



Environment  
Canada

Environnement  
Canada



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# Environment Canada

Annual Report  
1988-1989



Canada



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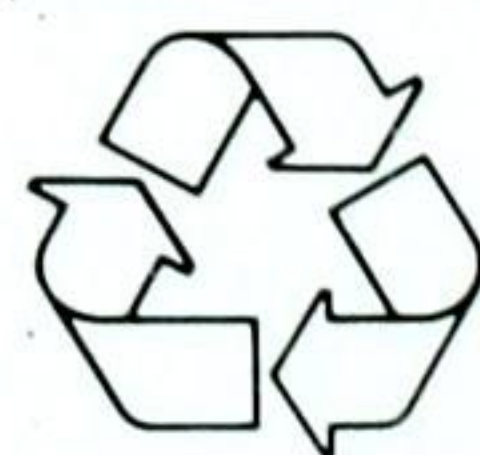
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# **Environment Canada**

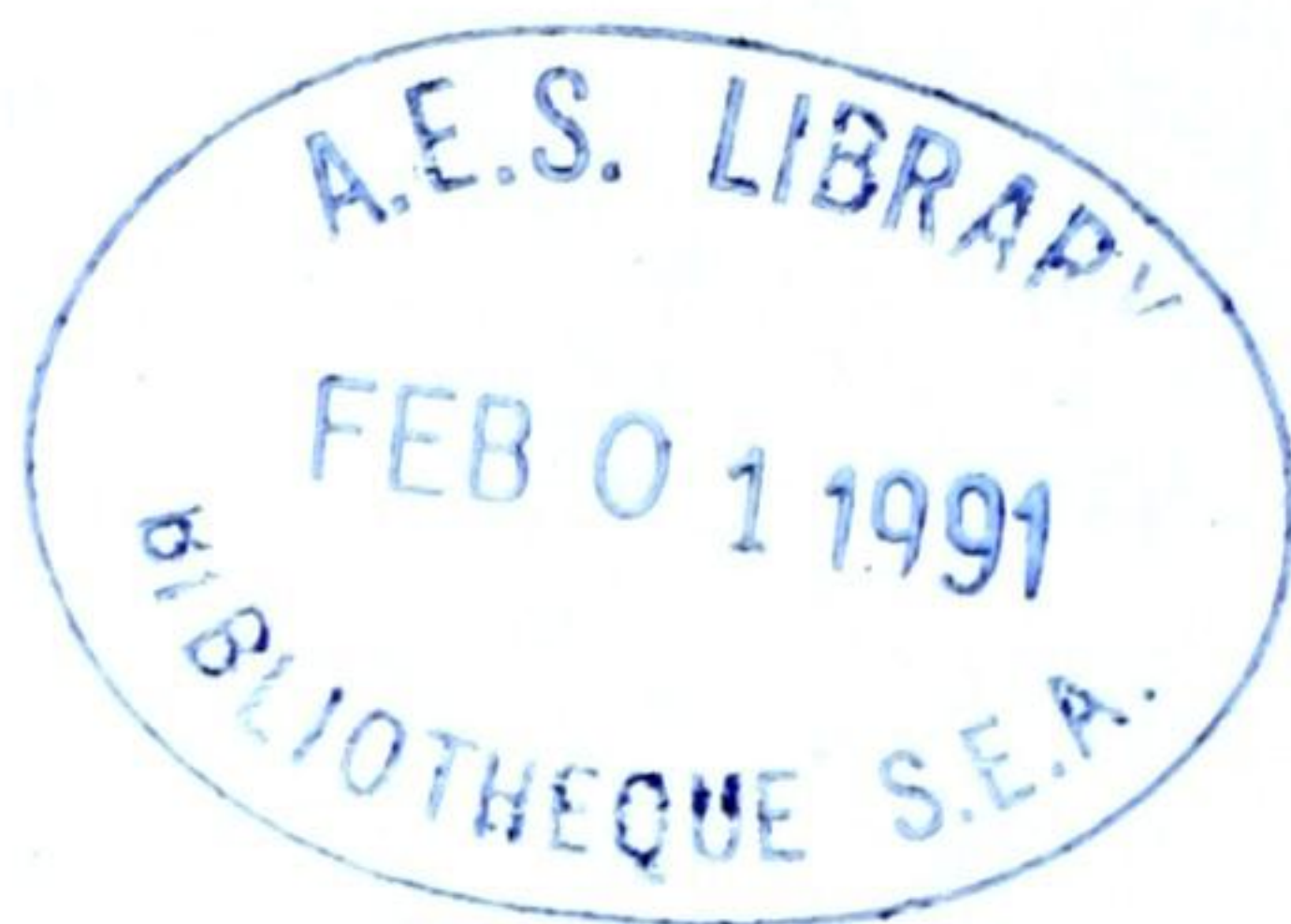
**Annual Report  
1988-1989**





Minister of the Environment

Ministre de l'Environnement



His Excellency  
The Right Honourable Ramon John Hnatyshyn, P.C., C.C.,  
C.M.M., Q.C.  
Governor General of Canada  
Rideau Hall  
Ottawa, Ontario  
K1A 0A1

Sir:

I am pleased to submit to Your Excellency and to the Parliament of Canada the Annual Report of the Department of the Environment for the fiscal year that ended March 31, 1989.

During that period, the Department was under the responsibility of my predecessor, the Honourable Lucien Bouchard.

I have the honour to be, Sir, Your Excellency's obedient servant,

Robert R. de Cotret





Deputy Minister  
Environment Canada

Sous-ministre  
Environnement Canada

The Honourable Robert R. de Cotret, P.C., M.P.  
Minister of the Environment

Minister:

I have the honour to submit the Annual Report of the  
Department of the Environment for the fiscal year  
that ended March 31, 1989.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Len Good". The signature is fluid and cursive, with a large loop at the beginning and a long tail.

Len Good



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## Mandate and Organization

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### Mandate

*The federal Minister of the Environment is responsible for policies and actions to preserve and enhance the quality of the environment for the benefit of present and future generations of Canadians.*

The mandate is derived from the Government Organization Act (1979), which establishes that the duties, powers and functions of the Minister of the Environment extend to and include all matters over which Parliament has jurisdiction not otherwise federally assigned, and relating to:

- preservation and enhancement of the quality of the natural environment, including water, air and soil;
- renewable resources, including migratory birds and other non-domestic flora and fauna;
- water;
- meteorology;
- enforcement of rules and regulations arising from the advice of the International Joint Commission relating to boundary waters and questions arising between the United States and Canada that relate to the preservation and enhancement of environmental quality;
- national parks, national historic sites and heritage canals; and
- other federal matters relating to the natural environment that are assigned to the Minister.

More specific powers and duties of the Minister of the Environment are defined by the following:

- Canada Water Act
- Canada Wildlife Act
- Canadian Environment Week Act
- Canadian Environmental Protection Act
- Game Export Act
- Historic Sites and Monuments Act
- International River Improvements Act
- Lake of the Woods Control Board Act
- Migratory Birds Convention Act
- National Battlefields at Quebec Act
- National Parks Act
- Weather Modification Information Act.

The Minister also has responsibility for administering pollution control provisions of the Fisheries Act and for providing specific advice and information under certain sections of federal legislation assigned to other departments.

The responsibilities noted above are carried out through departmental programs designed to:

- promote the establishment or adoption of objectives or standards relating either to environmental quality or to controlling pollution;
- ensure the wise management and use of renewable resources;
- provide Canadians with environmental information in the public interest;
- ensure that new federal projects, programs and activities are assessed early in the planning process for potentially adverse effects on the environment; and
- ensure the preservation of nationally significant natural and cultural heritage.

### Organization

In the fiscal year 1988-89, Environment Canada comprised the Atmospheric Environment Service, the Conservation and Protection Service, the Canadian Parks Service, and the Administration Program.

The Atmospheric Environment Service provides information on weather, climate, sea state, ice conditions and air quality.

The Conservation and Protection Service promotes conservation and protection of inland waters, lands and wildlife against the harmful effects of pollutants.

The Canadian Parks Service establishes, develops and manages national parks, national historic parks and sites, heritage canals and co-operative heritage areas.

The Administration Program is responsible for the general management of the Department, providing co-ordination and direction for environmental policy and building partnerships with national and international organizations whose co-operation with, and support for, departmental programs is essential to the fulfilment of Environment Canada's mandate.



# The Environment: A Global Challenge

*Environmental issues such as climate change, acid rain, ozone depletion and contamination from toxic substances transcend international boundaries, threatening the future of every nation.*

*Responding effectively to these global issues will require international co-operation far beyond anything attempted in the past. To help bring this about, Environment Canada participates in an ever-increasing number of international meetings, summits, conferences and other environmental forums, and complies with numerous conventions, protocols and international agreements. The Department also exchanges technical expertise and environmental information through organizations such as the United Nations Environment Programme (UNEP), the Economic Commission for Europe (ECE), the Organization for Economic Co-operation and Development (OECD), and the World Meteorological Organization (WMO).*

## **Sustainable Development: Key to the Future**

In the two years since the World Commission on Environment and Development released its ground-breaking report, *Our Common Future*, environmental concerns have come to be accepted worldwide as an integral component of economic development. Through active participation in many international organizations and events, Canada has had a major role in this shift in attitude.

At the Group of Seven Economic Summit held in Toronto in July 1988, heads of the leading industrial nations strongly endorsed the principle of sustainable development. In December 1988, Canada co-sponsored a UN resolution to initiate an international conference on environment and development, to be held in 1992.

To help encourage sustainable development research and applications, Canada decided to establish an International Centre for Sustainable Development, in Winnipeg. The Centre will act as a focal point for sharing expertise and information, with an emphasis on the challenges faced by developing countries.

In March 1989, Canada was among 24 countries attending the first-ever International Environment Summit in The Hague, Netherlands. The Hague Declaration expresses a commitment to dealing with global environmental problems, particularly climate change.

## **Dealing with a Changing Atmosphere**

In June 1988, Canada hosted in Toronto the first-ever World Conference on the Changing Atmosphere. The conference was an opportunity for both developed and developing countries to begin to address perhaps the most serious and complex environmental problem facing the world today — climate change.

As a follow-up to the Toronto conference, Canada sponsored an international meeting of policy and legal experts in February 1989. More than 90 experts from 25 countries and eight international organizations met in Ottawa to discuss potential elements of an international convention to protect the atmosphere. Delegates considered ways to control emissions of "greenhouse gases" such as carbon dioxide (CO<sub>2</sub>) and methane, and to counter deforestation and unsound agricultural practices. Research and monitoring, information exchanges and technology transfers to developing countries were also discussed.

Canada played an important part in establishing the Intergovernmental Panel on Climate Change (IPCC) and its three working groups. Mandated by UNEP and the WMO to examine the scientific evidence of climate change, to assess potential environmental and socio-economic impacts, and to develop effective response



strategies, the IPCC convened its first meeting in October 1988. The Panel's findings will be presented at the Second World Climate Conference in November 1990.

Environment Canada officials are involved in negotiations to strengthen the 1987 Montréal Protocol, an international accord to prevent depletion of the ozone layer. In February 1989, Canada announced its intention to phase out use of chlorofluorocarbons (CFCs) by 1999.

In September 1988, Canada signed a protocol in Sofia, Bulgaria, aimed at reducing emissions of nitrogen oxides (NO<sub>x</sub>), a major contributor to acid rain and smog. The Sofia Protocol was preceded by a similar protocol on sulphur oxides signed at Helsinki, Finland, in 1985. Both protocols fall under the Long-Range Transboundary Air Pollution (LRTAP) Convention overseen by the United Nations ECE, which comprises 35 European and North American nations.

### **Progress Made on Hazardous Wastes**

In March 1989, Canada was among 34 countries to sign, in Basel, Switzerland, a Global Convention on the Control of Transboundary Movements of Hazardous Wastes. This agreement, the first global application of the principle of prior informed consent, provides for strict controls of hazardous waste exports among participating countries, and a complete ban on exports to non-signatory or non-consenting countries.

### **International Scientific and Technical Co-operation**

The scale and complexity of global environmental issues make it imperative for nations to pool expertise and information. As a world leader in many areas of environmental research and technical capacity, Environment Canada makes a major contribution to this international exchange.

The Department has been working to establish international consensus on the need to preserve the planet's biological diversity. Achieving this goal will require a concerted worldwide effort to protect threatened ecosystems and to preserve habitat.

The Department is also working actively with its international partners to identify ways of assisting developing countries to meet international environmental standards and to participate in international agreements to address global environmental issues.

Canada contributes scientific and technical skills to MARPOL, the International Convention for the Prevention of Pollution from Ships. There are plans to amend the Canada Shipping Act to accede to MARPOL, thereby improving monitoring of ocean dumping. Canada is also working with its international partners on developing an Oil Spills Convention and on strengthening the 1972 London Dumping Convention.

With other OECD members, Canada is now working to develop environmental indicators equivalent to economic indicators such as the Consumer Price Index or the Gross Domestic Product. Proposed by Canada, these measures will be invaluable for assessing progress on environmental issues, and could also act as early warning signals.

Canada and the seven other Arctic circumpolar nations have arranged to meet, for the first time ever, in Rovaniemi, Finland, to discuss environmental concerns in the particularly vulnerable Arctic region.



# Atmospheric Environment Service

*The Atmospheric Environment Service (AES) has the primary responsibility for providing weather, climate, sea state, ice and air quality services for the safety of Canadians, the security of their property, the improvement of the national economy and the maintenance and enhancement of environmental quality.*

## **Protecting the Global Atmosphere**

The Government of Canada hosted "The World Conference on the Changing Atmosphere: Implications for Global Security" in Toronto from June 27 to 30, 1988. There were about 340 participants from 46 countries and 15 international organizations, including politicians and ambassadors, policy and legal advisors, senior government officials, physical scientists, social scientists, industry representatives, environmental experts and energy specialists.

The conference was chaired by Stephen Lewis, Canadian Ambassador to the United Nations. The Prime Ministers of Canada and Norway made opening speeches. Mr. Mulroney assured the delegates that governments around the world were listening and were increasingly willing and ready to help protect the global atmosphere.

The final statement that emerged from the conference clearly presented the scientific basis for concern and called for governments around the world to work urgently towards an action plan to protect the atmosphere. It recommended that such a plan be financed by a world atmosphere fund, to be supported in part by taxes on fossil fuel consumption in industrialized countries. The plan would include recommendations to reduce global CO<sub>2</sub> emissions by 20 per cent of 1988 levels by the year 2005, and to develop a comprehensive global convention on the protection of the atmosphere. The convention should be ready in time for the 1992 Intergovernmental Conference on Sustainable Development.

As a first step towards such a convention, 80 legal and policy experts met in Ottawa in February 1989. They included a broad spectrum of representatives from developed and developing countries on every continent.

The experts endorsed the proposal to develop an international convention, or conventions. They also stated that protocols to limit CO<sub>2</sub> and other greenhouse gas concentrations in the atmosphere were urgently required, within the framework of either a convention on climate change or a convention on the protection of the atmosphere. Work should proceed simultaneously to develop a climate change convention and principles for a framework convention on protection of the atmosphere, and to negotiate protocols on priority issues.

Participants also expressed the wish that their recommendations on the content of an international agreement or agreements be sent as soon as possible for consideration by international organizations and meetings competent to carry matters forward in this important area of environmental concern.

## **Climatic Change**

During 1988-89, international activity gathered speed on the issue of potential climate change and its impacts on the world's economic and social systems. A joint World Meteorological Organization/United Nations Environment Programme Intergovernmental Panel on Climate Change was set up in November 1988, to advise governments on the state of scientific knowledge about climatic change, potential impacts of a 1.5-4.5°C global warming by the middle of the next century, and possible policy response strategies. The panel established three working groups dealing with each of those aspects of the problem. The panel's final report will be presented at the Second World Climate Conference in Geneva in November 1990.

Canada is a very active participant in all three groups, and is lead author in two Working Group II sub-groups, dealing with the impacts of climate change on natural terrestrial ecosystems and on permafrost. In addition, Canada is a member of the steering group of Working Group III, which deals with response strategies.



The Canadian Climate Program's major focus on the impacts of climate change on Canada's economy continued in 1988-89. Further impacts were described in the Climate Change Digest series of publications, which presents studies in executive summary form. They included summaries of the implications of climate change for agriculture in Saskatchewan, tourism and recreation in Ontario, and natural resources in Quebec.

### **Better Weather Information for Mariners**

Environment Canada is working to improve forecast production and dissemination for marine interests in Canadian waters.

Along the Pacific coastline, four new weather observing buoys were deployed; steps were taken to improve the effectiveness of marine warnings; and near-shore sea-state forecasts were started.

The Atlantic coastline's weather observing network was enhanced by the deployment of four deep-sea and two drifting buoys. Three new buoys were deployed in the Great Lakes, two of them on Lake Superior.

To improve the dissemination of weather information to maritime interests, new Weatheradio transmitters were introduced in Yarmouth, Nova Scotia, Miscou and Shippegan, New Brunswick, and at Sept-Îles, Quebec. A similar initiative was approved for Great Lakes mariners. Weatheradio studios and transmitters in Thunder Bay, Sault Ste. Marie and Windsor, Ontario, were scheduled to become operational by the summer of 1989.

### **Severe Weather Awareness Program**

Environment Canada launched a program aimed at educating Canadians on action they should take in the event of severe weather, particularly in tornado-prone areas. The campaign began in the spring of 1988, in response to the recommendations of Dr. Keith Hage, who conducted a review of existing weather warning services following the Edmonton tornado of July 1987.

The public awareness program was conducted on several fronts, including displays, school and town-hall presentations, and media workshops. A video, "Stay Alert, Stay Alive," was produced and was sent, along with footage of the Edmonton tornado and another AES video, "Reap the Whirlwind," to many weather offices and stations for local use. Also, special tornado awareness presentations were made in several locations in southern Ontario.

The focus on public safety also resulted in the publication of the "Severe Weather Safety Guide," a booklet that provides data and advice on weather and safety procedures. The guide received extensive media coverage throughout the Prairie provinces.

### **Improved Warning Systems**

Environment Canada initiated several projects during the year as part of a continuing program to improve its severe weather warning services. Many of these projects were undertaken in response to recommendations made in the Hage Report.

In an effort to shorten the warning response time, the Department recruited amateur radio operators to act as severe weather watchers in Saskatchewan, Manitoba and Ontario. Early trials have shown that information communicated by this means has arrived up to 20 minutes sooner than by other media.

On other fronts, progress was made regarding the use of television text crawlers to disseminate weather warnings; a hot-line was established between the City of Winnipeg's Police Department and the local weather office; and some media outlets were provided with Weatheradio receivers in order to permit faster notification of warnings.

### **Improved Short-Range Weather Forecasts**

An improved, three-dimensional, short-range weather forecast model (the "100 km Semi-Lagrangian Regional Finite Element Model") was added in December 1988 to the supercomputer at the Canadian Meteorological Centre in Montréal. This was the first computer model of this type to become operational in the world. Thus far, it appears to be providing better predictions than the system employed by the United States Weather Service.

### **Arctic Ozone Studies**

Since the discovery of the Antarctic ozone hole in 1985, research on the ozone layer has increased significantly, particularly in polar regions. Several national and international scientific experiments have been carried out in order to understand the cause of the ozone hole and to monitor year-to-year changes. Results of these experiments have explained the chemical and physical mechanisms causing the Antarctic ozone hole and have determined that the ozone depletion over the Antarctic is most likely a result of human activity.

AES has been conducting experiments in the Arctic during the winter and spring since 1985-86. Between January and March 1989, ozone and other related gases were measured from Alert, Northwest Territories, Canada's northernmost station. The measurements were made using both ground-based and balloon-based instruments. Results have indicated that the Arctic stratosphere contains features similar to those of the Antarctic.

Ground-based ozone measurements taken in the Canadian Arctic were compared with those taken in the USSR as part of a bilateral agreement between Canada and the USSR on Scientific and Technical Co-operation in the Arctic and the North. Measurements were taken with the Brewer ozone spectrophotometer at Alert and Resolute in Canada, and at Heiss Island in the USSR. Three of these spectrophotometers, which are Canadian-manufactured, are in operation in the USSR.



## **Long-Range Transport of Air Pollutants — Evaluation of Models for Atmospheric Transport**

Environment Canada has completed the development phase of a regional air quality model that can be used to address several policy issues with regard to Canada's resolve to reduce acid rain. The development of the model was a co-operative effort involving Environment Canada, the Ontario Ministry of the Environment, the Federal Republic of Germany and the US Electric Power Research Institute. It was carried out in parallel with the development of other similar models elsewhere in the world, most notably in the United States.

Over the next few years the model will be tested, using factual data, and used to resolve current environmental issues. This effort began in 1988-89.

A major field experiment, started in June 1988 and scheduled for completion in June 1990, will generate the data necessary to test and establish the credibility of the model. The experiment, the largest of its type, is sponsored by Environment Canada, the Ontario Ministry of the Environment, the US Environmental Protection Agency, the US Electric Power Research Institute and the Florida Electric Power Generating Group. Total project costs are expected to be approximately \$50 million.

As part of this experiment, a network of several hundred sites continuously samples precipitation and air quality. At times during 1988-89, more intensive (higher sampling frequency) and more exhaustive (additional variables) measurements were taken, using, among other equipment, several specially equipped aircraft from Canada, the United States and the Federal Republic of Germany. During these intensive measurement periods, emissions from major pollution sources were tracked on a day-to-day basis, the meteorological conditions were recorded and key chemical species were measured.

The results of this initial evaluation of both the Canadian and US models will contribute significantly to the US National Acid Precipitation Assessment Program currently under way. The US model will be the key tool in evaluating sulphur dioxide control scenarios.

## **East Coast Storms**

The basis for weather forecasting in Canada is the ability to simulate the behaviour of the atmosphere, through mathematical models run on super-computers. Such models incorporate our understanding of the physics of the atmosphere. A group of AES scientists joined their colleagues from the US Office of Naval Research and from Canadian and American universities to investigate the very powerful storms that affect the offshore and land areas of Atlantic Canada every winter. They investigated 10 storms, from December 1, 1988, to February 28, 1989, using a variety of equipment that included Doppler radars and instrumented aircraft from the US National Hurricane Centre. All the storms brought high winds, heavy snow and freezing rain to Atlantic Canada.

It will take several years to analyze thoroughly the data gathered during this three-month field project, but preliminary results are encouraging. Scientists are hopeful that the final results will significantly enhance our understanding of storms, thus permitting more accurate forecasts.

## **Fog as a Desert Water Resource**

One of the major problems facing developing countries is the lack of fresh water for human consumption and agricultural purposes. This problem is particularly acute in arid and semi-arid lands, where there is often negligible rainfall, saline ground water and no surface water. In several countries, Environment Canada is assisting with projects to test the potential use of high-elevation coastal fogs as a source of fresh water.

A combined research and operational project in northern Chile, sponsored by the International Development Research Centre in Ottawa, has reached the pilot project stage. An average of 10,000 litres of fog water per day has been produced by 50 collectors over the last two years. A pipeline is being constructed to take the water to a coastal village.

Another field study has been undertaken in the Dhofar region of southern Oman. It is sponsored by the Government of Oman and two United Nations organizations, the World Meteorological Organization and the United Nations Development Fund. The water production per square metre of collecting surface has been found to be much higher than in Chile, but the period of fog collection is limited to only two months during the summer monsoon.



# Conservation and Protection

*Conservation and Protection is responsible for the sound conservation, enhancement and management of Canada's renewable resources of water, land and wildlife. This responsibility includes water quantity and quality monitoring, aquatic research, flood damage reduction, river basin planning, land resources development, the management of migratory birds, the protection of threatened and endangered species, and other national and international water and wildlife issues.*

*In addition, the Service is responsible for protecting environmental quality. This includes preventing, reducing or eliminating adverse environmental effects from new developments, releases of pollutants and the use of hazardous chemicals. It also involves cleaning up harmful substances that have been spilled.*

## **Toxic Chemical Pollution**

Pollution by toxic chemicals is widely recognized as one of the most serious problems facing our planet. A 1989 survey indicates that the top three environmental risks perceived in Canada as being an immediate threat to life are the pollution of drinking water by industrial and chemical wastes, the storage of dangerous chemicals, and the chemical destruction of the ozone layer.

- **Canadian Environmental Protection Act (CEPA)**

The Canadian Environmental Protection Act was proclaimed by Parliament in June 1988, after nearly five years of consultation with other governments, environmental groups, industry, labour and the general public.

The Act provides for the control of toxic chemical production, transport, use and disposal, and consolidates much of the legislative authority of the Minister of the Environment. It builds on earlier environmental legislation, broadening the authority of the federal government with the objective of anticipating and preventing environmental problems. The legislation adopts an ecosystem approach

to controlling toxic contamination of the air we breathe, our waterways, oceans and soil.

CEPA prescribes fines of up to \$1 million a day, as well as jail terms, for those who violate the law. In June 1988, an Enforcement and Compliance Policy was implemented to guide the government's responses to violations of CEPA. Regional investigation units and inspector training programs were established in Vancouver, Edmonton, Toronto, Montréal, Halifax and St. John's.

In February 1989, the first Priority Substances List was released under CEPA. The list identifies 44 substances, including chemical families, for priority assessment, within the next five years, of their effects on health and the environment. An advisory panel selected the substances and indicated approaches to their individual assessment. The National Water Research Institute organized a CEPA Science Forum in February 1989, which brought together some 100 scientists to discuss the scientific research needed for toxic chemical assessment under CEPA.

Compilation of the Domestic Substances List began in order to bring into effect the provisions, under section 25 of CEPA, concerning the notification and assessment of new substances. The first phase of the two-year exercise, which involved a national survey of some 200 major chemical manufacturers and importers, began on October 1, 1988, and concluded on March 31, 1989. The final list will be published in December 1990.

- **Montréal Protocol**

The Montréal Protocol was established to encourage countries to protect the ozone layer by controlling the use of chlorofluorocarbons (CFCs) and other ozone-depleting chemicals.



The Government of Canada ratified the Protocol in June 1988. Consumer awareness of CFCs is being heightened in Canada by a video campaign. The federal government has set as its overall objective the complete elimination of controlled CFCs by 1999.

- **Pesticides**

In 1988-89, the Department significantly reduced the backlog of pesticides to be considered for regulation. An annual report describing departmental pesticide research and monitoring activities was published. DOE, in co-operation with the Canadian Council of Resource and Environment Ministers (CCREM) and other federal agencies, has developed guidelines for three priority pesticides. The guidelines were approved by the CCREM Task Force on Water Quality Guidelines and by scientific experts. Research at the National Water Research Institute on the aquatic impacts of the anti-fouling pesticide Tributyltin led to Agriculture Canada's imposing a partial ban on its usage.

- **Dioxins**

In December 1988, notices were issued under CEPA to 47 pulp and paper mills suspected of discharging dioxins, furans and chlorinated organic compounds into the environment through a chlorine-bleaching process. The mills were ordered to provide details on their existing or proposed technologies for removing or reducing the pollutants, as well as their plans and schedules for implementing pollution controls. The National Pulp and Paper Mill Sampling Program analyzed the contamination of areas surrounding pulp and paper mills. A communications package on dioxins was distributed. Guidelines for the incineration of municipal solid wastes were approved by CCREM and published in October 1988.

- **PCBs**

Following a major fire in a PCB (polychlorinated biphenyls) storage warehouse in the Quebec community of Saint-Basile-le-Grand, Environment Canada developed legally

enforceable national standards for PCB storage under CEPA. PCB storage facilities must pass stringent tests concerning fire, access, emergency contingencies and site design. As part of a management strategy to phase out all PCBs in use in Canada by 1993, a comprehensive action plan to destroy PCBs at federal facilities was announced in September 1988.

- **Transportation of Hazardous Wastes**

In March 1989, Canada was one of 34 countries to sign the new Global Convention on the Control of Transboundary Movements of Hazardous Wastes. Signatories to this convention, developed under the auspices of the United Nations Environment Programme, agreed to reduce hazardous wastes to a minimum at their source, to treat such wastes as near as possible to their source, and to ship wastes only to countries equipped to treat them. Under the National Hazardous Waste Action Plan, draft guidelines for the mobile treatment and destruction of PCBs were developed. Interim test methods for hazardous waste were developed under the Transportation of Dangerous Goods Act, and a uniform manifest for hazardous waste shipments was implemented.

### **Acid Rain**

Acid rain is contributing to serious environmental problems in eastern Canada. About 14,000 lakes have become so acidic that fish reproduction is unlikely. An additional 300,000 lakes are similarly threatened. Acid rain is also suspected as the cause of serious declines in forest growth, has a negative impact on wildlife and contributes to respiratory problems in Canadians.

- **Research**

A biomonitoring program to determine the adverse effects of acid rain on wildlife is being established. A report has been published, identifying and quantifying the socio-economic benefits at risk due to acid stress on wildlife and wildlife habitat. A computer model was designed to forecast the potential severity of the acid released during the spring thaw. A modelling and management system, RAISON, was developed to manage scientific data on the effects of acid rain and to evaluate the implications of various sulphur emission reduction scenarios.

- **Agreements**

The last of the federal/provincial acid rain agreements with the seven easternmost provinces was signed in February 1988. In four of the seven provinces, the agreements have been backed by provincial regulations. Eastern Canadian sulphur dioxide emissions have declined from 4.6 million tonnes in 1980 (the base year) to about 2.8 million tonnes in 1988. It is anticipated that the 2.3-million-tonne target for the year 1994 will be met.

### **Water**

Water is the most important, yet least valued, of Canada's natural resources. It is an essential ingredient of human life and health, as well as a key element in industrial processes. Water is an integral component of ecosystems and ecosystem-based activities. Canada's water resources are experiencing increasing pressures on both quality and quantity, with water use increasing faster than either population growth or economic growth. Improved management of Canada's water resources is, therefore, a very high priority.

- **Federal Water Policy**

In 1988-89, detailed action plans were completed to guide the implementation of the 1987 Federal Water Policy. The following issues were addressed: water quality protection



and management; realistic water pricing; water use conflicts; the North; climate change; interbasin transfers; integrated planning of river basins; and the enhancement of the Canadian water industry.

- **Water Quantity Monitoring**

Cost-sharing agreements between the federal government and all provinces and territories provide data on floods, droughts and water supplies. This information is needed to address current environmental issues and for the design, construction and operation of hydro-electric power stations, water supply systems, waste treatment plants, transportation systems, and flood forecasting systems. Canadians invest over one billion dollars each year in these systems. All of the level and flow data collected over the past 136 years are now available on optical disk, making this valuable information available to more users at a very reasonable cost.

During the mid-1980s, four of the five Great Lakes were experiencing the highest water levels of this century. Accordingly, the Canadian and US governments requested the International Joint Commission (IJC) to examine methods of alleviating the adverse consequences of fluctuating Great Lakes water levels. In 1988-89, Environment Canada continued to provide strong administrative and technical support to this investigation. A Phase I progress report will be prepared by mid-1989.

- **Water Quality Monitoring Agreements**

The national program for water quality monitoring is being expanded through cost-sharing agreements with the provinces. The basis for these agreements is the Canadian Water Quality Guidelines, developed under the auspices of CCREM. Agreements have been signed with four provinces, and negotiations are progressing well with the remaining provinces.

- **Great Lakes Water Quality Agreement**

A revised Great Lakes Water Quality Agreement (GLWQA) was signed with the United States in November 1987, after extensive review by the public, the federal government, the provinces of Ontario and Quebec, the eight Great Lakes states and the United States government. In 1988-89, several initiatives were undertaken to implement the GLWQA, including agreement on categorizing toxic chemicals into three lists: (i) present and toxic; (ii) present and potentially toxic; and (iii) potentially present and toxic. A review of 11 International Joint Commission (IJC) recommendations on water quality objectives was also undertaken.

The first stage in the development of Remedial Action Plans for the 17 Canadian toxic hot spots is under way, in co-operation with the Province of Ontario. In February 1989, the first report of Canada under the 1987 protocol to the 1978 Great Lakes Water Quality Agreement was formally transmitted to the IJC. The report details the measures being undertaken in Canada to implement the revised agreement.

- **Lake Ontario and Niagara River Toxics Management Plans**

Following public consultation and co-ordination of input from the US Environmental Protection Agency, New York State and Ontario, a Lake Ontario Toxics Management Plan was prepared and released in February 1989. It contains a statement of the present impact of toxic

chemicals and highlights criteria for measuring the success of the actions planned to virtually eliminate releases of persistent toxic chemicals.

The Niagara River Toxics Management Plan is already in effect. It prescribes a 50-per-cent reduction in the discharge of specific chemicals from sources on both sides of the Niagara River by 1996. In 1988-89, a progress report was completed.

- **St. Lawrence River**

A Canada-Quebec Convention on the St. Lawrence River was signed in June 1988, under which both governments undertook to enter into a harmonization agreement to ensure that each party's initiatives to clean up and enhance the river complement those of the other party. The federal government's commitment is represented by its five-year, \$110-million action plan. The plan includes programs to protect water quality and the environment from industrial toxic substances, remove contaminated sediments from the Lachine Canal, and propose restoration plans for national ports.

Twenty-five million dollars will be invested in four conservation programs: to ensure the protection of wild plant and animal life and habitat; to develop and implement survival plans for endangered species; to assess the condition of the river's ecosystems; and to create a marine park where the Saguenay and St. Lawrence rivers merge.

The St. Lawrence Centre was established in Montréal to promote the development and application of environmental technologies, ecotoxicology, and the production of state-of-the-environment reports on the St. Lawrence.



- **Water Research**

C&P published over 100 reports in the following fields: the aquatic presence, fate, and impacts of toxic contaminants in the Great Lakes and in the St. Lawrence, Fraser, Athabasca, Mackenzie and Yamaska rivers; the processes controlling pulp mill effluent and pesticide toxicity; the exchange of toxic chemicals between water and sediment; and improved methods of analysis, assessment, and ecosystem restoration. Major field research programs were initiated in several areas: the impacts of pulp mill effluent, as part of the priority substances assessment under CEPA; the relationship between climate change and wetlands; recharge and contamination of ground water aquifers; and drought mitigation measures in the Prairies.

## **Wildlife**

There is considerable public- and private-sector support for building wildlife and habitat management concerns into the economic decision-making process. Wildlife has significant impacts on both subsistence- and recreation-based economies: in 1987, 18.3 million Canadians (91.3 per cent) were involved in some form of wildlife-related activity, and spent a total of \$5.1 billion on such activity. In addition, the health and abundance of wildlife are important indicators of the health of our environment.

Conservation of Canada's wildlife resources requires a continued commitment to sound management practices and the flexibility to respond to future developments in wildlife management. Priorities include the following: the identification and protection of habitat critical to wildlife; research on the biology and dynamics of wildlife populations and on habitat, as the

basis for effective management; implementation of strategies to protect wildlife, including the development and enforcement of appropriate regulations; and partnership in co-operative protection and conservation efforts with other levels of government, non-government organizations, and the private sector.

- **Migratory Birds**

The North American Waterfowl Management Plan (NAWMP), signed by Canada and the United States in 1986 and implemented in 1988, represents a major co-operative effort by federal, provincial, territorial and state governments, and non-government organizations, in conserving and managing waterfowl. The main objective of this \$1-billion, 15-year plan is to restore declining waterfowl populations to the levels of the 1970s by protecting up to 1.6 million hectares of wetland habitat in Canada. The plan will also promote the conservation of other wildlife species and of soil and water, and will contribute to a healthy economy through the business opportunities and jobs associated with recreation and tourism.

Federal funding of \$1.7 million was secured for the implementation of NAWMP in 1988-89. The funds — together with more than \$8 million contributed by the provinces, private conservation organizations and US sources — were used to implement "first step" projects. These habitat enhancement and securement projects were begun at Quill Lakes (Saskatchewan), Buffalo Lake (Alberta), and Minedosa Potholes (Manitoba), under the Prairie Habitat Joint Venture; and at Matchedash Bay (Ontario), Nicolet (Quebec), Grand Lake (New Brunswick), Yarmouth (Nova Scotia) and Grove Pine (Prince Edward Island), as part of the Eastern Habitat Joint Venture. Breeding pair surveys to monitor Black Duck population trends were conducted in the Atlantic provinces, Quebec and Ontario.

- **Wildlife Habitat**

Habitat critical to the survival of migratory bird species is being protected. In June 1988, Malpeque Bay, Prince Edward Island, was designated a wetland of international importance under the Ramsar Convention, and Minas Basin, Nova Scotia, was dedicated as a hemispheric shorebird reserve in August. Protected sites for wildlife in Canada now include 99 migratory bird sanctuaries, 45 national wildlife areas, 30 sites designated as wetlands of international importance under the Ramsar Convention, and two sites designated as hemispheric sister shorebird reserves.

- **Endangered Species**

The number of species listed as endangered, threatened or vulnerable has been increasing much faster than the number of programs to recover species. This imbalance made it essential to develop a national strategy involving all jurisdictions and interested parties. The Strategy for the Recovery of Nationally Endangered Wildlife (RENEW) was endorsed by federal and provincial wildlife ministers in September 1988. The RENEW organization is composed of provincial, territorial and federal wildlife agencies and three major national wildlife organizations. The goal is to have all agencies and organizations work as a team to rescue species at risk of becoming extinct and to prevent vulnerable species from becoming at risk.

A joint endeavour with World Wildlife Fund Canada has created a \$2-million Endangered Species Recovery Fund to assist in the recovery of endangered animals and plants native to Canada. The fund is available for projects between April 1988 and March 1992.



Recovery work in Canada is showing some signs of success: whooping crane numbers have increased from 43 to about 200 since the recovery plan was initiated in 1966, and peregrine falcon populations have grown through reintroduction programs.

- **Wildlife Toxicology Research**

Research continues on the levels and effects of contaminants in sea-birds, birds of prey and other wildlife. The information is being used to develop recovery plans for endangered species, such as the Peregrine Falcon Recovery Plan produced in October 1988. Data are also used as an indication of environmental quality, such as the continuing monitoring and reporting of levels of dioxins and furans in herring gull eggs in the Great Lakes and the St. Lawrence and in great blue herons in the Fraser River estuary. A review summarizing Canadian research on contaminants in birds of prey has been completed.

A national system of computer mapping showing the overlap between endangered species and pesticide use has been developed. This will greatly enhance scientists' ability to forecast the impact of specific pesticides on endangered wildlife. Research on the effects of carbofuran on endangered burrowing owls resulted in a recommendation to Agriculture Canada that the insecticide be formally re-evaluated.

#### **Other Activities**

- **International Co-operation**

The environment is an international concern, and countries are making technological discoveries that can benefit all. Canada signed an environmental agreement with the Netherlands in May 1988. Of special interest to Canada is the Netherlands' greater familiarity with nitrogen oxide pollution. Canada also hosted a visit of Soviet biologists in November 1988, as part of the Canada-USSR Arctic Science Exchange.

- **State of the Environment**

The new SOE Fact Sheet and Report was inaugurated with publications on the urbanization of rural land, pollutants in the B.C. marine environment, and acid rain in the Atlantic provinces. There was significant progress on the 1991 National SOE Report.

- **Sustainable Development**

The drive for sustainable development has led to several initiatives: the production of an action plan for a Federal Strategy on Sustainable Development; the incorporation of environmental and economic concerns into economic regional development agreements and economic development agreements; establishment of a bank of sustainable development success stories; and research on links between the environment and the economy and on resource evaluation.



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# Canadian Parks Service

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*As Canadians, we take great pride in the beauty of our lands and waters and in the richness of our nation's history. For over a century the federal government has protected outstanding natural areas as national parks and has commemorated persons, places and events of national historic significance at historic sites.*

Our national parks and historic sites, taken together, represent the very essence of Canada. They reflect for present and future generations the environment upon which we have always been dependent and the many people whose lives have shaped our diverse nation.

The goal of the Canadian Parks Service is "to protect for all time those places which are significant examples of Canada's natural and cultural heritage and also to encourage public understanding, appreciation and enjoyment of this heritage in ways which leave it unimpaired for future generations."

This mosaic, although as yet incomplete, is composed of 34 national parks, two national marine parks and 112 national historic sites, which include the historic canals. More than 1,000 bronze plaques have been erected nation-wide by the Historic Sites and Monuments Board of Canada. The Parks Service contributes, through cost-sharing and co-operative agreements, to the protection of 44 sites of national historic and/or architectural significance.

In 1988-89, Canada's national parks recorded 12 million visits, while six million visits were registered at national historic sites.

## Program Activities

### • **Amendments to the National Parks Act**

Major amendments to the *National Parks Act* were formally proclaimed on September 16, 1988, following thorough review by the House of Commons Legislative Committee and the Senate Committee on Energy and Natural Resources. During the proceedings, over 50 witnesses represented interest groups and the general public and several additions were made to the original Bill. These included a requirement to produce management plans within five years of the proclamation of a national park or national marine park, and a provision that ecological integrity be the first consideration in management planning.

Meanwhile, the Bill was refined and strengthened through additional measures for wildlife protection and the legislation of wilderness areas in parks. Authority was given to proceed with establishing Grasslands National Park in Saskatchewan, Bruce Peninsula National Park in Ontario, and Canada's first national marine park, Fathom Five, near Tobermory, Ontario. Ellesmere Island National Park Reserve, Northwest Territories, was officially established on proclamation of the amendments.

### • **Heritage Railway Stations Protection Act**

The Heritage Railway Stations Protection Act received Royal Assent on September 22, 1988. It states that no railway company may remove, destroy, alter or in any way dispose of a heritage railway station under its control, or alter any of its heritage features, without Governor-in-Council approval. A heritage station is defined as one designated as such by the Minister of the Environment on the recommendation of the Historic Sites and Monuments Board of Canada.



Furthermore, according to the Act, a railway company proposing to undertake any of the actions noted above must file an application for authorization with the Minister and give public notice of its intention to file such an application. Carrying out such work without Governor-in-Council authorization can result in a fine to the railway company of not less than \$50,000.

It is anticipated that the Heritage Railway Stations Protection Act will be formally proclaimed during the fiscal year 1989-90.

## **Natural Resources Protection and Management**

### **• Enforcement**

The Law Enforcement Operations Program is well under way, having met its objectives in seven special operations conducted in conjunction with regions and parks during the fiscal year 1988-89. Results from these operations included convictions for moose hunting in Gros Morne National Park, and charges for salmon netting in Kouchibouguac National Park and trophy hunting in Jasper National Park.

The program's impetus stemmed from National Parks Act amendments that increased penalties from a maximum of \$500 for any offence to a maximum of \$150,000 and/or a six-month jail term for the poaching of specified trophy and endangered species.

Staffing was completed for the Law Enforcement Operations Section to assist in combatting poaching in the national parks. Five law enforcement specialists are in place in the regions, and a manager, an intelligence officer and a technical and training officer are employed at the national level.

The section acquired an inventory of high-tech law enforcement equipment designed for anti-poaching operations in the national parks. Major initiatives under negotiation with the RCMP include direct access to the Canadian Police Information Centre and the Police Information Retrieval System.

### **• Resource Management**

The Canadian Parks Service continued efforts to improve vegetation management techniques, in order to ensure the protection of national parks' ecosystems and to develop its competence in managing fire as a natural ecosystem process. Elk Island, Banff and Jasper national parks now have areas zoned for planned-ignition, prescribed fires. In Banff National Park, 1,500 hectares were burned on April 17, 1988, the largest single burn so far attempted by the CPS. Operational management of prescribed fires provided excellent training for the newly established Western Region fire command team.

As part of its efforts to maintain or restore parks' ecosystem integrity, the Parks Service continued implementing a resource management plan for the protection of piping plover in Prince Edward Island National Park, Kejimikujik National Park, Nova Scotia, and Kouchibouguac National Park, New Brunswick. To increase the population of the endangered peregrine falcon, a reintroduction program was launched in Forillon National Park, Quebec, following a similar program in Fundy National Park, New Brunswick. Reintroduction programs for the endangered pine marten were also undertaken at Gros Morne and Terra Nova national parks in Newfoundland, and at Kejimikujik and Fundy national parks.

### **• Canadian Parks Service Management Plans**

In November 1988, management plans for Banff, Jasper, Kootenay and Yoho national parks were approved by the Minister, concluding an eight-year exercise that included one of the most extensive public consultation programs ever conducted by the CPS. The Minister also approved the Jasper Town Plan and management plans for Waskesiu and Wasagaming, two smaller communities in Prince Albert and Riding Mountain national parks. The Waskesiu plan outlines steps towards future development of Waskesiu as a heritage community, while the plan for Wasagaming concentrates on upgrading the community through investments in municipal services and public facilities. The 1978 management plan for Forillon National Park was amended, providing increased tourism opportunities.

For the first time, the national park management plans approved in 1988-89 provided for the designation of wilderness areas, as specified in the 1988 amendments to the National Parks Act.

During the year, management plans were approved for Fort Wellington, Fort Battleford and the Chilkoot Trail. These plans give direction for the management and development of the sites through guidelines governing research, resource protection, marketing, interpretation and the provision of visitor facilities. As well, public consultations were held in Newfoundland to discuss plans for the future of Port au Choix, and in Halifax, Nova Scotia, to receive public comment on plans for the historic Defence Complex.

### **• New Park Negotiations**

The challenge facing the Canadian Parks Service is to depict the full breadth of Canada's natural diversity within the national park system.



Currently, Canada's 34 national parks are located within 21 of the 39 land-based natural regions; by this measure, the national park system is roughly 54 per cent complete. Only two of the 29 marine regions are represented: one by a national marine park, the other by a national marine park reserve. Efforts are being made to complete the park system before existing opportunities disappear, perhaps forever.

Work is under way on six park proposals. Proposals concerning the East Arm of Great Slave Lake and the Old Crow Flats are being negotiated through the Dene/Metis and Council for Yukon Indians land claims respectively. Discussions are being held regarding four possible national parks in the vicinity of northern Baffin Island, on Banks Island, in the Bluenose lake area, and near Churchill. In addition, plans are being prepared to guide efforts to complete Canada's systems of national parks and national marine parks.

- **Canadian Parks Service Heritage Awards Program**

On Heritage Day, February 20, 1989, the Minister of the Environment presented the annual Canadian Parks Service Heritage Awards to 10 recipients at a ceremony on Parliament Hill. These awards recognize exceptional achievements in natural and cultural heritage conservation. The 1988 award-winners were:

**G.H.U. (Terk) Bayly**, Ontario, Chairman of the Niagara Escarpment Commission and former Chairman of the Ontario Heritage Foundation.

**Marc Denhez**, Ontario, an Ottawa lawyer specializing in heritage and author of *Heritage Fights Back*.

**Island Nature Trust**, Prince Edward Island, an organization active in the development of provincial legislation, including the *Environmental Protection Act for P.E.I.* and the *Provincial Conservation Strategy*.

**Sister Estelle Lacoursière**, Quebec, a botany professor and author of 24 books, including *The Living Pond* and *L'arbrier québécois*.

**Father Donat Martineau**, Quebec, founder of the "Société du patrimoine de l'Abitibi-Témiscamingue," who was instrumental in the designation of Fort Témiscamingue as a national historic site.

**Bill Mason** (deceased), Quebec, former member of the Canadian Parks and Wilderness Society. He produced 18 nationally and internationally recognized wilderness films, including *Paddle to the Sea*.

**Nature Conservancy of Canada**, a national non-profit organization dedicated to preserving ecologically significant natural areas in Canada.

**Pangnirtung Tourism Committee**, Northwest Territories, community-based committee that co-ordinates and implements programs for tourism development in Southeast Baffin Island.

**Muriel Kent Roy**, New Brunswick, the Director of the Acadian "Centre des Études" at the University of Moncton.

**John Woodworth**, British Columbia, founding director of the Okanagan-Similkameen Parks Society and the Nature Trust of British Columbia. He continues to concentrate his efforts on the Alexander Mackenzie Heritage Trail.

- **Federal Heritage Buildings Review Office**

FHBRO is an inter-departmental body that advises the Minister of the Environment on the designation of federal heritage buildings. As it is federal policy to conserve and re-use

buildings so designated, FHBRO advises owner departments on the conservation of the heritage character of designated buildings. Federal heritage buildings are designated as either "recognized" or "classified." Classified buildings are those identified as having the highest heritage significance, while recognized buildings are of second-highest significance. To date, FHBRO has evaluated 987 buildings. Of these, 77 have been classified and 336 have been recognized.

In 1988-89, 22 classified and 91 recognized buildings were added to the Register of Federal Heritage Buildings. These included a series of World War I hangars at Canadian Forces Base Borden, Ontario, and the Cape Sable Island lighthouse in Nova Scotia.

Departments planning changes to a federal heritage building must first seek the advice of FHBRO. If the proposed changes affect the building's heritage character, they are termed a "significant intervention." FHBRO considered proposals for significant interventions to 24 federal heritage buildings in 1988-89.

- **Historic Sites and Monuments Board of Canada**

Three new members were appointed to the Historic Sites and Monuments Board of Canada in 1988-89: John White, Marion Beyea and John Bayly, representing respectively Ontario, New Brunswick and the Northwest Territories.

The Historic Sites and Monuments Board of Canada is the statutory body appointed by the Governor-in-Council to advise the Minister of the Environment on the commemoration of historic events. The Minister is responsible for developing and implementing a national program to commemorate the national historic significance of persons, places or events.



Sixteen members, representing each province and territory, are appointed to the Board for a term of five years. Ontario and Quebec each have two representatives. Other members include the Dominion Archivist and a representative of the National Museums of Canada. Since its inception in 1919, the Board has made over 5,000 recommendations and erected plaques at more than 1,000 sites of national historic significance across Canada.

- **Canadian Heritage Rivers**

Across the country, 17 rivers are now included in the Canadian Heritage Rivers System. Although no rivers were nominated in 1988-89, three rivers within Canadian Parks Service jurisdiction — the Athabasca, North Saskatchewan and Kicking Horse rivers — were formally designated. Management plans for nine of these rivers — which total 1,204 kilometres in length — have already been lodged with the Canadian Heritage Rivers Board.

The Canadian Heritage Rivers System is a joint federal-provincial-territorial program established in 1984. In June 1988, Prince Edward Island joined, bringing the number of governments participating to eleven — the federal, eight provincial and the two territorial. Inclusion of rivers in the System recognizes their outstanding natural, historical or recreational attributes, and ensures that these will be protected through long-term management plans.

- **Marketing**

The Canadian Parks Service's national market study of over 2,000 Canadians aged 16 and over was undertaken to provide essential information for

developing program marketing strategies for the Parks Service. The study focuses on identifying target markets for marketing programs, communications strategies and product planning. It also provides a marketing-oriented database that will serve as a benchmark for monitoring future changes in the domestic market and a framework for identifying additional marketing information needs.

The first long-term national marketing strategy for the Parks Service was developed in preparation for program-wide discussion and confirmation in 1989-90. The proposed strategy touches on many different aspects of the Parks program and its relationship with the public at the national, regional and local levels.

Various regional marketing initiatives were also undertaken. Of particular note were market strategy development and partnership efforts for the Atlantic Region's parks and sites in Cape Breton, and marketing-communications efforts by Parks' Quebec Region. Individual parks, sites and canals have also undertaken marketing initiatives.

Marketing training and international inter-agency workshops on marketing also took place in 1988-89. These are recognized as an important aspect of the marketing function for the Parks Service and will continue to receive emphasis in future years.

- **Visitors and National Parks**

A more integrated approach to meeting visitors' needs was introduced in 1985. The process, based upon a visitor market perspective, helps determine ways of making

services more responsive to visitors' needs and tastes. It is guided by a "Getting Started" manual, which has been distributed to a number of provincial, territorial, and other park agencies. Staff from the agencies have participated in workshops on service planning developed by the Canadian Parks Service in collaboration with the University of Waterloo and other centres. Service plans are now being prepared for most national parks.

A recently adopted strategy and action plan aims to provide disabled visitors with at least minimum levels of access to all parks and sites within the next five to eight years. Standards for access and specifications for design were developed, as were training programs for staff.

New interpretive aids were provided for some park visitors with special needs — sign language interpretation was developed for events at Fort George National Historic Park, wheelchair ramps and braille displays were installed at Forillon National Park, and negotiations were initiated to arrange for additional interpretation services and advice from national non-government organizations representing people with disabilities.

Special emphasis was placed on the interpretation of the threat of acid rain to Canada and its national heritage places. Park interpreters distributed buttons and information sheets, gave evening campfire programs featuring this theme, and encouraged visitors to consider appropriate public follow-up action.

A US-Canada inventory of training for park interpreters is being completed in co-operation with the National Association of Interpretation (USA) and Interpretation Canada.

Thirteen hostels are now operated



in national parks by the Canadian Hostelling Association. Skills development and heritage programs offered by the Association serve 48,000 hostellers annually.

- **Volunteers**

Over 4,000 volunteers contributed nearly 91,000 hours to 357 projects in 1988-89, supplementing parks' existing services and providing new services. Volunteers assisted with a wide range of activities: whale watching festivals and litterblitzes at Pacific Rim; archaeological research at sites in Ontario; a Children's Volunteer Animation Program at Fort Wellington; training presentations to employees in Pukaskwa; canoe jousting and buffalo chip throwing in Riding Mountain; and the revision of photos and text for a publication in Auyuittuq. The corps of volunteers included local residents and visitors, with several international volunteers placed in a variety of projects throughout the system.

A system to co-ordinate the central screening and placement of international volunteers was introduced. Over 250 inquiries from international volunteers were handled during 1988-89, with about a dozen placements.

- **Co-operating Associations**

Thirty-three co-operating associations composed of nearly 3,700 members were active in parks and sites in all 10 provinces and in Yukon. They provided 55,000 volunteer hours and presented 600 events during the year. Over 100,000 visitors to parks, sites and canals benefited from their dedication and creativity.

At sales outlets operated by co-operating associations, visitors spent nearly \$2 million on publications and other park-related products and services. Over 150 new products were created by associations in 1988-89.

Highlights of the past year included the third biennial workshop for co-operating associations, held at Hecla, Manitoba, in October 1988 — a national workshop co-sponsored by Canadian Parks Partnership, Manitoba Parks and the Canadian Parks Service.

The National Affiliation of Co-operating Associations was renamed Canadian Parks Partnership to better reflect its growing commitment to partnership with the Canadian Parks Service.

Among the co-operating associations themselves, Les Amis du Plein Air contributed approximately \$30,000 to expand the Visitor Reception Centre at Cheticamp, including the space for their bookstore. Co-operating associations trebled their contacts with distributors of products and services related to heritage themes, with the assistance of the new co-operating association program merchandising officer.

### Atlantic

- **Gros Morne National Park**

His Royal Highness, The Prince Edward, officially unveiled a plaque proclaiming Gros Morne National Park, Newfoundland, a World Heritage Site in June 1988. Internationally renowned for its display of plate tectonics processes and features, the park's spectacular wilderness environment qualifies it for the World Heritage List in the exceptional natural beauty category.

- **Fort Amherst/Port La Joye**

A second year of archaeological excavations at Fort Amherst/Port La Joye on Prince Edward Island was undertaken to unearth more artifacts from the French outpost that flourished there in the mid-18th century. The most exciting find was a cellar pit containing personal objects of the Acadian families that inhabited the fort.

- **Grassy Island**

In May the federal and provincial governments announced a \$1.1-million development for Grassy Island, at Canso, Nova Scotia. Grassy Island was a major fishing base and a main port of call between Europe and the colonies in the 18th century.

- **Halifax Citadel**

In November 1988, the federal government provided \$2.4 million towards the restoration of the Halifax Citadel, ensuring the preservation of one of Canada's most significant heritage monuments.

### Quebec

- **Information office opened at Centre Infotourisme**

The Canadian Parks Service's Quebec region opened an information kiosk in the new Centre Infotourisme in Montréal. The office presents many aspects of the Canadian Parks Service's regional network and also offers information on Environment Canada's two other services in Quebec. More than 300,000 Canadian and foreign tourists visited the centre in 1989.



- **Grosse-Île**

Under an Agreement signed in August 1988 with the Department of Agriculture, this national historic site will soon be transferred to the Canadian Parks Service to commemorate the immigration theme in Canada. In the interim, work has begun on stabilizing selected buildings on the island.

- **Lachine Canal (Montréal)**

A five-year, \$10-million project to clean up the Lachine Canal, started in 1988, will feature the construction of special containers along the canal to store excavated material.

- **Saint-André-de-Kamouraska (Saint-André)**

As part of the national cost-sharing program for national historic sites, the Department contributed \$200,000 towards the restoration of Saint-André's Church, a fine example of the Recollet style of architecture. Other contributors included the parishioners and the Department of Regional Industrial Expansion.

## **Ontario**

- **The Winter Garden Theatre (Toronto)**

The Department contributed \$240,300 through a cost-sharing agreement with the Ontario Heritage Foundation for Phase II of the restoration of the theatre's decorative elements. This agreement ensures the protection of the finest period roof-garden theatre existing intact in the world. A historian will complete specialized documentation of the theatre's history.

- **George Brown House (Toronto)**

The Department contributed \$680,000 to the restoration of the George Brown House through a cost-sharing

agreement with the Ontario Heritage Foundation. In addition, the Canadian Parks Service conserved the 2,000-volume George and Anne Brown book collection, restored and furnished the home's library and installed an interpretive display.

- **The Manitou Mounds Edukit (Rainy River)**

In co-operation with the Rainy River Band, the Canadian Parks Service completed a major education kit designed to interpret the significance of the prehistoric burial mounds along the Rainy River and promote awareness of native heritage, customs and tradition. The kit will be used in the Native Education Program for Rainy River region schools.

## **Prairie and Northern**

- **Ellesmere Island National Park Reserve (Northwest Territories)**

Ellesmere Island National Park Reserve was formally established on September 6, 1988, when 37,775 square kilometres of northern Ellesmere Island were set aside. The park reserve protects a representative part of the Eastern High Arctic Glacier Natural Region and peacefully asserts Canada's sovereignty over the northernmost tip of the continent. Park administration facilities were constructed at Tanquary Fjord.

- **Grasslands National Park (Saskatchewan)**

On September 23, 1988, following five years of negotiations, Canada and Saskatchewan entered into a new agreement for the establishment of Grasslands National Park in

southwest Saskatchewan. This agreement replaced the previous federal-provincial Park Establishment Agreement and Oil and Gas Agreement, both signed in June 1981. The proposed park will comprise an east and a west block, containing a total of 906.5 square kilometres. Under the terms of the new agreement, a Crown Mineral Reserve has been placed on 336.6 square kilometres of land, precluding oil and gas exploration. When Canada has acquired all these lands, the province will transfer their administration and control to the federal government.

- **Wood Buffalo National Park (Alberta/Northwest Territories)**

A peregrine falcon recovery program continued on the Peace-Athabasca Delta within the park. In 1988-89, 25 peregrine falcon chicks from seven nests hatched, 10 of which were foster chicks. The park, the Canadian Wildlife Service and Alberta Fish and Wildlife have been co-operating, over the past eight years, in research and management activities for the subspecies of peregrine falcon in northeastern Alberta, the only remaining boreal forest population of these birds. An interagency recovery plan was completed in October 1988. It includes basic chemical monitoring, fostering and release programs involving Wood Buffalo National Park's nesting pairs.

The issue of bison disease within Wood Buffalo National Park and surrounding areas of Alberta and the Northwest Territories remained contentious. In February 1989, the Minister of the Environment appointed a five-member environmental assessment panel to study the subject, as requested by the Minister of Agriculture. Technical and scientific data



are being prepared for submission to the panel. Public hearings are expected in January 1990, with panel recommendations later in that year.

## **Western**

### **Self Government — Banff Townsite (Alberta)**

The issue of self government for park townsites, particularly Banff and Jasper, has been debated at varying degrees of intensity since the early 1960s. At one time or another during this period, all federal parties indicated support for this democratic concept.

On June 13, 1988, the electors of Banff voted 65 per cent in favour of incorporation. Since that time, officials from the Canadian Parks Service, the Province of Alberta and Banff School District Number 102 have been working in partnership towards the incorporation of Banff as a town by January 1, 1990.

The preferred option for the Banff plebiscite described Banff as a town having the rights, powers and responsibilities of any other Alberta town, save for those exceptions required to recognize that this town is part of a national park.

### • **South Moresby (British Columbia)**

The July 12, 1988, Canada-British Columbia Memorandum of Agreement on South Moresby is the first agreement establishing a national park reserve that also includes a regional economic initiative. In total, the federal government is committed to expenditures over eight years of \$106 million. Progress in 1988-89 towards park development included the following:

The Canadian Parks Service has established an office in North Vancouver, with its main responsibility being the implementation of the South Moresby Agreement.

A new South Moresby/Gwaii Haanas National Park Reserve office has been established in the Queen Charlotte Islands, to be responsible for managing the park reserve.

Canadian Parks Service staff, at various times during the year, negotiated with the Haida in an effort to reach a mutually satisfactory arrangement for planning, managing and operating the national park reserve.

The regional economic development initiative was launched with studies to determine the requirements of a proposed small craft harbour at Sandspit, visitor information and reception centres at Queen Charlotte City and Sandspit, and the establishment of a federal-provincial planning and co-ordination committee to guide the initiative.

### • **The S.S. Moyie (Kaslo, British Columbia)**

A cost-sharing agreement was signed with the Kootenay Lake Historical Society and the Village of Kaslo. The federal government's \$175,000 contribution will help to stabilize and protect the vessel, which upon retirement was the oldest Canadian-built paddle-wheeler in service.

### • **Brooks Aqueduct (Brooks, Alberta)**

The Department contributed \$150,000 under a co-operative heritage agreement with the Province of Alberta and the Eastern Irrigation District to construct visitor and interpretive facilities. The Brooks Aqueduct was built of reinforced concrete between 1912 and 1914.



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# Administration

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*The Administration Program is responsible for the general management of the Department, providing co-ordination and direction for environmental policy and building partnerships with national and international organizations whose co-operation with, and support for, departmental programs is essential to the fulfilment of Environment Canada's mandate.*

*The program comprises the corporate offices, including the Minister's and Deputy Minister's offices, the Corporate Policy Group, the Science Advisor, the Finance and Administration Service, and the Personnel and Communications directorates.*

*The Federal Environmental Assessment Review Office (FEARO) and the Canadian Environmental Advisory Council, which report directly to the Minister, are also part of the Administration Program.*

## **Canadian Council of Resource and Environment Ministers (CCREM)**

### **• PCB Phase-Out**

At a special meeting in September 1988, CCREM Ministers agreed to phase out all PCBs in use in Canada by 1993. An action plan was approved, setting out the major elements of a CCREM phase-out program based on federal-provincial partnership. In addition, the Co-operative Hazardous Waste Management Program was accelerated.

### **• National Task Force on Environment and Economy**

The Task Force presented a progress report to CCREM in October 1988, outlining the performance of the private and public sectors in implementing recommendations made in the Task Force's initial report of September 1987.

### **• National Round Table on Environment and Economy**

In October 1988, the Prime Minister announced the creation of a National Round Table on Environment and Economy, as recommended in the 1987 report of the National Task Force. David Johnston, Principal and Vice-Chancellor of McGill University, was appointed Chair. Membership of the Round Table is drawn from government, business, academia, research organizations and environmental groups. The first meeting will be held in June 1989.

## **Environmental Choice Program**

A new Environmentally Friendly Products Program, subsequently renamed the Environmental Choice Program, was announced in June 1988. The program will help consumers to recognize, through a distinctive "EcoLogo," products and services that reduce the burden on the environment. Environmentally sound decisions by consumers will encourage commercial development of less harmful products and services, and help to alleviate pollution and waste disposal problems.

A board appointed by the federal Minister of the Environment, and chaired by Pat Delbridge, guides the development of performance standards for Environmental Choice products. Board members include consumer advocates and representatives from areas such as business, science and environmental law.

The Canadian Standards Association is the independent testing agency that certifies which products meet Environmental Choice criteria, qualifying them to carry the EcoLogo.

In March 1989, draft guidelines setting out the criteria for three product categories were submitted for public consultation. The products were re-refined motor oil, insulation made from recycled wood-based cellulose fibre, and selected products made from recycled plastics.



## **Environment Week 1988**

More than 250 government and non-government organizations, and thousands of individuals across Canada, helped celebrate Environment Week, from May 30 to June 5, 1988.

The theme was "Our Common Future" — the title of the 1987 Brundtland Commission report. More projects were undertaken than in any previous year. They included hazardous waste collections, litter and recycling drives, demonstrations of organic farming methods, programs to enhance salmon and wood duck populations, and environmental "treasure hunts."

## **Acid Rain Communications Campaign**

A \$1.5-million program was mounted to convince American citizens that the US should reduce emissions that cause acid rain. A major component of the program was an advertising campaign using billboards, radio and magazines to reach the 10 million American tourists who visit Canada each summer. Environment Canada also helped Canadian environmental organizations to undertake cross-border projects designed to influence US citizens in large population centres.

## **Office Technology: DOTS**

The Departmental Office Technology System (DOTS), a common computer communications network that allows thousands of users across the country to share and communicate information, began operation in August 1987, with the opening of InfoPlace — the network support centre at departmental headquarters in Hull. By April 1989, the network had over 3,000 users at over 80 locations. It will grow to include 120 locations and 4,000 users across Canada. Environment Canada is the federal government leader in the implementation of office technology and operates one of the largest office technology networks in Canada.

Any user at any location can communicate with any other user on the network, within a building or across the country. Users can prepare documents, plans and budgets, maintain schedules, send messages, share information or jointly work on projects, and retrieve information stored on internal and external computer systems.

Both the individual and the organization have benefited. Individuals have reduced repetitive aspects of their work and improved its quality by using personal productivity tools such as spread-sheets, automated filing, activity management, word processing and electronic mail. The organization gains by having a group approach to the management of projects and information. Managers at all levels in the organization use electronic mail services to request or report information.

As the DOTS network grows, the real pay-off is being realized from widespread implementation of administrative, operational and scientific applications. Examples of these include systems for automated procurement and contracting, materiel in use, correspondence tracking, departmental records management, online pay, human resources management information, and Parks realty records management.

Furthermore, links with external organizations and systems are being established through "gateways" to the network. These include the financial system operated by Supply and Services Canada, the DOBIS system at the National Library and a number of systems used at commercial service bureaux.



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## Federal Environmental Assessment Review Office

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*The Federal Environmental Assessment Review Office (FEARO) administers the Environmental Assessment and Review Process (EARP) on behalf of the Minister.*

### **EARP Reform**

In September 1987, the federal minister of the Environment issued a Green Paper to serve as a basis for discussion among Canadians on possible changes to the federal Environment Impact Assessment (EIA) Process. During the autumn of 1987, members of FEARO held public meetings in major Canadian centres to hear the public's reaction and expectations. Following this year of extensive consultation, the Minister of the Environment announced in 1988 that EARP would be legislated.

On May 4, 1988, FEARO published a Report of Proceedings entitled *The National Consultation Workshop on Federal Environmental Assessment Reform*. After a six-month period of public consultation, the workshop provided a final forum for public discussion of ways of reforming the federal EARP. A discussion paper, "Reforming Environmental Assessment," released by the Minister of the Environment in September 1987, launched this dialogue.

The workshop:

- identified and described the changes required to increase the effectiveness of EARP;
- identified policy options and implications in the initial assessment and public review phases, in follow-up and among agencies and jurisdictions;
- recommended changes to the Minister on reforms where consensus had been reached and those where there was a strong difference.

### **Selected Environmental Assessment Panels**

Several Environmental Assessment Panels were in operation, starting up or completing their work during the fiscal year 1988-89. Panels focused on such varied topics as nuclear waste disposal, transportation and animal disease.

- **Low-level Air Training Area in New Brunswick**

In February 1989, the province of New Brunswick offered National Defence three sites for training, on condition that an environmental assessment be commissioned under the New Brunswick regulations. Final Environmental Impact Statement guidelines are expected in May 1989.

- **Disposal of Nuclear Fuel Waste**

On September 28, 1988, the Minister appointed a panel to review the question of nuclear fuel waste disposal. It will examine the safety and acceptability of the concept of deep underground disposal of nuclear fuel wastes. In addition, it will also examine the social, economic and environmental implications of a possible nuclear fuel waste management facility. The panel is expected to hold public hearings and workshops in 1990.



- **Northern Diseased Bison**

A panel was established on February 7, 1989, to examine the risks presented by a herd of diseased bison in and around Wood Buffalo National Park (Alberta/Northwest Territories). Many of the bison are infected with bovine tuberculosis, brucellosis, or both. The panel will examine all reasonable methods of controlling or eliminating the problem.

- **Military Flying Activities in Labrador and Quebec**

In January 1988, the ministers of the Environment, Indian Affairs and Northern Development, and National Defence announced a \$500,000 participant funding program to assist public participation during the review of a proposal on military flying activities in Labrador and Quebec. The Environmental Impact Statement is expected to be submitted to the panel and made public later in 1989.

- **Fixed Link Crossing Project in PEI**

On March 6, 1989, the Minister of the Environment was asked by the Minister of Public Works to appoint an independent panel to review the environmental and socio-economic effects of a proposed bridge across the Northumberland Strait between Prince Edward Island and New Brunswick. The panel will undertake a rigorous review of the potential effects of a fixed crossing, with opportunities for public discussion of the project. It is expected to submit a report in 1990.

- **Sea Island Fuel Barge Facility**

In February 1988, a three-member panel was established to conduct a comprehensive review of a proposal by the Vancouver Airport Fuel Facilities Corporation to construct and operate a jet fuel barge terminal on

Sea Island in the north arm of the Fraser River. The proposed facility would be sited on federal lands under the administration of the North Fraser Harbour Commission.

### Highlights

FEARO's departmental training program, established in 1987, grew during 1988 as increasing public concern about the environment became evident and the Minister announced that EARP would be reformed.

In February 1988, a report entitled *Public Review: Neither Judicial, Nor Political But an Essential Forum for the Future of the Environment* was released. The report was based on consultations held across the country and submissions received by FEARO.

In January 1988, FEARO was invited to carry out the federal government's responsibilities for planning, developing and organizing the conference portion of the Global Opportunities for Business and the Environment conference and trade fair scheduled for Vancouver in March 1990. FEARO's Vancouver office provided the Secretariat.

In April 1988, FEARO adjusted the regional boundaries under which it operates. The new regions are:

Atlantic — NFLD, NS, PEI, NB

Quebec — QUE

Central — ONT, MAN, SASK

Pacific, Western and Northern — ALTA, BC, NWT, YT

A FEARO representative chaired a working group established in 1988 by the United Nations Economic Commission for Europe. The group's objective

is to develop an international convention on environmental impact assessment in a transboundary context. It is intended that the convention will be completed for ratification by the member countries of the European Economic Community in the spring of 1991.

### The Canadian Environmental Assessment Research Council

The Canadian Environmental Assessment Research Council (CEARC) promoted and supported research on environmental assessment by:

- developing new approaches for the legislation of environmental assessment with strategic planning and development control;
- fostering a more rigorous scientific method of applying ecological and social studies to impact analysis and interpretation;
- improving the effectiveness of procedures for clarifying social values and for incorporating them into impact evaluation; and
- identifying other ways of strengthening policy and institutional frameworks to co-ordinate efforts in all these areas.

Within these broad research themes, CEARC is focusing on new ideas and research directed towards improving performance in social impact assessment (SIA), cumulative effects assessment (CEA), mitigation and compensation, monitoring and prediction, risk analysis, sustainable development and environmental health.

CEARC is considering health-related issues in EIA. The first of a series of four regional workshops was held in February 1989 in Toronto. The others are scheduled for Edmonton, Halifax, Montréal and Rankin Inlet within a year. As a result, a background paper and a research prospectus on EIA and health will be developed.



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In February 1989, a workshop on social impact assessment was held to obtain the views of Quebec EIA researchers and practitioners on their approach to the assessment of social impacts. Proceedings of the workshop may be consulted on request.

A Canada-US workshop, a series of background papers and a prospectus on cumulative effects assessment have been commissioned by CEARC. A reference guide on CEA has recently been completed and is undergoing review by experts in the field.

CEARC issues an annual review of its activities.



# Financial Summaries

## Department of the Environment

### Summary of Human and Financial Resources — by Activity

<i>Programs</i>	<i>PYs</i>	<i>(\$000s)</i>
<b>Environmental Services Program</b>		
Amospheric Environment Service	2,379	203,328
Conservation and Protection	2,347	226,282
Total	4,726	429,610
<b>Parks Program</b>		
Park Operation	3,649	240,616
Park Development	374	62,754
Program Management and Technical Services	608	52,133
Total	4,631	355,503
<b>Administration Program</b>		
Administration	458	35,202
Federal Environmental Assessment Review Office	29	3,694
Total	487	38,896
<b>Grand Total</b>	<b>9,844</b>	<b>824,009</b>

### Departmental Financial Summary

<i>Budgetary Expenditures</i>	<i>1988-89</i> <i>(\$000s)</i>	<i>1987-88</i> <i>(\$000s)</i>	<i>Increase/</i> <i>(Decrease)</i>
Operating Expenditures	610,269	585,095	25,174
Capital Expenditures	142,932	148,530	(5,598)
Grants and Contributions	46,305	24,709	21,596
Payments to the National Battlefields Commission	1,745	2,052	(307)
Contributions to the Employee Benefit Plans	60,060	60,242	(182)
Total (Gross)	861,311	820,628	40,683
Revenues Credited to the Vote	(37,302)	(35,797)	(1,505)
<b>Total (Net)</b>	<b>824,009</b>	<b>784,831</b>	<b>39,178</b>



## Atmospheric Environment Service

### Summary of Expenditures for the 1988-89 Fiscal Year — by Activity

<i>Activity</i>	<i>(\$000)</i>
Management and Common Support Services	7,067
Ice Services	29,010
Weather Services	155,292
Air Quality Services and Atmospheric Research	12,393
Climate Services and Research	18,314
Contributions to the Employee Benefit Plans	17,322
Total (Gross)	239,398
Revenue Credited to the Vote	(36,070)
<b>Total (Net)</b>	<b>203,328</b>

### Financial Summary

<i>Budgetary Expenditures</i>	<i>1988-89 (\$000s)</i>	<i>1987-88 (\$000s)</i>	<i>Increase/ (Decrease)</i>
Operating Expenditures	190,244	182,355	7,889
Capital Expenditures	29,908	39,489	(9,581)
Grants and Contributions	1,924	2,563	(639)
Contributions to the Employee Benefit Plans	17,322	(16,705)	617
Revenues Credited to the Vote	(36,070)	(34,647)	(1,423)
<b>Total</b>	<b>203,328</b>	<b>206,465</b>	<b>(3,137)</b>

### Grants and Contributions

<i>Grants</i>	<i>(\$000s)</i>
Meteorological Research	816
Economic Commission for Europe's Co-operative Program for Monitoring and Evaluation of the Long-range Transport of Pollutants	10
Canadian Meteorological and Oceanographic Society	20
Meteorological Association	10
Total Grants	856
<i>Contributions</i>	<i>(000s)</i>
World Meteorological Organization	1,006
Scholarships for studies in meteorology and atmospheric sciences at Canadian universities	62
Total Contributions	1,068
<b>Total Grants and Contributions</b>	<b>1,924</b>



## Conservation and Protection

### Summary of Expenditures for the 1988-89 Fiscal Year — by Activity

<i>Activity</i>	<i>(\$000s)</i>
Management and Common Support Services	23,499
Inland Waters	91,558
Wildlife Conservation	34,660
Environmental Protection	61,502
Contributions to the Employee Benefit Plans	16,295
Total (Gross)	227,514
Revenues Credited to the Vote	(1,232)
<b>Total (Net)</b>	<b>226,282</b>

### Financial Summary

<i>Budgetary Expenditures</i>	<i>1988-89 (\$000s)</i>	<i>1987-88 (\$000s)</i>	<i>Increase/ (Decrease)</i>
Operating Expenditures	175,437	162,916	12,521
Capital Expenditures	17,137	13,595	3,542
Grants and Contributions	18,645	19,506	(861)
Contributions to the Employee Benefit Plans	16,295	15,971	324
Revenues Credited to the Vote	(1,232)	(1,150)	(82)
<b>Total</b>	<b>226,282</b>	<b>210,838</b>	<b>15,444</b>

### Grants and Contributions

<i>Grants</i>	<i>(\$000s)</i>
Wildlife Toxicology Fund	333
Canadian Nature Federation	10
Creston Valley Wildlife Management	100
Fur Institute of Canada	20
Wildlife Habitat Canada Foundation	2,397
Canadian Association of Geographers	7
Environmental Non-Government Organizations	149
Canadian National Committee of the International Association on Water Pollution Research	5
Canadian Wildlife Federation	10
Total Grants	3,031



<i>Contributions</i>	(\$000s)
To Provinces, for Federal-Provincial Water Resources Projects	893
To Provinces, for Waterfowl Crop Depredation	880
To Provinces, for Flood-damage Reduction Studies and Flood-risk Mapping	2,626
To Provinces, for Implementation of Water Planning Recommendations:	
Saskatchewan: Qu'Appelle Valley	344
British Columbia: Fraser River Flood Control	2,338
Quebec: Hydrometric Agreement	756
James Bay Agreement	84
Water Quality and Monitoring Agreement	301
Ontario: Canada-Ontario Agreement respecting Great Lakes Water Quality	1,772
Fur Institute of Canada	556
United Nations, for the Convention on International Trade in Rare and Endangered Species	61
Interjurisdictional Caribou Management Board	15
Porcupine Caribou Management Board	6
Canadian Institute of Resources Law	25
Windermere Basin Clean-up	760
Organization for Economic Co-operation and Development	101
Sydney Tar Ponds Clean-up	3,130
Environmental Network	414
Water Pollution Control Federation	2
Convention on Wetlands of International Importance	17
North American Waterfowl Management Plan	178
World Wildlife Fund	25
Canadian Coalition on Acid Rain	80
World Wildlife Fund — Canadian Endangered Species Recovery Fund	250
Total Contributions	15,614
<b>Total Grants and Contributions</b>	<b>18,645</b>



## Canadian Parks Service

### Summary of Expenditures for the 1988-89 Fiscal Year — by Activity

<i>Activity</i>	<i>(\$000s)</i>
Park Operation	223,813
Park Development	60,919
Program Management and Technical Services	47,760
Contributions to the Employee Benefit Plans	23,011
<b>Total</b>	<b>355,503</b>

### Financial Summary

<i>Budgetary Expenditures</i>	<i>1988-89 (\$000s)</i>	<i>1987-88 (\$000s)</i>	<i>Increase/ (Decrease)</i>
Operating Expenditures	209,975	206,292	3,683
Capital Expenditures	95,887	95,446	441
Grants and Contributions	24,885	2,419	22,466
National Battlefields Commission	1,745	2,052	(307)
Contributions to the Employee Benefit Plans	23,011	24,299	(1,288)
<b>Total</b>	<b>355,503</b>	<b>330,508</b>	<b>24,995</b>

### Grants and Contributions

<i>Grants</i>	<i>(\$000s)</i>
Development of International Peace Garden in Manitoba	30
Canadian Parks and Wilderness Society	20
Jasper School Board	550
<b>Total Grants</b>	<b>600</b>
<i>Contributions</i>	<i>(\$000s)</i>
Jasper Townsite Committee	16
Interagency Forest Fire Centre	27
Co-operating Associations	244
Banff Municipal Committee	26
Compagnie Franche de la Marine	66
Porcupine Caribou Management Board	6
Federal-Provincial Parks Conference	16
International Union for the Conservation of Nature and Natural Resources	120
Canadian Contribution to World Heritage Fund	90
Resources/Conservation Monitoring Centre	15
International Centre for the Study of the Preservation and Restoration of Cultural Property	43
International Council on Monuments and Sites	40
Acquisition and Restoration of Trestler House	14
Army Museum	31
Jasper School Board (Ambulance Service)	20
Restoration of Sites and Structures	998
Canadian Man and the Biosphere Program	15
University of Waterloo	25
Eastern Irrigation District (Brooks Aqueduct)	28
World Wildlife Fund	65
Province of British Columbia for the Forestry Compensation Account re South Moresby National Park	22,380
<b>Total Contributions</b>	<b>24,285</b>
<b>Total Grants and Contributions</b>	<b>24,885</b>



## Administration Program

### Summary of Expenditures for the 1988-89 Fiscal Year — by Activity

<i>Activity</i>	<i>(\$000s)</i>
Administration	29,818
Federal Environmental Assessment Review Office	3,935
Contributions to the Employee Benefit Plans	3,432
<b>Total</b>	<b>37,185</b>

### Financial Summary

<i>Budgetary Expenditures</i>	<i>1988-89 (\$000s)</i>	<i>1987-88 (\$000s)</i>	<i>Increase/ (Decrease)</i>
Operating Expenditures	34,574	33,486	1,088
Grants and Contributions	851	221	630
Minister, Salary and Motor Car Allowance	39	46	(7)
Contributions to the Employee Benefit Plans	3,432	3,267	165
<b>Total</b>	<b>38,896</b>	<b>37,020</b>	<b>1,876</b>

<i>Contributions</i>	<i>(\$000s)</i>
Canadian Council of Resource and Environment Ministers	117
Non-Profit Organizations	734
<b>Total Contributions</b>	<b>851</b>