



# Environment Canada

## Performance Report

For the period ending  
March 31, 1999

Canada

## **Improved Reporting to Parliament Pilot Document**

The Estimates of the Government of Canada are structured in several parts. Beginning with an overview of total government spending in Part I, the documents become increasingly more specific. Part II outlines spending according to departments, agencies and programs and contains the proposed wording of the conditions governing spending which Parliament will be asked to approve.

The *Report on Plans and Priorities* provides additional detail on each department and its programs primarily in terms of more strategically oriented planning and results information with a focus on outcomes.

The *Departmental Performance Report* provides a focus on results-based accountability by reporting on accomplishments achieved against the performance expectations and results commitments as set out in the spring *Report on Plans and Priorities*.

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## Foreword

On April 24, 1997, the House of Commons passed a motion dividing on a pilot basis what was known as the annual *Part III of the Estimates* document for each department or agency into two documents, a *Report on Plans and Priorities* and a *Departmental Performance Report*.

This initiative is intended to fulfil the government's commitments to improve the expenditure management information provided to Parliament. This involves sharpening the focus on results, increasing the transparency of information and modernizing its preparation.

This year, the Fall Performance Package is comprised of 82 Departmental Performance Reports and the government's report *Managing for Results - Volumes 1 and 2*.

This *Departmental Performance Report*, covering the period ending March 31, 1999, provides a focus on results-based accountability by reporting on accomplishments achieved against the performance expectations and results commitments as set out in the department's pilot *Report on Plans and Priorities* for 1998-99. The key result commitments for all departments and agencies are also included in Volume 2 of *Managing for Results*.

Results-based management emphasizes specifying expected program results, developing meaningful indicators to demonstrate performance, perfecting the capacity to generate information and reporting on achievements in a balanced manner. Accounting and managing for results involve sustained work across government.

The government continues to refine and develop both managing for and reporting of results. The refinement comes from acquired experience as users make their information needs more precisely known. The performance reports and their use will continue to be monitored to make sure that they respond to Parliament's ongoing and evolving needs.

This report is accessible electronically from the Treasury Board Secretariat Internet site:  
<http://www.tbs-sct.gc.ca/tb/key.html>

Comments or questions can be directed to the TBS Internet site or to:

Planning, Performance and Reporting Sector  
Treasury Board Secretariat  
L'Esplanade Laurier  
Ottawa, Ontario, Canada  
K1A 0R5  
Tel: (613) 957-7042  
Fax (613) 957-7044

**Environment Canada**

# **Performance Report**

**For the period ending March 31, 1999**

A handwritten signature in black ink that reads "David Anderson". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

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David Anderson

Minister of the Environment



## Executive Summary

Environment Canada's Mission is to make sustainable development a reality in Canada by helping Canadians live in an environment that is protected, respected and conserved. Science and technology are the foundation for all of Environment Canada's policies, programs, technological solutions, services and operations, and are key to making sustainable development a reality in Canada.

This Performance Report focuses on progress made on priorities listed in its *Report on Plans and Priorities for 1998-99*, as well as on Science and Technology and on implementing the Department's Sustainable Development Strategy. Key areas where the Department did not meet the expected targets are also described. More specifically, it reports on the key areas where Environment Canada reached significant milestones during the year ending March 31, 1999.

In its *Report on Plans and Priorities for 1998-99*, Environment Canada outlined four strategic priorities to guide actions to be taken by its business lines. These priorities were:

- Achieving results on climate change, clean air and water, and nature;
- Improving service to Canadians;
- Mobilizing key partners; and
- Rejuvenating capacity for scientific excellence, technology transfer and communications.

With few exceptions, the Department succeeded in meeting its goals in these priority areas. A significant accomplishment for the Department was the recent Royal Assent of the renewed *Canadian Environmental Protection Act*. Progress on climate change was made through work to develop a National Implementation Strategy on Climate Change, the Climate Change Action Fund, the World Climate Research Program and the Intergovernmental Panel on Climate Change. Work on cleaner air was advanced through the introduction of new regulations and further development of Canada-wide standards on priority pollutants. On clean water, progress was made through several ecosystem initiatives.

Examples of progress in nature include implementing the National Accord for the Protection of Species at Risk, renewing the North American Waterfowl Management Plan, the Bulk Water Removal Strategy and establishment of the Northern Ecosystem Initiative. The introduction of the *Species at Risk Act* has been deferred to allow for further consultation.

Improving service to Canadians remains a departmental priority. The Department continued its ongoing quality service to Canadians, its partners and clients on weather warnings, forecasts and information. Significant progress was made in improving access to climate change data, climate model output and climate analyses to the Canadian public and to climate researchers. The Department also strengthened its capacity to monitor performance for delivery of service to Canadians.

In order to improve delivery of results, Environment Canada adjusted its management structure to provide a clear framework of accountabilities for the Department and to strengthen its capacity to allocate resources strategically based on priorities and performance.

Due to the scope and scale of environmental issues, mobilizing key partners is necessary for achieving results. The National Accord for Protection of Species at Risk, the Canadian Biodiversity Strategy, the Implementation Strategy on Climate Change, and the Toxic Substances Research Initiative are a few examples of initiatives which forged stronger ties with partners in other governments, industry, non-government organizations, and Aboriginal Communities.

Environment Canada enhanced environmental education and communications to Canadians through such initiatives as Millennium Eco-Communities, the SkyWatchers program, an on-line environmental Education Colloquium, and the launching of new Internet web sites.

Department is continuing to assess its needs in terms of rejuvenating its scientific capacity. Environment Canada did improve science and technology management in the Department by addressing issues such as collaborative research, external review of research and development within the Department, and science and technology partnering.

The successes achieved in 1998-1999 leave Environment Canada well positioned to deliver a stronger and healthier environment in the new millennium.

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## Section I : Message from the Minister of the Environment

I am pleased to present Environment Canada's Performance Report for the period ending March 31, 1999. Although I am new to the position of Minister of the Environment, I am impressed by the scientific capacity and the achievements of the Department as well as the dedication of the staff to making a measurable difference in the quality of life of Canadians.

The progress achieved in 1998-99 has left us positioned to successfully deliver on our environmental commitments. With the recent passage of the renewed *Canadian Environmental Protection Act*, I will now focus on implementing and enforcing the Act so that the federal government can continue to play a significant leadership role in ensuring that the highest standards of environmental protection are achieved across the country.

Extensive consultations have been conducted on species at risk and have indicated that cooperation and joint action between the federal government and the provinces is absolutely necessary to protect these species. These consultations have also provided a strong foundation for the federal government to introduce Canada's *Species at Risk Act* for the protection and recovery of species at risk, including their habitat.

Environment Canada, in partnership with Natural Resources Canada, is demonstrating strong national leadership in the development of a national strategy to meet Canada's commitments for addressing climate change. Working together, we will implement a national strategy to reduce greenhouse gas emissions and improve our energy efficiency which will also result in cleaner air. Environment Canada is also playing an important role in improving scientific understanding of climate change and working with other countries to address global warming internationally.

Conserving, protecting and respecting the Canadian environment involves mobilizing all Canadians. Last year, Environment Canada was successful in establishing Millennium Eco-Communities, expanding ecosystem initiatives across the country, and involving youth on key issues such as species at risk and climate change. I will continue to encourage and facilitate Canadians being responsible stewards for a clean, safe and diverse environment.

Environment Canada continues to provide environmental and atmospheric services that Canadians rely on for weather information, warnings and predictions so they have the knowledge and the time to react to protect themselves, their property and their businesses.

As we approach the new millennium, we are all reminded of the importance of governing with future generations in mind. My goal is to leave our natural legacy stronger and healthier as we go into the next millennium, a goal which will only be achieved if we work together.

David Anderson

## Chart of Key Results Commitments

### Environment Canada (EC)

to provide Canadians with:	to be demonstrated by:	achievements reported in:
<i>Clean Environment</i>		DPR Section III
Protection from domestic and global sources of pollution.	<ul style="list-style-type: none"> <li>• Reduced adverse human impact on the atmosphere and on air quality.</li> <li>• Understanding, and prevention or reduction of the environmental and human health threats posed by toxic substances and other substances of concern.</li> </ul>	Page 13  Page 18
<i>Nature</i>		DPR Section III
Conservation of biodiversity in healthy ecosystems.	<ul style="list-style-type: none"> <li>• Conservation of biological diversity.</li> <li>• Understanding and reduction of human impacts on the health of ecosystems.</li> <li>• Conservation and restoration of priority ecosystems.</li> </ul>	Page 23  Page 26  Page 28
<i>Weather and Environmental Predictions</i>		DPR Section III
Adaptation to influences and impacts of atmospheric and related environmental conditions on human health and safety, economic prosperity and environmental quality.	<ul style="list-style-type: none"> <li>• Reduced impact of weather and related hazards on health, safety, and the economy.</li> <li>• Adaptation to day-to-day and longer term changes in atmospheric, hydrological, and ice conditions.</li> </ul>	Page 32  Page 36
<i>Management, Administration and Policy</i>		DPR Section III
Strategic and effective departmental management to achieve environmental results.	<ul style="list-style-type: none"> <li>• Strategic and integrated policy priorities and plans.</li> <li>• A well-performing organization supported by efficient and innovative services.</li> </ul>	Page 41  Page 45

## Section II : Departmental Overview

### Mandate, Vision and Mission

Under the *Department of the Environment Act*, Environment Canada's **mandate** includes preservation and enhancement of the quality of the natural environment, conservation and protection of water resources, meteorology, enforcement of the rules of the Canada-United States International Joint Commission, and coordination of federal environmental policies and programs. While the Department's overall mandate has not changed since it was founded in 1971, the range and character of the issues and challenges it faces have evolved considerably.

Environment Canada interprets and acts on this mandate in the context of sustainable development – a concept of decision making which integrates considerations of the environment, economy and society. Sustainable development is a national goal, a policy of the Government of Canada, and a shaping assumption for environmental management in this country. Environment Canada is uniquely positioned to provide leadership in mobilizing other departments and Canadians as a whole to make sustainable development a reality.

**Vision:** *At Environment Canada, we want to see a Canada where people make responsible decisions about the environment, and where the environment is thereby sustained for the benefit of present and future generations.*

**Mission:** *EC's mission is to make sustainable development a reality in Canada by helping Canadians live and prosper in an environment that needs to be protected, respected and conserved. To this end, we undertake and promote programs to:*

- *protect Canadians from domestic and global sources of pollution;*
- *conserve biodiversity in healthy ecosystems; and*
- *enable Canadians to adapt to weather and related environmental influences and impacts on human health and safety, economic prosperity and environmental quality.*

While Environment Canada's vision is of responsible decision making, it exercises its leadership through a **focus on results**. This approach ensures that we are making measurable differences to the quality of the environment, and helps to build and sustain public commitment to environmental action.

## Organizing to Deliver Results

*Environment Canada makes measurable differences to the quality of the environment, and builds and sustains public commitment to environmental action.*

Environment Canada's business lines, adjusted over the past year, are based on the broad environmental goals toward which all its activities are oriented.

They are:

- *Clean Environment* — Canadians are affected by different forms of pollutants from many sources, both global and domestic. Environment Canada's goal in this business line is to protect Canadians and the environment from substances released as a result of human activity.
- *Nature* — Canadians depend on ecosystems for valued resources and services, from producing oxygen that sustains us to providing recreational enjoyment. The goal of this business line is to conserve biological diversity in healthy ecosystems.
- *Weather and Environmental Predictions* — Canadians require timely information on environmental hazards and events to reduce risks to their health, safety, property and environment. The goal of this business line is to provide the means whereby environmental hazards and events can be anticipated, and Canadians can be helped to adapt to the environment in ways which safeguard their health and safety, encourage economic efficiency and enhance environmental quality.

A fourth business line, *Management, Administration and Policy*, provides strategic and effective departmental management to achieve environmental results, and encourages citizen engagement and action on environmental priorities.

Business lines are the fora for setting priorities, allocating resources and measuring performance. But business lines are not isolated; each one makes important contributions to the success of the others.

*Environment Canada has adopted a matrix approach to departmental management, to ensure integrated program delivery that respects regional differences.*

Environment Canada revised its business line structure to provide clearer accountabilities and to strengthen its capacity to allocate resources strategically based on priorities and performance. The main adjustments were division of the Healthy Environment business line into Clean Environment and Nature, and distribution of elements of the Greener Society business line across the new business lines. The relationship between the old and new lines is shown in Section V. None of the adjustments required organizational change.

Environment Canada's organizations crosscut business lines in a matrix or interconnected management approach. This allows the Environment program to be defined in a national context, while being delivered in a client-centered manner that takes into account regional differences.

Environment Canada is divided into seven headquarters organizations:

- Offices of the Minister and Deputy Minister;
- Atmospheric Environment Service;
- Environmental Conservation Service;
- Environmental Protection Service;
- Corporate Services;
- Policy and Communications; and
- Human Resources Directorate.

Additionally, services and organizations are integrated in five Regions: Atlantic; Quebec; Ontario; Prairie and Northern; and Pacific and Yukon.

## **Operating Environment**

Environment Canada exercises a combination of roles on every issue which may include:

- creating new knowledge and tools;
- building public and political understanding through development of science assessment and scientific tools, through reporting on the state of the environment and through electronic and traditional communications;
- building community capacity through partnerships, ecosystem initiatives and support to community action;
- prescribing the actions of others through legislation, regulation and permitting;
- managing national wildlife areas and migratory bird sanctuaries, conserving species, restoring habitat and cleaning up contaminated sites;
- operating national infrastructure such as water, air and climate monitoring networks, research facilities, and weather forecasting services; and
- representing Canada's environmental interests abroad, by leading the development of national positions, developing protocols and conventions for global action and through international scientific cooperation on emerging issues.

As environmental issues continue to evolve, Environment Canada's capacity to understand, interpret and forecast on the basis of scientific knowledge will remain of central importance to its work in policy, regulation and services. Science is therefore the foundation for all of Environment Canada's policy choices, technological solutions, services and operations.

Science activities account for more than four-fifths of Departmental spending. A quarter of this is devoted to research and development, including the operation of 15 laboratories and research institutes.

*Science is the foundation for all of Environment Canada's policy choices, technological solutions, services and operations.*

Environment Canada is the country's largest single contributor to environmental and meteorological sciences, accounting for more than 25% of Canadian environmental research publications.

In the last few years, science has shown that environmental issues have increasingly become global issues. For example, pollutants are carried from other countries through the atmosphere and threaten vulnerable Canadian ecosystems and populations such as those of the North. In spite of gains made in protecting migratory birds in Canada, species such as songbirds are affected by loss of habitat in their wintering grounds in other countries. The problems associated with climate change and ozone depletion require commitment of the global community to resolve. In order to achieve results, Environment Canada must work with other countries and international organizations to find global solutions to global problems.

Within Canada, because jurisdiction for the environment is shared constitutionally by the provinces and the federal government, Environment Canada must also work in close cooperation with the provinces to ensure gaps are avoided and environmental prediction, conservation and protection are effective. One of the means Environment Canada uses to make a measurable difference in the quality of the environment on a regional level is its ecosystem initiatives. An ecosystem is a community of living things (including people) that, together with their physical environment, form a stable and integrated whole. By focusing on ecosystems, and on the actions needed to restore their health and integrity, the contributions of all levels of government, industry, non-governmental organizations, and other stakeholders can be amalgamated. Environment Canada has been a pioneer in developing and applying the ecosystem approach and it remains a cornerstone of the Department's program delivery in all regions of Canada.

*It is essential that Environment Canada work in partnership with others to help predict environmental problems and to develop and implement innovative solutions to those problems.*

The sheer scope and scale of environmental issues means that no nation, no level of government, and no single department has all of the tools (including regulatory authority, financial resources and expertise) needed to address environmental issues. It is therefore essential that Environment Canada work in partnership with others to help predict environmental problems and to develop and implement innovative solutions to those problems. The following table summarizes some of Environment Canada's key partners and the contributions they make towards achieving results.

## Key Co-Delivery Partners

Long-Term Goal	Key Co-Delivery Partners	Major Area of Cooperation
<i>Clean Environment</i>		
Reduced adverse human impact on the atmosphere and or air quality.	Natural Resources Canada	National Implementation Strategy on climate change
	Canadian Council of Ministers of the Environment	Canada-wide standards
	United States Environmental Protection Agency	Canada - U.S. Air Quality Accord
	United Nations Agencies	International protocols
Understanding, and prevention or reduction of the environmental and human health threats posed by toxics substances and other substances of concern.	Health Canada (including Pesticide Management Review Agency), Industry Canada, Natural Resources Canada, Agriculture and Agri-Food Canada	Implementation of the new CEPA
	Health Canada	Assessment of toxic substances
	Industry	Pollution prevention and emergency preparedness
	Provincial and territorial governments	Enforcement of environmental laws and regulations
	Fisheries and Oceans	Protecting freshwater fisheries and the marine environment
	Canada Customs	Regulation of the transboundary movement of hazardous wastes
	Canadian Environmental Assessment Agency	Environmental assessment
<i>Nature</i>		
Conservation of biological diversity.	Provinces, territories, other federal departments	Implementation of the Accord for the Protection of Species at Risk in Canada
	Agriculture and Agri-Food Canada, Fisheries and Oceans, Natural Resources Canada and provinces	Implementation of the Biodiversity Convention and Strategy
Understanding and reduction of the human impacts on the health of ecosystems.	Health Canada	Toxic Substances Research Initiative
	Federal departments, provinces, territories	Development of environmental quality guidelines and national environmental indicators
Conservation and restoration of priority ecosystems.	Five natural resource departments, universities	Ecosystem science
	Federal and provincial governments, territories	Implementation of Federal Strategy to Prohibit Bulk Water Removals and development of federal water strategy
	Other government departments, Aboriginal organizations, industry, communities	Ecosystem Initiatives



Long-Term Goal	Key Co-Delivery Partners	Major Area of Cooperation
<i>Weather and Environmental Predictions</i>		
Reduced impact of weather and related hazards on health, safety and the economy.	<p>Media</p> <p>World Meteorological Organization</p> <p>Other government departments. (i.e. Health Canada, Department of National Defense, Royal Canadian Mounted Police, Canadian Coast Guard), Emergency Measures Organizations, Provinces</p> <p>Provinces</p> <p>US National Weather Service, Canadian Space Agency, US National Oceanic and Atmospheric Administration</p>	<p>Providing weather forecasts and warnings to the public</p> <p>Global telecommunications and data standards for the global exchange of meteorological data and products</p> <p>Data information and services to enhance subject-specific understanding and encourage responsible decision making for safety</p> <p>Hydrological information and data (flood forecasting)</p> <p>Radar and satellite data and imagery for weather and environmental predictions and warnings</p>
Adaptation to day-to-day and longer term changes in atmospheric, hydrologic, and ice conditions.	<p>Research community (Universities, etc.)</p> <p>Other government departments (natural resource departments)</p> <p>Intergovernmental Panel on Climate Change, Inter-American Institute for Global Change Research and others</p>	<p>Research relating to atmospheric science</p> <p>Data, research and development for enhanced understanding of environmental conditions, impacts and responsible decision making</p> <p>Consensus on climate change science, impacts and advice for policy makers on adaptation and mitigation</p>
<i>Management, Administration, and Policy</i>		
Strategic and integrated policy priorities and plans.	<p>Health Canada</p> <p>Indian and Northern Affairs Canada, Human Resources Development Canada, Health Canada</p> <p>Department of Foreign Affairs and International Trade</p> <p>Canadian Council of Ministers of the Environment</p>	<p>Health/Environment Agenda</p> <p>Aboriginal governance in Environment</p> <p>Furthering international cooperation</p> <p>Harmonization of environmental management between federal and provincial governments</p>
A well-performing organization supported by efficient and innovative services.	<p>Treasury Board Secretariat</p> <p>Public Works and Government Services Canada</p>	<p>Strengthening sound management</p> <p>Delivery of common services</p>

## Departmental Performance

### Total - Gross

Planned Spending	\$ 578,694,645
<i>Total Authorities</i>	<i>\$ 645,020,998</i>
<b>1998-99 Actual Spending</b>	<b>\$ 635,503,139</b>

In its *Report on Plans and Priorities for 1998-1999*, Environment Canada outlined four strategic priorities to guide actions to be taken by its business lines. Priorities included:

- Achieving results on climate change, clean air and water, and nature;
- Improving service to Canadians;
- Mobilizing key partners; and
- Rejuvenating capacity for scientific excellence, technology transfer and communications.

Overall, during the past year, Environment Canada met its priority goals with few exceptions. Key to the Department's success was completing the adjustments necessitated by government-wide program review, re-establishing the momentum within the Department, and building the foundation to deliver in the new millennium.

*Environment Canada met its priority goals with few exceptions.*

Environment Canada adjusted its management framework to clearly define accountabilities for results and strengthen its capacity to strategically allocate resources based on priorities and performance.

On **climate change**, progress was made toward developing a National Implementation Strategy for implementing the Kyoto Protocol by working closely with Natural Resources Canada and the provincial and territorial governments. Through the Climate Change Action Fund, the federal government leveraged significant resources from the private sector and other levels of government to support many actions on climate change across the country. On the international front, Environment Canada, with the Department of Foreign Affairs and International Trade, was active in advancing negotiations on climate change and supporting the engagement of developing countries. Environment Canada continues to play a key role in advancing the world's understanding of climate change and its impacts through its science activities, including participation in the World Climate Research Program and the Intergovernmental Panel on Climate Change.

The renewed *Canadian Environmental Protection Act* (CEPA) is expected to contribute significantly to **clean air** and **clean water**. It expands and creates new legislative authorities for the management of toxic substances with an emphasis on pollution prevention. New regulations to lower levels of sulphur in gasoline and actions toward development of Canada-wide standards for particulates and ground-level ozone were other important milestones in efforts to reduce air pollutants. On protecting **water**, progress was also made on all performance expectations as well as forward momentum on all ecosystem initiatives.

1998 was the **International Year of the Oceans**, and the release of a Draft National Programme of Action for the Protection of the Marine Environment from Land-based Activities was the result of a cooperative effort to find solutions to better protect our oceans. Canada also sponsored the first Circumpolar Ministerial Meeting of the Arctic Council which adopted a Regional Programme of Action, and a specific action plan for the next two years and adopted Canada's Children and Youth of the Arctic Initiative.

Environment Canada also focused on **Nature**. Key to meeting this goal was the commencement of the implementation of the National Accord for the Protection of Species at Risk and the renewed North American Waterfowl Management Plan. Other progress included the implementation of the Bulk Water Removal Strategy and the launching of an ecosystem initiative in the North. The introduction of the *Species at Risk Act* has been deferred to next year to allow for further consultation.

**Improving service to Canadians** is a high priority for Environment Canada. The Department continues to maintain its ongoing quality service to the Canadian public, its partners and clients on weather warnings, forecasts and information. Significant progress was made in improving access to high quality climate change data, climate model output and climate analyses to climate researchers and the Canadian public. The Department has also strengthened its capacity to monitor performance for delivery of service to Canadians and continues to work in the area of environmental education and communications to Canadians through various tools such as the Internet, training sessions, funding programs, bulletins, fact sheets, publications and research. Through the Millennium Eco-Communities initiative, Environment Canada now provides information, tools, and opportunities for exchange and recognition for community-based environmental action.

*Improving  
service to  
Canadians is a  
high priority for  
Environment  
Canada.*

Over the past year, Environment Canada has strengthened its relationships with other federal departments, provincial governments, industry, Aboriginal communities and non-government organizations. Principles of public accountability and stakeholder participation agreed to last year under the Canada-wide Accord on Environmental Harmonization provided a key basis for enhanced cooperation. Development of the Implementation Strategy to meet Canada's commitments on Climate Change, plus implementation of the National Accord for Protection of Species at Risk and the Canadian Biodiversity Strategy also provided opportunities for forging firmer partnerships.

#### **APEX Partnership Award**

Jean-Pierre Gauthier, Director General, Quebec Region, received the 1999 APEX Partnership Award. The Association of Professional Executives of the Public Service of Canada (APEX) recognized Mr. Gauthier's exceptional contribution in partnership and horizontal management. Mr. Gauthier, one of the designers of the St. Lawrence River Action Plan for the protection and restoration of the St. Lawrence River, ensured from the outset that representatives of both federal and provincial governments were working together. The St. Lawrence Vision 2000 Plan, signed in June 1998, brought together more than 10 departments and numerous non-governmental partners.

Environment Canada's scientific excellence and leadership has enabled it to achieve these results. The accomplishments of Environment Canada's **science and technology** (S&T) are reflected throughout this Performance Report. The Department continued to make progress on its efforts to improve science and technology management. In addition, in 1998-99, Environment Canada played a leadership role in various interdepartmental science and technology activities to implement the Federal Science and Technology Strategy. As part of Environment Canada's Science and Technology Framework, three key documents were developed to improve the overall management in the Department while responding to the principles of the federal strategy. The three documents were: Collaborative Science and Technology Positions Policy; Managers and Applications Guides; Framework for External Review of Research and Development in Environment Canada; and, Science and Technology Partnering: Principles and Practices. Other milestones included the development of a Communications Framework for communicating the Department's sciences. The Department also assessed opportunities and barriers to career development for women in science and technology fields in Environment Canada.

#### **Management of Science and Technology**

Environment Canada has been recognized by the Auditor General as one of the leaders in responding to the goals and objectives set out in the Federal Science and Technology Strategy, for example, through the development of an Environment Canada S&T Management Framework that defines how the Department does business and articulates the principles governing its S&T. Key components of the Framework include guidelines for peer review and data ownership, collaborative positions policy, principles for partnerships, to name a few. In addition, the S&T Advisory Board has helped the Department move the agenda forward in key areas including R&D priority setting, science capacity, science communications, and integration of social sciences into its science planning.

This year, in support of the government-wide priority on **youth**, Environment Canada in partnership with Canadian environmental industries,

*Through the International Youth Corps, young Canadians assisted in bringing environmental benefits to other countries.*

placed 299 young Canadians in international internship abroad in the environmental sector through the International Environmental Youth Corps. The program links graduates of Canadian colleges and universities under the age of 30 with Canadian environmental companies and non-governmental organizations to gain valuable job experience for 6 to 12 months, and to assist in bringing environmental benefits to other countries in need of assistance. The Department has also taken actions in developing, in three of its regions, a SkyWatchers program involving approximately 300 schools. This interactive educational program for elementary schools enables students to learn about the science of meteorology through weather observations. Environment Canada participates in the Youth Employment Strategy through the Science Horizons Youth Internship Program and the International Environmental Youth Corps Program. Science Horizons is a collaborative effort with industry, non-government organizations, universities and provinces. The objectives of the program are to provide youth with necessary technical expertise and practical work experience in cutting edge science and to give them access to networks that will allow them to find long term employment in Canada, better focus their studies and knowledge gaps, address the concern over the aging workforce of the research community by helping to train a new generation of scientists to replace retiring senior scientists in the coming years, and to encourage greater private sector investment in science. In 1997-98 and 1998-99, 113 and 103 youth placements were awarded across Canada for a total of 216 placements.

The following chapters provide more detail on the accomplishments and progress achieved throughout the year. The successes of the past year, and the momentum established, position Environment Canada well to deliver on a government-wide environmental agenda for the new millennium and building an environmental legacy for future generations of Canadians.

## Section III : Business Line Performance

### Clean Environment

#### Total – Gross

Planned Spending	\$ 133,883,130
<i>Total Authorities</i>	<i>\$ 136,186,217</i>
<b>1998-99 Actual Spending</b>	<b>\$ 135,985,273</b>

In the Clean Environment business line, Environment Canada acts to protect Canadians from domestic and global sources of pollution. Emphasizing a pollution prevention approach, it leads in the development of shared, long-term strategies to identify and reduce the impacts on the environment and on human health of substances released as a result of human activity. The two long-term goals for this business line are: to reduce human impact on the atmosphere and on air quality; and to understand, and prevent or reduce the environmental and human health threats posed by toxic substances and other substances of concern.

*Environment Canada acts to protect Canadians from domestic and global sources of pollution.*

Performance expectations for the business line in 1998-99 included the reintroduction of a renewed *Canadian Environmental Protection Act* (CEPA) into Parliament; actions to improve air quality, particularly regulations to reduce sulphur in gasoline and progress toward Canada-wide standards for particulates and ground-level ozone; and progress on addressing climate change. These commitments were met. Further gains in protecting the environment and human health will be obtained as the new authorities under CEPA are implemented and as additional funding announced this past year is applied to the research, assessment and management of toxic substances.

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#### Long-Term Goal

Reduced adverse human impact on the atmosphere and on air quality.

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As detailed below, performance commitments due for completion in 1998-99 on air quality and reductions of acid emissions were achieved, and real improvements in environmental quality can be demonstrated.

*Commitments on air quality and reductions of acid emissions were achieved and, real improvements in environmental quality can be demonstrated.*

In 1998-99, Environment Canada concentrated its efforts on air issues in three critical areas: climate change, air quality, and acid rain. All air issues are closely interconnected and have common sources and common health and environmental impacts. Accordingly, the Department's strategy has

been to work in partnership with others, nationally and internationally, to develop and implement solutions with multiple benefits. As a result, credit for many of the achievements on air issues is shared with these partners.

Environment Canada and Natural Resources Canada, working closely with the Climate Change Secretariat and provincial and territorial governments, are developing a National Implementation Strategy to meet Canada's commitment to address **climate change**<sup>1</sup>. The Department continues to participate on all 16 Issue Tables, along with experts from other government departments, the private sector, non-government organizations and universities. These Issue Tables are identifying options for solutions to the climate change challenge. Environment Canada is the federal lead for six of the Tables: public education and outreach, credit for early action, sinks, municipalities, Kyoto mechanisms, and (with Natural Resources Canada) science, impacts and adaptation. Due to the complexity of the problem, completion of the National Implementation Strategy is now expected at the end of 2000.

*On climate change, the Government of Canada and its partners provided funding to raise public understanding, provide communities with tools and information needed to take action, and develop and commercialize innovative technologies to reduce greenhouse gases and other pollutants.*

Environment Canada also manages, on behalf of the Government of Canada, the Public Education and Outreach element of the Climate Change Action Fund. As of September 1999, the government contribution of over \$11 million has leveraged an additional \$20 million from the private sector and other partners to fund 85 projects to raise public understanding and provide communities with tools and information needed to take action on climate change. An additional 32 projects to better understand climate processes were funded under the Science, Impacts and Adaptation component of the Climate Change Action Fund. In partnership with Natural Resources Canada and Industry Canada, support was also provided to 39 projects under the Technology Early Action Measures initiative for the development and commercialization of innovative technologies to reduce greenhouse gases and other environmental pollutants. Five evaluation and accountability frameworks were developed for the Climate Change Action Fund by Environment Canada, Natural Resources Canada and the Climate Change Secretariat. These frameworks, a requirement of Treasury Board, will be used to guide data collection, performance measurement and evaluation of funded projects.

#### **Technological Solutions for Cleaner Air**

The Multi-dynamometer simulator™ is an innovative solution for evaluating the emissions performance of vehicles while they are stationary. Environment Canada first developed the technology for its own tests of exhaust emissions, but then recognized the potential for commercial application. In a joint project with Ottawa-Carleton Transit Authority, a simulator was installed to detect engine, drive-train and brake problems in buses that cause excessive fuel consumption and emissions of pollutants.

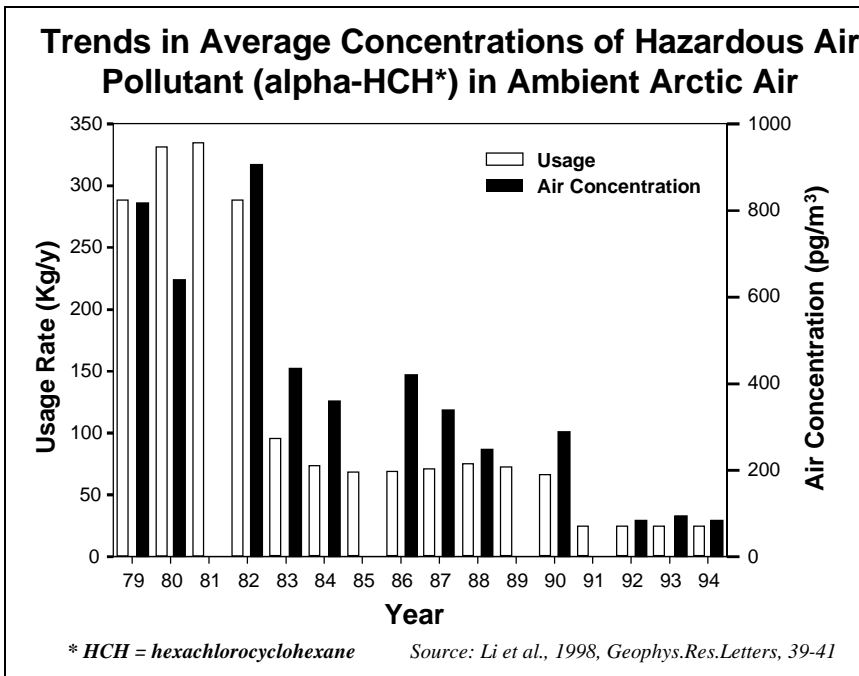
Environment Canada took several key steps in 1998-99 toward improving **air quality**. Regulations were proposed this year (and published in June 1999) to control sulphur levels in gasoline and thereby reduce emissions from motor vehicles. This was also the first full year of application for regulations published in 1997 to control sulphur levels in on-road diesel fuel. In addition, new codes of practice for the printing industry and for

<sup>1</sup> Environment Canada's climate change web site  
<http://www.ec.gc.ca/climate/index.html>

vehicle painting were completed and are being published by the Canadian Council of Ministers of the Environment. Canada-wide standards for particulates and ground-level ozone are expected to be ready for submission to federal and provincial environment ministers by the fall of 1999. Upgrades to equipment for air quality monitoring and laboratories were postponed pending a more thorough assessment of Department-wide requirements.

Environment Canada is also working internationally to reduce air pollutants that enter Canada from other countries. This is of particular concern in the north, as these pollutants have been shown to accumulate in the tissues of animals used for food by many Aboriginal people. Environment Canada's research has provided a major contribution to global understanding of the distribution and biological effects of these substances. Considerable reduction of some pollutants has already been achieved, as shown in Figure 1, but sustained effort is required to address other pollutants whose concentrations in the Arctic continue to increase. In December 1998, Canada became the first country to ratify two Protocols under the United Nations Economic Commission for Europe. Under these protocols, the long-range transport of heavy metals and persistent organic pollutants will be reduced. Environment Canada also hosted the first meeting and serves as chair of the International Negotiating Committee to prepare a legally-binding instrument for international action on certain persistent organic pollutants. Expectation is that an agreement will be presented to the United Nations Environment Programme Governing Council by the end of 2000.

*Environment Canada's research has provided a major contribution to global understanding of the distribution, and biological effects, of persistent organic pollutants.*



**Figure 1**



Research by Environment Canada scientists points to the need to reduce sulphur dioxide emissions further to provide adequate environmental protection.

Significant progress has been achieved toward addressing the **acid rain** problem. Emissions of sulphur dioxide have been reduced by 50% since 1980 in eastern Canada, the area most affected. Target levels were first met in 1993 and emissions continue to remain below these levels, as shown in Figure 2. Research by Environment Canada scientists, however, points to the need to reduce emissions further, by up to 75% below current caps in certain areas of eastern Canada and the United States, to provide adequate environmental protection. In October 1998, federal and provincial Ministers of Energy and Environment signed the Canada-wide Acid Rain Strategy for Post-2000. This strategy addresses the remaining acid rain problem in eastern Canada, ensuring that acid rain does not become a problem in other parts of the country and that Canada meets its international commitments on this issue.

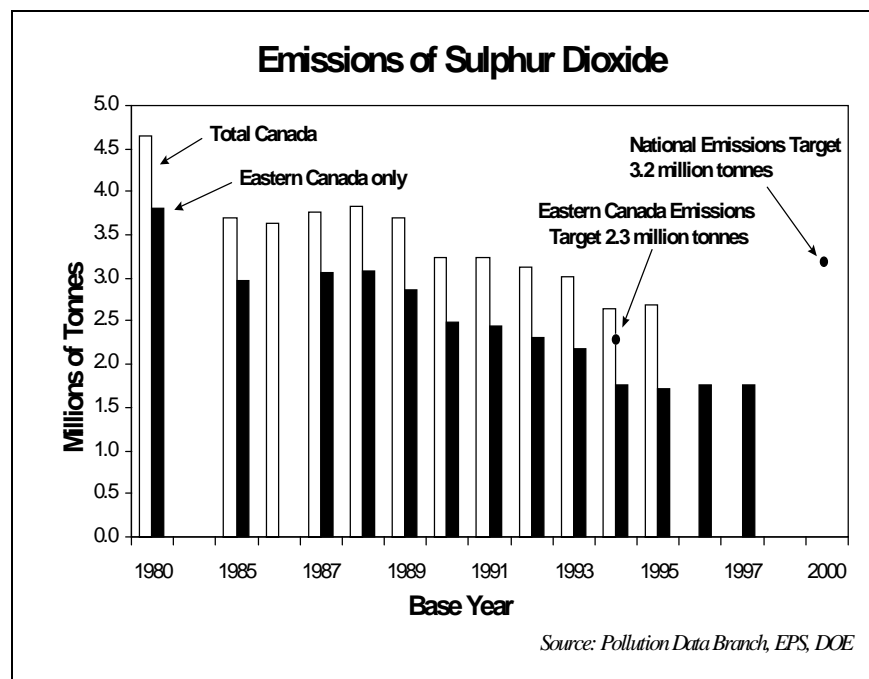


Figure 2

The following table summarizes expectations and progress toward the goal of reducing adverse human impacts on the atmosphere and on air quality.

**Performance Expectations**

Negotiations on international rules for participation by developing countries in the Kyoto Protocol completed by end 1999.

National plan for implementing the Kyoto Protocol on greenhouse gas emissions developed with NRCan and other partners by December 1999.

**Progress**

This issue was taken off the agenda at the fourth Conference of the Parties in 1998. Signed a letter of intent to cooperate on climate change with Mexico.

Options for greenhouse gas emission reductions to be considered by federal and provincial energy and environment ministers by early 2000.

### ***Performance Expectations***

Community-based partnerships, education and public engagement in support of climate change outreach launched in 1998.

New ambient air quality objectives for fine particulates published with HC in 1998.

Sulphur in gasoline regulation promulgated early 1999.

Smog forecast expanded to up to four locally-sensitive areas by end 2000.

Ozone annex to Canada / US Air Quality Agreement drafted for negotiation by April 1999.

Canada-wide Acid Rain Strategy for Post-2000 developed by end 1999.

UNECE persistent organic pollutants and heavy metals protocols signed in 1998.

UNECE Protocol on Multi Pollutants, Multi Effects (ozone / acid rain) negotiated by end 1999.

Air quality monitoring equipment and laboratory facilities upgraded by end 1999 to improve measurement and analysis of airborne substances.

### ***Progress***

Actions included: advertising aimed at educational magazines; a climate change workshop to the Federation of Canadian Municipalities (with NRCan), and partnership with Green Communities.

Science Effects Assessment document on particulate matter prepared by EC and HC and provinces in support of the development of Canada-wide standards published June 1999.

Regulation promulgated June 1999.

Pilot smog forecasting program for Saint John expanded in 1999 to include all of southern New Brunswick. Includes both a daily smog forecast and a health advisory when conditions dictate.

Joint announcement of intent to negotiate in April 1999. Negotiations to be completed by December 2000.

Canada-wide Acid Rain Strategy for Post-2000 signed by federal and provincial ministers October 1998.

Protocols signed June 1998.

Work on target.

Upgrading deferred. National ambient air quality monitoring continued through the federal / provincial National Air Pollution Surveillance Network.

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### Long-Term Goal

Understanding, and prevention or reduction of the environmental and human health threats posed by toxic substances and other substances of concern.

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A significant milestone under this goal was the passage by Parliament of the renewed *Canadian Environmental Protection Act* (CEPA). Additionally, real progress was achieved in establishing Canada-wide standards on toxic substances and implementing Action Plans to manage them, a renewal focus began for the

Enforcement function of Environment Canada, and considerable effort was expended successfully in readiness of Year 2000 issues. Details of these achievements are outlined below.

The renewed *Canadian Environmental Protection Act* (CEPA)<sup>2</sup> represents the most significant milestone of this business line for the past year. This renewed Act has as its focus pollution prevention rather than pollution controls, expands several legislative authorities and creates some new ones. For example, it introduces new powers to require pollution prevention planning for toxic substances, requires that all 23,000 substances in use in Canada be examined, introduces new deadlines for taking action on toxic substances, and requires virtual elimination of the most dangerous toxic substances. It provides authority for setting emission standards for new motor vehicles and expands that authority to cover other types of engines. CEPA also increases the public's access to information, and expands membership on the National Advisory Committee to include Aboriginal governments. It addresses concerns about enforcement by giving "peace officer" status and expanded powers to enforcement officers.

Work on **Canada-wide standards** for toxic substances is on track for their scheduled completion in late 1999 and early 2000. These standards fulfill commitments in a sub-agreement under the Canada-wide Accord on Environmental Harmonization, which was signed by federal and provincial environment ministers (except Quebec) in January 1998. Standards are now being developed for six priority substances: particulate matter, ground-level ozone, benzene, dioxins and furans, mercury, and petroleum hydrocarbons. Environment Canada participates on the committees developing standards for all of these substances, and leads the committees for particulate matter, ozone and benzene.

Renewal of the **enforcement** program<sup>3</sup> has been a key focus for the business line. Recent reviews by the Office of the Auditor General and by the House of Commons Standing Committee on the Environment and Sustainable Development have pinpointed the inability of the enforcement program to provide sufficient assurance of regulatory compliance within existing resources. Environment Canada has developed a National Action Plan that

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<sup>2</sup> CEPA annual report [http://www.ec.gc.ca/cepa/index\\_e.html](http://www.ec.gc.ca/cepa/index_e.html)

<sup>3</sup> Enforcement program <http://www.ec.gc.ca/enforce/homepage/english/index.htm>

*The renewed Canadian Environmental Protection Act has as its focus pollution prevention rather than pollution control.*

addresses several key issues: providing clarity of roles and directions, addressing gaps and weaknesses in program management, and providing additional tools to enable officers to perform their duties more effectively.

Environmental laws and regulations, clearly understood and fairly and effectively enforced, are essential to the protection of the environment. In 1998-99, increased efforts were made to promote awareness and compliance with regulations including the *Export and Import of Hazardous Wastes Regulations*, and the new *Ozone-depleting Substances Regulations* under CEPA. Detailed information on the number of inspections and enforcement actions on these and other CEPA regulations are provided in the CEPA annual report <sup>2</sup> for 1998-1999. Environment Canada is working with Canada Customs to foster continued cooperation on enforcement and is also developing stronger partnerships with provinces by sharing experiences, discussing common training and developing better networks. Environment Canada developed a new tool, the National Enforcement Management Information System and Intelligence System (NEMESIS), which provides a more precise picture of its enforcement activities. This software is being provided to provinces as part of the sharing of enforcement-related information amongst enforcement agencies. The public also has easier access to enforcement information through the Enforcement Homepage on Environment Canada's Green Lane <sup>3</sup>.

The **assessment and management of toxic substances** is at the core of Environment Canada's work for a clean environment. Management actions to address substances identified as toxic on the first Priority Substances List continue to be implemented. In 1998, the Minister accepted additional recommendations for the management of these substances put forward by six multi-stakeholder Issue Tables (electric power generation, steel manufacturing, base metals smelting, metal finishing, refractory ceramic fibres and dichloromethane). Anticipated emissions reductions vary between sector and substance. For example, emissions of six CEPA-toxic substances from the base metals smelting sector are targeted for 80% reduction from 1988 levels by 2008. The five remaining Issue Tables are expected to complete their assessment of management options by the end of 2000.

Substances that are toxic, persistent and bioaccumulative and whose releases are due mainly to human activities are required to be virtually eliminated under the federal Toxic Substances Management Policy. This year, for the first time, the Policy was used to designate twelve substances for virtual elimination. Domestic action has already been taken to severely limit or ban the production, use or release of these substances. Action plans were prepared and are being implemented for their virtual elimination.

The May 1999 Report of the Commissioner of the Environment and Sustainable Development included audits of the assessment and management of toxic substances across federal departments. The report described a growing gap between the demands to provide scientific information on toxics and federal departments' ability to meet existing obligations and respond to emerging issues. The report also notes many examples of

*The assessment and management of toxic substances is at the core of Environment Canada's work for a clean environment.*

*Environment Canada is implementing action plans to virtually eliminate 12 of the most dangerous toxic substances.*

progress achieved through our cooperative and collaborative efforts. Environment Canada will be leading the Government response to the report and will be working with other government departments to deal with key horizontal issues on toxics. Environment Canada also conducted an internal review of the Strategic Options Process, a process to identify options for managing CEPA-toxics. The Department is following up on the twelve recommendations of this review, which were consistent with the findings of the Commissioner's audit.

**Environmental assessment**<sup>4</sup> represents a large investment of effort for the Department, particularly in the Regions. More than just a mandated requirement, advice through environmental assessments provides a cost-effective opportunity to prevent pollution and protect ecosystems before damage has occurred. During the past year, Environment Canada assessed

387 projects over which it had regulatory approval and provided advice on 1397 additional projects and 56 Cabinet memoranda. Major initiatives with significant potential for environmental impact included the proposed Voisey's Bay nickel mine in Labrador, oil and gas developments off the Atlantic coast, the Red Hill Creek Expressway in Hamilton, Ontario, and the Cheviot mine in Alberta. Environment Canada also promoted the use of cumulative impact assessments for oil sands projects in Alberta, which contributed to a decision by the provincial government to initiate a Regional Sustainable Development Strategy for the oil sands sector.

### Science and Technology in Action

On March 23, 1999, amid gale force winds, the M/V Gordon C. Leitch crashed into a dock at Havre Saint-Pierre, Quebec, tearing a half-meter gash in its hull and leaking 50 tonnes of bunker crude oil into the water of the Gulf of St Lawrence north of Anticosti in the heart of Mingan Archipelago National Park. At the height of the emergency in difficult weather conditions, 250 people were working on site and managing the emergency. Teams of EC experts monitored and tracked the spill, determined the type of contamination at each site and proposed appropriate methods of restoration. Map overlays were created which identified key environmental features and established priorities for clean up. Daily maps of progress were also created. Biologists from EC set up a center for cleaning oil soaked birds, and despite the difficulties, 80% of the oil was cleaned up within a month.

In partnership with Treasury Board Secretariat, Environment Canada began work on a coordinated approach to managing the approximately 5000 **contaminated sites** under federal jurisdiction. Environment Canada has a dual mandate toward these sites: to clean up those sites for which it is directly responsible, and to provide technical assistance to other federal departments as they carry out their own responsibilities. The framework being developed will respond to recent findings of the Auditor General and the House of Commons Standing Committee on the Environment and Sustainable Development. Implementation is expected to begin by December 1999.

Environment Canada also provided federal leadership in assessing the **Year 2000 readiness** of the national infrastructure for sewage treatment, hazardous materials and wastes, and water purification systems. Equipment

<sup>4</sup> Environmental assessment [http://www.ec.gc.ca/envass\\_e.html](http://www.ec.gc.ca/envass_e.html)

failures in these systems have the potential to cause releases of pollutants into the environment. Gaps in preparedness have been identified and resolved through risk assessments conducted with provinces and industry. Environment Canada has also developed and tested contingency plans to deal with environmental emergencies that may arise.

Performance expectations and progress toward the goal of understanding, and preventing or reducing the environmental and human health threats posed by toxic substances and other substances of concern are detailed below.

*Environment Canada is working to ensure national infrastructure for sewage treatment, hazardous materials and wastes, and water purification systems are Year 2000 ready.*

***Performance Expectations***

***Progress***

CEPA reintroduced in Parliament in 1998.

CEPA reintroduced March 1998, received Royal Assent September 1999.

Risk assessments for 25 PSL2 substances completed 1998 to 2000.

Five PSL2 assessments published and released for public review. Remaining assessments to be completed before December 2000.

Regional action plans under NAFTA CEC developed by end 1999.

Regional action plans for DDT, chlordane, PCBs and mercury developed and are being implemented.

Under National Pollutant Release Inventory, mandatory reporting of materials sent off-site for recycling by end 1998.

Implemented. Data for 1998 collected and will be reported in Fall 2000.

Action plan for protection of marine environment from land-based activities implemented in 1998.

Draft National Programme of Action (with Fisheries and Oceans) released for public consultation March 1999.

Targeted compliance promotion and enforcement actions for ozone-depleting substances, hazardous waste, particularly at international borders, starting in 1998.

Increased compliance with reporting requirements of the Export and Import of Hazardous Waste Regulations through compliance promotion.

Ozone-depleting Substances Regulations amended in 1998 to include more stringent restrictions on import of recovered or recycled CFCs and halons.

Releases of toxics reduced by 25 000 tonnes through the Accelerated Reduction / Elimination of Toxics (ARET) program by end 1999.

As of 1997, ARET participants reduced emissions by 24,090 tonnes, or 64%. A further reduction of 5,172 tonnes or 78% from baseline emissions expected by 2000.

Canadian Council of Ministers of the Environment discussions on harmonization of enforcement launched in 1998.

Agreement reached with provinces and territories on scope of Enforcement Sub-agreement to Harmonization Accord. Completion expected by spring 2000.

### *Performance Expectations*

Evaluate and improve emergency prevention and preparedness practices for hazardous wastes in 20 federal facilities.

National Environmental Emergency System (NEES) upgraded in 1998 and system harmonization with OGDs and three provinces explored by early 1999.

Information on 10 industrial sectors made available electronically through the Canadian Pollution Prevention Information Clearinghouse in 1998.

Community funding for 200 projects yearly and the number of climate change community projects increased by 20%.

Initial remediation measures completed for Sydney Tar Ponds / Muggah Creek contaminated site by end 1999.

International protocols, agreements and technology transfer to build environmental capacity expanded by end 1999.

Uptake of clean technologies and processes advancement programs in Canada and abroad increased by end 1999.

### *Progress*

Efforts concentrated on determining status of EC's own practices first. Fifteen facilities assessed in 1998, including laboratories and weather stations. Actions to address gaps will be fully implemented by March 2000.

NEES upgraded late 1998. Negotiations currently underway with Canadian Coast Guard to harmonize with marine spills database.

Information now available on 37 industrial and other sectors, totaling 746 pollution prevention references.

Funding provided for 163 projects in 1998-99 (includes projects supporting the Nature business line). Projects dealing with clean air and climate change increased by over 20%.

Memorandum of understanding and cost-sharing agreement for Joint Action Group signed by federal, provincial and municipal governments to ensure a long-term commitment to site clean up. Initial remediation measures to begin by end 1999.

Five projects continue and nine new projects approved under Multilateral Fund of the Montreal Protocol (ozone-depleting substances).

EC also managed ten bilateral agreements and two CIDA-funded projects to build capacity for environmental protection and transfer clean technologies to developing countries.

Technical, scientific and management expertise provided to approximately 500 technology and know-how projects annually. During 1998-99, focus on climate change mitigation technology increased, specifically, "green" chemistry and vehicle and plant emission reductions.

Key **next steps** for the Clean Environment business line include implementing the renewed CEPA, completing development of Canada-wide standards on six priority substances, reporting to federal and provincial Ministers on a National Implementation Strategy to deal with climate change, beginning remediation of the Sydney Tar Ponds and Pacific Environment Centre contaminated sites, and implementing the recommendations in the government response to the Office of the Auditor General audit on toxics.

## Nature

### Total - Gross

Planned Spending	\$ 143,923,700
<i>Total Authorities</i>	\$ 146,094,213
<b>1998-99 Actual Spending</b>	<b>\$ 146,583,554</b>

In the Nature business line, Environment Canada acts to conserve biodiversity in healthy ecosystems and leads in building shared sustainability strategies for Canada's wildlife and ecosystems. Its science focuses principally on wildlife biology, habitat and the impacts of human activities on aquatic ecosystems.

Key performance expectations for 1998-99 included the reintroduction in Parliament of legislation to protect endangered species; the implementation of species recovery plans; the development and implementation of new habitat initiatives; ongoing leadership in ecosystem science; and the continued delivery of measurable progress under its ecosystems initiatives. The Department met its performance expectations, with some exceptions in the area of endangered species.

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### Long-Term Goal

Biological diversity is conserved.

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During 1998-99, Environment Canada worked in close collaboration with the provinces, territories, and a wide range of stakeholders in support of this goal. A work plan to

implement the National Accord for the Protection of Species at Risk in Canada was developed, the North American Waterfowl Management Plan was renewed and signed by Canada, the United States and Mexico, and



Canada's first National Report on Implementation of the Convention on Biological Diversity was released. Specific progress is outlined below.

### **The Atlantic Canada Conservation Data Center**

The Atlantic Canada Conservation Data Center (AC CDC) is the newest of 86 such conservation data centers throughout the Americas. The AC CDC, which comprises nine major partners, including Environment Canada, Canadian Forest Service, Parks Canada, the four Atlantic provinces, Nature Conservancy of Canada, and The Nature Conservancy, will provide biodiversity information services for Atlantic Canada with a focus on species and natural communities at risk.

Under the Accord for the Protection of **Species at Risk** in Canada, the federal government, in cooperation with the provinces and territories, has been consulting broadly to determine how best to proceed to protect Canada's species at risk. The federal government intends to table a proposed *Species at Risk Act* early in 2000. The reintroduction of legislation to protect endangered species has been delayed to next year, in order to allow for further consultations with Aboriginal communities and other stakeholders. The Act would formalize the national listing process, enhance recovery efforts and authorize prohibitions against harmful activities to species at risk and their residences.

*Stewardship is an important component in preventing loss of species and habitat.*

In the course of public consultations, stewardship has been identified as an important protection component of protecting species at risk. In recognition of the stewardship efforts of many landowners and resource managers, the Wildlife Ministers Council of Canada amended the Accord for the Protection of Species at Risk to better recognize the role of stewardship in preventing loss of species and habitat and in recovery efforts. A Canada-wide stewardship action plan is being developed for approval by the Wildlife Ministers Council of Canada later in 1999.

### **New tool for tracking migratory species**

Environment Canada scientists have developed an innovative technique to track the origins of songbirds, ducks, and insects moving between Canadian breeding sites and wintering grounds in the south. They have discovered that concentrations of stable hydrogen isotopes in animal tissues mirror those found in rainwater. The new method uses isotopes to establish the geographic area of origin of migratory species. With this information, conservation projects can be directed more precisely for species management and the protection of habitats.

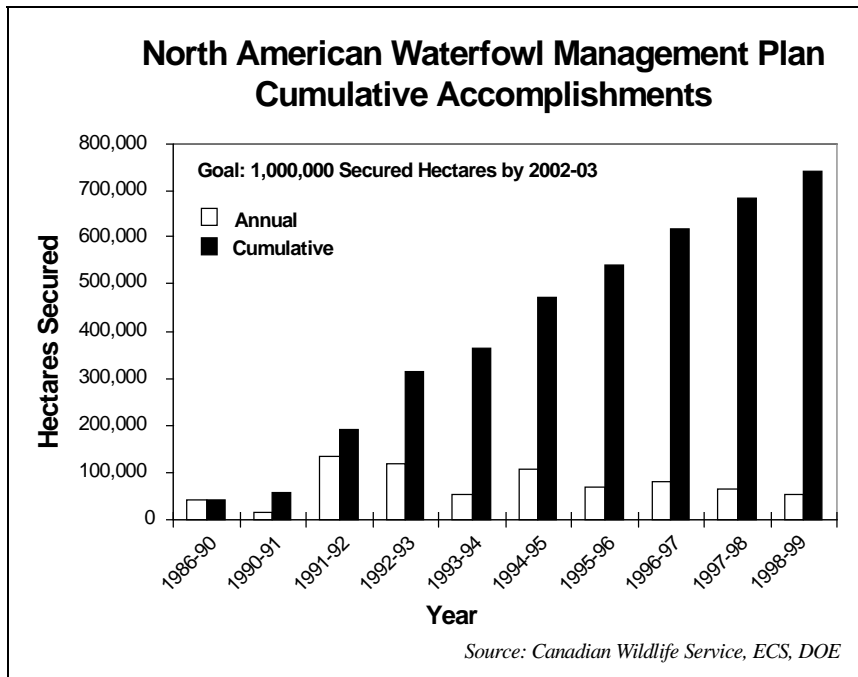
The National Wildlife Areas systems plan was delayed in order to develop a departmental marine strategy to support Parks Canada's Bill C-48, the *Marine Conservation Areas Act*, and implementation of the *Oceans Act* by the Department of Fisheries and Oceans. Modifications to the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA) regulations will be put forward for pre-publication in the fall of 1999. Review of the Migratory Bird Regulations, which are subject to United States protocol implementation, is ongoing and will be completed in 1999-2000, subject to ratification of changes to the Migratory Birds Convention.

The North American Waterfowl Management Plan<sup>5</sup> was renewed in November 1998 by Canada, United States and Mexico and signed in March 1999. The aim of the Plan is the restoration of waterfowl

<sup>5</sup> The North American Waterfowl Management Plan  
[http://www.cws-scf.ec.gc.ca/nawmp/nawmp\\_e.html](http://www.cws-scf.ec.gc.ca/nawmp/nawmp_e.html)

populations in North America to 1970s levels by securing, enhancing and managing wetland habitat across the continent. Under the North American Waterfowl Management Plan in 1998-99, there were an additional 53,253 hectares of key wetland habitat conserved across Canada for a total of more than 744,090 hectares since the plan's inception in 1986. Figure 3 shows the progress in reaching the North American Waterfowl Management Plan habitat objective.

*More than 744,090 hectares of wetland have been conserved under the North American Waterfowl Management Plan.*



**Figure 3**

Through the Commission on Environmental Cooperation, several projects were developed to conserve North American biodiversity, through shared ecosystems and transboundary species, and to improve the North American biodiversity network.

The table below summarizes expectations and progress for the goal of conserving biological diversity.

***Performance Expectations***

Canada Endangered Species Protection Act (CESPA) reintroduced in Parliament in 1998.

Habitat status on an ecosystem basis is better understood through a National Wildlife Areas systems plan in 1998.

***Progress***

Species at Risk Act (SARA), to be tabled in early 2000.

National Wildlife Areas systems plan to be completed in 1999-2000.

New Migratory Bird Sanctuary proclaimed in Inkerman, New Brunswick.

### ***Performance Expectations***

Implementation strategy developed with provinces and territories for the National Accord for the Protection of Species at Risk in 1998.

WAPPRIITA regulations approved in 1998.

Update of the North American Waterfowl Management Plan (NAWMP) completed by September 1998.

Canada's first Country Report on implementation of the Convention on Biological Diversity released in 1998 and federal modules on implementation of the Canadian Biodiversity Strategy completed by end 1998.

International negotiations on the Biosafety Protocol under the Biodiversity Convention finalized by end 1998.

All regional working groups of Partners in Flight in place by March 1999.

Migratory Bird Regulations updated by August 1999.

Recovery plans for all threatened or endangered species of migratory birds implemented by 2005.

### ***Progress***

Work plan to implement the Accord developed with provinces, territories, stakeholders. Implementation commenced, including amendment to reflect stewardship role.

Public consultations completed spring 1998; Proposed regulations to be approved in fall 1999.

NAWMP Update completed November 1998, signed March 1999. Sea Duck Joint Venture approved.

Report released May 1998.

Five of eight planned federal modules completed 1998. The three remaining modules to be completed 1999-2000.

Canada's mandate approved February 1999. Final negotiating session to resume prior to Fifth Conference of Parties May 2000.

Two groups established, remaining three delayed pending resolution of need for provincial involvement.

Overall review to be completed 1999-2000, subject to ratification of changes to the Migratory Birds Convention.

Recovery plans for Acadian Flycatcher, Hooded Warbler and King Rail completed, awaiting approval by responsible jurisdictions. Piping Plover recovery plan being revised.

*The ability to secure a clean and healthy environment for Canadians is dependent upon our ability to understand how human-induced stressors affect the nation's ecosystems.*

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### **Long-Term Goal**

Human impacts on the health of ecosystems are understood and reduced.

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by conducting ecosystem research, monitoring and assessments to identify and report on the state of Canadian ecosystems. The Department also

The ability to secure a clean and healthy environment for Canadians is dependent upon our ability to understand how human-induced stressors affect the nation's ecosystems. Environment Canada advances this knowledge and understanding

identifies and communicates where anthropogenic activities are causing significant impacts on Canadian ecosystems, what ecosystem components are most vulnerable, and what opportunities exist to minimize or adapt to these impacts. It also develops scientific tools and techniques, such as national standards, guidelines and indicators, and sediment remediation techniques to guide environmental managers in reducing the impacts of human activities on the health of ecosystems.

The Department met all of its 1998-99 performance commitments under this long-term goal and demonstrated real progress in advancing its scientific knowledge and understanding of the health of ecosystems.

In 1999, Environment Canada expanded its scientific involvement in the Northern Contaminants Program, which involves four federal departments, as well as universities, northern Aboriginal groups, and territorial governments. Research efforts will focus on contaminant concentrations and effects on Arctic seabirds and polar bears, and the assessment of risks to northern ecosystems and human health from the long-range transport of persistent pollutants into the Arctic.

Environment Canada, in conjunction with Health Canada, announced that the federal government, through the Toxic Substances Research Initiative, will invest \$40 million over four years to promote scientific research into the links between toxic substances, environmental damage and human illness. Environment Canada will spend over \$2.8 million it obtained from the initiative to conduct research on specific health and environmental issues: endocrine disrupting substances, persistent organic pollutants, toxic forms of metals, cumulative effects of toxics and air pollutants. This research will be done in partnership with other federal departments as well as universities, the private sector and non-government organizations.

Expectations and progress are summarized in the table below for the goal of understanding and reducing human impacts on the health of ecosystems:

***Performance Expectations***

Develop indicators of health of Canada's ecosystems and continue reporting through Indicators Bulletins and Internet on Canada's progress toward environmentally sustainable development.

**Regional Indicators on Ecosystem Health**

Environment Canada's Pacific and Yukon Region is reporting the general health of selected ecosystems to the public through its indicators web site<sup>6</sup>. Nine indicators on the condition of the stratospheric ozone layer, biodiversity, toxic contaminants and marine ecosystems have been published, and more indicators are under development. As these indicators will be linked with up to 50 socio-economic and health indicators, the regional indicators will allow environmental and socio-economic linkages to become an important part of decision-making in sustaining the region's ecosystems.

***Progress***

Air Quality Indicator and Stratospheric Ozone indicator bulletins released; three others (Acid Rain, Agricultural Soils, and Sustaining Canada's Forests) are expected to be released in fall 1999.

*Environment Canada, under the Toxic Substances Research Initiative, has expanded research activities on endocrine disrupting substances, persistent organic pollutants, metals in the environment, cumulative effects of toxics and air pollutants.*

<sup>6</sup> Environmental indicators: [http://ecoinfo.org/env\\_ind/Default.htm](http://ecoinfo.org/env_ind/Default.htm)

### ***Performance Expectations***

Northern Contaminants Program and Toxics Substances Research Initiative expanded in 1999.

Integrated (social, economic, environmental) assessments of the state of science and environment on 12 priority issues (acid rain, UVb effects, nutrients, mercury, etc.) 1998-2000.

### ***Progress***

Fifteen EC science projects approved under Northern Contaminants Program; 19 EC projects approved under Toxic Substances Research Initiative.

Science assessment on municipal wastewater effluent completed and assessment on Nutrients under way. State of the Environment Summary report to be published spring 2000.

*Environment  
Canada provides  
federal leadership  
and expertise in  
conserving and  
protecting  
Canada's water  
resources and  
aquatic  
ecosystems.*

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### **Long-Term Goal**

Priority ecosystems are conserved and restored.

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of freshwater resources. Environment Canada responds to this challenge by providing federal leadership and expertise in conserving and protecting Canada's water resources and aquatic ecosystems, including targeted ecosystems.

The challenge Canadians face in addressing freshwater sustainability is significant given the diverse policies and programs of many federal, provincial and municipal agencies which influence the quality and quantity

As shown in the following section, the Department achieved its targets over the past year under this long-term goal. Environment Canada focused its efforts on implementing the Bulk Water Removal Strategy, bringing all its ecosystem initiatives into their next phase, and on launching the Northern Ecosystem Initiative.

In February 1999, in response to Canadians' concerns about the security of Canada's **freshwater resources**, the Ministers of Environment and of Foreign Affairs and International Trade announced a strategy to prohibit the bulk removal of water, including for export, from Canadian watersheds. The strategy includes amendments to the *International Boundary Waters Treaty Act* to give the federal government power to prohibit bulk removals from boundary waters, principally the Great Lakes; a joint reference with the United States to the International Joint Commission to study the effects of water consumption, diversion, and removal, including for export from boundary waters; and a proposal to develop, in cooperation with the provinces and territories, a Canada-wide Accord on bulk water removals to protect Canadian watersheds.

**Ecosystem initiatives**<sup>7</sup> are cooperative efforts on targeted ecosystems to address and solve complex environmental issues as identified and agreed upon by stakeholders. Ecosystem initiatives help Canadians achieve environmental results through partnerships, pooling resources, focusing science, coordinating effort, sharing information and experiences, and generating a broad basis of support. Moreover, they help build the capacity of all the players involved to make better decisions and to effect change. Environment Canada is engaged in a number of initiatives across the country where it promotes an ecosystem approach.

*Ecosystem initiatives help Canadians achieve environmental results.*

Phase I of the **Atlantic Coastal Action Program** brought diverse interests together in 13 degraded coastal harbour and watershed sites to develop detailed action plans for the restoration and sustainable development of these ecosystems. In 1998-99, Phase II was launched with the initiation of implementation of these action plans by the sites.

The **Northern Rivers Ecosystem Initiative** was officially announced in February 1999. Under this initiative, the governments of Canada, Alberta and the Northwest Territories have approved several projects to address pollution prevention, effects of contaminants and nutrients, endocrine disruption in fish, dissolved oxygen, hydrology and drinking water.

The **Northern Ecosystem Initiative** is a new initiative launched in 1999. It is a five-year project that will bring together various levels of government, Aboriginal organizations, industry, environmental groups and others to address priority ecosystem issues in the North. A two-track approach is being applied: firstly to further develop partnerships around priority issues related to northern climate change, cumulative effects, and declining sea duck populations; and secondly to illustrate the potential of the initiative by working with partners on demonstration projects related to wetland drying, snow geese over-population and Innu traditional knowledge.

The **St. Lawrence Action Plan** was launched in 1988. Results from the first 10 years of the plan include a 96 percent reduction in toxic effluent discharges by 50 priority industrial plants; the creation of the first federal-provincial marine park in the Saguenay; the protection of 12,000 hectares of wildlife habitat; and an increase in the population of beluga whales, from 500 to approximately 800. The success of the two first phases of this plan led to a third one that was launched in June 1998. This new initiative, seeks to achieve three major objectives: protect ecosystem health, protect human health, and involve riverside communities in helping to make the St. Lawrence more accessible and recover its former uses. Achievements for 1998-99 include the introduction of a new funding program aimed at community projects that resulted in the joint funding of 44 projects, the protection of targeted threatened species and wildlife habitat, and the production of a biodiversity atlas, as well as reports and fact sheets related to different aspects of the St. Lawrence River.

*The St. Lawrence Action Plan has successfully led to measurable changes in the environmental quality of the St. Lawrence River.*

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<sup>7</sup> Ecosystem initiatives <http://www.ec.gc.ca/ecosyst/gdprecin/contents.html>

The **Georgia Basin Ecosystem Initiative** was officially launched in December 1998 and is being delivered in partnership with federal, provincial, regional and local governments, First Nations, and community, industry, university and non-government organizations. Throughout the course of 1998-99, efforts focused on projects to: support environmental goals of achieving clean air and clean water and conserving and protecting species and habitat; support community efforts in meeting their sustainability objectives; and provide local governments with information and tools that will enable them to better incorporate environmental values into local community planning and growth strategies, liquid waste management plans, and day-to-day decision-making. In all, over 100 projects were initiated in the first year of operation.

**Great Lakes**

The BEAST is not exactly wildlife, but it helps in making decisions that affect habitats and ecosystems. By entering the latitude, longitude and water depth of a habitat site in the Great Lakes, the BEAST goes to work. Soon the information pops up on the expected biological community of invertebrates in that area along with an assessment of that community. BEAST is the name of software developed by Environment Canada's National Water Research Institute as part of a multi-year project to develop biological sediment guidelines for the Great Lakes. The software also provides an assessment of the sediment toxicity based on four invertebrate species and then ranks sediment as either toxic, potentially toxic or nontoxic. The software is a major step in assisting management decisions on contaminated sediment in the Great Lakes.

Both the **Great Lakes 2000 initiative** and the Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem expire in the year 2000, and work has commenced on the development of the next phase of the Great Lakes Program. The Great Lakes Program Management Committee has commissioned a number of discussion documents and issue papers for consultation purposes, and has formed a multi-stakeholder advisory committee to provide ongoing input to the planning process. The Committee also hosted a week-long series of consultative workshops in February 1999, with representation from diverse interests including federal, provincial and municipal agencies, First Nations, universities, public health and non-government groups. The Great Lakes Program has made measurable environmental improvements in the Great Lakes Basin Ecosystem. For example, the Collingwood Harbour was restored and removed from the list of 43 Areas of Concern in Canada and the United States. Also, pollutants in effluents at Ontario pulp mills have been reduced by over 82%, releases of

dioxin and furans have been reduced by 77%, close to 4,000 hectares of wetlands have been rehabilitated and approximately 500,000 hectares of park land have been protected.

The table below summarizes expectations and progress for the goal of ecosystem conservation and restoration.

<i>Performance Expectations</i>	<i>Progress</i>
Next phases of St. Lawrence, Lower Fraser/Georgia Basin, Atlantic Coastal and Northern Rivers ecosystems initiatives launched in 1998.	Launched as planned.
Northern Ecosystem Initiative developed in 1998, launched in 1999.	Launched as planned.

### ***Performance Expectations***

Provide, through Biosphere, information/instruction on reducing water pollution and the importance of clean water to St. Lawrence and Great Lakes ecosystems.

Federal water policy updated in 1999.

### ***Progress***

Public awareness raised and increasing public involvement in water and aquatic ecosystem preservation accomplished.

Efforts focused on implementing Federal Strategy to Prohibit Bulk Removal of Water and pursuing national "Canada-wide" Strategy for fresh water. Delivery subject to further federal-provincial-territorial discussions.

**Next steps** in the Nature business line will include reintroducing Species at Risk legislation in Parliament, implementing the renewed North American Waterfowl Management Plan and developing the federal freshwater strategy.

## **Weather and Environmental Predictions**

### **Total - Gross**

Planned Spending	\$ 215,306,452
<i>Total Authorities</i>	\$ 239,864,409
<b>1998-99 Actual Spending</b>	<b>\$ 239,704,535</b>

Environment Canada's Weather and Environmental Predictions business line is about helping Canadians respect and adapt to the environment, both in the short and the long term, in order to reduce adverse impacts of the environment on their health and safety, their property and their livelihood. Its long-term goals are to reduce the impact of weather and related hazards, and to enable Canadians to adapt to changes in climate, water and ice.

Operating 365 days per year, 24 hours per day with short-term delivery requirements for weather warnings, forecasts and information, Weather and Environmental Predictions is more operational than the Department's other business lines. Although supporting the other business lines in emerging issues, its performance is dependent on the effective functioning of its large monitoring, production and information delivery infrastructure.

Studying the atmosphere allows Environment Canada's scientists to better understand environmental issues and to advise how human impacts on the environment may be reduced or mitigated. While the Weather and

*Studying the atmosphere allows Environment Canada's scientists to better understand environmental issues and to advise how human impacts on the environment may be reduced or mitigated.*



Environmental Predictions business line has no direct policy responsibility, its research provides the sound science needed for policy development across the Department. This research also lends scientific credibility to the negotiation of international protocols and provides the knowledge needed to develop and improve information products and services.

Weather and Environmental Predictions priorities for the past year included contributing to the achievement of environmental results in other business lines; responding to the changing needs of Canadians, their governments, clients and partners for products and services; continuing to develop environmental prediction capacity; enhancing linkages with scientific and international partners; mitigating risks of limited resources and “rust out”; and ensuring weather services are Year 2000 resilient.

Although facing resource pressures as identified in its Alternative Service Delivery Study, overall, Environment Canada met these commitments. It has proven to be responsive to client needs, demonstrated innovation, and effectively managed its on-going operations. It has done so by re-allocating resources, postponing certain projects and delaying required investments.

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### **Long-Term Goal**

Reduced impact of weather and related hazards on health, safety and the economy.

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Environment Canada acts to safeguard Canadians against short-term weather and environmental hazards. Through its warnings, forecasts and advisories, the Department’s objective is to ensure that Canadians have the knowledge and the time to react to protect themselves, their property and business.

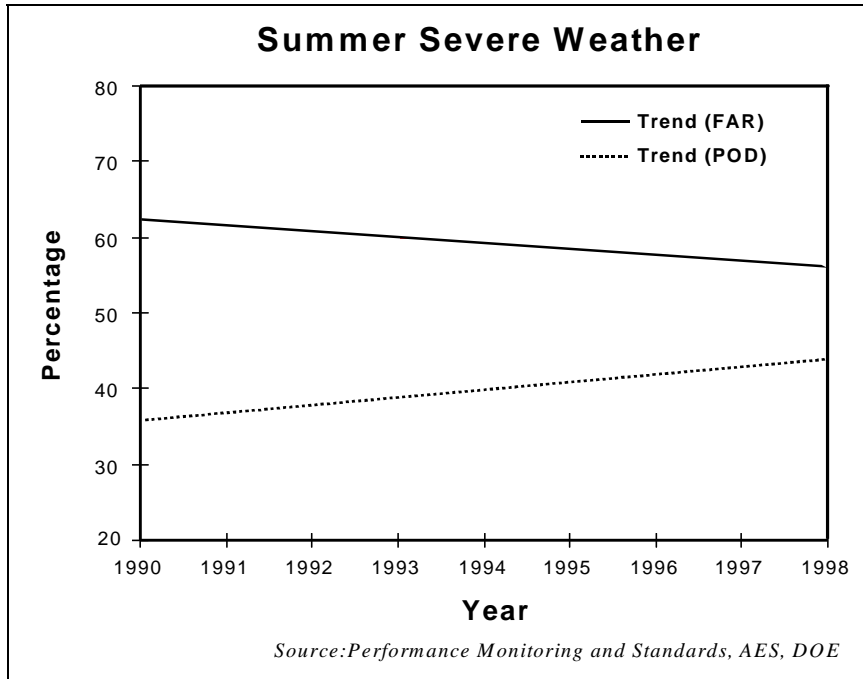
Each year, Environment Canada issues approximately 14,000 warnings of high impact weather and environmental events. It also provides hydrological and meteorological data, education and outreach, and technical support directly to Canadian citizens, clients and partners, and conducts research and development on which these products are based.

In cooperation with all provinces, the Weather and Environment Predictions business line has the federal lead for measuring Canada’s water resources to define reliable supplies, to determine hydro power potential, to assess irrigation potential, to protect life and property, to ensure the sustainable management of Canada’s water resources and to protect Canada’s sovereignty over this resource.

Overall, Environment Canada has seen its forecast quality performance improve. As an example, Figure 4 shows the probability of detection (POD- percentage of all severe weather events that were predicted correctly) is rising while the trend for the False Alarm Ratio (FAR- percentage of time that a warning is issued but the event does not actually occur) is diminishing.

*Each year, Environment Canada issues approximately 14,000 warnings of high impact weather and environmental events.*

Summer severe weather is defined as including: tornadoes, winds with gusts over 90 kmh, rainfall of 50 mm in one hour and 75 mm in 3 hours, and hail greater than 2 cm in diameter.



**Figure 4**

Environment Canada’s weather forecast and warning system is one of the Government-wide Mission Critical systems. Over the past year, the primary concern of this business line has been ensuring that this system is ready for **Year 2000**. While the Department is now confident that the software and hardware are Year 2000 compliant, efforts have shifted to developing and testing contingency plans to ensure that a critical level of service is maintained in case of widespread system failure. As of August, 1999, 99 percent of the Weather Forecast and Warning System was deemed Year 2000 compliant. Of particular note, the Canadian Meteorological Centre was declared Year 2000 compliant August, 1999.

Environment Canada, with Treasury Board, completed an **alternative service delivery** study of its weather, water, and ice services in 1998. This study provides a better understanding of the risks and opportunities facing these services. Environment Canada is now developing options to position the business line for a sustainable future.

### Canadian Hurricane Centre

The Canadian Hurricane Centre in Environment Canada's Atlantic Region is leading in international research on the movement and characteristics of hurricanes beyond the tropics. In the past year there were four systems which passed through Canadian waters, one touching the Avalon Peninsula in Newfoundland. These systems are known to have effects as far west as Ontario. Our research and efforts in this area have allowed us to track the movements, provide guidance to weather centres, and predict the impact on Canadians of these weather patterns.

The study included an extensive analysis of human resource issues, culminating in the development of a Human Resources Strategy. Several actions were taken to meet urgent operational requirements. A workforce renewal plan was developed to address the main issues of resourcing, training and development and workplace health and safety. Twenty meteorologists were recruited and trained this past year, which signaled Environment

Canada's resumption of national recruitment of atmospheric science graduates from universities, and initiated renewal of its science and technology workforce.

*Environment Canada continues to respond to the needs of Canadians and to look for ways to improve service to ensure safety from environmental hazards.*

Achievement of this long-term goal of reducing the impact of weather on health, safety and economy is dependent on the effective operation of an extensive and complex **infrastructure**. Environment Canada commissioned two Doppler radars in 1998-99, as part of its plan for an all-Doppler network. Doppler radar is an advanced weather radar that, in combination with other networks, will improve public safety by assisting meteorologists in the earlier detection and prediction of environmental hazards such as severe weather. In total, the department plans to commission 29 Doppler radars by 2003-04. There are now a total of five Doppler radars installed

Environment Canada is working with Indian and Northern Affairs Canada and the provinces to replace aging mercury-based equipment through the national mercury manometer replacements project. Manometers are used in support of the water-monitoring program for measuring water levels in rivers and lakes.

Environment Canada continues to respond to the **needs of Canadians** and to look for ways to improve service to ensure safety from environmental hazards. Following a significant number of severe summer weather events, the Windsor Weather Review community consultation group was established in 1997-98. Many recommendations made through the review have been implemented, resulting in an increased margin of safety to Canadians from high impact environmental events. For example, in 1998, severe weather warnings were issued for 76 percent of summer storms which struck Ontario, a six percent increase over the previous highest warning percentage.

A pilot "weather office" web site<sup>8</sup> was launched to provide weather warnings and forecasts across Canada. User visits have tripled from 7,000 to 22,000 per day over the last 12 months, and peak usage hit 45,000 users during one stormy day in January with the total for the complete month hitting 750,000 users.

<sup>8</sup> Weather office web site: <http://www.weatheroffice.com/>

Road weather services are provided to provincial and municipal governments in several regions to help make winter driving safer and winter road maintenance more efficient. Environment Canada has started working with Transport Canada to ensure a nationally consistent approach to road weather forecasting.

*Environment Canada provides road weather services to provincial and municipal governments to help make winter driving*

As part of its effort to provide **scientific leadership**, the Department continues to look for new techniques and models to improve its forecast and predictive capacity. In the past year, Environment Canada implemented a unified Global Environmental Model. The Canadian Meteorological Centre is now the only location in the world running the same forecast model and data assimilation system for both the global and regional applications, allowing higher service quality.

The Department's **partnership** role was shown in recovery operations of the Swissair jet which crashed near Peggy's Cove, Nova Scotia on September 2, 1998. These recovery operations were highly weather dependent. Environment Canada, providing weather and sea state information, was part of an interdepartmental team supporting the recovery operations.

*Environment Canada's expertise and capabilities in global meteorological modeling and prediction are in demand internationally.*

Environment Canada's expertise and capabilities in global meteorological modeling and prediction are in demand internationally. The Department works closely with the World Meteorological Organization to help implement the Comprehensive Nuclear Test Ban Treaty. It also participates in a global network to track volcanic ash, a major hazard to aviation. This ongoing work contributes to the overall safety from hazards. During 1998, the Department completed the process to bring the Volcanic Ash Advisory Centre in Montreal to full operational status. The designated centres are recognized by the International Civil Aviation Organization.

Environment Canada's Regions work in close cooperation with provincial and territorial governments and the private sector in developing hydrological models. For example, Quebec Region is working with Hydro-Quebec, Alcan and le ministère de L'Environnement du Quebec. Hydrometric networks and models are essential for flood forecasting, control of water levels and for regulating pollution releases.

Environment Canada has demonstrated its expertise in water monitoring by participating in two important projects. In cooperation with the Prairie Farm Rehabilitation Agency, Environment Canada participated in the Egyptian National Water Quality and Availability Management Project to start-up a national water quality monitoring network in a foreign country. Environment Canada also participated in a joint training exercise with SNC-Lavalin to provide practical training in the areas of water quality monitoring, data management, and laboratory operations to delegates from Vietnam .

*Environment Canada's SkyWatchers program is teaching elementary school children about meteorology.*

Related to the government-wide priority on **youth**, a SkyWatchers program involving almost 300 schools is being developed in three Environment Canada Regions. This is an interactive educational program for elementary schools, designed specifically for Grades 4-7. Students learn about the

science of meteorology by taking weather observations during the school year. This program provides a public outreach component, knowledge generation and community awareness.

The table below illustrates expectations and progress toward the goal of reducing the impact of weather and related hazards.

<i><b>Performance Expectations</b></i>	<i><b>Progress</b></i>
Seven new Doppler radars installed and 12 existing radars retrofitted for Doppler capability under the National Radar project by end 2000.	Two radars commissioned in 1998-99. Full scope of radar project is to complete a network of 29 Doppler radars by 2003-04: Full project on schedule.
Complete the aircraft remote sensing project by 2000-01.	Completion expected in 2001-02.
Recommendations of the interim report of the Red River Flood Task Force responded to by end 1998.	Completed. EC addressed its responsibilities by implementing a 3-year hydrometric network enhancement program funded through the Canada-Manitoba Agreement on Flood Disaster Assistance, and the installation of a Doppler Radar in the Red River Basin to be in service in September 1999.

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**Long-Term Goal**

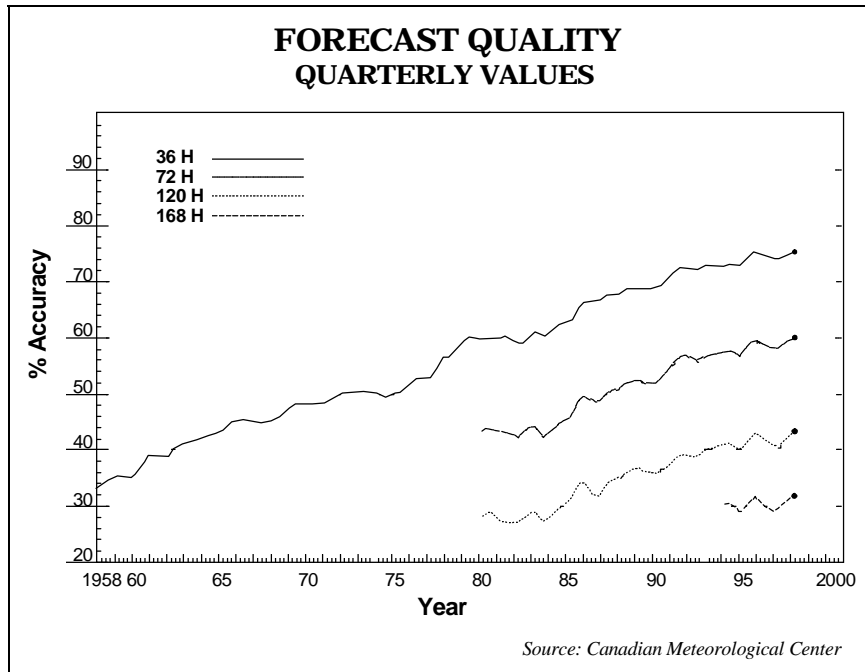
Adaptation to day-to-day and longer term changes in the atmospheric, hydrological and ice conditions.

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Canadians need to be aware of changes to the physical environment across all time scales and the impacts such changes may have on their health, safety and prosperity. Environment Canada's contribution to this goal includes providing 500,000 public weather forecasts, 200,000 marine weather forecasts, 400,000 aviation forecasts each year.

This information enables Canadians to reduce their vulnerability to environmental changes, take advantage of opportunities change may bring, and to make more effective and efficient personal and business decisions. Environment Canada has performed well in achieving this result, as Figure 5 illustrates. This graph shows the increasing accuracy of Environment Canada forecasts over time. The top line illustrates accuracy for a 36 hour forecast, the second line for a 72 hour forecast, the third line a 120 hour forecast and the final line for a 168 hour forecast. Environment Canada's 72 hour forecast is now as accurate as the 36 hour forecast was in 1984.

*Environment Canada's contribution to this goal includes providing 500,000 public weather forecasts, 200,000 marine weather forecasts and 400,000 aviation forecasts each year.*



**Figure 5**

One of the ways in which Environment Canada is responding to **client needs** is by monitoring its performance. For example, a performance measurement system was created to track performance against target levels for aviation weather forecasts provided under contract to NAV CANADA. This system has been described by NAV CANADA as a leading-edge system.

As part of its ongoing **service to Canadians**, Environment Canada routinely provides support to provincial agencies to prevent and control forest fires. In 1998, one Region provided vital meteorology support at the actual site of a major forest fire to help fire fighters make decisions on fighting strategies and on the potential evacuation of residents. Monitoring staff maintained an emergency surface weather station, taking hourly measurements of upper winds, and launching upper-air balloons twice daily.

Science provides the foundation for service improvement and achievement of results. The following are some examples of **scientific leadership** in the Weather and Environmental Predictions business line.

*Environment Canada routinely provides support to provincial agencies to prevent and control forest fires.*

### Outstanding Study on Pollen Transport

Dr. Karen McDonald, an Environment Canada atmospheric chemist, and two scientists from the Canadian Forest Service, analyzed weather patterns to explain the June 1998 appearance of yellow rings and gold stains extending 25 kilometers onto sea ice in the Inuit community of Naujaat (Repulse Bay). They discovered that a rare meteorological event transported a cloud of pollen from forests in central Quebec to the Arctic Circle.

Dr. McDonald and her colleagues demonstrated that long distance, low-level atmospheric transport of particulates is possible, a finding with implications for movement of pollution as well as pollen. By discovering a method for the pollen to travel well above the tree line, some of the inconsistencies can be explained in the pollen record of ice cores and thereby potentially improve the interpretation of paleoclimatology.

Canadian global climate models, important to policy makers and researchers in Canada and internationally, are among the best in the world. Environment Canada's models have performed well in international intercomparison studies and have been in demand by other countries. The Climate Research Branch recently developed and made operational a new model, called CGM3. This state-of-the-art science represents a major improvement in Environment Canada's ability to simulate past, present and future climates and provides the Atmospheric Environment Service, the Department, and Canada with considerable credibility and respect internationally. Various simulations using climate models have been completed to determine how the climate and ocean circulation might react to various concentrations of greenhouse gases and sulfate aerosols.

By rehabilitating and analyzing climate data sets, Environment Canada is able to better understand the state of the climate system. These findings, used primarily by policy makers and researchers, have generated numerous media stories and given high visibility to the Department and the climate change issue. For example, the data sets are being used both nationally and internationally to analyze climate change over the

past century. These analyses are in turn being used to support policy decisions such as the Kyoto agreement. Access to high quality climate data, climate model output and climate analyses for domestic and international climate researchers and the Canadian public has also been improved.

Environment Canada is working with many **partners** to identify region-specific impacts of climate change and possible adaptation strategies. One such partnership with Dalhousie University and the Department of Fisheries and Oceans, the Atlantic Environmental Prediction Research Initiative, involves research focusing on the ocean / atmosphere interface. This research is expected to aid improvement of ocean circulation, storm surge, and hydrology models.

*Volunteer observers are an integral part of the Department's monitoring, research and service functions.*

The efforts of volunteer observers are an integral part of the Department's monitoring, research and service functions, providing important information that can be used to determine storm intensity and frequency and to validate warnings. Two volunteer climate observers in British Columbia were awarded for their significant efforts in taking daily climate observations for more than 30 years. These awards recognize a valued partnership between Environment Canada and citizens going back more than 125 years.

**Responding to Global Climate Change in  
British Columbia and the Yukon**

Current knowledge and predictions of the impacts of climate change in British Columbia and Yukon were analyzed and disseminated to the public through several modes in 1998-99. The 1997 report "Responding to Global Climate Change in British Columbia and Yukon" was published to summarize the current knowledge about the potential impacts and significance of a changing global climate on the landscapes, natural systems and economy in British Columbia and Yukon. Forty-two authors contributed to this first volume of the Canada Country Study. Information on climate change and variability was also given to media in about 70 interviews along with about 15 public lectures or seminar presentations. As a final example, the complex climate change issue has been communicated to children through the Sturgeon General web site<sup>9</sup>.

The table below details expectations and progress toward the goal of adapting to short and long term changes in the atmospheric, hydrological and ice conditions.

<i>Performance Expectations</i>	<i>Progress</i>
Real-time access to climate data provided by end 2001.	On target. Certain data sets now available.
At least five target markets for specialized products developed 1998-2001, starting with the media and transportation sectors.	Area covered by road weather forecast program expanded. Media survey in progress.
A client feedback mechanism developed to resolve client concerns by end 1998.	Due to resource constraints, completion of the commitment now expected during 2000-01. Feedback can now be submitted via EC's Internet Site, the GreenLane <sup>10</sup> . Since June 1998, this has allowed EC to address 3,185 complaints and suggestions regarding weather service.
Representation of clouds and aerosols in climate and weather models improved by end 1999.	Delayed until March 2000 due to resource constraints.
Physical / chemical processes in life cycle of atmospheric constituents (GHG, toxics, acid rain precursors) better understood by end 2001.	Work is currently underway to achieve these targets.
Canada's susceptibility to a changing and variable climate better understood, and adaptation strategies assessed by end 2000.	On target for 2000-01. Research focuses on integrated assessment of socio-economic and ecological impacts and adaptation options.

<sup>9</sup> Sturgeon General web site at [http://www.sturgeongeneral.org/html/site\\_map/weather.html](http://www.sturgeongeneral.org/html/site_map/weather.html)

<sup>10</sup> EC's Internet Site, the GreenLane at: <http://www.ec.gc.ca>



### *Performance Expectations*

Seasonal to annual predictions improved by end 2000.

### *Progress*

Work is currently underway to achieve these targets.

**Next steps** for the Weather and Environmental Predictions business line focus on resolving issues identified during the alternative service delivery study: ensuring the ongoing health and long term sustainability of its weather warning and prediction infrastructure and its human resources. Other priorities include maintaining science capacity, continuing to broaden the range of weather and environmental information provided to clients and the public, strengthening the service culture, and renewing relationships with clients and partners.

## **Management, Administration and Policy**

### **Total - Gross**

Planned Spending	\$ 85,581,363
<i>Total Authorities</i>	\$ 122,876,159
<b>1998-99 Actual Spending</b>	<b>\$ 113,229,777</b>

The Management, Administration and Policy business line secures support and assures action by other business lines for environmental and sustainable development goals. The business line's mandate is to develop the Department's integrated management; specifically, its strategic medium and long-term agenda, leadership skills, partnerships, and innovative means to inform and engage citizens, and to provide efficient and innovative support services. Its two long-term goals are strategic and integrated policy priorities and plans, and a well-performing organization supported by efficient and innovative services.

In 1998-1999, Environment Canada made significant progress in advancing its goals of the Management, Administration and Policy business line. Two key examples of this progress include the enhancement of accountability through the development and implementation of a new Management Framework that better links results to performance; and demonstrated leadership in advancing sustainable development across government. Performance expectations have been met with few exceptions, and with the introduction of the new framework, the business line is well poised to achieve its long-term goals.

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## Long-Term Goal

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Strategic and integrated policy priorities and plans.

Through this goal, Environment Canada's intention is to create a policy agenda that transcends short-term policy pressures, responds to the longer term needs of government and non-government partners (domestic and international) and is

communicated to, and supported by, stakeholders and the public alike.

In 1998-1999, Environment Canada made particular progress in advancing a sustainable development policy agenda through strengthened partnerships both inside and outside of government. To support this thrust, the Department established the Management, Administration and Policy business line as the steering committee for sustainable development in the Department, providing a permanent forum with senior management participation and accountability. The following highlights selected accomplishments.

Environment Canada was successful in acquiring the support and partnership of several federal departments in a Sustainability Research Project in early 1999. Under the umbrella of the government's Policy Research Initiative, this project will focus policy research towards improving federal capacity to address the implementation gap as it relates to **sustainable development**.

Environment Canada was also effective in enhancing cooperative and coordinated federal efforts with respect to sustainable development through its continued leadership of two interdepartmental committees — the Interdepartmental Network on Sustainable Development Strategies and the Federal Committee on Environmental Management Systems. The Department's efforts in leading the Interdepartmental Network on Sustainable Development Strategies

resulted in building capacity across federal departments in setting targets for Sustainable Development Strategies, an area for improvement identified by the Commissioner of the Environment and Sustainable Development. In addition, the Department led efforts that will result in better coordination of departmental processes for updating their Sustainable Development Strategies. Through the Federal Committee on Environmental Management Systems, the Department continued to advance effective implementation of departmental Environmental Management Systems.

*Environment Canada made progress in advancing a sustainable development policy agenda through strengthened partnerships both inside and outside of government.*

### Leading by example in the Greening of Operations

In 1995, EC began designing its Environmental Management System, based on the ISO 14004 model. EC has advanced from the design phase to implementation and is building a stable and long standing system of environmental accountability. In 1998, EC achieved its fleet reduction target six years ahead of schedule and surpassed its target to reduce and/or divert from landfill 80% of waste from all office facilities by 1997-98. In addition to these milestones, EC continues to play an active role in advocating green practices across government and within international organizations and other countries.

### **Survey on the Importance of Nature to Canadians**

The results of the findings of the Survey on the Importance of Nature to Canadians released in September 1998, are a testimony to EC's partnerships for sustainable development. Undertaken as a joint federal-provincial/territorial initiative, the survey showed that 760 000 Canadians were directly involved in providing food and shelter for wildlife in areas like woodlots, hedges, ponds and open fields. The survey is an important contribution to the economic valuation of environmental goods and services that benefit people and the economy.

Policy development and decision making was supported through the provision of analytic economic support, tools and methodologies. For instance, benefits assessments were undertaken in the development of Canada-wide standards and cost estimations were used to shape climate change policy. Socio-economic information for

decision making was also improved in 1998 with the release of the findings of the Survey on the Importance of Nature to Canadians.

Environment Canada worked closely with other federal departments to examine opportunities for, and develop, shared policy agendas. In particular, efforts to advance a health and environment agenda, climate change, and tools and knowledge for sustainable communities were pursued and are expected to lead to concrete government actions and results.

*Environment Canada launched the Millennium Eco-Communities initiative in June 1998, an initiative aimed at helping communities move from concern to action on the environment.*

This past year was a notable one for Environment Canada in strengthening relationships with its many partners outside of the federal government. Environment Canada launched the **Millennium Eco-Communities** initiative in June 1998, an initiative aimed at helping communities move from concern to action on the environment. At the hub is an interactive web site<sup>11</sup> that offers information, planning and decision-making tools, opportunities for information exchange, and recognition for community action. Environment Canada's regional offices play a key role at the local level in recruiting and supporting Millennium Eco-Communities. Members of Parliament and other community leaders are also encouraged to be catalysts for the initiative. Millennium Eco-Communities have acted as an umbrella to integrate the Department's existing community action initiatives. As of March 31, 1999, 30 communities had registered and continue to share their plans, accomplishments, problems and solutions.

The Department's environmental **education and communication** efforts to Canadians also continued through the production of proven information vehicles. This includes as the issuing of 22 Enviro Tipsheets, seven editions of Science and the Environment Bulletin, 12 radio productions of Planet Update and 20 video productions of Earth Tones. The Department also initiated a review of the Green Lane, its internet site, which receives over one million hits each month, in order to examine ways to improve its usefulness as an information tool.

Global issues require **global partnerships**. During 1998, Canada gained a strong reputation as a bridge builder between Northern and Southern countries primarily from the work accomplished at a ministerial forum on

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<sup>11</sup> Web site can be located at <http://www.ec.gc.ca/eco>

the Clean Development Mechanism with the Governments of Brazil and Argentina. Over 20 industrialized and developing countries attended the forum. In addition, Canada hosted a meeting in Buenos Aires on how to address equity considerations in on-going negotiations around the Clean Development Mechanism. This ultimately resulted in the adoption of the Buenos Aires Plan of Action.

Environment Canada's Pacific and Yukon Region successfully advanced commitments under the Memorandum of Understanding on Environmental Cooperation between Environment Canada and the State Environmental Protection Agency of the People's Republic of China. As part of this effort, a pollution control and prevention workshop was held in Beijing, drawing on Canadian experiences with ecosystem initiatives. Several successful delegations were hosted by the Pacific and Northern Region and the Quebec Region, showcasing environmental education in Canada. In addition, the Canada-China Framework Statement for Cooperation on Environment into the 21<sup>st</sup> Century, which reflects a shared interest in enhancing cooperation on environmental and sustainable development issues, was signed during Prime Minister Chretien's visit to China in November 1998.

In September 1998, the Canadian Council of Ministers of the Environment agreed to an Annex to the **Harmonization Accord**<sup>12</sup>, which sets out principles for Public Accountability and Stakeholder Participation. This Annex was a key commitment on the part of the previous Minister when signing the Harmonization Accord.

Environment Canada cultivated partnerships in the North by providing continued support to the Arctic Council whose activities focus on sustainable development as a means of improving the economic, social and cultural well-being of Northerners, and the protection of the Arctic environment. This year also marked Canada's first term as chair.

Environment Canada recognizes the unique and significant role of **Aboriginal peoples** in environmental management. A unique partnership was established between Environment Canada, the Eskasoni Fish and Wildlife Commission, the University College of Cape Breton, Enterprise Cape Breton Corporation, the Nova Scotia Department of Fisheries and Aquaculture, the Nova Scotia Department of the Environment and the Nova Scotia Aquaculture Association to carry out shellfish water quality monitoring in Bras d'Or Lake. Primarily designed to monitor and enhance water quality in Bras d'Or Lake for the sustainable development and use of shellfish, this partnership also provided training and technology transfer to the Eskasoni First Nation. An Aboriginal Student Apprenticeship Program was established in Environment Canada's Prairie and Northern Region, which combines practical work experience and post-secondary education that will result in the development of qualified Aboriginal Canadians for employment. In addition, the Department successfully incorporated

*The Department successfully incorporated environmental management input into self-government and treaty framework agreements in British Columbia, the Yukon, the Northwest Territories and Labrador.*

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<sup>12</sup> A joint web site can be located at [http://www.mbnet.mb.ca/ccme/3e\\_priorities/3ea\\_harmonization/3ea.html](http://www.mbnet.mb.ca/ccme/3e_priorities/3ea_harmonization/3ea.html)

environmental management input into self-government and treaty framework agreements in British Columbia (Nisga's Final Agreement), the Yukon, the Northwest Territories and Labrador.

The table below summarizes expectations and progress toward the goal of strategic and integrated policy priority and plans.

<i>Performance Expectations</i>	<i>Progress</i>
Authority and responsibility shared and coherent approaches ensured with key OGDs on files such as climate change, CEPA, and CESPAs implementation.	With Health Canada, developed activities related to children's health and the environment; collaborated with Climate Change Secretariat, NRCan, Finance and others to ensure effective federal participation in national climate change process.
With industry, barriers assessed to more rapid development/diffusion of innovation in support of national implementation plan on climate change.	Sixteen Issue Tables established to identify best practices, opportunities, obstacles and options for achieving Canada's Kyoto target.
Shared environmental strategy with provinces advanced by implementing the Harmonization Accord and sub-agreements.	Significant progress made in implementing the Harmonization Accord; multi-jurisdictional development committees established and undertook science, socio-economic analysis, stakeholder consultation; jurisdictions agreed on scope of Enforcement sub-agreement, timelines for public consultations and negotiations.
With DFAIT and other departments, cohesive plan for international environmental activities developed in 1998.	A 1998 review of international activities led to strategic approach to managing Department's involvement in international environmental issues; better integration of priority international issues across delivery areas, better coordination within and outside Department, better communication of progress.
Capacity-building strategy for Aboriginal peoples developed in 1998.	Sponsored Wskitquamu First Nations Environment Conference designed to build environmental management capacity in First Nations communities in Atlantic Canada; supported First Nations in Quebec to develop an Aboriginal Institute on Sustainable Development; provided scientific and technical capacity to Mohawks of Akwesasne First Nation to assist in evaluation of transboundary contamination of well water from well drilling. EC continued to develop and implement training programs to assist BC First Nations gaining knowledge of environmental hazards, risk assessment and emergency preparedness.

### *Performance Expectations*

With other departments, next steps on sustainable development strategies developed by June 1998, including addressing the role of tax measures and subsidy removal.

Size of EC's fleet reduced by 30% in 1998, environmental management systems expanded and environmental performance clauses in contracts by the end 1999.

Socio-economic information for decision-making improved in 1999.

### *Progress*

Organized inter-departmental target-setting workshop to address findings of the Commissioner of the Environment and Sustainable Development's Report that most departments failed to set clear and measurable targets in their SDSs; December 1998, EC completed its first progress report on implementation of its SDS.

44% fleet reduction achieved. Performance clauses in contracts to be implemented April 2000.

S&T Advisory Board established working group to develop mechanisms for better integrating social science and community-based knowledge into departmental decision-making. Integration tool developed; evaluation summer 1999.

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### **Long-Term Goal**

A well-performing organization supported by efficient and innovative services.

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This result concentrates on delivering stewardship and frameworks that ensure the Department has the management context and capacity to achieve its environmental results. The Management, Administration and Policy business line must function

strategically to ensure Environment Canada has the framework, principles and other tools to guide good management decision-making and processes across the Department. The challenge is to help the Department function as effectively as possible, as a single, coherent organization. Accordingly, the business line must work very closely with all three of the other departmental business lines. Expectations were realized for this performance period as detailed below. Implementing the Management Framework provided the Department with the ability to link accountabilities to results while at the same time strengthening the accountability for human resource issues.

Over the performance period, the focus of the business line has been on strengthening sound management within the Department. To better meet those needs, a **Management Framework** was developed and implemented, designed to make the value of what the Department does clearer to Parliament and to improve the delivery of services to Canadians. The new framework has enabled the Department to clearly define accountabilities for

*Implementing the Management Framework provided the Department with the ability to link accountabilities to results while at the same time strengthening the accountability for human resource issues.*

*The new Management Framework has proven successful in creating incentives for better financial management, in promoting strategic thinking and in integrating performance information through the setting of concrete targets.*

each business line and key result, and strengthens its capacity to strategically allocate resources based on priorities and performance. In addition, strong and consistent linkages were made between the Executive Performance Contracts and the results identified in the business line plans.

Human Resource Management has been integrated into the business planning process via the framework, strengthening accountability for human resource issues and moving towards a more results-based approach. The first round of business planning using the new framework has been completed. Integrating Human Resource Management issues and developing strategies to address the issues varied from one business line to another. The business line plans formed the basis for the Department's 1999-2000 Report on Plans and Priorities. The framework has proven successful in creating incentives for better financial management, in promoting strategic thinking and in integrating performance information through the setting of concrete targets. Treasury Board Secretariat has identified the Management Framework as a Best Practice across government.

*In 1998-99, over \$79 million in revenue was realized from cost-recovery.*

The objective of Environment Canada's **Cost Recovery** Initiative is to promote an equitable approach to financing programs. This is done by fairly charging those who benefit from levels of service beyond that enjoyed by the general public, and to earn a fair return for Canadians on publicly owned and controlled resources. New cost recovery initiatives introduced last year include the implementation of user fees for ocean dumping permits and for lightening detection data. As well, adjustments were made to existing fees such as migratory bird hunting permits. In 1998-99, over \$79 million in revenue was realized from services (compared to \$70.6 million in 1997-98).

A framework has been developed for cost recovery and user charges relating to meteorological products and services. Environment Canada also strengthened its framework for managing cost recovery through enhanced client and sales tracking, development of dispute resolution approaches, consistency in delegation instruments and improved allocation of the full cost of providing services. In addition, information on policies, best practices and tools related to cost recovery has been made available to managers and staff via the departmental Intranet site and a training course aimed at providing staff with the knowledge and tools necessary to conduct meaningful and effective consultation on cost-recovery issues has been developed.

Environment Canada uses a variety of innovative and effective **alternative service delivery** models and will continue to explore further opportunities where appropriate. The opportunities assessed over the last fiscal year include the Atmospheric Environment Service; Emergencies Engineering Division of the Environment Technology Center that resulted in the approval of five-year service delivery contract with Science Applications International Corporation Canada; and the Wastewater Technology Center that resulted in the management function being brought back within Environment Canada and the technical research and development support contracted out.

As part of an ongoing effort to better meet the needs of its clients, the Department has strengthened its capacity to monitor its performance in delivering **services to Canadians**. To support the continued delivery of client-centered, value-added and results-focused services, Environment Canada has advanced its capacity in several areas.

A manager's guide<sup>13</sup> to performance management and a related one-day training course have been developed. Managers are developing strategies and undertaking pilot projects to measure and report on the key results identified in the Department's management framework. The measurement strategies integrate the requirements of public and private sector decision-makers and Canadians for information on the performance of Environment Canada's programs.

A new Environment Canada Intranet site provides employees with access to information, such as examples of best management practices, in support of quality services. The Department continues to monitor, and where appropriate, exploit the use of technology and innovative practices in an effort to continuously improve the value of the services provided to Canadians. Wherever possible, Environment Canada has been strengthening its partnerships with key government service initiatives such as GeoConnections and CanExplore to provide Canadians with accessible value-added services.

Of critical importance to supporting sound management is a motivated workforce with the knowledge and competencies required to deliver results. Environment Canada is working to build **human resources** capacity for the long-term sustainability of the Department in several ways.

Within the La Relève initiative, Environment Canada has actively participated in interdepartmental working groups for the renewal of the Science and Technology and other public service communities. The Department has been involved in analyzing demographics, issues and barriers to recruitment and retention of science and technology workers and managers with a special focus on designated group members. Environment Canada has also played an important role in an interdepartmental initiative to develop learning programs and modules for science and technology managers at all levels in the Public Service. Environment Canada is presently developing a comprehensive management development framework for the Department based upon the competency profile established for science and technology managers. Another initiative undertaken within the Department, was the Women, Environment, Science and Technology Initiative which looked at current strategies for the recruitment, retention and development of women and made significant recommendations for improving the situation.

*The Department continues to monitor, and where appropriate, exploit the use of technology and innovative practices in an effort to continuously improve the value of the services provided to Canadians.*

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<sup>13</sup> Manager's Guide is available in hard copy from the Corporate Management and Review Directorate or by calling (819)953-3922.



*Environment Canada developed a department-specific staffing regime to address the needs for a sustainable workforce.*

**Staffing Reform** is one of several initiatives intended to modernize human resource management practices. It will help make the system more effective and efficient by developing tailor-made staffing regimes for individual departments. Environment Canada developed a department-specific staffing regime to address the needs for a sustainable workforce through a highly participative and consultative process.

Environment Canada has made a commitment to implement **Competency Based Management**. As a first step, various services within Environment Canada have developed competency profiles. Several pilot projects have been developed using assessment tools linked to competency profiles for the identification of learning and development needs. In addition, personal development plans and resource guides, based on established competency guides, have been developed for selected communities within the Department. These efforts will be continued and strengthened over the next two years.

In January 1998, Environment Canada created a steering committee to provide direction and support to managers in implementing the **Universal Classification Standard** and to ensure regular communication with employees. The Department implemented the conversion in a decentralized manner, which allowed for greater staff involvement, cooperation and acceptance.

In order to improve the representative character of its workforce, the Department has conducted an **Employment Systems Review** to identify systemic barriers to the recruitment, retention and promotion of members of designated groups within the Department. This review was followed up by an action plan to address the concerns raised in the report.

Environment Canada has an annual Learning Fund of \$1,250,000 that it uses to support innovative learning initiatives that are supportive of both the organization's business requirements and the employees learning/development needs. During the period under review, 30 projects were initiated under the learning fund.

**The Territory of Nunavut**

In preparation for the creation of Nunavut, Environment Canada has established an office in Iqaluit, the capital, and planned staffing, over the next five years, will see 8-10 new employees working with various partners to implement Sustainable Development in the new territory.

Information technology forms an integral part of the daily operation of the Management, Administration and Policy business line. Given this role, the most important challenge during fiscal year 1998-1999 was to ensure **Year 2000** readiness of the critical departmental systems. A detailed status report can be found in Section IV.

The following table summarizes expectations and progress for the goal of a well-performing organization supported by efficient and innovative services.

***Performance Expectations***

Develop bulletins, publications, computer applications and other initiatives to make available and more effectively communicate EC's science to Canadians in 1998.

GreenLane sites for clean air, clean water, nature and climate change to ensure single-window, integrated access to EC science by end 1998.

Develop and adopt an information technology/information management strategic plan during 1998/99.

***Progress***

22 issues of Enviro Tipsheet, 7 editions of Science and Environment Bulletin, 12 radio productions of Planet Update and 20 video productions of Earth Tones produced, distributed through news media, and available on Green Lane.

Climate change site created. Strategic review of the Green Lane undertaken, recommendations being addressed.

Draft IM/IT Strategic Plan developed 1998-99, to be final 1999-2000 fiscal year.

**Next steps** for the Management, Administration and Policy business line focus on acquiring and building upon some of the fundamentals for effective management, administration and policy decision-making. This will provide effective horizontal support to the other business lines so that they will be in position to effectively deliver on their results.



## **Section IV: Consolidated Reporting**

### **Year 2000 Readiness**

A critical management challenge for 1999-2000 is to ensure that the Department is ready to meet the Millennium in terms of its Informatics infrastructure. Environment Canada has 1,297 applications that needed to be examined and repaired, as necessary, to ensure that they will continue to operate correctly through the **Year 2000**. Ninety-seven percent of this work is now complete. Fifty-seven of Environment Canada's 63 mission critical sites are Year 2000 ready. Necessary repairs have been completed at the remaining six sites and final testing is underway. In the event of an environmental emergency, the Department will activate its National Environmental Contingency Plan and will provide the necessary assistance to the provinces and territories.

The weather forecast and warning system is one of the Government-wide Mission Critical Systems. Further details on the year 2000 readiness of this system can be found in Section III under the Weather and Environmental Predictions business line.

Justice Canada representatives evaluated Environment Canada's departmental systems in 1998 from a Year 2000 legal liability perspective assessing objectives, nature of content, remediation and contingency planning efforts underway. Their conclusion was that the overall liability to the Department is "low". External consultants have been involved in three Year 2000 audits of departmental activities, and similar exercises relating to Environment Canada's business continuity assurance efforts are being planned.

With respect to regulatory responsibilities, over 12,500 letters have been sent to regulated industries advising them of potential concerns relating to the Year 2000 problem and their obligations to respond. In addition, Environment Canada has also communicated with the provinces' environmental ministries to ensure that they are aware of potential risks associated with Year 2000 and the actions that the Department is taking. Other countries such as Russia, China and Sudan have made less progress, and significant Year 2000-related problems are expected in those countries that may impact on Canadians. Environment Canada is addressing these concerns through international fora (e.g., World Meteorological Organization and through the Department of Foreign Affairs and International Trade). This work is ongoing.

## **Sustainable Development Strategy**

Since the tabling of Environment Canada's Sustainable Development Strategy in 1997, significant progress has been made in its four goal areas, which are to:

- strengthen Environment Canada's ability to meet sustainable development goals;
- be a more effective advocate of sustainable development;
- give Canadians tools to make sound decisions in a changing environment; and
- set a good example in greening government operations.

The many partnerships which the Department fosters with communities, other government departments, provinces and municipalities, stakeholders, and international partners play an instrumental role in Environment Canada's ability to meet its Sustainable Development Strategy goals, and to influence others to integrate social, economic and environmental considerations into decision-making. Finally, Environment Canada also continues to Chair the Interdepartmental Network on Sustainable Development Strategies.

In addition to strengthening its partnerships, Environment Canada has established structures and processes to oversee and coordinate the implementation of sustainable development. Internally, Environment Canada's Management, Administration and Policy business line guides implementation of the Department's Sustainable Development Strategy, and will oversee the updating of the Strategy required by December 2000. Environment Canada also provides expertise, leadership and coordination to much of the government's activity in sustainable development. In April 1999, the Department reinvigorated the Sustainable Development Coordinating Committee, with a membership of Deputy Ministers from many departments across government to ensure a coherent approach to the government's Sustainable Development agenda by collaborating on, and coordinating sustainable development initiatives; and to manage cross-cutting issues related to the preparation of departmental sustainable development strategies. Collaborative policy research initiatives are also underway to assist the government in bridging the gaps to implement sustainable development.

The following table highlights the progress Environment Canada has made over the past fiscal year in relation to its Sustainable Development Strategy commitments.

**ENVIRONMENT CANADA'S SUSTAINABLE DEVELOPMENT STRATEGY:  
IMPLEMENTATION PROGRESS HIGHLIGHTS**

<b>Objectives</b>	<b>Progress to date</b>	<b>Targets</b>
<b>GOAL A: STRENGTHEN EC'S ABILITY TO MEET SUSTAINABLE DEVELOPMENT GOALS</b>		
Acquire techniques and tools for socio-economic analysis in the design of EC's policies	<p>EC undertook economic analysis in the assessment of a wide range of policy instruments, and developed tools and methodologies for economic analysis in support of policy development and management strategies, such as the benefits assessment of Canada-Wide Standards.</p> <p>Innovative policy instruments, such as market-based approaches, are being tested to determine their effectiveness in moving towards EC's sustainable development goals. For example, EC conducted pilot projects to assess the effectiveness of voluntary emission reduction trading and credits for early action in developing climate change policy options.</p>	
Develop Sustainable Development Indicators	<p>EC is the sponsor for a Sustainability Project under the federal Policy Research Initiative which contains a component on sustainable development indicators.</p> <p>In 1998-99, 2 new indicators on Pacific Herring fish stocks and Persistent Organochlorines were added, and 10 existing indicators were updated in EC's National Environmental Indicators Series.</p> <p>In the Pacific and Yukon Region, EC produced 4 new regional environmental indicators on waterfowl species, Great Blue Heron, Lesser Snow Geese, and dioxin/furan levels.</p>	By 2002, contribute scientific knowledge and tools to the development of management actions to reduce human impacts of the health of ecosystems.
Enhance EC's capacity to employ science, socio-economic analyses and market-based approaches, particularly in implementation of legislation	<p>EC continues to develop performance-based regulations, including a regulation announced in October 1998 to reduce the amount of sulphur in gasoline sold in Canada and thereby improve the health of Canadians. In the development of this regulation, EC undertook health valuation studies to estimate the cost and benefits of reducing the effects of air pollution on health measured by cases of premature mortality, hospital admissions, and chronic bronchitis.</p> <p>Changes to CEPA include a provision that allows the Minister to establish guidelines, programs and other measures for the development and use of economic instruments and market-based approaches.</p> <p>In December 1998, EC released volumes 7 and 8 of the Canada Country Study on climate change. Volume 7 (National Sectoral Issues) explores how climate change is projected to affect sectors of the Canadian economy, including impacts on human health and nature. Volume 8 (National Cross-Cutting Issues) notes the interdependence of Canada's natural and socio-economic systems.</p>	By 2000, consideration of economic instruments is incorporated into the management of toxic substances.

Objectives	Progress to date	Targets
<b>GOAL B: BE A MORE EFFECTIVE ADVOCATE OF SUSTAINABLE DEVELOPMENT</b>		
Build partnerships for SD in the North	<p>EC developed and launched the Northern Ecosystem Initiative, bringing together various levels of government, Aboriginal organizations, industry, environmental groups and others to address priority ecosystem issues in the North.</p> <p>EC provided expertise and support to the Arctic Council whose activities focus on sustainable development as a means of improving economic, social and cultural well-being of Northerners, and the protection of the Arctic environment during Canada's first term as Chair. EC also contributed scientific expertise and policy advice on 15 projects under the Northern Contaminants Program, ranging from wildlife to atmospheric pollutants.</p> <p>EC continued its work with other federal departments through the Interdepartmental Committee on Northern S&amp;T to complete a draft Northern S&amp;T Strategy and related consultations with northerners.</p>	
Strengthen relationships and build partnerships with Aboriginal people and their structures of governance	<p>EC engaged Aboriginal participation in policy and legislative initiatives, including the Environmental Standards sub-agreement under the Harmonization Accord, the renewed CEPA, and on endangered species legislation.</p> <p>EC provided scientific and technical capacity, and developed and implemented training programs for First Nations. Mohawks of Akwesasne were assisted in the evaluation of transboundary contamination of well water from well drilling, and BC First Nations gained a greater awareness of environmental hazards, risk assessment and emergency preparedness through training programs.</p> <p>The renewed CEPA explicitly recognizes Aboriginal governments and enables the establishment of administrative and equivalency agreements with Aboriginal governments.</p>	By end 2000, the perspectives and knowledge of Aboriginal Peoples are consistently considered in EC decision-making, and their capacity to participate in SD projects and initiatives is enhanced.
Improve partnerships and interdependencies within government	<p>EC continues to Chair the Interdepartmental Network on Sustainable Development Strategies (INSDS), a forum for enhancing coordination across the federal government on sustainable development strategies and their implementation. In March 1999, the INSDS agreed to develop a shared vision, indicators, principles, goals and objectives.</p> <p>In March 1999, an EC-championed proposal was endorsed under the government-wide Policy Research Initiative (PRI). The project aims to improve government capacity to implement sustainable development, by conducting and disseminating policy research and through collaboration with partners.</p> <p>The Toxic Substances Research Initiative, a joint project led by EC and HC, and with input from other departments to identify priorities, will invest \$40M over four years in scientific research into the links between toxic substances, environmental damage and human illness.</p> <p>In June 1998, EC, DFO, several provincial departments and the Nova Scotia Petroleum Directorate agreed to common goals in a Conservation Strategy for Sable Island.</p> <p>In September 1998, federal, provincial and territorial wildlife ministers amended the Accord for the Protection of Species at Risk in Canada. The amendments emphasize stewardship as a way to encourage better management of natural resources and prevent further loss of species and habitat diversity.</p>	<p>Coordinated SD agendas with key sectors (e.g. health) by end 2000.</p> <p>A sustainable development component is added to the government-wide Policy Research Initiative by 2000.</p>

Objectives	Progress to date	Targets
	<p>Under the leadership of Environment Canada, the Regional Council of Quebec developed and implemented a Regional Federal Interdepartmental Sustainable Development Action Plan.</p> <p>Internationally, EC has been working in partnership bilaterally and multilaterally with other countries to advance Canada's interests. For example, Canada led the development of a new Convention on Persistent Organic Pollutants. Also, EC seized many opportunities to advance climate change in bilateral meetings, in negotiations on the Kyoto Protocol, and through work at institutions. The Canada-China Framework Statement for Cooperation on Environment into the 21<sup>st</sup> Century, signed during the Prime Ministers visit to China in November 1998, reflects a shared interest in enhancing cooperation on environmental and sustainable development issues including climate change. A letter of intent to cooperate on climate change was signed with Mexico, and a ministerial level capacity building forum was hosted on the Clean Development Mechanism.</p>	
<p>Develop partnerships with the private sector and NGOs</p>	<p>EC established issue tables through the Strategic Options Process (SOP), as multistakeholder fora to recommend the most feasible way to address the problems associated with specific toxic substances.</p> <p>EC continued to support Industry Canada's Technology Partnerships Canada program through provision of technical review and environmental policy advice on private sector proposals for federal government financial support. In 1998-99, Technology Partnerships Canada invested \$96M in 15 environmental and enabling technology projects.</p> <p>EC continued implementing the Accelerated Reduction and Elimination of Toxics (ARET) program. To date, program participants have reduced toxic substance emissions by 24,090 tonnes – a reduction of 64% from base-year levels to December 1997. A further reduction of 5,172 tonnes is expected by 2000. Reductions of substances on list A-1 is proving slower than expected, however, participants are making good progress towards achieving their targets.</p> <p>EC identified, promoted and provided ongoing support for approximately 50 innovative technologies (this year) originating in federal departments. For instance, EC negotiated a technology transfer agreement with Shimadzu Corporation of Japan, to internationally manufacture and market equipment using revolutionary gas-phase extraction technology developed at Environment Canada (the Microwave Assisted Process™). The technology eliminates use of toxic solvents and reduces the energy required to analyze samples.</p> <p>EC continued to support the Canadian Environmental Network, a registered non-profit organization which acts to build capacity of environmental organizations to engage in constructive dialogue with governments on environmental issues.</p> <p>In June 1998, the Minister called for Millennium Eco-Communities (MEC) to be created across Canada. MEC works to help communities set and achieve environmental results on priority environmental issues through the sharing of experiences of groups across the country. To date, 30 communities have registered under MEC.</p>	<p>100 communities benefit from information sharing and networking activities under the Millennium Eco-Communities initiative (MEC) by end 2000.</p>



Objectives	Progress to date	Targets
Engage Youth	<p>EC met its target to expand its existing youth network by roughly 25%.</p> <p>During 1998-99, EC's Youth Round Table on the Environment provided input into climate change, endangered species, and youth-oriented publications.</p> <p>This year, an EC partnership with the Canadian environmental industry, placed 299 young Canadians in internships abroad in the environmental sector through the International Environmental Youth Corps. A preliminary survey indicated that 90.4% of previous interns are employed and their salary is \$4,000 higher than the national average.</p> <p>EC supported participation of youth delegates in 1998-99 at the United Nations Commission on Sustainable Development and the United Nations Environmental Program Youth Council.</p> <p>EC is a key partner in the Blue School Program, led by the Canadian Wildlife Federation. Launched in 1998, the program aims to engage youth in protecting our marine environment. The first year of the program was a great success, with 200 schools registered in the program.</p>	EC's existing youth network is expanded by 25% by end 2000 to ensure Canada's diversity of youth are providing their perspectives and knowledge to EC's decision making processes.
<b>GOAL C: GIVE CANADIANS TOOLS TO MAKE SOUND DECISIONS IN A CHANGING ENVIRONMENT</b>		
Warn Canadians of environmental risks to their health and safety	<p>EC is implementing a national approach to road weather to help make winter driving safer and winter road maintenance more efficient. Road weather forecasts are now available in three regions - Atlantic, Quebec and Ontario.</p> <p>EC, in conjunction with provincial and municipal partners, issues smog or air quality advisories in communities across the country. These advisories, usually issued the day before an ozone episode, encourage individuals and industries to reduce air pollution, and provide information about the effects of smog on the environment and human health.</p> <p>The pilot smog forecast program for Saint John was expanded in 1999 to include all of southern New Brunswick. The forecast includes both a daily smog forecast and a health advisory when conditions dictate.</p>	
Provide services and expertise to contribute to the competitiveness of Canadian business in the global market	EC provided services such as seasonal, route, road or site specific forecasts to the aviation, transportation (road, rail and water), agriculture, hydroelectric power, media, and insurance sectors. There is expanded interest in EC's services, such as the purchase of daily weather data in grain growing areas of the world by the Canadian Wheat Board.	Public and government satisfaction with products and services increased 10% in 2001-2002 over 1997/98 baseline.
Predict a wider variety of environmental parameters using various time scales	<p>The National Doppler Radar Project, an EC effort to ensure Canada's weather radar becomes an all-Doppler network, was on target in 1998-99, with 2 of 26 planned Doppler Radar installed in Saskatchewan and Quebec. The radar acts to improve public safety by assisting EC's meteorologists in the earlier detection and precision of environmental hazards, such as severe weather, high water events.</p> <p>The Canadian Lightning Detection Network was completed in 1998, providing EC's meteorologists with lightning data to forecast and detect thunderstorms across Canada.</p> <p>Development of a new atmospheric climate model, called GCM3, has improved EC's ability to simulate past, present and future climates.</p>	Service standards for products and services met 80% of the time by 2000-2001.

Objectives	Progress to date	Targets
<p>Increase efforts aimed at environmental education and communication</p>	<p>In 1998-99, EC experienced an estimated 50% increase in the number of visits to EC's National Green Lane Internet site.</p> <p>EC's Pacific and Yukon Region launched a pilot weather office web site to provide weather warnings and forecasts across Canada. User visits to the site increased from an average of 7,000 to 22,000 / day over the twelve month period. Peak daily usage was in excess of 45,000. Monthly usage peaked at 750,000 users in January 1999.</p> <p>EC's Science Linkage Fund supported projects in Atlantic Canada to enhance community education and public awareness of the relationship between environment and health, air quality, and extreme weather events.</p> <p>EC issued seasonal Climate Trends and Variations Bulletins; renewed the Atmospheric Environment Service web site; released fact sheets on El Nino and La Nina; launched web sites to explain the effects of the 98 Ice Storm, El Nino and La Nina; and issued weather forecasts, alerts, watches, warnings and advisories.</p> <p>In 1998, EC hosted an on-line environmental Education Colloquium on the Green Lane. Environmental educators from across Canada and around the world participated by posting papers and engaging in a dialogue on the integration of sustainability into the Canadian education system.</p>	<p>20% increase in the number of EC's Green Lane visits by 2000.</p>
<b>GOAL D: SET A GOOD EXAMPLE IN GREENING GOVERNMENT OPERATIONS</b>		
<p>Play advocacy role and lead by example in implementing sustainable development</p>	<p>EC advanced from the design phase of its Environmental Management System (EMS), which follows ISO 14004 guidelines, to the implementation phase which integrates EMS into EC's operations and accountability framework.</p> <p>EC developed tools to assist its employees in greening operations. These include: a green products catalogue; a product inventory; an internal guide to environmental legislation, policies and codes of practices; and regional EMS web sites. EC also provided staff awareness training in areas such as compliance and due diligence.</p> <p>EC completed the second year of operation of the Alberta ENMAX Green Power project which supplies 100% of EC's Alberta facilities electricity from wind-generated Environmental Choice Program certified power. EC was instrumental in implementing the first Federal Buildings Initiative in a leased facility where anticipated energy savings to the Crown approximate \$211K per year.</p> <p>In 1998, EC achieved its fleet reduction target — six years ahead of schedule. Six of fifteen new vehicles have been converted to operate on alternative fuels.</p>	<p>Measurable progress by May 2000 to reduce environmental risks and liabilities in May 1999 Environmental Management Programs.</p> <p>Obtain 15-20% of Environment Canada's electricity consumption from green power by 2010.</p>

## Legislative and Regulatory Initiatives

Purpose of legislative or regulatory initiative (as reported in the FRP)	Expected results (as reported in the FRP)	Performance measurement criteria	Results achieved
<p><b><i>Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA)</i></b></p> <p>Under WAPPRIITA put forward limited exemptions and modifications under the Convention on International Trade in Endangered Species (CITES) for personal and household effects and personal pets.</p>	<p>The proposal will substantially streamline processes and eliminate controls that create an inconvenience for the public and increase costs to government, while providing little benefits for wildlife conservation. The proposal will also improve enforcement and administration of WAPPRIITA.</p>	<p>Reduction in the number of CITES permits issued. Substantial savings in staff time for both Environment Canada and the provinces and territories who issue the vast majority of permits.</p> <p>With regard to the labelling provisions, there is an expectation to see savings to government regarding the testing of product contents while enhancing the government's capacity to ensure compliance with WAPPRIITA.</p> <p>With regard to enforcement matters, use of removal orders will reduce costs to government related to detention/seizure of live animals and other goods.</p>	<p>Consultations were completed in the spring of 1998 with other departments, the provinces/territories and the public on the intent and scope of the proposed regulations to implement exemptions from CITES permit requirements for certain personal and household effects, recognize personal pet "passports" issued by other Parties, authorize prosecutions based on labelling and providing for removal orders to enhance enforcement of the Act. Further consultations with provinces/territories were completed in July 1999 on draft regulatory text. Draft regulations are being finalized. The goal is prepublication of the proposed regulation in the Canada Gazette, Part I in the early fall of 1999, with final approval in January 2000.</p>
<p><b>Migratory Bird Regulations (MBRs), (amendments)</b></p> <p>Under the <i>Migratory Birds Convention Act</i>, amend the MBRs to increase fee for Migratory Game Bird Hunting Permit (MGBHP) for 1998-99 hunting season.</p>	<p>The new fee for the MGBHP [which arose out of commitments in the February 1996 federal budget and second federal program review exercise] will generate revenue that is more consistent with the cost to government of Environment Canada activities that help sustain migratory game bird hunting opportunities.</p>	<p>Establishment of new fee.</p>	<p>Regulations came into force in May 1998.</p>

## Legislative and Regulatory Initiatives (cont'd)

Purpose of legislative or regulatory initiative (as reported in the FRP)	Expected results (as reported in the FRP)	Performance measurement criteria	Results achieved
Under the MBRs, amend the definition of non-toxic shot to accommodate new approved shot for 1998-99 hunting season.	The regulations will provide hunters with more choice in the selection of non-toxic shot alternatives, and will facilitate the increased commercial availability and acceptance of these products.	Increased variety of commercially available non-toxic shot.	Regulations came into force in August 1998.
<p><b>Migratory Bird Sanctuary Regulations (amendment)</b></p> <p>Under the Migratory Birds Convention Act, the intent is to delist the Cape Dorset Migratory Bird Sanctuary in Nunavut.</p>	The integrity of protected areas is maintained. The CWS regularly reviews the status of established sanctuaries to ensure that they still benefit migratory birds, as the long-term management of areas important to migratory birds is weakened when under-utilized or insignificant sites maintain sanctuary status. In the case of Cape Dorset, the intent behind establishing the site as a sanctuary, was to conserve the eider population for the establishment of an eiderdown industry. The industry never materialized and the community support for a sanctuary waned.	The sanctuary is delisted.	Amendments are being drafted as part of the Miscellaneous Amendments process, with final approval expected in October 1999. Project was delayed due to other regulatory priorities.
<p><b>Wildlife Area Regulations (amendment)</b></p> <p>Under the Canada Wildlife Act, the intent is to enlarge three National Wildlife Areas (NWA) Iles de Contrecoeur, Iles de l'Estuaire in Quebec, and Shepody in New Brunswick.</p>	The addition of new lands to the existing NWAs will enable Canada to more effectively meet its commitment to conserving wetlands and other habitats with considerable potential for migratory birds and other species.	New lands added to the existing NWAs.	Amendments to incorporate new lands into the NWA's have been prepared. Aim is prepublication for public comment in the early fall 1999, and final approval in December 1999. Delay in project was due to other regulatory priorities.

## Legislative and Regulatory Initiatives (cont'd)

Purpose of legislative or regulatory initiative (as reported in the FRP)	Expected results (as reported in the FRP)	Performance measurement criteria	Results achieved
<p><b>Wildlife Area Regulations (amendment)</b></p> <p>Under the Canada Wildlife Act, the intent is to establish the Iqalituuq National Wildlife Area in Nunavut.</p>	<p>This will be the first National Wildlife Area (NWA) to be composed primarily of marine waters. Establishing this NWA, will help protect critical habitat for summering populations of the Eastern Arctic Bowhead Whale, a species designated endangered by the Committee on the Status of Endangered Wildlife in Canada. In addition, several other species will be protected such as the peregrine falcon and polar bears.</p>	<p>Ten years after establishment of the NWA, the summering population of the Eastern Arctic Bowhead Whale is stable or increasing.</p>	<p>Progress made on project, but put on hold in July 1998, pending decision from Treasury Board on funding to implement Inuit Impact and Benefits Agreements, as required under the Nunavut Land Claim Agreement.</p>
<p><b>Ocean Dumping Permit Fee Regulations (site Monitoring)</b></p> <p>The purpose of these regulations under the Financial Administration Act is to introduce a requirement for permittees who dispose of dredged or excavated material to pay fees to cover the cost of monitoring disposal sites.</p>	<p>Monitoring of Ocean Disposal sites for dredged and excavated materials be conducted on a cost recovery basis.</p>	<p>The first year of regulations has resulted in less revenue than anticipated since most permits for the year were issued prior to the regulation being passed. Subsequent years should meet the objective of full cost recovery for monitoring.</p>	<p>Regulations were published in Canada Gazette Part II on March 17/99. The department is currently collecting revenues.</p>
<p><b>Sulphur in Gasoline Regulations</b></p> <p>The purpose of these regulations is to reduce emissions of pollution from motor vehicles through controls on the level of sulphur content in gasoline.</p>	<p>Reduced concentrations of sulphur in gasoline will result in lower emissions of pollutants from motor vehicles.</p>	<p>Lower levels of sulphur in Canadian gasoline.</p>	<p>Regulation does not take effect until July 2002. No results achieved to date</p>

## Legislative and Regulatory Initiatives (cont'd)

Purpose of legislative or regulatory initiative (as reported in the FRP)	Expected results (as reported in the FRP)	Performance measurement criteria	Results achieved
<p><b>Gasoline Regulations - Amendment</b></p> <p>The purpose of these amendments is to allow an exemption until December 31, 2002, for all competition vehicles from the restriction on the use of leaded gasoline.</p>	<p>Increased use of leaded gasoline.</p>	<p>Lead levels in the atmosphere in the vicinity of competition racing.</p>	<p>Regulations were published in Canada Gazette Part II in April 1998.</p>
<p><b>Federal Halocarbon Regulation for Federal Facilities</b></p> <p>Under the Canadian Environmental Protection Act (CEPA), the intent of the regulations is to close a regulatory gap, such that releases and management of ozone depleting substances (ODS) and their halocarbon alternatives in the federal house are in line and consistent with current provincial regulatory requirements applicable to the private sector.</p>	<p>To develop appropriate standards of performance applicable to federal operations that ensure proper management of ODS, and their halocarbon alternatives, to prevent and eliminate releases to the environment.</p>		<p>The regulations appeared in Canada Gazette Part II in July 1999 and are now in effect as of July 1, 1999.</p>
<p><b>Ozone-depleting Substances Regulations, 1998</b></p> <p>The intent of these amendments was to consolidate existing regulations under a single regulation, as well as to add certain requirements to further reduce ODS emissions.</p>	<p>Additional reduction of emissions of ozone-depleting substances.</p>		<p>Regulations were published in Canada Gazette Part II in January 1999.</p>

## Legislative and Regulatory Initiatives (cont'd)

Purpose of legislative or regulatory initiative (as reported in the FRP)	Expected results (as reported in the FRP)	Performance measurement criteria	Results achieved
<p><b>Prohibition of Certain Toxic Substances Regulations</b></p> <p>These regulations were amended to prohibit the manufacturing, use processing, offer for sale, sale and importation into Canada of (4-chlorophenyl) cyclopropylmethanone, O-[4-nitrophenyl] methyl]oxime.</p>	<p>Substance prohibited from restrictions laid out in the regulations.</p>		<p>Amendments were published in Canada Gazette Part II in September 1998.</p>

## Statutory Annual Reports

### ***Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA)***

**Purpose:** This Act and Regulations came into effect in May, 1996. WAPPRIITA implements Canada's international obligations under the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES). Canada was one of the original Parties to the Convention, which had been adopted by 146 countries by the end of 1998.

As well as implementing trade controls under CITES, WAPPRIITA protects Canadian and foreign species of animals and plants by making it an offense to transport illegally obtained wildlife between provinces or between Canada and other countries. It also safeguards Canadian ecosystems by controlling importation of certain harmful species.

**Administration:** Environment Canada coordinates and administers WAPPRIITA through national CITES management and scientific authorities. CITES authorities are also located in the Department of Fisheries and Oceans (DFO) for fish and marine mammals, and in each province and territory (except Alberta), which issue export permits for other species. The Canadian Food Inspection Agency (CFIA) helps Environment Canada process CITES documentation for the export of artificially propagated plants.

**Activities:** The following table summarizes the CITES permits that were issued in 1998.

#### **CITES Permits issued in Canada in 1998**

<b>Jurisdiction</b>	<b>Import</b>	<b>Export</b>	<b>Temporary Export/import</b>	<b>Scientific</b>
Canada	193	8438	239	36
Alberta <sup>1</sup>		N/A		
British Columbia		2084		
Manitoba		1630		
New Brunswick		1547		
Newfoundland		130*		
N.W.T.		95		
Nova Scotia		63		
Ontario		5697		
P.E.I.		3		
Quebec		1999		
Saskatchewan <sup>2</sup>		480*		
Yukon		242		
<b>TOTAL</b>	<b>193</b>	<b>22408</b>	<b>239</b>	<b>36</b>

<sup>1</sup>Alberta does not issue CITES export permits.

<sup>2</sup>Saskatchewan ceased issuing CITES export permits for black bear in 1997.

\*Estimate.



**Agreements with the Provinces and Territories:** Section 5 of WAPPRIITA provides for the establishment of agreements with the provinces and territories to promote cooperative management and administration of the Act. Five such agreements, or Memoranda of Understanding (MOUs) have been reached. Two, with the Province of Saskatchewan and the Yukon Territory, were signed in 1997. Three, with the provinces of Alberta and Manitoba and the Northwest Territories, were signed in 1998.

An agreement was signed with Manitoba in 1998 to permit ticketing for WAPPRIITA under the *Contraventions Act*. Ticketing agreements with other provinces are being negotiated by the Department of Justice.

**Enforcement:** Enforcement of WAPPRIITA is coordinated by Environment Canada and carried out by five regional offices (Pacific and Yukon, Prairie and Northern, Ontario, Quebec, and Atlantic), in cooperation with Revenue Canada, the RCMP, Department of Fisheries and Oceans and provincial and territorial wildlife agencies.

In 1998, Environment Canada conducted more than 400 investigations under provisions of applicable federal, provincial/territorial, or foreign legislation into poaching or trafficking incidents involving international or interprovincial movement of wildlife. A number of cases led to prosecutions and the imposition of fines.

Environment Canada and its partners continued efforts during 1998 to promote awareness and compliance with WAPPRIITA by providing information to travellers, the import-export community, industry, outfitters and the general public. Public awareness activities carried out included publication of newspaper articles, press releases, advertisements and media interviews; placement of CITES displays in airports, zoos, and other public buildings; public information sessions; and attendance at trade shows, conferences and special events.

A new enforcement tool has been put in place. The National Enforcement Management Information System and Intelligence System (NEMISIS) tracks and manages national enforcement activities for the environmental and wildlife legislation enforced by Environment Canada officers. The system provides accurate and timely statistical information and detailed reports on enforcement efforts. A CITES permit database is under development within NEMISIS that will be used to issue CITES permits. The CITES database component is expected to be operational in late 1999.

**New Regulations:** Consultations were initiated in late 1997 on proposed amendments to the *Wild Animal and Plant Trade Regulations* to reduce administrative burden on government and the public, and to improve enforcement capacity for WAPPRIITA. These initiatives include an exemption from CITES permit requirements for personal and household effects; authority to prosecute based on claims made on labels, marks or accompanying documents as to package contents; and the content of removal orders.

Early in 1998, a consultation document was broadly distributed to solicit views on the proposed regulatory initiatives. This was followed with two public consultation meetings, the first in March 1998 and the second in May 1998, to discuss the proposals. These meetings were attended by a number of representatives of non-governmental organizations, import/export and industry groups, and the interested public. Drafting of the proposed amendments proceeded

during 1998, with final consultations to be carried out in 1999.

**International cooperation:** In June 1997, Canada participated in the 10<sup>th</sup> Meeting of the Conference of the Parties to CITES (COP10), which was convened in Zimbabwe. In advance of COP10, proposals for changes to species listings were solicited by Environment Canada from approximately 200 government and non-government organizations. This was followed by a public meeting to discuss the proposals in May 1997. In February 1998, Schedule I of Canada's *Wild Animal and Plant Regulations* was amended to reflect changes that had been made to the CITES Appendix listings at COP10.

Environment Canada works actively with the wildlife subgroup of Interpol, the World Customs Organization (CITES Working Group) and the North American Wildlife Enforcement Working Group on international wildlife enforcement activities. Environment Canada's Office of Enforcement, Wildlife Division, is leading an international project to prepare identification guides for species protected under CITES.

## ***International River Improvements Act***

**Purpose:** This Act received assent on July 11, 1955. It provides for licensing international river improvements to ensure that Canada's water resources are developed and utilized in the best national interest. The Act does not apply to international river improvements built under the authority of an Act of the Parliament of Canada, or situated within boundary waters as defined in the Boundary Waters Treaty of January 11, 1909, or those constructed, operated and maintained solely for domestic, sanitary or irrigation purposes.

**Administration:** Regulations for administering this Act were passed by Order-in-Council P.C. 1955-1899 dated December 29, 1955, and amended P.C. 1987-1943, dated September 17, 1987, and P.C. 1993-764 dated April 20, 1993. The Department of the Environment has administered this Act since June 1971.

**Activity:** During 1998, no licenses were issued under the Regulations of the *International River Improvements Act*.

The following proponents provided the requisite notification in writing and accompanying information to the Minister as specified in the Regulations for international river improvements that are excepted from the application of the Act:

- (1) International Skyline Gold Corporation, for the construction of a run-of-the-river hydro-electric plant on the Iskut River in northern British Columbia as part of the Bronson Slope Mine project;
- (2) Canadian Hydro Developers (B.C.) Inc., for a small hydro-power development on Pingston Creek, a tributary to Upper Arrow Lake and the Columbia River in B.C.

### **Other Statutory and Departmental Reports:**

- *Canadian Environmental Protection Act (CEPA)* – [http://www.ec.gc.ca/cepa/index\\_e.html](http://www.ec.gc.ca/cepa/index_e.html)
- *Canada Water Act* - <http://www.ec.gc.ca/water/index.htm>
- *Access to Information Act*
- *Privacy Act*

## **Section V: Financial Performance**

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The financial tables presented in this Performance Report are based on the new Planning, Reporting and Accountability Structure (PRAS) which reflects the current business line organization of the Department. Since the new PRAS was approved in 1998-99, the financial information for 1996-97 and 1997-98 is not available under the new structure, and is estimated for 1998-99.

This section provides financial performance information using a variety of formats. Summary financial data, such as the information presented in Table 1, are displayed using three separate headings. For clarity, these headings are defined as:

- Planned Spending – what the plan was at the beginning of the fiscal year;
- Total Authorities – include additional spending Parliament has approved for departments to reflect changing priorities and unforeseen events; and
- 1998-99 Actuals – what was actually spent for the fiscal year.

**Table 1: Financial Requirements by Authority (\$ millions)**

Vote	1998 - 99		
	Planned Spending	Total Authorities	Actual
<b>Environment Program</b>			
1	Operating expenditures	405.5	444.5
5	Capital expenditures	24.5	29.6
10	Grants and contributions	32.2	38.8
(S)	Minister of the Environment - Salary and motor car allowance *	0.0	0.0
(S)	Contributions to employee benefit plans	48.9	51.3
<b>Total Department</b>		<b>511.1</b>	<b>564.2**</b>

\* \$48,645 is not shown due to rounding.

\*\* The 1998-1999 Actuals do not include expenditures related to the disposal of crown assets (0.4).

**Explanation of change:**

The \$53.1 million increase in the 1998-99 Actual Expenditures over the 1998-99 Planned Spending is due mainly to:

**Increases included in the Actual Expenditure but not in the Planned Spending**

	<b>\$ Millions</b>
Settlement of Methylcyclopentadienyl Manganese Tricarbonyl (MMT) claim	17.7
Compensation for collective bargaining	17.2
Year 2000 issue for the Government Wide Mission Critical Systems (GWMCS)	15.2
Severance pay and other Treasury Board Vote 5 eligible costs	4.4
Additional resources in respect of employee departure programs	2.2
Miscellaneous adjustments	2.2

**Decreases included in the Actual Expenditure but not in the Planned Spending**

Climate Change Action Fund reprofile	5.8
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**Table 2: Departmental Planned versus Actual Spending by Business Line (\$ millions)**

Business Lines	FTEs	Operating*	Capital	Voted Grants & Contributions	Subtotal: Gross Voted Expenditures	Statutory Grants & Contributions	Total: Gross Expenditures	Less: Respendable Revenues**	Total Net Expenditures
<b>Clean Environment</b>	916	116.5	4.6	12.8	133.9	-	133.9	(5.6)	128.3
	<i>944</i>	<i>116.3</i>	<i>5.0</i>	<i>14.9</i>	<i>136.2</i>	-	<i>136.2</i>	<i>(5.6)</i>	<i>130.6</i>
	<b>978</b>	<b>116.2</b>	<b>4.9</b>	<b>14.9</b>	<b>136.0</b>	-	<b>136.0</b>	<b>(5.6)</b>	<b>130.4</b>
<b>Nature</b>	928	129.6	2.2	12.1	143.9	-	143.9	(6.3)	137.6
	<i>986</i>	<i>126.6</i>	<i>2.7</i>	<i>16.8</i>	<i>146.1</i>	-	<i>146.1</i>	<i>(6.3)</i>	<i>139.8</i>
	<b>1,025</b>	<b>127.2</b>	<b>2.7</b>	<b>16.7</b>	<b>146.6</b>	-	<b>146.6</b>	<b>(6.3)</b>	<b>140.3</b>
<b>Weather and Environmental Predictions</b>	1,498	193.6	16.3	5.4	215.3	-	215.3	(55.7)	159.6
	<i>1,533</i>	<i>214.2</i>	<i>20.4</i>	<i>5.3</i>	<i>239.9</i>	-	<i>239.9</i>	<i>(59.0)</i>	<i>180.9</i>
	<b>1,599</b>	<b>214.0</b>	<b>20.4</b>	<b>5.3</b>	<b>239.7</b>	-	<b>239.7</b>	<b>(59.0)</b>	<b>180.7</b>
<b>Management, Administration and Policy</b>	899	82.3	1.4	1.9	85.6	-	85.6	-	85.6
	<i>897</i>	<i>119.3</i>	<i>1.7</i>	<i>1.9</i>	<i>122.9</i>	-	<i>122.9</i>	-	<i>122.9</i>
	<b>954</b>	<b>109.7</b>	<b>1.6</b>	<b>1.9</b>	<b>113.2</b>	-	<b>113.2</b>	-	<b>113.2</b>
Total	4,241	522.0	24.5	32.2	578.7	-	578.7	(67.6)	511.1
	<i>4,360</i>	<i>576.4</i>	<i>29.8</i>	<i>38.9</i>	<i>645.1</i>	-	<i>645.1</i>	<i>(70.9)</i>	<i>574.2</i>
	<b>4,556</b>	<b>567.1</b>	<b>29.6</b>	<b>38.8</b>	<b>635.5</b>	-	<b>635.5</b>	<b>(70.9)</b>	<b>564.6</b>
<b>Other Revenues and Expenditures</b>									
Non-Respendable Revenues ***									(10.7)
									<i>(10.7)</i>
									<b>(8.3)</b>
Cost of services provided by other departments									50.6
									<i>50.6</i>
									<b>48.2</b>
<b>Net Cost of the Program</b>									551.0
									<i>614.1</i>
									<b>604.5</b>

\* Operating includes contributions to employee benefit plans, Minister's allowances and the disposal of crown assets.

\*\* These revenues were formerly called "Revenues Credited to the Vote".

\*\*\* These revenues were formerly called "Revenues Credited to the Consolidated Revenue Fund".

Note: Normal font: 1998-99 Planned Spending

*Italic font: 1998-99 Total Authorities*

**Bold font: 1998-99 Actual Spending**

**Explanation of change:**

The \$53.5 million increase in the 1998-99 Actual Expenditures over the 1998-99 Planned Spending is due mainly to:

**\$ Millions**

**Operating:**

Settlement of Methylcyclopentadienyl Manganese Tricarbonyl (MMT) claim

Compensation for collective bargaining

Additional resources in respect of employee departure programs and other costs paid by Treasury Board Vote 5 Year 2000 issue for the Government Wide Mission Critical Systems (GWMCS)

45.1

**Capital:**

Year 2000 Government Wide Mission Critical Systems (GWMCS)

5.1

**Grants and Contributions:**

Climate Change Action Fund (CCAF)

St. Lawrence Action Plan

6.6

**Respendable Revenues:**

Canadian Lightning Detection Network revenues being collected as Respendable Revenues

Increase in services to NAVCAN

3.3



**Table 3: Historical Comparison of Departmental Planned versus Actual Spending by Business Line (\$ millions)**

Business Lines	Actual* 1996-1997	Actual* 1997-1998	1998-99		
			Planned Spending	Total Authorities	Actual
Clean Environment	-	-	128.3	130.6	130.4
Nature	-	-	137.6	139.8	140.3
Weather and Environmental Predictions	-	-	159.6	180.9	180.7
Management, Administration and Policy	-	-	85.6	122.9	113.2
<b>Total</b>	581.1	548.1	<b>511.1</b>	<b>574.2</b>	<b>564.6</b>

\* The information is not available under the new Business line structure which was approved in 1998-99.

**Explanation of change:**

The \$53.5 million increase in the 1998-99 Actual Expenditures over the 1998-99 Planned Spending is due mainly to:

	<b>\$ Millions</b>
<b>Weather &amp; Environmental Predictions</b>	21.1
Year 2000 issue for the Government Wide Mission Critical Systems (GWMCS) Compensation for collective bargaining	
<b>Management, Administration and Policy</b>	27.6
Settlement of Methylcyclopentadienyl Manganese Tricarbonyl (MMT) claim Year 2000 issue for the Government Wide Mission Critical Systems (GWMCS)	

**Table 4: Crosswalk Between Old and New Structures for the Planned Spending of 1998-1999 (\$ millions)**

Old Structure	New Structure				Old Structure		
	Clean Environment	Nature	Weather and Environmental Predictions	Management, Administration and Policy	Total (\$\$\$)	FTEs	% of Total
A Healthy Environment	74.9	126.4	21.0	2.5	224.8	1,587	44%
Safety from Environmental Hazards	7.3	-	138.6	-	145.9	1,377	29%
A Greener Society	46.1	11.2	-	19.6	76.9	569	15%
Administration	-	-	-	63.5	63.5	708	12%
<b>New Structure</b>							
<b>Total (\$\$\$)</b>	<b>128.3</b>	<b>137.6</b>	<b>159.6</b>	<b>85.6</b>	<b>511.1</b>		
<b>FTEs</b>	916	928	1,498	899		4,241	
<b>% of TOTAL</b>	25%	27%	31%	17%			100%

**Crosswalk Between Old and New Structures for the Actual Expenditures of 1998-1999 (\$ millions)**

Old Structure	New Structure				Old Structure		
	Clean Environment	Nature	Weather and Environmental Predictions	Management, Administration and Policy	Total (\$\$\$)	FTEs	% of Total
A Healthy Environment	75.0	124.5	20.8	1.3	221.6	1,751	39%
Safety from Environmental Hazards	7.1	0.1	155.9	-	163.1	1,528	29%
A Greener Society	47.8	14.1	3.8	14.4	80.1	494	14%
Administration	0.5	1.6	0.2	97.5	99.8	783	18%
<b>New Structure</b>							
<b>Total (\$\$\$)</b>	<b>130.4</b>	<b>140.3</b>	<b>180.7</b>	<b>113.2</b>	<b>564.6</b>		
<b>FTEs</b>	978	1,025	1,599	954		4,556	
<b>% of TOTAL</b>	23%	25%	32%	20%			100%

Figures by the new Planning, Reporting and Accountability Structure (PRAS) Business Line represent an estimate of the Department's Planned spending and Actual expenditures for the 1998-99.

**Table 5: Comparison of 1998-99 Planned Spending to Actual Expenditures by Organization and Business Line (\$ millions)**

	REG DIR GEN Pacific and Yukon	REG DIR GEN Prairie and Northern	REG DIR GEN Ontario	REG DIR GEN Quebec	REG DIR GEN Atlantic	DIR GEN Human Resources	
Clean Environment	8.8	7.9	8.4	3.3	8.3	-	
	<b>9.4</b>	<b>8.6</b>	<b>8.0</b>	<b>7.3</b>	<b>9.6</b>	-	
Nature	17.7	12.9	21.0	21.0	7.7	-	
	<b>19.0</b>	<b>15.3</b>	<b>18.0</b>	<b>21.6</b>	<b>10.0</b>	-	
Weather and Environmental Predictions	13.3	26.9	10.6	9.9	9.6	-	
	<b>14.4</b>	<b>33.2</b>	<b>15.0</b>	<b>11.9</b>	<b>10.1</b>	-	
Management, Administration and Policy	3.6	7.0	8.6	4.8	4.7	7.5	
	<b>2.5</b>	<b>4.4</b>	<b>9.7</b>	<b>4.7</b>	<b>6.5</b>	<b>6.4</b>	
Total- \$Millions	43.4	54.7	48.6	39.0	30.3	7.5	
	<b>45.3</b>	<b>61.5</b>	<b>50.7</b>	<b>45.5</b>	<b>36.2</b>	<b>6.4</b>	

Note: Normal font: 1998-99 Planned Spending

**Bold font: 1998-99 Actual Spending**

REG DIR GEN = Regional Director General

ADM = Assistant Deputy Minister

	ADM Policy and Communications	Corporate Offices	ADM Corporate Services	ADM Atmospheric Environment Service	ADM Environmental Protection Service	ADM Environmental Conservation Service	Total	% of Total
	4.2	0.1	11.9	6.1	61.9	7.4	128.3	
	<b>9.5</b>	-	-	<b>6.9</b>	<b>64.2</b>	<b>6.9</b>	<b>130.4</b>	23.1%
	-	0.1	3.8	-	1.5	51.9	137.6	
	<b>0.2</b>	-	-	<b>0.2</b>	<b>1.9</b>	<b>54.1</b>	<b>140.3</b>	24.8%
	-	-	1.6	87.4	-	0.3	159.6	
	-	-	-	<b>95.6</b>	-	<b>0.5</b>	<b>180.7</b>	32.0%
	16.9	7.6	21.8	0.6	1.2	1.3	85.6	
	<b>18.8</b>	<b>5.1</b>	<b>33.5</b>	<b>0.5</b>	<b>20.5</b>	<b>0.6</b>	<b>113.2</b>	20.0%
	21.1	7.8	39.1	94.1	64.6	60.9	511.1	
	<b>28.5</b>	<b>5.1</b>	<b>33.5</b>	<b>103.2</b>	<b>86.6</b>	<b>62.1</b>	<b>564.6</b>	100.0%

**Table 6: Respendable Revenues by Business Line (\$ millions)**

Business Lines	Actual** 1996-97	Actual** 1997-98	1998-99		
			Planned Revenues	Total Authorities	Actual
Clean Environment	-	-	5.6	5.6	<b>5.6</b>
Nature	-	-	6.3	6.3	<b>6.3</b>
Weather and Environmental Predictions	-	-	55.7	59.0	<b>59.0</b>
Management, Administration and Policy	-	-	-	-	-
<b>Total Respendable Revenues*</b>	<b>52.9</b>	<b>70.6</b>	<b>67.6</b>	<b>70.9</b>	<b>70.9</b>

\* These revenues were formerly called "Revenues Credited to the Vote"

\*\* The information is not available for the new business line structure, which was approved in 1998-99.

**Explanation of change:**

The \$3.3 million increase in the 1998-99 Actual Revenues over the 1998-99 Planned Revenues is due mainly to the Canadian Lightning Detection Network revenues being collected under Respendable Revenues, and an increase to services to NAVCAN.

**Table 7: Non-Respendable Revenues by Business Line (\$ millions)**

Business Lines	Actual** 1996-97	Actual** 1997-98	1998-99		
			Planned Revenues	Total Authorities	Actual
Clean Environment	-	-	0.2	0.2	<b>0.3</b>
Nature	-	-	4.8	4.8	<b>4.0</b>
Weather and Environmental Predictions	-	-	5.7	5.7	<b>4.0</b>
Management, Administration and Policy	-	-	-	-	-
<b>Sub-total</b>	-	-	10.7	10.7	<b>8.3</b>
Unplanned	-	-	-	-	-
<b>Total Non-Respendable Revenues *</b>	<b>7.3</b>	<b>9.5</b>	<b>10.7</b>	<b>10.7</b>	<b>8.3</b>

\* These revenues were formerly called "Revenues Credited to the Consolidated Revenue Fund"

\*\* The information is not available for the new business line structure which was approved in 1998-99.

**Explanation of change:**

The \$2.4 million decrease in the 1998-99 Actual Revenues over the 1998-99 Planned Revenues is due mainly to Canadian Lightning Detection Network collections previously deposited to the Non-Respendable Revenue Fund now collected as Respendable Revenues, and lower than expected Migratory Bird Permit Sales.

**Table 8: Transfer Payments by Business Line (\$ millions)**

Business Lines	Actual 1996-97 *	Actual 1997-98 *	1998-99		
			Planned Spending	Total Authorities	Actual
<b>GRANTS</b>					
Clean Environment	-	-	2.0	1.2	1.2
Nature	-	-	0.3	0.2	0.2
Weather and Environmental Predictions	-	-	0.9	0.4	0.4
Management, Administration and Policy	-	-	0.2	0.2	0.2
<b>Total Grants</b>	<b>9.9</b>	<b>4.2</b>	<b>3.4</b>	<b>2.0</b>	<b>2.0</b>
<b>CONTRIBUTIONS</b>					
Clean Environment	-	-	10.8	13.7	13.7
Nature	-	-	11.8	16.6	16.5
Weather and Environmental Predictions	-	-	4.5	4.9	4.9
Management, Administration and Policy	-	-	1.7	1.7	1.7
<b>Total Contributions</b>	<b>38.5</b>	<b>38.1</b>	<b>28.8</b>	<b>36.9</b>	<b>36.8</b>
<b>Total Transfer Payments</b>	<b>48.4</b>	<b>42.3</b>	<b>32.2</b>	<b>38.9</b>	<b>38.8</b>

\* The information is not available for the new business line structure, which was approved in 1998-99.

**Explanation of change:**

The \$6.6 million increase in the 1998-99 Actual Expenditures over the 1998-99 Planned Spending is due mainly to:

**\$ Millions**

**Clean Environment**

2.1

Climate Change Action Fund Contribution

**Nature**

4.6

Contribution to the Province of Quebec for the St. Lawrence Action Team  
Contributions under the St. Lawrence Vision 2000 - Habitat Enhancement Program  
Contribution - Georgia Basin Ecosystem Initiative

**Table 9: Capital Spending by Business Line (\$ millions)**

Business Lines	Actual* 1996-97	Actual* 1997-98	1998-99		
			Planned Spending	Total Authorities	Actual
Clean Environment	-	-	4.6	5.0	<b>4.9</b>
Nature	-	-	2.2	2.7	<b>2.7</b>
Weather and Environmental Predictions	-	-	16.3	20.4	<b>20.4</b>
Management, Administration and Policy	-	-	1.4	1.7	<b>1.6</b>
<b>Total Capital Spending</b>	<b>27.9</b>	<b>36.2</b>	<b>24.5</b>	<b>29.8</b>	<b>29.6</b>

\* The information is not available for the new business line structure, which was approved in 1998-99.

**Explanation of change:**

The \$5.1 million increase in the 1998-99 Actual Expenditures over the 1998-99 Planned Spending is due mainly to:

**Weather & Environmental Predictions**

Additional resources for the Year 2000 Government Wide Mission Critical Systems (GWMCS)



**Table 10: Capital Projects by Business Line (\$ millions)**

Business Lines	Current Estimated Total Cost	Actual 1996-97	Actual 1997-98	1998-99		
				Planned Spending	Total Authorities	Actual
<b>Nature</b>						
Revitalization of laboratories - National Water Research Institute	4.8	0.4	0.8	-	-	-
<b>Weather and Environmental Predictions</b>						
Doppler upgrade - Radar Network Modernization	39.2	0.4	2.6	4.4	4.4	<b>5.1</b>
North American Lightning Detection Network	10.6	-	9.6	-	-	<b>1.0</b>
Weather station construction Eureka N.W.T.	4.1	0.5	0.3	0.1	0.1	<b>0.1</b>
Weather Warning Delivery System	3.8	-	0.1	0.3	0.3	<b>0.2</b>
Regional Infrastructure Renewal	2.5	-	0.5	-	-	-
Ice Integration and Analysis System	-	0.9	0.2	0.3	0.3	-
Mercury manometer replacement program	3.8	1.0	0.5	0.9	0.9	<b>0.5</b>
Automation & real-time access to discharge data-hydrology	3.3	0.3	0.3	0.5	0.5	<b>0.4</b>
Data processing upgrades for Radarsat	-	0.8	0.2	-	-	-
Construction of new wing - Environmental Technology Centre	2.6	1.9	1.2	-	-	-
Modernization of the Climate Observing Program	2.5	0.1	0.2	-	-	<b>0.1</b>

**Table 11: Contingent Liabilities (\$ millions)**

There are currently 25 claims against the Department on various grounds including breach of contract, damage to property, and physical damage.

As of March 31, 1999, the contingent liabilities associated with the claims were estimated at \$20.7 million.



## Section VI : Other Information

### Contacts for Further Information and Web Sites

#### Headquarters Directors of Communications

**Linda Bergeron**

Environmental Protection Service

**Clean Environment Business Line**

351 St. Joseph Boulevard

12th floor

Hull, Quebec

K1A 0H3

Telephone: (819) 953-6603 Fax: (819) 953-8125

E-mail: Linda.Bergeron@ec.gc.ca

**Roch Rollin**

Environmental Conservation Service

**Nature Business Line**

351 St. Joseph Boulevard

9th floor

Hull, Quebec

K1A 0H3

Telephone: (819) 994-6079 Fax: (819) 994-0196

E-mail: Roch.Rollin@ec.gc.ca

**Linda Larocque**

Atmospheric Environment Service

**Weather and Environmental Predictions Business Line**

10 Wellington Street

4th floor

Hull, Quebec

K1A 0H3

Telephone: (819) 997-0458 Fax: (819) 953-5888

E-mail: Linda.Larocque@ec.gc.ca

#### Regional Managers of Communications

**Wayne Eliuk**

Atlantic Region

Environment Canada

45 Alderney Drive

Dartmouth, Nova Scotia

B2Y 2N6

Telephone: (902) 426-1930 Fax: (902) 426-5340

E-mail: Wayne.Eliuk@ec.gc.ca

**Clément Dugas**

Quebec Region

Environment Canada

1141 Route de l'Église

Sainte-Foy (Quebec)

G1V 4H5

Telephone: (418) 648-5777 Fax: (418) 648-3859

E-mail: Clement.Dugas@ec.gc.ca

**Maureen Martinuk**

Ontario Region

Environment Canada

4905 Dufferin Street

Downsview, Ontario

M3H 5T4

Telephone: (416) 739-4787 Fax: (416) 739-4776

E-mail: Maureen.Martinuk@ec.gc.ca

## Contacts for Further Information and Web Sites (cont'd)

### Headquarters Directors of Communications

#### **Deborah Davis**

Corporate Communications

#### **Management, Administration and Policy Business Line**

10 Wellington Street

25<sup>th</sup> floor

Hull, Quebec

K1A 0H3

Telephone: (819) 953-6805 Fax: (819) 953-1599

E-mail: Deborah.Davis@ec.gc.ca

#### **Mark Colpitts**

Ministerial Communications Services

10 Wellington

25<sup>th</sup> floor

Hull, Quebec

K1A 0H3

Telephone: (819) 953-9738 Fax: (819) 953-6789

E-mail: Mark.Colpitts@ec.gc.ca

### Regional Managers of Communications

#### **Kathryn Labach**

Prairie and Northern Region

Environment Canada

Room 200, 4999-98 Avenue

Edmonton, Alberta

T6B 2X3

Telephone: (708) 951-8867 Fax: (780) 495-2478

E-mail: Kathryn.Labach@ec.gc.ca

#### **Anne-Marie Clancy**

Pacific and Yukon Region

Environment Canada

700-1200 West 23<sup>rd</sup> Avenue

Vancouver, British Columbia

V6P 6H9

Telephone (604) 713-9513 Fax: (604) 713-9517

E-mail: ClancyA@ec.gc.ca

## **Publications**

Hard copy departmental publications can be obtained from the:

Enquiries Centre  
Environment Canada  
Ottawa, Ontario  
K1A 0H3  
1-800-668-6767  
1-819-997-2800

The Environment Canada Green Lane address on the World Wide Web is:

**<http://www.ec.gc.ca/envhome.html>**

## Legislation and Associated Regulations Administered

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*The Minister has sole responsibility to Parliament for the following Acts and regulations:*

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<i>Canada Water Act</i>	R.S. 1985, c. C-11
<i>Canada Wildlife Act</i>	R.S. 1985, c. W-9
The administration, management and control of certain public lands was assigned pursuant to various statutory instruments.	
Wildlife Area Regulations	C.R.C., vol. XVIII, c.1609
<i>Canadian Environmental Assessment Act</i>	S.C. 1992, c. 37
Comprehensive Study List Regulations	SOR/94-638
Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements	SOR/97-181
Exclusion List Regulations	SOR/94-639
Federal Authorities Regulations	SOR/96-280
Inclusion List Regulations	SOR/94-637
Law List Regulations	SOR/94-636
Projects Outside Canada Environmental Assessment Regulations	SOR/96-491
<i>Canadian Environmental Protection Act</i>	R.S. 1985, c. 16 (4th Supp.)
Asbestos Mines and Mills Regulations	SOR/90-341
Benzene in Gasoline Regulations	SOR/97-493
Chlor-Alkali Mercury Release Regulations	SOR/90-130
Chlorobiphenyls Regulations	SOR/91-152
Contaminated Fuel Regulations	SOR/91-485
Diesel Fuel Regulations	SOR/97-110
Domestic Substances List	SOR/94-311
Export and Import of Hazardous Wastes Regulations	SOR/92-637
Federal Mobile PCB Treatment and Destruction Regulations	SOR/90-5
Fuels Information Regulations	SOR/77-597
Gasoline Regulations	SOR/90-247
List of Hazardous Wastes Authorities	SOR/92-636
List of Toxic Substance Authorities	SOR/94-162
Masked Name Regulations	SOR/94-261
Ocean Dumping Regulations, 1988	SOR/89-500
Ozone-Depleting Substances Regulations, 1998	SOR/99-7
PCB Waste Export Regulations, 1996	SOR/97-108
Phosphorus Concentration Regulations	SOR/89-501
New Substances Notification	SOR/94-260
Regulations Amending the New Substances Notification Regulations - Biotechnology	SOR/97-119
Prohibition of Certain Toxic Substances Regulations	SOR/96-237
Pulp and Paper Mill Defoamer and Wood Chip Regulations	SOR/92-268

## Legislation and Associated Regulations Administered (cont'd)

Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on Federal Lands Regulations	SOR/97-10
Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations	SOR/92-267
Secondary Lead Smelter Release Regulations	SOR/91-155
Storage of PCB Material Regulations	SOR/92-507
Toxic Substances Export Notification Regulations	SOR/92-634
Vinyl Chloride Release Regulations, 1992	SOR/92-631
<i>Canadian Environment Week Act</i>	R.S. 1985, c. E-11
<i>Department of the Environment Act</i>	R.S. 1985, c. E-10
<i>Environmental Contaminants Act</i>	R.S. 1985, c. E-12
<i>Heritage Railway Stations Protection Act</i>	R.S. c.52 (4th Supp.)
<i>International River Improvements Act</i>	R.S. 1985, c. I-20
<i>Lac Seul Conservation Act</i>	S.C. 1928, c. 32
<i>Lake of the Woods Control Board Act</i>	S.C. 1921, c. 10 and S.C. 1958, c. 20
<i>Manganese-Based Fuel Additives Act</i>	S.C. 1997, c. 11
<i>Migratory Birds Convention Act, 1994</i>	S.C. 1994, c. 22
Migratory Birds Regulations	C.R.C., Vol. XI, c.1035
Migratory Bird Sanctuary Regulations	C.R.C., Vol. XI, c.1036
<i>National Wildlife Week Act</i>	R.S. 1985, c. W-10
<i>Weather Modification Information Act</i>	R.S. 1985, c. W-5
Weather Modification Information Regulations	C.R.C., Vol. XVIII, c. 1604
<i>Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act</i>	S.C. 1992, c. 52
Wild Animal and Plant Trade Regulations	SOR/96-263
<hr/>	
<i>The Minister shares responsibility to Parliament or assists other departments in administering the following Acts and regulations:</i>	
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<i>Arctic Waters Pollution Prevention Act</i>	R.S. 1985, c. A-12
<i>Auditor General Act</i>	R.S. 1985, c. A-17
<i>Canada Shipping Act</i>	R.S. 1985, c. S-9
<i>Emergency Preparedness Act</i>	R.S. 1985, c. 6 (4th Supp.) (April 27, 1988)
<i>Energy Supplies Emergency Act</i>	R.S. 1985, c. E-9
<i>Fisheries Act</i>	R.S. 1985, c. F-14
Alice Arm Tailings Deposit Regulation	SOR/79-345
Chlor-Alkali Mercury Liquid Effluent Regulations	SOR/77-575
Meat and Poultry Products Plant Liquid Effluent Regulations	SOR/77-279
Metal Mining Liquid Effluent Regulations and Guidelines	SOR/77-178
Petroleum Refinery Liquid Effluent Regulations and Guidelines	SOR/73-670
Port Alberni Pulp and Paper Liquid Effluent Regulations	SOR/92-638
Potato Processing Plant Liquid Effluent Regulations and Guidelines	SOR/77-518
Pulp and Paper Effluent Regulations	SOR/92-269



## Legislation and Associated Regulations Administered (cont'd)

<i>James Bay and Northern Quebec Native Claims Settlement Act</i>	S.C. 1976-77, c. 32
<i>Hazardous Products Act</i>	R.S. 1985, c. H-3
<i>International Boundary Waters Treaty Act</i>	R.S. 1985, c. I-17
<i>Motor Vehicle Safety Act</i>	S.C. 1993, c. 16 (in force 12.04.95)
<i>National Round Table on Environment and Economy Act</i>	S.C. 1993, c.31 (in force April 28, 1994)
<i>Resources and Technical Surveys Act</i>	R.S. 1985, c. R-7
<i>Transportation of Dangerous Goods Act, 1992</i>	S.C. 1992, c. 34

*R.S. = Revised Statutes of Canada 1985*

*S.C. = Statutes of Canada*

*R.S.C. = Revised Statutes of Canada 1952*

## Glossary

<b>Accelerated Reduction/Elimination of Toxics (ARET)</b>	A departmental voluntary program to reduce toxic pollutant releases by industries.
<b>Benzene</b>	A toxic substance (a known human carcinogen) present in gasoline.
<b>Biodiversity / biological diversity</b>	The variability among living organisms, including diversity within species, between species and of ecosystems.
<b>Consolidated Revenue Fund (CRF)</b>	The aggregate of all public moneys on deposit at the credit of the Receiver General of Canada.
<b>Dichlorodiphenyl Trichloroethane (DDT), chlordane</b>	Synthetic, chlorinated, organic pesticides. Although no longer registered for use domestically, they may still enter the Canadian environment through long-range atmospheric transport or release from contaminated sites.
<b>Dioxins and Furans</b>	Popular names for two classes of chlorinated organic compounds, formed either as by-products during some types of chemical production that involve chlorine and high temperatures, or during combustion where a source of chlorine is present.
<b>Ecosystem</b>	An integrated and stable association of living and non-living resources functioning within a defined physical location.
<b>Endangered species</b>	A species facing imminent extirpation or extinction.
<b>Endocrine-disruptive substances</b>	Pollutants that mimic the effects of natural hormones, and can affect growth, development and reproduction of fish, wildlife and human.
<b>Environmental Management System (EMS)</b>	A systematic approach for organizations to bring environmental considerations into decision making and day-to-day operations. It also establishes a framework for tracking, evaluating and communicating environmental performance. An EMS helps ensure that major environmental risks and liabilities are identified, minimized and managed.
<b>Greenhouse Gases (GHGs)</b>	Gases in the atmosphere that trap the sun's energy and thereby contribute to rising surface temperatures. The main greenhouse gas that contributes to climate change is carbon dioxide (CO <sub>2</sub> ), a byproduct of burning fossil fuels. Other greenhouse gases include methane (from agricultural sources) and nitrous oxide (from industrial sources).

## **Glossary (cont'd)**

<b>Ground-Level Ozone</b>	Ozone (O <sub>3</sub> ) that occurs near the surface of the earth and is injurious to health. Its toxic effects make this pollutant a major component of smog.
<b>Kyoto Protocol</b>	An international agreement under the United Nations Framework Convention on Climate Change and signed by Canada in April 1998 that establishes binding targets for reducing emissions of greenhouse gases.
<b>Particulate matter</b>	Microscopic solid and liquid particles, of human and natural origin, that remain suspended in the air for some time. Particles give smog its color and affect visibility, and are believed to have adverse affects on vegetation and on various synthetic and natural surfaces.
<b>Persistent Organic Pollutants (POPs)</b>	Organic substances that do not break down quickly in the environment and are readily taken in by living organisms through contaminated food, water or air. These pollutants include some pesticides (e.g. DDT, Chlordane, Endrin); industrial chemicals (e.g. PCBs) or byproducts and contaminants (e.g. dioxins and furans).
<b>Polychlorinated Biphenyls (PCBs)</b>	This group of isomers was originally used for its flame-retardant attributes. Used since 1929 in the production of electrical transformers and lubricating oils, PCBs became regulated in Canada in 1977. The importation of all electrical equipment containing PCBs was banned in 1980.
<b>Priority Substances List (PSL)</b>	Two lists (list 1 and 2) of priority substances for assessment of toxic under CEPA. The first list of 44 substances has been assessed and management plans are being developed or implemented for the 25 substances that were assessed as toxic. The second list of 25 substances has been published in Part I of the Canada Gazette and is being assessed.
<b>Report on Plans and Priorities</b>	A department's primary strategic planning document, intended for parliamentary and public scrutiny. It portrays the department's mandate, plans and priorities and sets out strategies for achieving expected key results.
<b>Revenues Credited to the Vote</b>	Receipts credited to the appropriation that the department has the authority to reutilize.
<b>Species at risk</b>	General term for species that are endangered, threatened or vulnerable.

## **Glossary (cont'd)**

<b>Stratospheric Ozone</b>	The layer of the earth's atmosphere, extending from 15 to 35 kilometers above the earth, that protects life on the planet by absorbing harmful ultraviolet rays.
<b>Sulfate aerosols</b>	Tiny particles of a form of sulphur which is implicated in acid rain, climate change and smog.
<b>Sulphur dioxide, SO<sub>2</sub>, wet sulphate</b>	A substance present in emissions from combustion of fossil fuels that enters the atmosphere and returns to earth with precipitation as acid rain.
<b>Sustainable Development (SD)</b>	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
<b>The Green Lane</b>	Environment Canada's World Wide Web site
<b>Threatened species</b>	A species likely to become endangered if limiting factors are not reversed.
<b>Toxic substance</b>	According to CEPA definition: A substance that is entering or may enter the environment in a quantity or a concentration or under conditions: <ul style="list-style-type: none"><li>• having or that may have an immediate or long-term harmful effect on the environment, or</li><li>• constituting or that may constitute a danger to the environment on which human life depends, or</li><li>• constituting or that may constitute a danger in Canada to human life or health.</li></ul>
<b>Transfer Payments</b>	A payment authorized by a budgetary appropriation for which no goods or services are received in exchange, and that neither gives rise to financial claim nor represents the liquidation of financial obligations.
<b>Vote</b>	A request to Parliament for appropriation. A vote becomes an appropriation only when the Appropriations Act in which it is contained receives royal assent.

## Acronyms

<b>AAFC</b>	Agriculture and Agri-Food Canada
<b>ARET</b>	Accelerated Reduction/Elimination of Toxics Program
<b>CEC</b>	Commission for Environmental Cooperation
<b>CEPA</b>	<i>Canadian Environmental Protection Act</i>
<b>CESPA</b>	<i>Canadian Endangered Species Protection Act</i>
<b>CFCs</b>	Chlorofluorocarbons
<b>CIDA</b>	Canadian International Development Agency
<b>CITES</b>	Convention on International Trade in Endangered Species
<b>DDT</b>	Dichlorodiphenyl Trichloroethane
<b>DFAIT</b>	Department of Foreign Affairs and International Trade
<b>DFO</b>	Department of Fisheries and Oceans
<b>DND</b>	Department of National Defence
<b>EC</b>	Environment Canada
<b>EMS</b>	Environmental Management System
<b>FRP</b>	Federal Regulatory Plan
<b>FTEs</b>	Full-Time Equivalents
<b>GHGs</b>	Greenhouse Gases
<b>HC</b>	Health Canada
<b>HR</b>	Human Resources
<b>HRDC</b>	Human Resources Development Canada
<b>INAC</b>	Indian and Northern Affairs Canada
<b>MBRs</b>	Migratory Birds Regulations
<b>MEC</b>	Millennium Eco-Communities
<b>NAWMP</b>	North American Wildlife Management Plan
<b>NAFTA</b>	North American Free Trade Agreement
<b>NEES</b>	National Environmental Emergency System
<b>NGO</b>	Non-Governmental Organization
<b>NRCan</b>	Natural Resources Canada
<b>NWA</b>	National Wildlife Area
<b>ODS</b>	Ozone depleting substances
<b>OGDs</b>	Other Government Departments
<b>PCBs</b>	Polychlorinated Biphenyls
<b>POPs</b>	Persistent Organic Pollutants

## Acronyms (cont'd)

<b>PSL</b>	Priority Substances List
<b>PWGSC</b>	Public Works and Government Services Canada
<b>RCMP</b>	Royal Canadian Mounted Police
<b>S&amp;T</b>	Science and Technology
<b>SARA</b>	<i>Species at Risk Act</i>
<b>SD</b>	Sustainable Development
<b>SDS</b>	Sustainable Development Strategy
<b>UNECE</b>	United Nations Economic Commission Europe
<b>WAPPRIITA</b>	<i>Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act</i>

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