PERFORMANCE REPORT

Environment Canada

For the
period ending
March 31, 1997

Improved Reporting to Parliament —
Pilot Document

Canada

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Foreword

On April 24, 1997, the House of Commons passed a motion dividing what was known as the *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.* It also required 78 departments and agencies to table these reports on a pilot basis.

This decision grew out of work by Treasury Board Secretariat and 16 pilot departments to fulfil the government's commitments to improve the expenditure management information provided to Parliament and to modernize the preparation of this information. These undertakings, aimed at sharpening the focus on results and increasing the transparency of information provided to Parliament, are part of a broader initiative known as "Getting Government Right".

This ***Departmental Performance Report*** responds to the government's commitments and reflects the goals set by Parliament to improve accountability for results. It covers the period ending March 31, 1997 and reports performance against the plans presented in the department's *Part III of the Main Estimates* for 1996-97.

Accounting and managing for results will involve sustained work across government. Fulfilling the various requirements of results-based management – specifying expected program outcomes, developing meaningful indicators to demonstrate performance, perfecting the capacity to generate information and report on achievements – is a building block process. Government programs operate in continually changing environments. With the increase in partnering, third party delivery of services and other alliances, challenges of attribution in reporting results will have to be addressed. The performance reports and their preparation must be monitored to make sure that they remain credible and useful.

This report represents one more step in this continuing process. The government intends to refine and develop both managing for results and the reporting of the results. The refinement will come from the experience acquired over the next few years and as users make their information needs more precisely known. For example, the capacity to report results against costs is limited at this time; but doing this remains a goal.

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

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ENVIRONMENT CANADA

Environment Canada

Performance Report

for the period ending March 31, 1997

Preface

This is Environment Canada's *Performance Report* for the period ending March 31, 1997.

Its purpose is to communicate departmental performance against results commitments and to outline progress against ministerial priorities. Consistent with the department's desire to streamline reporting, this also serves as an annual report on Environment Canada's science and technology (S&T) efforts. This is the department's first attempt at blending S&T into the fall *Performance Report*, and it may take several future reports before we address S&T adequately. We will assess the feedback we receive and adjust future documents accordingly. Also, in future years this Report will provide the venue for sustainable development reporting.

This report is the department's second under the Improved Reporting to Parliament Initiative. Through text, graphs, summary tables and financial information, the report describes what Environment Canada (EC), in concert with partners, has done in 1996-97 toward:

- sustaining **A *Healthy Environment*** through essential environmental science and identification of important actions which Canadians can take to protect and restore their environment;
- securing Canadians' ***Safety From Environmental Hazards*** by forecasting severe weather and providing emergencies prevention, preparedness and response advice;
- building ***A Greener Society*** through information and knowledge for sustainable development, support for the realization of environmental technology opportunities, and the pursuit of productive and harmonious alliances to benefit the environment, the economy, and society; and
- improving ***Corporate Management and Administration*** of the Environment Program, including the management of its science and technology.

Under these four business goals, Environment Canada has identified its framework of accountability (a series of multi-year results) against which its performance can be measured and reported on, year after year. Some readers may find it useful to refer to three key tables appearing in this report:

- Section II, *Summary Table of Performance Expectations and Selected Accomplishments, FY1996-97,* provides an overview of progress made in this performance year.
- Section III, *Table of Key Reviews,* covers key findings of independent departmental reviews.
- Section IV, *Table of Key Results Commitments and Multi-year Reporting Schedule* provides a perspective on multi-year reporting.

While this report follows our progress over the last year, Environment Canada has identified priorities for making further progress. Readers interested in learning more about current activities and future directions should refer to Environment Canada's *1997-98 Estimates: A Report on Plans and Priorities (RPP).* The RPP will be updated over the next six months in light of performance reported here, as well as new ministerial direction.

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I am pleased to present Environment Canada's Performance Report for the period ending March 31, 1997.

1996-97 was a year filled with both accomplishments and challenges for Environment Canada. We succeeded in bringing to completion the National Action Plan on CFCs and a National Assessment on Acid Rain, as well as providing expertise and support to help Canadians deal with the Red River flood. We tackled other challenges such as climate change and biodiversity loss with the same determination. We also continued working with our partners to galvanize the support and action of communities and to promote international action on global issues.

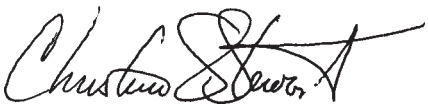
Lessons learned from both successes and failures will help to build the foundation for the next steps that need to be taken. Our experience over the past year has served to confirm how important sound science is to understanding and managing issues and to moving us towards sustainable development.

My agenda is focussed on achieving results — results that will reduce the emissions that contribute to climate change, improve the air in our cities, get toxics out of our water, air, and land and protect nature. The size and complexity of environmental challenges means that our actions must be specific and measurable so that we can build the broader social momentum necessary for success.

I intend to continue to actively encourage and engage the energy of communities and many other sectors of society to make progress on these priorities. Two pieces of legislation that I intend to re-introduce are the Canadian Environmental Protection Act and the Canada Endangered Species Protection Act. Some other actions will depend on voluntary commitments such as the Accelerated Reduction/Elimination of Toxic (ARET) program. I consider both legislation and voluntary action important means of achieving our goals.

I am also committed to openness in government and believe that Canadians need information, about environmental issues and about the results of our actions. Annual performance reports such as this play an important part in providing some of that information.

The coming years will present many challenges to our Department. I look forward to working with Canadians and with Canada's international partners so that we can build a healthy and a sustainable future for our environment and for ourselves.



Christine S. Stewart

Section II: Departmental Overview

Mandate, Goals and Roles

Environment Canada has a mandate under the *Department of the Environment Act* to preserve and enhance the quality of the natural environment (including migratory birds and other non-domestic flora and fauna), conserve and protect our water resources, carry out meteorology, enforce the rules of the Canada-U.S. International Joint Commission, and co-ordinate federal environmental policies and programs. Science is a primary foundation of all Environment Canada policies, programs and regulations, and is essential to achieving environmental results. Environment Canada is one of the federal government's leading S&T departments, with over 80 percent of its budget being spent on S&T and over 62 percent of its workforce engaged in scientific and technical occupations.

Beyond its traditional mandate and along with other federal departments, Environment Canada contributes to the Government of Canada's commitment to the goal of sustainable development. Beyond this, the department also has a responsibility and is uniquely positioned to provide leadership in building an agenda and mobilizing Canadians 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.*

Environment Canada's vision is of Canadians empowered to act on their own environmental values. It is also a statement of the department's core belief that, given the right information and opportunities, Canadians can and want to act in an environmentally responsible manner for their own well being, and for the well being of future generations.

From this vision, Environment Canada derives four, mutually reinforcing long term, business line goals:

- ***A Healthy Environment*** for present and future generations;
- ***Safety*** of Canadians ***from Environmental Hazards***;
- a capacity in Canada for ***A Greener Society***; and
- improving ***Corporate Management and Administration***.

Environment Canada cannot hope to achieve these goals alone. They will only be accomplished in partnership with many Canadians across different departments, jurisdictions and sectors of society.

Canadians expect Environment Canada to provide leadership in sustaining the environment, in securing their safety, and in providing the skills and knowledge for a greener future. The most effective way for Environment Canada to exercise its leadership is to play the roles for which it is uniquely suited. They are:

- **science** — conducting environmental science to support policy development, new methods to improve service delivery, and the application of new technologies to meet the department's mandate;
- **governance** — setting and enforcing rules for effective environmental management in Canada, where it is within the jurisdiction of the federal government to do so;
- **action** — acting to address environmental issues where Environment Canada is best positioned to act;
- **partnerships** — developing partnerships where responsibilities and results are best shared; and
- **international leadership** — providing an effective voice and leadership on environmental issues where Canada's perspective needs to be heard among the community of nations.

Within the larger responsibility to achieve environmental results that all Canadians share, these are the contributions for which Canadians hold Environment Canada accountable.

Organization

Environment Canada's business goals cut across the department's internal structure. Its headquarters organizations are:

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

The department's five integrated regions are Atlantic, Quebec, Ontario, Prairie and Northern, and Pacific and Yukon.

This matrix approach to management and accountability ensures that the Environment Program is defined in a national context and delivered in a client-centred manner that respects regional differences. It makes results the focus of departmental planning and reporting, and provides a shared strategic context for department-wide expenditure management.

Strategic Priorities to March 31, 1997

Within the context of its long term goals, Environment Canada's *Action Plan for 1996-2000* detailed the Minister's priorities and the department's planned actions to meet them.

They were:

- building greater public support for the environment through the development and promotion of environmental citizenship;
- environmental protection with a focus on ridding our air and water of toxics;
- environmental conservation with a focus on protecting endangered species;
- contributing to employment creation and growth;
- mobilizing and building effective partnerships; and
- strengthening Canada's international voice.

The department's effectiveness in delivering on the Minister's priorities, as well as on other results commitments, is the focus of this 1996-97 *Performance Report*.

This Report is not comprehensive. It focuses on a selection of results commitments from the department's accountability framework (Section IV.E, *Table of Key Results Commitments and Multi-year Reporting Schedule*) where Environment Canada has "moved the yardsticks" over the past year.

Approach to Performance Measurement

Performance Measurement over the Life Cycle of Environmental Issues

Results to be Achieved	Measurements
Outputs are used to track and evaluate the management and operational activities of an organization. They are a means by which to judge or evaluate an organization's performance against its own (internal) goals and objectives.	Outpus have ***performance measures***. Examples are: scientific understanding of an issue; numeric models; policy frameworks; agreement and regulations.
Intermediate outcomes, tracked over time, provide information on trends in the condition of a phenomenon. They are a means of judging whether an organization's activities, programs, policies or regulations have made any difference to the world outside.	Intermediate outcomes have their own ***indicators***. Examples are: reductions in loading on the environment; compliance with regulations; pollution *prevention*; restored habitat; and quality services that meet clients' needs.
Long-term outcomes focus on trends in environmental, social, cultural, and economic changes; driving forces behind these changes; how the ecosystem and its components (including humans) are responding to these changes; and societal responses to prevent, reduce or ameliorate stresses on ecosystems.	Long-term outcomes have ***sustainable development indicators***, Examples are: conservation of biodiversity; sustainability of ecosystems; lives and property saved from environmental disasters; the capacity of society to make responsible decisions; and the integration of environment and economy.

Environmental indicators allow us to measure our progress in reaching environmental results. To specify what part of an environmental result can be attributed to Environment Canada is complex. On most issues, Environment Canada will play one or more roles at different stages in the life cycle of an issue. Measuring Environment Canada's performance means determining whether there is a reasonable link between the role it played, its effectiveness in that role, and the progress made towards a result.

Environmental issues tend to be long term issues and to pass through a series of stages over their lives. Throughout this life cycle, science plays a key role. When an issue first emerges, Environment Canada's outputs include the science that is critical to defining the nature of the issue, helping us understand it, and identifying the range of possible actions.

The focus thereafter is on developing appropriate policies and the outcomes that we strive for include national and international consensus on action reflected in policy, legislation, etc. Our science is critical to forging this consensus and determining specific actions to be taken. Many performance measures at this stage are still output related but others are outcomes that reflect the consensus around shared agendas.

When the necessary actions are in place, our science shifts to support the need to track and report on the effectiveness of the actions. At this stage, we can start to report on outcomes such as reduced loadings on the environment, improved compliance, greater pollution prevention and others.

As the impact of actions accumulate, we can begin to report on outcomes related to measurable improvements in the environment. Science helps us determine how best to measure these environmental improvements. It tells us what to measure and how frequently to measure it, so we have credible data. This helps to tell us if our efforts, and those of others, are continuing to make a difference, or if the nature of the issue is changing and a new approach is required.

Departmental Performance

As last year's *Action Plan* made clear, Environment Canada expected 1996-97 to be filled with challenges. Among its performance expectations were to make progress on:

- effective toxics management by implementing the Toxic Substances Management Policy and a renewed *Canadian Environmental Protection Act (CEPA)*;
- recovery trends for threatened or endangered species by introducing federal endangered species legislation and implementing 11 endangered species recovery plans;
- partnerships to promote, develop and rationalize environmental policies and practices through agreements with the provinces and territories;
- leadership for sustainable development at the federal level by tabling early its Sustainable Development Strategy; and
- reducing the environmental consequences of emergencies by providing "one-window" environmental advice for the lifting of the *Irving Whale*.

The year proved to be even more difficult than expected:

- two pieces of important and essential legislation died on the Order Paper. Their development was enormously demanding and building support strained relationships among long-standing communities of interest;
- efforts to have other federal departments embrace environmental responsibilities — for species, contaminated sites, and sustainable development — were challenging; and
- beyond the budget reductions of Program Review, the department was learning to deal with the realities of expenditure management.

Even so, on balance most of the department's partnerships remain close, and its performance with its partners was strong. Environment Canada:

- developed its first *Sustainable Development Strategy*, which also serves as a reference point for information for other departments;
- gained the support of the provinces on the Harmonization Accord (approved in principle by CCME in November 1996)
- worked in partnership with the Department of Fisheries and Oceans to recover the *Irving Whale* and its 3200 tonnes of PCB-laden oil from the ocean floor;
- exceeded its own performance targets in re-engineering its weather services with the development of new lightning detection and Doppler radar networks;
- contributed its unique expertise and worked in partnership with others to help Canadians deal with the Red River Flood, earning the praise of provincial politicians, emergency organizations and ordinary Canadians;
- created new perspectives and galvanized capacity in 13 Atlantic communities and in communities in the Northern Rivers Basin area;
- worked with others to support community action on environmental issues in more than 300 communities under the Action 21 program;
- with its partners, brought years of work to successful conclusion, under the National Action Plans on chloroflurocarbons (CFCs) and acid rain;
- with partners on specific environmental targets, measurable improvements were achieved — as in the Accelerated Reduction and Elimination of Toxics (ARET) Program; and

- above all, Environment Canada's science contributed to positioning the department to lead in building global ecological knowledge, as with its Mackenzie Valley Impact Study.

Lessons learned in this difficult year are that Environment Canada must build from its science to create a broader understanding of and firmer commitment to do something about issues. It must also bridge the many communities of interest by focusing on mutually beneficial courses of action and results.

A table of Performance Expectations and Selected Accomplishments for 1996-97 (which summarizes the information to be found in Section III) follows.

Summary Table of Performance Expectations and Selected Accomplishments, 96-97

EC had a $546.4 Million budget for results to be achieved:	to fulfill its performance expectations for 1996-97:	through actual accomplishments in 1996-97 which included:
A HEALTHY ENVIRONMENT		
Protect health and environment of Canadians by reducing negative impacts on the atmosphere and helping Canadians better understand and adapt to these consequences		
Greenhouse gas emissions to be reduced and stabilized in Canada & international actions to reduce global concentrations promoted.	Continued implementation of the National Action Plan on Climate Change (NAPCC) and the Federal Action Program on Climate Change (FAPCC). Publish Canada Country Study to improve understanding of climate change effects.	Agreement by Joint Energy and Environment Ministers to renew their commitment to stabilization. In partnership with NRCan, announced 45 new initiatives for Canada to reduce greenhouse gas emissions. Initiatives for federal facilities will reduce GHG emissions by 33% by 2005 relative to base year 1990. British Columbia and Yukon reports published (Canada Country Study 1998).
Consumption of ozone-depleting substances to be stabilized, reduced or eliminated and ozone layer begins to recover.	Meet domestic and international commitments under Montreal Protocol and Canadian Council of Ministers of the Environment (CCME) Action Plan for ozone depleting substances by the year 2000.	Met commitments under Montreal Protocol on substances that deplete the ozone layer. 1996 statistics indicate ODS imports were well below targets. The 1992 National Action Plan for CFCs completed, update and expansion of plan has been approved.
Canadian levels of smog and inhalable particules to be reduced.	Complete comprehensive science assessment for NO_x/VOC and ozone smog (1996). Negotiate national and four regional smog management plans.	Technical aspects of NO_x/VOC and two of seven science assessment reports completed. Canada played a leadership role in development of new UN ECE NO_x/VOC Protocols. Basis for "Next Steps Smog Management Plan" negotiated with the provinces and territories through NAICC. To date, 29 national preventive initiatives approved by CCME.
Negative impacts from acid rain to be minimized.	Complete comprehensive assessment of scientific findings to date (1996) and publish (1997).	8th Science Assessment Summary Report presented to the National Air Coordinating Committee (NAICC) in 1997. Acidifying emissions science assessment will be completed in 1997. Federal and provincial governments began consulting on a new post-2000 Acid Rain Strategy. Canada exceeds SO_2 goal.
The environmental stress caused by transportation to be reduced.	Based on CCME recommendations, vehicle emissions will be reduced through regulatory and other means.	The *Manganese-based Fuel Additives Act* came into force June '97. Diesel fuel sulfur content regulations passed in Feb. 1997.

Summary Table of Performance Expectations and Selected Accomplishments, 96-97 (continued)

To be Achieved	Expectations 1996-97	Accomplishments
Eliminate the threat posed by toxics		
Sources and quantities of toxic substances, effluents, emissions and wastes requiring management to be identified to Canadians in a timely, effective manner.	Substances will be assessed and screened to identify candidates for management under the Toxic Substances Management Policy (TSMP). Publish annual National Pollutant Release Inventory reports. Research, monitoring and evaluation to identify toxics of concern (e.g., endocrine disrupters).	586 new substances assessed; eight have conditions imposed on their import or manufacture and 13 substances proposed for virtual elimination. Canadian Arctic Contaminants & Circumpolar Nations reports readied for Summer 1997. Second National Pollutant Release Inventory Report published. EC workshops held on endocrine disruption.
Management actions to be implemented toward the virtual elimination of persistent, bio-accumulative toxics (PBTs) resulting from human activity. (TSMP Track 1 Substances)	Implement the TSMP (1996-98) and promote national commitment to the policy. Regulations, national standards, and other measures will be employed to virtually eliminate PBTs	*Second Progress Report on Chlorinated Substances Action Plan* released (Nov. 1996). Progress made on CCME Policy on Management of Toxic Substances. Agreement with the provinces and territories on a Canada-wide ban on PCB land-fill wastes rating higher than 50 ppm. Since 1990, over 5000 tonnes of federal PCBs destroyed.
Management actions to be implemented to prevent, reduce or eliminate the risks posed by toxics not meeting TSMP Track 1 criteria, and by other substances of concern.	Renew CEPA (1997) to enhance toxics programs. Strategic management options for 25 CEPA toxic substances to be recommended for Ministerial consideration and action. Publish ARET report (voluntary reduction of toxics), reduction goal of 21 000 tonnes; challenge non-participants to join. Fulfill Canada's obligations under Basel Conventions.	Bill C-74 tabled Dec. 1996, but died on Order Paper. Five PSL 1 toxic regulations in place and management strategies announced for another four. ARET Program participants reduced annual toxic substance emissions by almost 17 500 tonnes, a decrease of 49% from base year levels to December 1995. Participants are committed to a further reduction of 8000 tonnes from 1996 to 2000. 1408 export, 4918 import of hazardous waste notices processed.
Conserve and enhance Canadian and global biodiversity		
Targeted wildlife populations, under federal jurisdiction, to be sustained at or increased to healthy levels.	Ban use of lead shot in National Wildlife Areas (1996-97) in Canada (1997-98). Develop action plan for landbird conservation in cooperation with provinces, territories and Non Government Organizations (NGOs) (1996-97).	Banned use of lead shot for migratory game bird hunting in all National Wildlife Areas. Canadian Framework for Landbird Conservation developed with NGOs and other partners. 50 wildlife toxicology research projects are under way in such areas as pesticides, metals, PBTs, UV-B.

Summary Table of Performance Expectations and Selected Accomplishments, 96-97 (continued)

To be Achieved	Expectations 1996-97	Accomplishments
Significant wildlife habitat and ecosystems to be protected and enhanced.	Establish eight National Wildlife Areas, two Migratory Bird Sanctuaries, and two Shorebird Reserves (1996-8). Secure habitat and influence land use under NAWMP agreements. Implement provision for conservation land donations with Finance and Revenue Canada (1996-97).	Gros Mecatina Migratory Bird Sanctuary established in Quebec. Since 1986, over 0.621 million hectares of wetlands and upland habitat have been secured and enhanced (81.678 hectares for 1996-97) and over 2.2 million modified-use hectares under NAWMP. Provision for conservation land donations implemented with the help of OGDs, and agreements signed with Saskatchewan, BC, Quebec, NS and NB resulting in 23 gifts of title or easement for ecologically sensitive land (value for tax receipts issued 10 M).
Positive recovery trends to be achieved for threatened or endangered species.	Introduce federal endangered species act (1996-97). Implement 11 endangered species recovery plans (1996-97).	*Canada Endangered Species Protection Act*, Bill C-65, tabled in House of Commons. Wildlife ministers reach National Accord on Protection of Species at Risk. Canada and U.S. signed a framework in April, 1997 for Protection and Recovery of Species at Risk. 2 plans completed (recovery levels achieved for Baird's Sparrow, Ferruginous Hawk). 9 plans approved and being implemented.
Canada's leadership and expertise to be used to advance the international biodiversity agenda.	Proclaim WAPPRIITA (1996-97). Promote international action on the Biodiversity Convention through sound Canadian positions at the Third Conference of Parties (1996-97).	WAPPRIITA was proclaimed in in May 1996. Canadian objectives for the Third Conference of Parties to the Biodiversity Convention were achieved.
Conserve and restore ecosystems		
Ecosystem science to be undertaken, scientific tools to be created and information transferred in support of ecosystem management initiatives.	Ecosystem effects of toxics and resource activities identified and articulated for appropriate management responses (1996-2000). Assess effectiveness of metal mining liquid effluent regulations, mining pollution, and develop remedial options (1996-97). Develop 50 Canadian Environmental Quality Guidelines (1998-99).	4 year Northern River Basins Study of cumulative effects of human impact completed. *AQUAMIN* Report on Metal Mining Regulations released. Mackenzie Basin Impact Study produced an integrated regional assessment of climate change scenarios for the entire watershed; study report and summary released early 1997. 20 new CCME Guidelines published to evaluate/manage risks of toxics.
A modern affordable management capacity and infrastructure for effective ecosystem science programming to be developed and maintained.	Establish an external advisory board for R&D (1996-7) Develop a federal scientific position on climate change and variability (1996-97) and on metals in the environment (1997-98).	External R&D Advisory Board to EC Deputy Minister established. 4NR MOU Groups working on Metals in the Environment, Climate Change and Variability, Endocrine Disruption, etc. Report of UV-B Working Group, *Addressing the Ecosystem Effects of Ultraviolet Radiation*, was released.

Summary Table of Performance Expectations and Selected Accomplishments, 96-97 (continued)

To be Achieved	Expectations 1996-97	Accomplishments
Health and sustainability of targeted ecosystems across Canada to be improved through ecosystems initiatives of national priority.	Great Lakes: 60% of beneficial use is restored in 17 Areas of Concern (2001); complete recovery plans for 3 threatened species; 3000 hectares of wetlands are protected by 1998-99. St. Lawrence Action Plan: support 140 community-based projects; plans are in place to restore four degraded sites; 2000 hectares of habitat are protected; toxic effluent from 56 additional priority plants is reduced or eliminated by 1997-98. Fraser River Action Plan: Develop (1997) and implement (1998) sustainability plan for the Fraser Basin; over 40% of the Basin population is exposed to sustainability principles; 3000 hectares of habitat are protected or enhanced; contaminant loadings are reduced by 30% by 1997-98. Atlantic Coastal Action Plan: 13 Environmental Management Plans for degraded coastal areas approved by stakeholders (1996-97).	13% of beneficial uses restored across the 17 Canadian Areas of Concern; recovery plans for two endangered species completed; recovery planning for four more initiated; five banned pesticides have been virtually eliminated from the Great Lakes; and, over 3000 hectares of wetlands conserved and rehabilitated at 13 sites within the Great Lakes Basin. More than 100 projects funded since introduction of St. Lawrence Vision 2000; as of March 1997, toxic effluent from 56 additional priority plants had been reduced by 83%. 40 % of the population in the Fraser Basin have a general understanding of sustainability; 1400 hectares of wetland and 6400 hectares of upland habitat in the interior Fraser Basin have been enhanced; wood preservation toxic effluent discharges in the lower Fraser Basin have been reduced by 87%. Comprehensive Environmental Management Plans completed under ACAP in 1996-97 for degraded watersheds and estuarine areas in Atlantic Canada. Over 1000 items have been identified for future action dealing with water quality, sewage, habitat protection and restoration, and solid waste management as a result.
Fairly and effectively enforce and promote compliance with environmental laws and regulations		
A high level of compliance with laws and regulations to be achieved.	Perform inspections at all pulp & paper mills (1996-7). Promulgate WAPPRITTA and develop awareness plan.	All pulp and paper mills that received transitional authorization extensions have been inspected; WAPPRITTA promulgated and information guide released to public May 1996. Cargo vessel/officers charged in oil discharge killing thousands of seabirds off southern Newfoundland.
Improved enforcement capacity to be developed.	Develop and implement action plans for national, transboundary and international targets.	With partners established the North American Working Group on Environmental Enforcement and Compliance Cooperation.

Summary Table of Performance Expectations and Selected Accomplishments, 96-97 (continued)

To be Achieved	Expectations 1996-97	Accomplishments
Canadians understand the law, know what is expected of them, and believe the law to be effectively enforced.	Place enforcement statistics on Green Lane (1996).	Reports and information on enforcement actions were posted on Environment Canada's Green Lane,
SAFETY FROM ENVIRONMENTAL HAZARDS		
Provide weather and environmental predictions as well as timely and accurate warnings of severe weather events to Canadians		
Timely and accurate weather forecasts and warnings to be delivered.	Provide 14 000 timely and accurate weather warnings per year. Cooperate with media for timely delivery of environmental warnings by using leading technologies; pilot tests (1996-97). Meet published service standards. The focus of research will be on improving accuracy of automated forecasts and on automating the severe weather warning system, including very short-term forecasting (1996-97).	Over 14 000 warnings issued; 183 000 telephone calls ($449 000 in revenue) made for 1-900 personal weather consultations. Pilot for TV Weather Alert launched in Toronto area (TV crawler through cable companies); media services policy to clarify delivery relationships published in 1997. A *Statement of Basic Level of Services for National Weather Forecasts* was published. New high resolution numerical model in place; new 3-D variation data assimilation method tested. Completed plan and obtained funding to establish a network of 29 Doppler radars by 2003. Development plan and funding in place for 81-sensor Canadian Lightning Detection Network (CLDN).
Effective decisions to be made by adapting to changing weather and climate.	Air pollution index (1998). Introduce road-temperature forecasts.	Pilot of ground-level ozone forecasts for Saint John, NB, readied for summer 1997. Road temperature sensor network installed and forecasts provided (Ottawa-Carleton 1996-97)
Prevent or reduce the frequency, severity and environmental consequences of emergencies which affect Canada		
Accidental releases to be prevented.	Agreement with Major Industrial Council of Canada (MIAAC) on development of standards, guidelines, and codes for major environmental accidents.	A two-year review of 50 private industrial sites along Fraser estuary against CCME guidelines was completed, resulting in $3 million invested by the private sector for upgrades.
Preparations to be made for handling environmental emergencies such as accidental releases.	Host Arctic Environmental Protection Strategy Emergencies Working Group meeting (1996). Develop regional annexes with the US for Inland Spills (1997) and participate in the Canada/US marine spills exercises.	Canada hosted Arctic Environmental Protection Strategy Emergencies Working Group in August 1996. Regional contingency plans underway; participated in two joint Canada/US marine exercises.

Summary Table of Performance Expectations and Selected Accomplishments, 96-97 (continued)

To be Achieved	Expectations 1996-97	Accomplishments
Advice and specialized support to be provided to lead responders.	With participation of Canadian Coast Guard, provide advice on all preparations for lifting the *Irving Whale* (1996-97). Continue "one window" approach in Manitoba, Sask., Alta., NWT, and Atlantic, and extend the one window concept through an Ontario pilot (1996/97).	EC lead Regional Environmental Emergencies Team (REET) in planning and recovery operations to successfully raise the *Irving Whale* after 26 years on the floor of the Gulf of St. Lawrence. The REET mechanism yielded timelier and more effective responses by providing a focal point for interagency cooperation on *Irving Whale.* EC led flood mapping of over 900 communities since 1975; over 360 flood risk areas identified. Past spending under Flood Damage Reduction Program avoided greater devastation in the recent Red River flood.
A GREENER SOCIETY		
Promote responsible environmental citizenship by helping Canadians to effectively use timely environmental information and advice		
Products and services to be developed that help Canadians make environmentally responsible decisions.	Make environmental information on Green Lane accessible to youth and educators via SchoolNet by summer of 1996.	Green Lane web site accessible to SchoolNet; over nine million information requests in 1996-97.
Canadians to receive products and services from EC that meet their needs.	Release comprehensive State of the Environment (SOE) Report in 1996 in print, Green Lane and CD-ROM versions, and continue to release environmental indicator bulletins on an on-going basis.	1996 SOE Report issued in CD-ROM version (1446 sold by end of 1996-97) and on the Internet (June 1996); 5000 hard copies to be printed in 1997-98. $29M in weather service revenues from federal and non-federal sources — up 30% from last year.
Broad public support to exist for the services provided by EC.	Issue annually 2,500 ice forecasts and warnings in line with national standards to safeguard maritime activities.	Over 163,000 charts, bulletins & images generated under the Ice Services Program.

Summary Table of Performance Expectations and Selected Accomplishments, 96-97 (continued)

To be Achieved	Expectations 1996-97	Accomplishments
Provide Canadians with tools to prevent pollution and develop green technologies and capacity to create social, economic, and environmental benefits		
Increasing emphasis to be placed on pollution prevention domestically (governments, public, industry) and internationally.	Establish a Commissioner of the Environment and Sustainable Development. Create a national pollution prevention clearinghouse. Advance pollution prevention through international protocols and agreements. Work with stakeholders to apply technologies to reduce release of toxics.	First Commissioner of the Environment and SD appointed with office established within Office of the Auditor General. Pilot developed; pollution prevention clearinghouse to be initiated in 1997-98 with three sub-sites for launch in 1997-1998, others to follow. Canada and US made commitment to Bi-national Toxics Strategy. MOUs signed with Canadian Vehicle Manufacturers and Printing and Graphics Associations; voluntary agreement with health care industry to reduce mercury use.
Green technologies, know-how and expertise to be transferred to the public.	Promote business opportunities, cleaner technologies, and build capacity internationally via green industry support. Deliver an environmental technology loan fund with Toronto Dominion Bank and Western Diversification as a pilot program (1996-98). Accelerate commercialization of Canadian green technology through CETACs (1996-7). International Environmental Management Initiative (IEMI) (1996-8).	Developed and demonstrated environmental technologies through Technology Partnerships Canada Program; 1996 Ministerial Trade Mission to South America built Canadian SME capacity; bilateral agreements signed with Argentina, Brazil and Uruguay. Western Environmental Technology Loan Programs established. Accelerated commercialization via regional CETACs by providing services on new technologies to 140 Environmental SMEs. 18 projects approved/implemented under IEMI through the Canadian Environmental Industry Strategy.
Industrial sectors to become more "eco-efficient" by adopting green technologies and services and economic growth and jobs are fostered at the same time.	Initiate Environmental Technology Verification program (ETV) (1996-97). Improve environmental and competitive firm performance by promoting ISO 14000, sustainable product policy, and extended producer responsibility.	Initiated ETV to promote SMEs via validation of their product performance claims. Two national workshops held to promote ISO 14000, sustainable product policy, and extended producer responsibility. *Environmental Life Cycle Management — A Guide to Better Business Decisions* was published.
Environment Canada to be in compliance with the *Canadian Environmental Assessment Act* (CEAA) and Cabinet directives on environmental assessment of policies and programs.	Fulfill environmental assessment mandate and set an example federally (OGDs) and internationally. Market environmental technologies through international environmental assessment (EA) commitments (1996-97).	Review and advice provided on EA of over 1845 documents (e.g. Voisey's Bay Mine, Irving Whale, BHP Diamond Mine, Confederation Bridge, low-level flying), and on 94 draft Memoranda to Cabinet to ensure that they were in compliance with government policy on EA.

Summary Table of Performance Expectations and Selected Accomplishments, 96-97 (continued)

To be Achieved	Expectations 1996-97	Accomplishments
		With OGDs, developed document on EA of policies/programs; provided EA Workshops in Canada/abroad; delivered EA expertise/technology to Chile, Portugal and Costa Rica.
Public and other stakeholders to be mobilized for advancing Canada's environmental agenda.	Implement Action 21 by funding community NGOs, Action 21 public awareness campaigns support EC's priorities in areas like climate change and biodiversity. Engage youth in environmental action and policy.	Action 21 was created in 1995; over 376 projects have been funded. Action 21 media materials created to encourage reduction of vehicle emissions. Program to recognize "local heroes" launched. Youth Round Table created and Youth Journalist activities promoted.
Mobilize effective partnerships nationally and provide a strong international voice to build a sustainable development agenda		
Visible Federal leadership and action to be implemented for integrating sustainable development (SD) into government policies and operations.	A process is established to better align economic and environment signals in successive budgets. Development of a Sustainable Development (SD) Strategy for EC (1996), including a component reflecting the department's operations (Environmental Management System-EMS) (1996-97).	July 1996 response to *Keeping a Promise: Towards a Sustainable Budget,* was tabled in the House of Commons. EC's SD strategy completed, and approaches shared with OGDs. EC implementing EMS based on ISO 14000 standards; 72% diversion rate from landfill of total waste generated by EC in the NCR; projected energy savings of $.85 million at CCIW at Burlington, Ontario.
Partnerships to be established to promote, develop and rationalize environmental policies/ practices.	Up to 40 bilateral and multilateral agreements with provinces and territories by 1998 to efficiently achieve environmental results.	Federal-provincial agreement in principle on Harmonization Accord: sub-agreements on Standards and Inspections substantially complete; CCME direction for new approach to environmental assessment.
International agreements and fora to promote and protect Canada's interests and to foster the resolution of globally common issues.	Provinces and territories consulted where meeting "national" commitments relates to ability to deliver. EC positions put forward by Canada in international fora: CSD and General Assembly; 5-year review of Rio; UNEP General Council; OECD EPOC; UN-ECE; APEC; and OAS. Release report on Canada's Agenda 21 progress. WTO Ministers consider recommendations to align trade and environment policies beginning in 1996.	Additional provinces signed the Canadian Intergovernmental Agreement regarding the North American Agreement on Environmental Cooperation. APEC economic leaders endorse Sustainable Development for priority theme in 1997. Bilateral agreements reached with Thailand, Trinidad, Taiwan and Chile. EC/Finance engage in OECD review of subsidies/ disincentives. EC/OGDs submitted Canada's report *Building Momentum: Sustainable Development in Canada,* to the 5th Session, UN Commission on SD. Recommendations to align trade and environment policies considered by the WTO's Ministerial Conference in Singapore in December 1996.

Additional Information

Comparison of Total Planned Spending to Actual Expenditures, 1996-97 by Business Line

($ millions) Business Lines	Human Resources (Full Time Equivalent)	Operating[1]	Capital	Grants and Contributions	Total Gross Voted Expenditures	Less: Revenue Credited to the Vote	Total Net Expenditures
A Healthy Environment	1,659	202.6	8.6	25.7	236.9	6.3	230.6
	1,785	206.0	6.0	29.1	241.1	5.9	235.2
Safety from Environmental Hazards	1,352	146.4	10.8	2.8	160.0	24.6	135.4
	1,407	165.0	11.3	3.0	179.3	25.9	153.4
A Greener Society	812	118.5	8.4	11.6	138.5	24.6	113.9
	832	115.9	9.4	16.3	141.6	21.1	120.5
Administration	814	64.6	1.9		66.5		66.5
	886	70.8	1.2		72.0		72.0
Totals	**4,637**	**532.1**	**29.7**	**40.1**	**601.9**	**55.5**	**546.4**
	4,910	**557.7**	**27.9**	**48.4**	**634.0**	**52.9**	**581.1**
Other Revenues and Expenditures							
Revenue credited to the Consolidated Fund							(3.1)
							(7.3)
Cost of services provided by other departments							49.3
							49.3
Net Cost of the Program							592.6
							623.1

Shaded numbers are Actuals

1 Operating includes contributions to employee benefit plans and minister's allowances.

Explanation of Change: The $34.7 million increase in the 1996-97 Actual Expenditures over the 1996-97 Main Estimates is due mainly to:	**$ Millions**
Operating: The net effect of the 1995-96 operating budget carryforward received in 1996-97 offset by 1996-97 operating budget funds to be carried forward into 1997-98 (5.8); additional resources in respect of employee departure programs and other costs paid by Treasury Board Vote 5 (20.5)	**25.6**
Capital: Reallocation of resources to other priorities	**(1.8)**
Grants and Contributions: Payments to additional international organizations (including NACEC, INWEH) and to the Wildlife Habitat Canada Foundation	**8.3**
Revenues Credited to the Vote: Revenue realized from hydrometric and ice services and from publications was less than expected with the decrease partially offset by increased revenues from meteorological services, in particular from the NAV Canada Agreement.	**(2.6)**

Departmental Planned versus Actual Spending by Business Lines

($ Millions)

Business Lines	Actuals 1995-96	Total Planned 1996-97	Actuals 1996-97	Total Planned 1997-98
A Healthy Environment	247.3	230.6	235.2	220.6
Safety from Environmental Hazards	189.2	135.4	153.4	130.5
A Greener Society	129.1	113.9	120.5	94.2
Administration	85.2	66.5	72.0	62.2
Total	**650.8**	**546.4**	**581.1**	**507.5**

Explanation of Change: The $34.7 million increase in the 1996-97 Actual Expenditures over the 1996-97 Main Estimates is due mainly to:

	$ Millions
Net effect of the carryforward of the 1995-96 operating budgets received in 1996-97 and the lapsing resources of 1996-97	5.8
Additional resources in respect of employee departure programs	12.3
Severance pay and other Treasury Board Vote 5 eligible costs	8.2
Adjustments for changes in timing in the revenue collections from NAV Canada	4.0
Grant to the Wildlife Habitat Canada Foundation	1.7
Other workload adjustments	2.7
Increase	**34.7**

Section III: Business Line Performance

Business Line Goal: A Healthy Environment

This business line addresses: the air we breathe and our global atmosphere; the toxic substances we emit; biodiversity; the impact of human activities on ecosystems; and promotion of enforcement and compliance.

The Issues

Over the past quarter century, the quality of Canada's environment has improved in a number of respects, as last year's *Performance Report* showed. The evidence is that Environment Canada has made a material contribution to these improvements. However, it is becoming only too clear that the global environment is deteriorating at an accelerating rate and that Canada's environmental heritage and achievements are increasingly vulnerable to changing global conditions.

Consumerism in the developed world, rapid industrialization and urbanization in the developing world, and global population growth are beginning to test the limits of the earth's capacity to provide food, water and energy and absorb wastes, toxics and other pollutants. The rate at which demand is growing is also testing our own ability to adapt to naturally occurring and human-induced hazards and changing environmental conditions. The rate at which environmental issues can be solved is also slowing as issues that are increasingly global in scale are found to require more long-term preventive, rather than shorter-term command and control, approaches.

What is the state of our knowledge?

Environment Canada has earned an international reputation for scientific excellence in the global effort to understand a healthy environment and the stressors that threaten it. The department's science galvanized global action on ozone depleting substances, North American action on acid rain, and national action on pulp and paper effluent. The department adopted and promotes the use of a multidisciplinary or ecosystems approach to environmental sustainability in the management of its programs — and with its partners.

That said, our scientific understanding of many issues is not yet sufficient to provide a complete picture of their complexity and interconnectedness. Some problems have been found to persist even when the source has been removed, as in the case of DDT in the Great Lakes. Others are hard to detect, such as toxic substances that may accumulate below scientific detection levels for decades before their effects become evident. We do not yet fully comprehend the interactions of various environmental stressors and their effects on ecosystems and the global environment. There is growing potential for surprises as substances interact in unforeseen ways.

While we have long known about the risks that certain toxics and environmental hazards pose to human health and well-being, evidence suggests

that some of these risks are becoming more serious and probable. We are beginning to understand the health effects of endocrine-disrupting substances and the cognitive effects of prolonged exposure to low levels of heavy metals. It appears, however, that the greatest health and environmental effects are likely to arise from such global phenomena as ozone depletion and biodiversity loss, and their interaction.

Performance

Canadians are concerned that their health is being affected by pollution and that their children will be denied the benefits and pleasures of the environmental heritage they received. With its partners and all Canadians, Environment Canada seeks to:

- reduce the negative impacts that human activity has on the atmosphere and help Canadians better understand, prevent and adapt to the resultant consequences;
- eliminate the threat posed by toxics to human health and the environment;
- fairly and effectively enforce and promote compliance with environmental laws and regulations;
- conserve and enhance Canadian and global biodiversity; and
- conserve and restore ecosystems.

Environment Canada develops preventive mitigation and adaptive standards and strategies to address **climate change**, **stratospheric ozone depletion**, **hazardous air pollutants**, **smog, acid rain**, and **inhalable particulates** with a focus on energy and transportation sectors.

Within these broad objectives, Environment Canada's strategy is to focus on environmental issues that pose the greatest risks to human health and the environment: toxics in our air and water, and the loss of species.

The atmosphere sustains and protects life on earth, creates the climate and weather patterns that govern our lives, and carries the pollutants discharged into it from one part of the globe to another. The chemical composition, temperature, and even the behaviour of the atmosphere are being changed by our industrial civilization, but to what degree is, as yet uncertain.

This report focuses on four complex and inter-related atmospheric issues — climate change, stratospheric ozone depletion, smog and acid rain. These issues exhibit similar characteristics: they are injurious to human and ecosystem health; they have detrimental effects on the Canadian economy through agriculture, fishing and forestry; they are subject to long-range transport; and climate change and stratospheric ozone depletion are global in scale. The primary source of pollutants contributing to these problems is the burning of fossil fuels. To prevent and remedy impacts, efforts must be made on the science and policy fronts simultaneously. These efforts will take time.

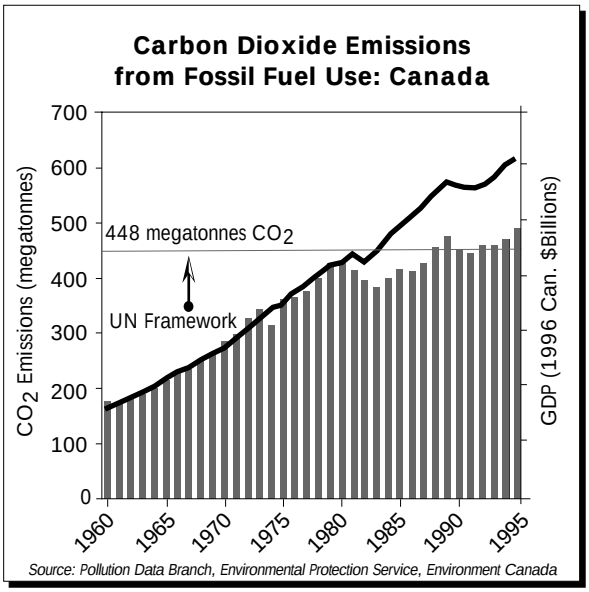
***Result to be achieved*:** Greenhouse gas emissions (GHGs) to be reduced and stabilized in Canada and international actions to reduce global concentrations are promoted.

Emissions of greenhouse gases (GHGs) continue to rise in Canada and globally. Canada has for some time been attempting to stabilize its emissions of greenhouse gases. The issue is, nevertheless, in the early stages of its life cycle, given the state of our knowledge of the impacts of climate change and the level of public understanding. Over the past year, Environment Canada's scientific efforts focused on determining the implications of climate change for Canada:

- simulations of historical and future effects of GHG and aerosol emissions, using a new atmosphere-ocean general circulation model, suggest that global warming by the year

2100 will be at the high end of current projections—and that Canada may be warming more than the global average;

- reports of the impact of climate change on British Columbia and the Yukon have been published, and work on the full Canada Country Study on Climate Change is progressing toward a 1998 release;
- economic studies of the impacts of climate change mitigation continue with Industry Canada, Department of Foreign Affairs and International Trade, Finance and National Resources Canada.
- at a December 1996 Joint Meeting of the Canadian Energy and Environment Ministers, Canada acknowledged that it will not meet its commitment to stabilize emissions by the year 2000. However, federal and provincial ministers renewed their commitment to achieving stabilization;
- Environment Canada and Natural Resources Canada worked to make the greenhouse gas issue real to Canadians while showing federal leadership in reducing emissions by announcing 45 new federal measures to address the issue and by undertaking a commitment to buy Green Power for their Alberta operations; and
- Environment Canada played a leadership role in the difficult and continuing negotiations with other federal departments and the provinces to define a Canadian position for the Third Conference of the Parties in Kyoto, Japan, in December 1997.



The lessons learned over this past year are that Environment Canada still has much to do to make climate change and its implications real to Canadians, and that Canada needs to bring a new sense of pragmatism to international negotiations.

Result to be achieved: Consumption of ozone-depleting substances to be stabilized, reduced or eliminated and ozone layer begins to recover.

The state of the ozone layer is a relatively mature issue. The result of a decade of science, regulation, and global action is that we are beginning to see reduced loadings of ozone-depleting substances on the environment. However, recovery from the damage done will take decades.

Environment Canada provides world-class expertise and leadership in atmospheric chemistry aimed at monitoring the ozone layer and understanding the effectiveness of international policies:

- it has participated in national and international experiments such as the International Stratospheric Ozone Depletion Study;
- its monitoring networks measure stratospheric ozone and UV-B and the state of the stratospheric ozone layer;
- a sun photospectrometer, designed by Environment Canada staff and flown on space shuttle missions, provided the first verification that ozone depletion leads to increased ground level UV flux; and
- linking air chemistry-meteorological models has enabled the department to test emission-control scenarios before they are implemented.

Environment Canada's ozone science has also been used to support domestic priorities. In 1992, the Canadian Council of Ministers of the Environment approved the National Action Plan for Chlorofluorocarbons (CFCs).
This past year, the plan was completed with:

- publication of the code of practice for halons; and
- an updated code of practice for the refrigeration and air-conditioning sector.

Both codes were developed by Environment Canada and aim to reduce or prevent emissions in sectors which still use significant quantities of ozone-depleting substances.

An update of the National Action Plan has also been developed and approval by the Canadian Council of Ministers of the Environment has been requested. The new plan will:

- incorporate all ozone-depleting substances and halocarbon alternatives that have entered the market; and
- provide a national framework for a harmonized approach by federal, provincial and territorial governments to implementing the ozone layer protection program.

***Result to be achieved*:** Canadian levels of smog and inhalable particulates to be reduced.

The state of our knowledge about smog has evolved considerably since research began over 25 years ago. This knowledge has been used to set clean air targets, including those in the NOx/VOC Management Plan signed by the Canadian Council of Ministers of the Environment in 1990.

While this progress is important, our evidence suggests that Canada is a long way from achieving its clean air goals. In 1996, Environment Canada's science on smog produced the following key findings:

- although occurrences of smog in the three most prominent smog areas of Canada — the Lower Fraser, Windsor-Quebec corridor and southern Atlantic region — were lower in 1996, the number of times they exceeded acceptable levels increased in 1997 due to hot sunny weather which is conducive to smog creation;
- the current air quality objective for ground-level ozone under the NO_x/VOC Management Plan is 82 parts per billion (ppb). However, results of scientific work done in cooperation with Health Canada indicate that 82 ppb may not be sufficient to protect human health and vegetation; and
- a science assessment of particulate matter (also conducted with Health Canada) has indicated that inhalable particulates are linked to increased hospital admissions and mortality rates.

This past year, Environment Canada took steps to launch a new initiative on air quality to protect Canadians:

- the technical aspects of a NO_x/VOC Science Assessment were completed using a multi-stakeholder process involving scientists from a broad spectrum of organizations;
- the basis for a "Next Steps Smog Management Plan" was developed and negotiated with provincial and territorial governments. It consists of federal and regional smog plans;
- internationally, Canada provided leadership in developing new protocols on NO_x and VOCs, under the UN Economic Commission for Europe; and
- to date, 29 national preventive initiatives on industrial processes, coatings and industrial products, fuels, vehicles and commercial practices have been approved by the Canadian Council of Ministers of the Environment.

***Result to be achieved*:** Negative impacts of acid rain to be minimized.

In 1996, Environment Canada's scientific efforts on acid rain focused on evaluating the effectiveness of existing national policy. The results form part of the 1997 Canadian Acid Rain Assessment. The science shows progress in emission reductions by Canada and the U.S. However, problems such as loss of soil nutrients, damaged lakes and human health effects continue. Sensitive areas of Eastern Canada will continue to incur soil and lake acidification if emissions are not cut further. Federal and provincial governments have been consulting on a new Acid Rain Strategy for Canada for the post-2000 period to ensure that critical loading limits are not exceeded, that cooperative efforts with the U. S. will reduce transboundary emissions, that "clean areas" are kept clean, and that the adequacy of the science program is reviewed.

Result to be achieved: The environmental stress caused by transportation to be reduced.

In 1997, Parliament passed the *Manganese-based Fuel Additives Act* prohibiting the importation and inter-provincial trade for commercial purposes of MMT and unleaded gasoline containing MMT. The Act came into force June 24, 1997. Diesel fuel regulations were also passed in February 1997 restricting the level of sulphur in diesel fuel for on-road use to 500 ppm beginning January 1, 1998.

Environment Canada assesses the risks associated with **toxics**, and implements targeted measures to virtually eliminate persistent bioaccumulative toxics (PBTs) and to prevent, control or eliminate the use or release of other toxics of concern.

Environment Canada relies on domestic and international partners to help reduce the risks posed by toxics in the Canadian environment:

- internationally, with other countries to reduce the entry of toxics from foreign sources into the Canadian environment; and
- domestically, with other federal departments, other levels of government, non-government organizations, industry and communities to minimize domestic releases of toxic substances.

Since 1988, the *Canadian Environmental Protection Act* (CEPA) has provided Environment Canada with the federal legislative authority to assess and manage toxic substances in Canada. CEPA has proven to be a valuable tool, and considerable progress has been achieved, including:

- the banning of lead in automotive gasoline;
- the phasing-out of several ozone-depleting substances;
- the virtual elimination of dioxin and furan emissions from the pulp-and-paper industry; and
- new substances notification regulations.

Amendment of this legislation would enable Canada to move further and faster to reduce the risks associated with toxics. Although the department succeeded in having legislation to amend the Act introduced in the last Parliament, it died on the Order Paper when the government called a federal election.

Environment Canada's approach to the assessment and management of risks posed by toxics builds on

sound science to implement the federal Toxic Substances Management Policy (TSMP).

Over the past year, Environment Canada has been working with provincial governments to develop a Canadian Council of Ministers of the Environment Policy for the Management of Toxic Substances that is consistent with the federal policy.

***Result to be achieved*:** Management actions to be implemented toward the virtual elimination of persistent bioaccumulative toxics (PBTs) resulting from human activity,(TSMP Track 1 substances).

There is considerable agreement among governments about which substances pose the most risk to human health and the environment. This is predicated, in part, on our knowledge of long-range atmospheric transport, an area for which Environment Canada is well respected. Many of these substances are persistent and bioaccumulative.

With our international and domestic partners, Environment Canada continues to use its scientific understanding of these substances to move further towards their virtual elimination.

Over this past year:

- 13 toxic substances were assessed against scientific criteria for persistence and bioaccumulation and proposed for virtual elimination domestically;
- Environment Canada scientists, with scientists from three other federal departments, concluded an assessment of contaminants in the Canadian Arctic. Clear evidence that contaminants in the Canadian north originate outside the country has resulted in a stepped-up attack by Canada to control or eliminate releases of persistent and bioaccumulative toxic substances abroad. The department continues to be actively engaged in international negotiations under the UN-ECE Convention on Long-Range Transboundary Air Pollution on a protocol for 15–18 persistent organic pollutants and heavy metals; and
- under the draft sub-agreement on Standards to the Harmonization Accord of the Canadian Council of Ministers of the Environment, candidate substances for the development of Canada-wide Standards were identified, including discharge and ambient Standards for dioxins and furans. Environment Canada is now working with the provinces and territories on their development.

The Canada-U.S. Great Lakes Binational Toxics Strategy—aimed at virtually eliminating human-generated persistent and bioaccumulative toxic substances from the Great Lakes—was signed in April 1997.

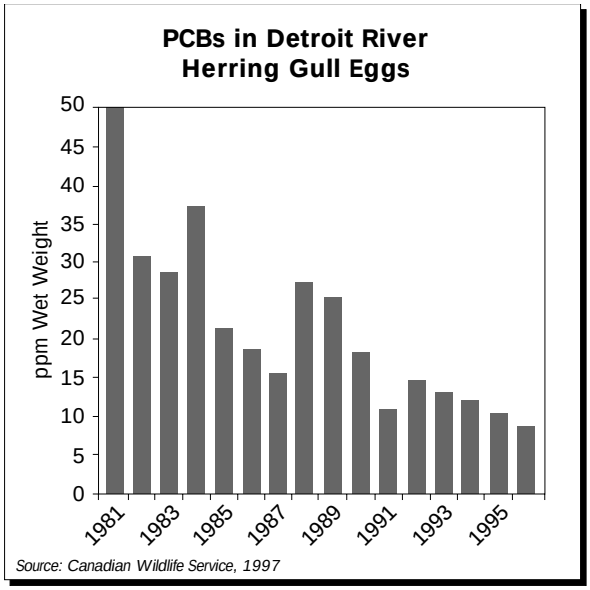
Under this strategy:

- fourteen substances have been identified for action (ten of which are the same as those targeted by CCME for action);
- measurable reduction targets and timelines, ranging from 1997 to 2006, have been set for each substance; and
- both countries will monitor and report on progress.

Considerable progress was made towards managing PCBs:

- under the NAFTA Council on Environmental Cooperation, a regional action plan was completed in 1996 and its implementation begun;
- in February 1997, new PCB Waste Export Regulations were established that complement a 1996 federal-provincial agreement to ban land-filling of PCB wastes; and
- since 1990, the federal government has destroyed over 5000 tonnes of federal PCB waste. A small amount of federal PCBs remain in storage. PCBs have been found at

DEW-line sites being demolished, and Environment Canada is working with other departments to develop disposal options.



Last year's *Performance Report* briefly described the successful raising of the oil barge *Irving Whale* from the Gulf of St. Lawrence in July 1996. The department can now report that the operation, conducted with the Department of Fisheries and Oceans, recovered 3200 tonnes (approximately 80%) of the bunker C cargo, and over 1800 kgs of PCBs — thereby significantly reducing the environmental threat posed by this source. Some contaminated sediment in the vicinity of the site was also removed. (See Emergency Prevention and Preparedness)

***Result to be achieved*:** Management actions to be implemented to prevent, reduce or eliminate the risks posed by toxics that do not meet all the TSMP Track 1 criteria, and by other substances of concern.

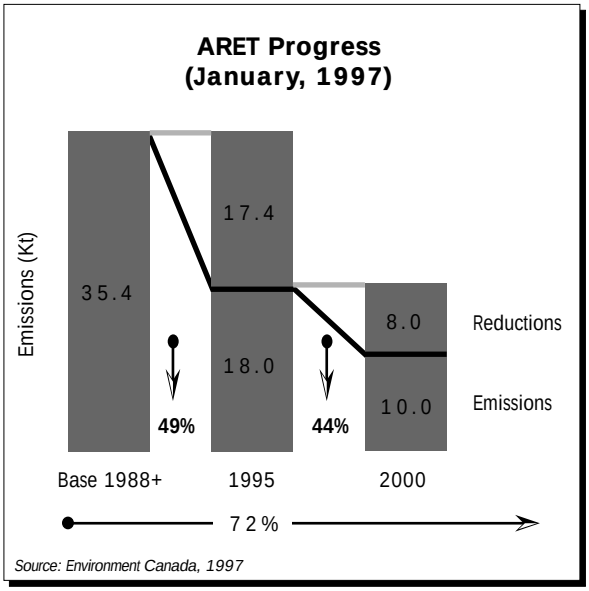
Environment Canada's approach to managing toxics focuses on:

- pollution prevention;
- a life cycle approach; and
- the use of effective and efficient methods to reduce toxics in the environment.

A multi-stakeholder process is commonly used to recommend management approaches which may include: regulations, incentives for voluntary action, covenants and other approaches. Over the past year, this approach had considerable success:

- of the 25 substances deemed toxic on the first Priority Substances List (PSL1), regulations or prohibitions were put in place for five;
- in February 1997, management strategies, including regulations and other measures, were approved for another four toxic substances. Implementation of these recommendations is on-going; and
- a further ten consultative working groups are expected to make recommendations on the remaining PSL1 toxic substances by the end of fiscal year 97/98.

The voluntary initiative, Accelerated Reduction/ Elimination of Toxics Program (ARET), targets 117 toxic substances for voluntary emissions reduction. Since 1994 the program:



- has grown to include 278 facilities in eight major industrial sectors, and
- reduced the annual toxic emissions of participants by almost 17 500 tonnes—a decrease of 49%.

In 1996, the department completed a report entitled Assessment of the *Aquatic Effects of Mining in Canada* (AQUAMIN) on the effects of metal mining activities on aquatic environments. The report sets out:

- the scientific findings;
- recommendations on amendments to the *Metal Mining Liquid Effluent Regulations*;
- design of a national Environmental Effects Monitoring program; and,
- updates to the Environmental Code of Practice for Mines.

Stakeholders participated at all levels and the report represented a remarkable consensus.

In August 1996, the federal ministers of health and the environment, with provincial ministers, and the mayor of the Cape Breton Regional Municipality joined with community members to develop a community-based action plan for the Sydney Tar Ponds and Coke Ovens sites. They formed the Joint Action Group for Environmental Clean-up (JAG). The JAG process will take approximately two years and will require up to $8 M shared between the federal and provincial governments. Accomplishments to date have focused on: site assessment, leachate studies, health studies and public education.

As a result of efforts in areas such as compliance promotion and enforcement, as well as increased trade between Canada and the US, reporting related to the export and import of hazardous wastes regulations under CEPA increased by about 25% in 1996-1997. They included:

- 1408 export notices;
- 4918 import notices and 500 notices for hazardous waste shipments in transit processed; and
- 33 500 manifests for tracking shipments associated with these notices.

Environment Canada's goal is to conserve and enhance Canadian and global biodiversity. Traditionally, the department's focus has been on migratory birds and their habitats, (especially waterfowl), because of federal responsibilities under the Canada-U.S. Migratory Birds Convention. As issues related to wildlife management have broadened, so to have Environment Canada's responsibilities.

Environment Canada acts nationally and internationally to protect and recover **endangered species**, sustain **migratory birds** and other **wildlife** populations, and conserve wildlife habitat.

Alarm over the growing number of threatened species worldwide has focused attention on Canada's species at risk. Environment Canada has worked with parties in Canada to draft action plans to implement the Canadian Biodiversity Strategy, and has taken a leadership role in a broad range of international initiatives promoting the conservation of biological diversity worldwide.

Research in Canada and the U.S. in recent years has highlighted conservation problems with migratory birds that are not hunted, such as songbirds that migrate to Latin America. In response, Environment Canada, led the development of a national Framework for Landbird Conservation in 1996, in cooperation with non-government groups and others. It will provide a focus for regional action plans to address species and land use concerns.

In 1996, Environment Canada ensured that the principles of the Protocol to Amend the Migratory Birds Convention—recently negotiated with the provinces, territories, aboriginal parties and the U.S.—were incorporated into land-claim negotiations.

***Result to be achieved*:** Targeted wildlife populations under federal jurisdiction to be sustained at, or increased to, healthy levels.

Environment Canada research has shown that waterfowl hunting has resulted in an unintended environmental problem. Lead shot has become one of the most significant sources of lead deposited into the environment. Our science has concluded that 200 000 to 360 000 game ducks in Canada die annually from lead-shot poisoning, and that several million suffer sublethal lead poisoning. In 1996, Environment Canada:

- banned the use of lead shot in all National Wildlife Areas; and
- developed a draft regulation to ban the use of lead shot for waterfowl hunting across Canada.

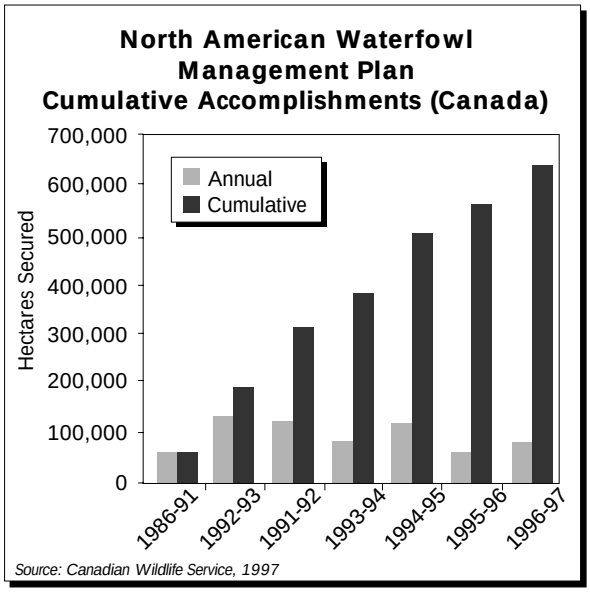
***Result to be achieved*:** Significant wildlife habitat and ecosystems to be protected and enhanced.

The availability of suitable habitat is required to sustain healthy wildlife populations. In 1996, Environment Canada:

- enhanced the network of protected areas by establishing the Gros Mecatina Migratory Bird Sanctuary in Quebec; and
- brought the total area of wetlands and upland habitat, secured and enhanced, since 1986, to over 0.621 million hectares (81 678 ha in 1996-97) and influenced land use on a further 2.2 million ha to benefit wildlife under the North American Waterfowl Management Plan.

Environment Canada was instrumental in obtaining an amendment to the *Income Tax Act* covering the donation of ecologically sensitive land for wildlife conservation. In 1996, Environment Canada negotiated implementation agreements with five provinces. As of March, 1997:

- 23 gifts of title or easements related to properties identified as ecologically sensitive had been made across Canada;
- the gifts were developed cooperatively with the Nature Conservancy of Canada, municipalities, and other qualified non-government charitable organizations; and
- the value of tax receipts issued by these agencies was estimated to exceed $10M and involved a total area of over 3500 hectares.

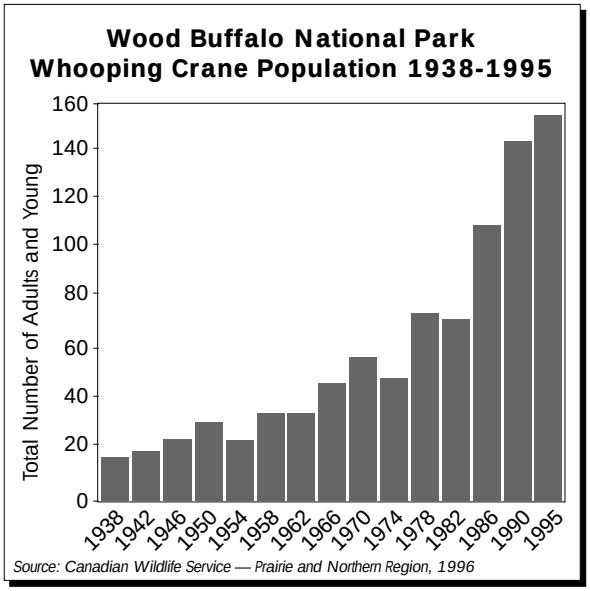


***Result to be achieved*:** Positive recovery trends to be achieved for threatened or endangered species.

In 1996, the Minister of the Environment tabled Bill C-65—the *Canada Endangered Species Protection Act*—for first reading in Parliament. The draft bill was reported back to Parliament by Standing Committee, but died on the Order Paper when the June 1997 federal election was called.

In 1996, the federal government gained the endorsement of provinces and territories for a National Accord for the Protection of Species at Risk. The Accord sets out requirements for:

- complementary legislation in all jurisdictions; and
- programs providing for the effective protection of endangered species throughout Canada.

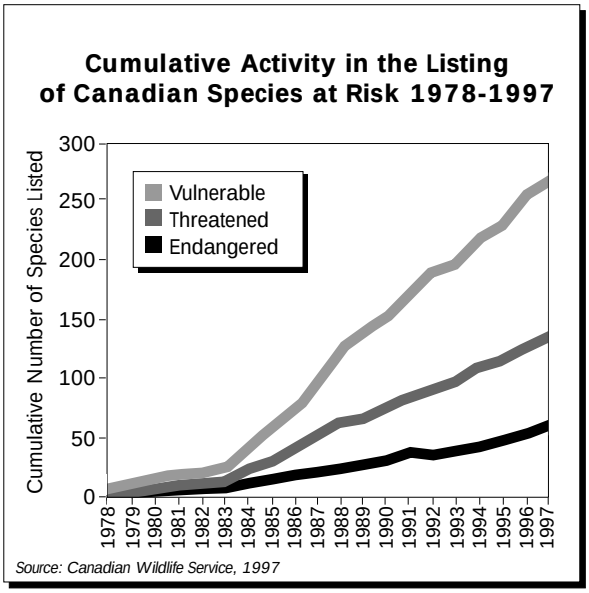


Canada-U.S. cooperation on endangered species moved a step forward with the signing on April 7, 1997, of a Framework for Cooperation between Environment Canada and the U.S. Department of the Interior in the Protection and Recovery of Wild Species at Risk. Currently, Canadian and U.S. agencies are working on recovery efforts for endangered species such as the Piping Plover and the Whooping Crane.

***Result to be achieved*:** Canada's leadership and expertise to advance the international biodiversity agenda.

Canada was one of the first nations to sign the international Convention on Biological Diversity, and has maintained a high profile in the implementation of the Convention, both nationally and internationally. In 1996:

- obtained agreement at the Third Conference of the Parties on Canada's objectives, including agreement to hold an intergovernmental meeting on indigenous issues in Montreal in 1997;
- co-sponsored a workshop on the economic valuation of biodiversity for Latin America and the Caribbean that produced a well-received program of work to build capacity in this region; and
- launched a collaborative initiative to build capacity for implementation of the Convention in francophone Africa.



On May 14, 1996, the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA) was proclaimed, and the Wild Animal and Plant Trade Regulations came into force. Under the Act, Environment Canada has the authority to prevent illegal trade in wild animals and plants and their parts and derivatives, both nationally and internationally. The department also launched a national awareness information campaign on WAPPRIITA, including brochures and travellers' guides to help the public understand the new Act.

Environment Canada builds understanding of how **ecosystems** work and the impacts of human activities and natural events on them, develops and implements strategies to conserve ecosystems, and takes action on ecosystems of national priority.

An ecosystems approach is essential in dealing with issues of environmental sustainability. The approach combines multidisciplinary scientific knowledge of the environment with an understanding of the social and economic factors that shape human attitudes, perceptions and behaviour. The global state of knowledge on the functioning of ecosystems is in the very early stages of development. Environment Canada contributes to ecosystem sustainability by furthering scientific understanding of how ecosystems work and the impact of human activity, and by working with partners and communities to develop strategies for action.

***Result to be achieved*:** Ecosystem science to be undertaken, scientific tools to be created and information transferred in support of ecosystem management initiatives.

Environment Canada's ecosystem science is at work in the Peace-Athabasca Delta, Prince Albert National Park, the Mackenzie River Basin and the Arctic Ecozone. This report highlights the performance of the MacKenzie Basin Impact Study and the Northern Rivers Basin Study:

- MacKenzie Basin Impact Study: Initiated by Environment Canada in 1990 as a six-year research project, the study was the first of its kind in the world. It required the participation of scientists from many disciplines and stakeholders in the Mackenzie River Basin region, including representatives from aboriginal groups, industrial firms, universities, northern colleges and research institutes, as well as municipal, territorial, provincial and federal governments. It was directed by a working committee of representatives from aboriginal organizations, industry and governments. The output of the project is an integrated regional assessment of climate change scenarios for the entire Mackenzie River Basin watershed, released by Environment Canada in early 1997. The assessment provides the essential data upon which stakeholders can build appropriate strategies and actions.

- The Northern Rivers Basin Study: This four-year study examined the relationships between human development and aquatic ecosystems in the Peace, Athabasca and Slave River Basin. Directed by a 25-member multi-stakeholder board, the study integrated traditional ecological knowledge with science. It brought the views of industry, the public, governments (federal, provincial and territorial) and First Nations together. Community gatherings grounded the study's scientific efforts and provided important local perspectives that enriched the report's final recommendations, while Environment Canada lead much of the scientific effort. The *Northern Rivers Basin Study Report* was received by governments on June 6, 1996. A joint federal-provincial-territorial task force is developing a response to be released in early fall.

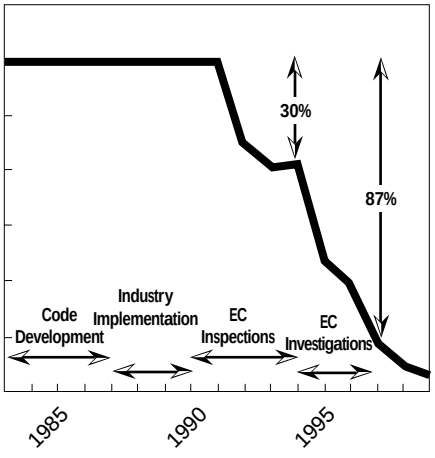
***Result to be achieved*:** Health and sustainability of targeted ecosystems across Canada to be improved through ecosystems initiatives of national priority.

Environment Canada targets its leadership where risks to the environment are greatest. Its initiatives in ecosystems of national priority are examples of its influence at work and clearly illustrate the advantages of integrating science with government, private sector and community action. This report highlights departmental performance over the past year in the Fraser River, Atlantic Coast, St. Lawrence and Great Lakes ecosystem initiatives.

- Fraser River Action Plan: During the 1980s, Environment Canada scientists identified the toxicity of heavy-duty wood preservation chemicals to aquatic life. Under the Fraser River Action Plan, inspections and investigations of wood preservation plants along the Lower Fraser River were intensified, and discharges in violation of federal and provincial laws were identified. Most facilities have taken action to reduce their contaminant discharges through dry storage sheds, stormwater collection and treatment systems, and more efficient industrial processes. A substantial reduction in contaminant loading to the river has been achieved, including zero discharge in some cases. Overall, the toxic runoff from these facilities has been reduced by an estimated 87%, at a cost of $600 000 to government and about $25 million to industry.

In 1996/97, a review of the Fraser River Action Plan determined that the program objectives and mandate continue to be relevant. Lessons learned from the program, which can be applied to other ecosystem initiatives, stress the need for strong planning, coordination and accountability mechanisms in a multi-partner initiative. The identification of results in an environmental, economic and social context is also important.

Lower Fraser Heavy Duty Wood Preserver Toxic Runoff



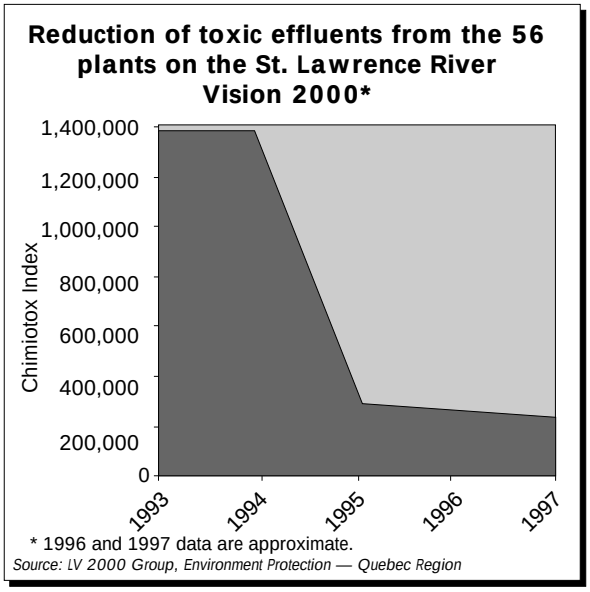
Source: Environment Protection — Pacific and Yukon, 1996

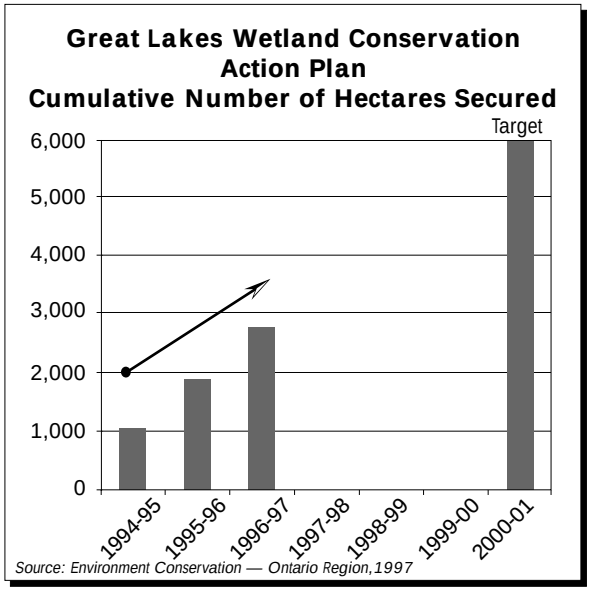
- The Atlantic Coastal Action Program: The program has helped 13 community-based groups in the four Atlantic provinces examine issues and make plans to remediate degraded watersheds and estuarine areas. In each case, a Comprehensive Environmental Management Plan is being developed with the involvement of communities, industries, farmers, fishers, municipalities and provincial governments. They identify 1000 actions for dealing with such issues as water quality, municipal and domestic sewage, habitat protection and restoration, as well as solid waste management. They also provide a "snapshot" assessment of environmental quality in the Atlantic region.

- St. Lawrence Vision 2000: A key consideration in restoring the St. Lawrence River is the reduction of industrial toxic effluents. The program has targeted a total of 106 industrial plants along the St. Lawrence River and 16 of its tributaries for priority action. Fifty plants have already achieved an overall reduction of 95% in toxic liquid effluent. Specific objectives for the other 56 include:

  - reducing toxic liquid effluent from 11 of the plants by 90%;
  - ensuring the optimum reduction of toxic liquid effluent from 22 plants that have already installed treatment technologies; and
  - assessing the toxic liquid effluent from 23 regulated pulp and paper mills to determine the optimum corrective measures required.

The Chimiotox index, developed by Environment Canada, is used to measure reductions in toxics. In March 1997, an overall reduction of 83% in toxic effluent was recorded for the 56 plants.





Great Lakes 2000: In partnership with the Province of Ontario and others, Environment Canada has established 50 measurable results to be achieved by the year 2000 in the Great Lakes Basin. Highlights of the results achieved to date include:

- approximately 13% of beneficial uses were restored across 17 Canadian areas of concern. Collingwood Harbour is the first area of concern in the Great Lakes Basin to have been fully restored;
- 4500 tonnes of toxic chemical emissions were reduced and/or eliminated as a result of 13 voluntary partnerships with industrial and commercial associations, member companies, communities and municipalities;
- over 2900 hectares have been conserved and rehabilitated at 13 sites within the Great Lakes Basin. Sites secured in 1996/97 include: Wainfleet Bog, North Cayuga Slough Forest and portions of the Long Point Wetlands complex on Lake Erie;
- in 1996/97, the Great Lakes Cleanup Fund assisted the municipalities of Midland, Collingwood and Windsor to realize savings of $18.8M by conducting process audits of sewage treatment plants;
- across all areas of concern, another $18M in estimated annual savings resulted from the use of innovative storm water management practices, and $33M was saved through a pilot evaluation of low-cost processes for the Windsor West sewage treatment plant; and
- SEDTEC, a directory of contaminated sediment removal and treatment technologies including those evaluated by the Cleanup Fund was developed by the department, and is being sold in Canada and internationally.

Environment Canada designed regulations to establish standards that, if met, will protect and conserve the environment and minimize the risk of harm. Compliance with regulations is essential to achieving the level of environmental conservation and protection that Canadians need and want. In order to achieve compliance, the department performs a continuum of activities. These range from promoting compliance, to ensure that the regulated community understands the legislation and its requirements, to enforcing compliance through investigation and prosecution.

Environment Canada targets **enforcement** activities against serious offenders of environmental laws and regulations, maintains a high level of compliance where it exists and recognizes performance leaders.

In its Action Plan for 1996-2000, Environment Canada outlined three priorities for its enforcement efforts: pulp-and-paper mills, transboundary movement of hazardous wastes and wildlife smuggling and commercialization. This report focuses on the Department's performance in these areas.

***Result to be achieved*:** A high level of compliance with laws and regulations to be achieved.

Pulp and Paper: Canada has 157 pulp and paper mills subject to the *Pulp and Paper Mill Effluent Regulation* and 42 mills subject to the *Chlorinated Dioxins and Furans Regulation*. At the time the regulations came into effect, Environment Canada agreed to give a Transitional Authorization Extension (to December 31, 1995) to 79 mills. As part of its compliance approach, the department committed to visiting every mill in Canada, with priority given to mills with expiring extensions. Some of these inspections were performed by provincial representatives, where bilateral agreements exist (Saskatchewan, Alberta, Quebec and British Columbia).

During the 1996-97 fiscal year, Environment Canada conducted 356 inspections under the pulp and paper regulations and 37 inspections under the dioxins and furans regulation.

- Mills found non-compliant were subject to enforcement actions. For example, Corner Brook Pulp and Paper Limited was found guilty of violating the pulp and paper regulations and ordered to pay a fine of $750 000, the largest fine to date in Canada under that regulation.
- Most mills not subject to expiring extensions have also been visited with the remainder to be completed in 1997-98.

Transboundary Movement Of Hazardous Wastes: Ensuring that toxic substances are controlled throughout their life cycle extends to the control of wastes. In 1996–97, the department conducted 151 inspections related to the *Export and Import of Hazardous Wastes Regulations*. This is a relatively small number given the number of trucks crossing our borders every day. Increasing inspections is not the only answer. Instead, the department is taking a more strategic approach that focuses on targeting illegal traffic. Milestones in 1996-97 include:

- with the U.S. and Mexico, development of a computerized tracking system to monitor the movement of hazardous waste under the North American Agreement on Environmental Cooperation. The system will be operational in 1998; and
- development of partnerships with other enforcement organizations already in place at the border, and the strengthening of departmental relationships with other international enforcement agencies such as Interpol.

Wildlife Smuggling and Commercialization: The *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA) was promulgated in May 1996:

- on August 23, Environment Canada obtained its first conviction under this Act. A foreign national convicted of importing four elephant tusks was sentenced to 22 days in jail.
- from May 1996 to March 1997, Environment Canada conducted 4141 inspections under the Act, leading to several significant seizures and prosecutions, including fining a foreign national convicted in November of unlawfully importing 232 live Indian Star Tortoises valued at up to $250 000.

***Result to be achieved*:** Improved enforcement capacity to be developed.

As environmental issues become broader in scope, effective enforcement requires collaboration with other enforcement agencies in Canada and internationally. In 1996-97, Environment Canada continued to strengthen its enforcement capacity through:

- agreement in principle among the federal, provincial and territorial governments, under the auspices of the Canadian Council of Ministers of the Environment, to an accord that would see pollution inspections related to both federal and provincial environmental legislation performed by the "best situated government";
- participation in regular meetings with Interpol, to share information on illegal activities and discuss training issues;
- involvement in the creation of the North American Working Group on Environmental Enforcement and Compliance Cooperation to strengthen cooperation among wildlife and pollution enforcement agencies; and
- participation in the working group on major illegal capture and sale of migratory birds.

In addition to these actions, a review of the enforcement program indicated that its capacity would be enhanced by development of a clearer policy and operations framework, as well as through better accountability mechanisms. An action plan to put the findings in place has been developed.

In its Healthy Environment business line, the lesson learned over this year is that there is still much to do to deliver on departmental commitments. Environment Canada has identified four areas of priority to produce results that are important to Canadians: toxics, smog, climate change and the protection of nature.

Some of the next steps are to: renew the *Canada Environmental Protection Act* (CEPA) and implement a strategy for assessing and managing more toxics more quickly; deliver the regional and national elements of the Smog Management Program including actions on vehicles and fuels; set the domestic agenda for negotiating new international emission reduction obligations; and table the *Canada Endangered Species Protection Act* and implement 11 wildlife recovery plans.

Business Line Goal: Safety from Environmental Hazards

This business line addresses: forecasting routine and severe weather; predictions of probable future states of the environment; and emergencies, prevention, preparedness and response advice.

The Issues

For 127 years, Canada's weather service has been committed to safeguarding the lives and property of Canadians from the hazards of nature. For 27 years, Environment Canada has supported other departments and jurisdictions in responding to environmental emergencies. The department has continuously improved the efficiency and timeliness of its operations and the quality of its services. Today, however, the challenges are becoming greater as the character and costs of environmental hazards are changing.

Severe weather events continue to threaten Canadians. At the same time, Canadians are also concerned that we are becoming more vulnerable to human-induced environmental disasters, such as chemical spills and toxic fires. Some of these hazards have their origin in Canada, while others originate elsewhere in the world. The costs to human health, the environment and to a local economy from one toxic fire can be high; the costs of a significant oil spill along our coasts or a nuclear accident anywhere in the world can be devastating.

What is the state of our knowledge?

Based on our current understanding of the world climate system, simulations indicate that the earth's surface temperatures may increase by about three degrees Celsius by the end of the next century. There is mounting evidence that the global climate is becoming more variable. The likelihood that rising temperature and increasing variability are linked is strong.

Assessments indicate that as new technologies create more complex and fragile systems, transportation infrastructure ages and resource development increases, our vulnerability to human-induced environmental emergencies is also increasing.

Environment Canada's ability to model the possible consequences of changing hazards on Canada's social and economic future is maturing. The capacity to identify vulnerabilities to human induced risk has also improved. The capacity to predict probable future states of the environment across a broad array of parameters and time scales is in its early stages of development. It is becoming clear, however, that a capacity to predict and manage the risks of environmental hazards and change will be important in the future, both to secure the well being of Canadians and to position Canada competitively.

Performance

Environment Canada's objectives are to:

- provide weather and environmental predictions, as well as timely and accurate warnings of severe weather events to Canadians; and
- prevent or reduce the frequency, severity and environmental consequences of emergencies that affect Canada.

Its strategy is to target initiatives that may widen Canadians' margin of safety. For example, by modernizing its tools and delivery systems and its predictive capability and response capacity.

By combining its strong science base with advances in satellites, radar and computers, Environment Canada has steadily improved the efficiency,

Environment Canada delivers **weather forecasts and warnings**, and develops the capacity to provide other environmental predictions.

accuracy and timeliness of its forecasts and warnings.

***Result to be achieved*:** Timely and accurate weather forecasts and warnings to be delivered.

Its performance milestones in 1996-97 included:

- ❍ network of 29 Doppler Weather Radars: Doppler radar detects the intensity and location of precipitation, as well as the movement of air inside a storm. This information is crucial for the early detection of severe thunderstorms (producing hail, heavy rain, high winds and/or tornadoes) and warning of these hazards. In 1996-97, it obtained funding to implement a network of 29 Doppler Weather Radars, including the three already owned by the department. The network will:
  - protect 90% of the country's population;
  - include 10 new Doppler Weather Radars; and
  - upgrade 16 existing radars to Doppler capability.

National Doppler Weather Radar Network by 2003

Source: Atmospheric Environment Service — National Weather Services Directorate, 1997

- ❍ Canadian Lightning Detection Network: Estimates are that about 42% (some studies suggest 60% in Western Canada) of all forest fires are started by lightning. Between 1979 and 1993, fires resulted in an average annual loss of $14 billion to the forestry sector. Lightning also presents a threat to safe air navigation. In 1996-97, Environment Canada obtained funding in principle for the development of a Canadian Lightning Detection Network of 81 sensors that will accurately detect lightning strike locations. Direct beneficiaries of this initiative will include:
  - pilots and airport operators for safe refueling and navigation systems;
  - meteorologists for tracking the motion and severity of thunderstorms; and
  - provincial forestry agencies for the prevention and fighting of forest fires.

The Future Canadian Lightning Detection Network

Source: National Weather Services Directorate, Environment Canada

- ❍ Global Environmental Multi-scale Model: Meteorological models are an important tool used in the preparation of forecasts. The improved efficiency, accuracy and timeliness of Environment Canada's forecasts and warnings are largely due to better atmospheric simulation models. In 1996-97, the department passed an important milestone with the implementation of a new data assimilation procedure and a versatile

atmospheric simulation model called Global Environmental Multi-scale (GEM) that:

- is capable of providing weather forecasts for any geographical area on the globe; and
- can be coupled with a chemical tracer model allowing Environment Canada to address a wide range of air quality issues.

❍ All-channel alert system: In 1996-97, Environment Canada successfully tested new technology for disseminating warnings in the Toronto area with cable companies and television broadcasters. The all-channel alert system (commonly called a "TV crawler") can distribute on-screen weather warnings during regular programming.

***Result to be achieved*:** Effective decisions to be made by adapting to changing weather and climate.

Environmental prediction involves understanding and monitoring changes to the environment and applying this information to meet the social, economic and environmental needs of Canadians. Building on its science and ability to model the atmosphere, Environment Canada provides products and services to meet the particular needs of clients. In 1996-97, departmental milestones included:

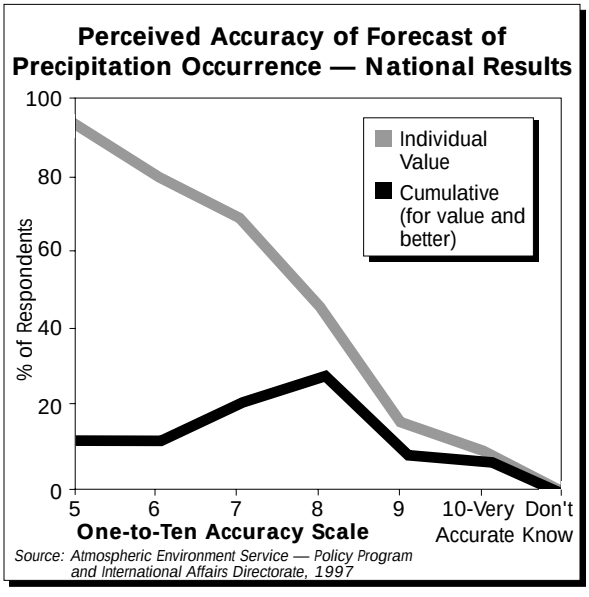
❍ air quality forecasts: About 40% of Canadians feel that air quality is a problem in their area. The department has developed an air-quality statistical model for ground-level ozone forecasting. Trial smog forecasting for Saint John, New Brunswick was conducted in the summer of 1997.

❍ road-weather sensors: Snow and ice on roads are responsible for an average 222 fatal accidents and 11 837 accidents with serious injuries per year. Working closely with partners in the Ottawa-Carleton area, Environment Canada designed and deployed a network of five road-weather sensors. Using data from these sensors and heat-balance models during the winter of 1996–97, Environment Canada provided precise road temperature forecasts to road crews, enabling them to treat roads ahead of time, thereby preventing dangerous driving conditions. Benefits include:

- reduced maintenance costs and less salt released into the environment. Studies show that such systems provide benefit-cost ratios of 2:1 for the direct costs of labour, road-treatment chemicals and fuel; and
- improved driver safety. Studies also show a ratio of 11:1 for the indirect societal benefits through reduced accidents, legal fees and environmental and infrastructure damage.

Environment Canada is working to expand this service to other parts of Canada.

❍ public satisfaction: A survey conducted by Environment Canada shows that, overall, Canadians are satisfied with the accuracy of weather forecasts, but feel that forecasts of precipitation (length, time of arrival, type, etc.) could be improved.



Source: Atmospheric Environment Service — Policy Program and International Affairs Directorate, 1997

On a scale of 1 to 10, the perceived accuracy was:

- seven for 70% of respondents; and
- eight or better for just 48% of respondents.

One of Environment Canada's objectives is to increase the proportion of Canadians that believe its forecasts have an accuracy of eight or more. (For 1996, 81% of daily probability of precipitation forecasts were verified as having been accurate).

Environment Canada promotes pollution prevention, preparedness, improved science and technology, and ongoing response advice in the event of **emergencies**.

Canadians expect governments, where possible, to prevent environmental emergencies, to be prepared to deal with emergencies that cannot be prevented, and to respond effectively when they do occur.

The aim of Environment Canada's Emergencies Program is to minimize the risk and consequences of emergencies by providing preparedness policies, standards, codes of practice, contingency plans, and technologies for response and remediation. This is achieved by working in partnership with other levels of government, industry and communities.

***Result to be achieved*:** Advice and specialized support to be provided to lead responders.

In 1996-97, Environment Canada staff were involved in responding to over 1000 significant spill accidents, providing expert advice, evaluating impacts, and serving as expert and material witnesses for the prosecution of polluters under the *Fisheries Act* and the *Canada Shipping Act*. The key element in the department's capacity to respond effectively is working in partnership with others, illustrated as follows:

- Regional Environmental Emergency Teams: In 1973, following the 1970 *Arrow* tanker spill off Nova Scotia, Environment Canada implemented its Regional Environmental Emergency Teams approach. These teams are made up of federal, provincial and municipal government agencies responsible for environmental protection, as well as industry and non-government associations, with expertise in environmental emergencies. In 1996-97, the benefits of this consolidated "one-window" approach were made clear in the lifting of the *Irving Whale* after 26 years on the floor of the Gulf of St. Lawrence. The raising of the *Irving Whale* was the most complex salvage operation in Canadian history. Throughout, the Atlantic Regional Environmental Emergency Team provided one-stop environmental advice and a focal point for inter-agency cooperation. Advice included crucial weather information essential in identifying the best time for the lift, as well as airborne remote-sensing and technology to detect and locate oil slicks.

- Flood Damage Reduction Program: To reduce the impacts of severe floods, Environment Canada in 1975 implemented a Flood Damage Reduction Program in partnership with provinces and municipalities. Under the program, cost shared 50/50 through federal/provincial agreements, areas at risk of flooding were mapped and sites were designated where a moratorium on construction should be applied. Over the life of the program, now completed, more than 900 communities were mapped and more than 360 flood-risk areas designated. In Manitoba, expenditures under the Flood Damage Reduction Program exceeded $10M, mainly for dike enhancement around smaller towns upstream of Winnipeg. The payback from this investment was that greater devastation from the Red River flood of 1997 was avoided.

- The Red River Flood: This spring, the Red River flood caused hundreds of millions of dollars in damage to agricultural lands and unprotected town sites. Throughout, Environment Canada provided continuous, integrated information, analysis and an uninterrupted flow of data to the provincial flood centre, including: short-term and long-term weather forecasts, water levels and forecasts, water contamination testing, satellite imagery, media information and a website that received 40 000 hits a day.

***Result to be achieved*:** Preparations to be made for handling environmental emergencies such as accidental releases.

Environment Canada has entered into a range of bilateral and multilateral inter-governmental agreements to enhance our ability, and that of others, to prepare for and respond to a variety of emergency situations. Targets achieved in 1996-97 included:

- in August 1996, the department hosted a meeting of the Emergency Prevention, Preparedness and Response Working Group (under the Arctic Environmental Protection Strategy) where the department's *Arctic Field Guide to Spill Response* was adopted as the basis for the circumpolar field guide;
- Environment Canada reviewed hundreds of Oil Handling Facility Emergency Response Plans submitted to the Canadian Coast Guard (CCG) under the new provisions in the *Canada Shipping Act* to ensure that environmental concerns were adequately addressed;
- Environment Canada led a Canada-U.S. team of regional specialists to develop regional contingency plans to deal with accidents along the border as required by the Canada-U.S. Joint Inland Pollution Contingency Plan. On the marine side, Environment Canada participated in two Canada-U.S. Joint Marine Plan exercises on the Great Lakes and in the Bay of Fundy area; and
- Environment Canada leads national and international efforts towards collaborative scientific and engineering research for spill related technology development. The department produces the Spill Technology Newsletter with 2500 subscribers in 40 countries and sponsors two international seminars annually on chemical spills and on the Arctic and Marine Oil Spill Program. This approach results in better information and avoids duplication of effort.

***Result to be achieved*:** Accidental releases to be prevented.

Prevention is key to achieving safety from environmental hazards. Environment Canada is involved in several prevention initiatives including:

- Federal Facilities Inspection Program. In cooperation with other federal departments, Environment Canada assessed risks at more than 300 federal facilities in the past six years.
- Industrial Facilities Inspection Program. With the province of British Columbia, the department reviewed 50 private sites along the Fraser estuary over the past two years for compliance with Canadian Council of Ministers of the Environment Guidelines as well as other regulations. The result has been an investment by industry of approximately $3 million to upgrade facilities and reduce spills.

The experiences of the past year have shown that we must expect environmental emergencies of unprecedented magnitude. Their likelihood means that we must make further improvements in our capacity to analyze trends and vulnerabilities and to further harmonize our response activities with the provinces and territories.

In its Safety from Environmental Hazards business line over the past year Environment Canada has learned that efforts must continue to maintain and increase the quality and efficiency of its services. As documented in the *Report on Plans and Priorities*, Environment Canada's planned approach includes the modernization of its national Weather Warning System (radar and lightning detection networks), to enhance safety for Canadians, and the implementation of a National Environmental Emergencies System to ensure timely flow of information on oil, chemical and other emergencies.

Business Line Goal: A Greener Society

This business line addresses: information products; technology partnerships; and leadership to build shared agendas across a range of jurisdictions to achieve sustainable development.

The Issues

In A Greener Society, environmental and economic interests would be reconciled, barriers to environmentally responsible action would be removed, and all sectors of society would have the skills, tools and knowledge to act on their environmental values. For all of Canada's success in conserving our environmental heritage, we are a long way from achieving the goal of a greener society.

To make informed decisions, Canadians need clear and practical information that is accessible and appropriate to different requirements. However, Canada lacks sufficient integrated and accessible information that links environmental, economic and social considerations.

The global market for environmental know-how and technology is over $425 billion, growing at a rate of 10% per year, and already employs 200 000 Canadians. Yet, the gap between the earth's carrying capacity and the rate at which we are developing solutions appears to be widening.

A greener society needs policies, laws and rules that integrate environmental, economic and social considerations. Canada's structures of governance, developed over a century ago, are not well suited to environmentally responsible decision making. Their fragmentation within and across governments is inconsistent with the need to integrate environmental, economic and social issues.

What is the state of our knowledge?

For 27 years, Environment Canada has been Canada's principal source of national environmental information. The department knows a great deal about the environment. Even so, it needs to know more about how information influences human behaviour, the information needs of Canadians, and integration of environmental and economic knowledge in products that meet the needs of decision-making.

Environment Canada has also been a major source of tools and technologies to clean up and control pollution. Today, however, Canada and the world need technologies and skills, not only to clean up past mistakes, but also to prevent future environmental problems and, in the process, create economic opportunity and sustainable employment.

Environment Canada has acquired a wide knowledge of policy tools for environmental issues. The challenge today is to integrate policy across environmental, economic and social sectors, and to mobilize effective partnerships nationally and internationally to achieve common goals. We still have much to learn about horizontal policy-making for example about ecosystems approaches to regional development, economic alternatives to regulation, valuation of environment resources, and integrated environmental and international trade policy.

Performance

A greener future means behavioural change. It means helping Canadians to understand their environmental responsibilities and act on their environmental values. The department's objectives to support a greener society are to:

- promote responsible environmental citizenship;
- provide tools and green technologies to prevent pollution and create social, economic, and environmental benefits;

- transfer our scientific knowledge to Canadians so that they can make environmentally responsible decisions; and
- mobilize effective partnerships nationally, and provide a strong international voice.

Environment Canada develops and delivers **information products** that meet Canadians' needs and helps them become better environmental citizens.

The department's strategies are to create capacity in communities, and build shared agendas across the federal house and other jurisdictions based on pragmatic objectives and results.

***Result to be achieved*:** Canadians to receive products and services from Environment Canada that meet their needs.

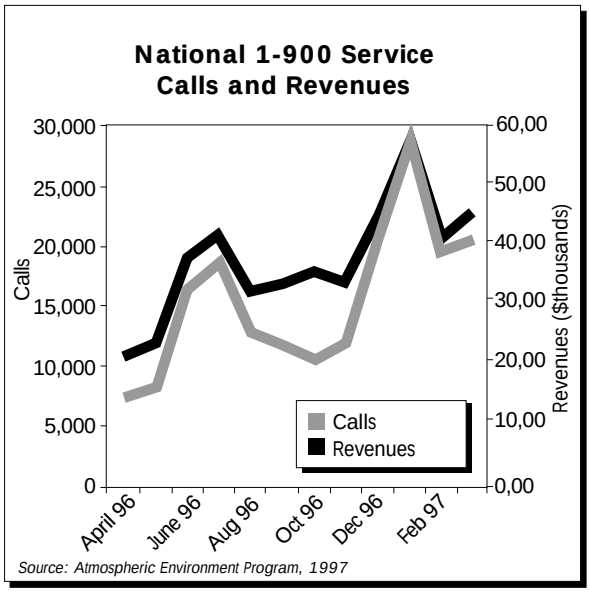
Environment Canada's products and services are used by the general public, private industry, provincial agencies, municipalities and federal government organizations such as The Department of National Defense (DND) and Transport Canada. In 1996-97, Environment Canada's performance milestones included:

- developing and negotiating charges based on full cost-recovery and/or market-driven pricing, in the department's contracts for weather services with DND and NAVCanada.;
- generating vote-netted revenues of $29M, for weather products and services from Transport Canada, NAVCan, the federal/ provincial cost-shared agreement, and commercial revenue. This activity was carried out within the departmental policy framework for commercialization and is an increase of 30% from 1995-96 revenues;
- using Automatic Telephone Answering Devices, now in use in all Regions, to deliver weather information and sponsors' messages. Over two million calls were recorded in the Maritimes alone during the first quarter of 1997; and
- undertaking in 1996, to publish a national declaration on service quality, including national standards and performance measures for a basic level of weather services. While progress was made, adjustments in service made necessary by Program Review delayed the completion of the project until 1997–98.

***Result to be achieved*:** Broad public support to exist for the services provided by Environment Canada.

Demand for Environment Canada's expertise is a measure of the public support for its services:

- Environment Canada operates a 1-900 service for consultations with meteorological staff. Over 183 000 calls were received nation-wide in 1996-97. The increases in calls in summer and winter are indicators respectively of farm activity and winter snow services.
- at the instigation of the Discovery Channel, Environment Canada collaborated in the production of a series of vignettes entitled



Earth Tones which aired on the program, *@discovery.ca*, from January through April 1997. The series profiled Environment Canada scientists and looked at how science works and contributes to a healthier environment. *Earth Tones* web pages have been added to the Green Lane, and a second series is in production.

- in 1996-97, through its Ice Services program, Environment Canada issued over 163 000 charts, bulletins and images to its clients for safe navigation through ice-infested waters in the Arctic, on the East Coast, along the St. Lawrence River and on the Great Lakes. The Canadian Coast Guard is the major client for Ice Services (85%).

***Result to be achieved*:** Products and services to be developed that help Canadians to make environmentally responsible decisions.

Environment Canada develops products and services to encourage interest in the environment. An indication of the effectiveness of this strategy is the demand for its educational products:

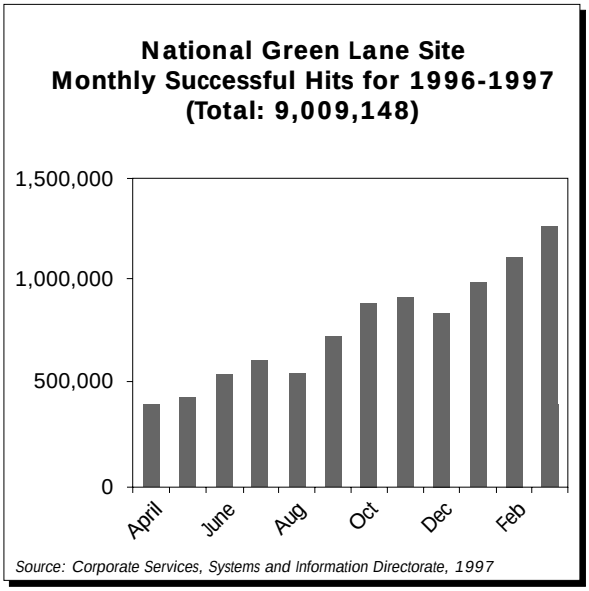
- on December 11, 1996, the Minister of Environment tabled in Parliament the first-ever CD-ROM version of the comprehensive State of Canada's Environment Report:
  - 1446 CDs were sold by the end of fiscal year;
  - 1029 orders placed for the printed version (964 English and 65 French);
  - 2762 calls for information or requests to purchase the report were processed from the private sector, elementary/post secondary schools, universities, associations, governments, diplomats, libraries, media; and
  - 5000 printed versions will be produced next fiscal year.

Under Program Review I, a decision was made to suspend production of a comprehensive Report. Alternative options being examined include:

- periodic assessments and summaries on specific environmental issues; and
- environmental indicator bulletins for key issues of national significance.

In November 1994, Environment Canada launched its World Wide Web site, known as the Green Lane. During 1996–97, the Green Lane:

- was expanded to provide information on departmental priorities such as toxics, endangered species, climate change and environmental action;
- was linked with SchoolNet and other World Wide Web sites to improve access to national and international environmental information; and
- had its national site (one of a network of seven sites) accessed over nine million times for information.



Environment Canada develops and transfers **environmental technology** and expertise to Canadian industry and communities to improve their capacity.

Environment Canada's goal is to enable Canadians to bridge the gap between the scientific understanding of environmental issues and the actions necessary to address them. Its efforts have yielded analytical reference methods such as the patented Microwave-Assisted Process (MAP^{TM}) and techniques to assist chemistry laboratories to prevent pollution and achieve significant energy savings. Environment Canada works closely with partners in Canada and abroad to create capacity to:

- assess environmental and socio-economic needs;
- evaluate options and make decisions; and
- implement goals to sustain activities in the long run.

In the past, the focus of departmental effort was to create the capacity to clean up pollution. Today, the focus is capacity for pollution prevention and eco-efficiency. The future focus will be to create a capacity for zero discharge from industrial processes.

***Result to be achieved*:** Green technologies, "knowhow" and expertise to be transferred to the public.

Targets achieved in 1996/97 include:

- technical review of 38 projects in support of the federal government's Technology Partnerships Canada program. In its first year of operation, four environmental projects were approved representing approximately $40M of federal investment, leveraged private sector investment in the order of $115M, and projected job creation of 400 short-term and 3000 long-term positions located primarily in the higher-pay, skilled category.
- the Pan-Western Environmental Technology Loan Program, April 1996. The program is a cooperative initiative between Toronto Dominion Bank, Western Economic Diversification Canada and Environment Canada. In its first year:
  - six loan applications, valued at a total of $1.9M, were approved and accepted by the proponent and an additional 40 applications are at various stages of review.
- eighteen environmental projects under the International Environmental Management Initiative were approved and implemented in developing countries and emerging or priority markets for projects to enhance lab capabilities and provide energy efficient housing, clean water and waste management. Of a total project cost of approximately $1.2M, funding support is estimated at $365 000 with $900 000 leveraged from partners. An initiative of the Canadian Environmental Industry Strategy, the project has introduced hundreds of Canadian companies to foreign markets through ongoing bilateral and multilateral cooperation.
- three Canadian Environmental Technology Advancement Centres, established by Environment Canada:
  - promoted and provided advice and information to Canadian environmental industry and provided services to 140 Canadian environmental companies in the commercialization of new technologies.

***Result to be achieved*:** Increasing emphasis to be placed on pollution prevention domestically (governments, public, industry) and internationally.

Environment Canada has developed partnerships on pollution prevention projects with the

provinces, industries and the United States. Milestones in 1996-97 included:

- a commitment to implement the Binational Toxics Strategy to achieve 90% reduction in the use and generation of eight substances by the year 2000;
- ongoing work with industry, (e.g., with the Canadian Vehicle Manufacturer's Association, the Printing Graphics Association and the Health Care Industry), on voluntary actions, to reduce and/or eliminate certain toxic substances in their facilities; and
- the development of a prototype of the Canadian Pollution Prevention Information Centre to be launched in 1997–98.

***Result to be achieved*:** Industrial sectors to become more "eco-efficient" by adopting green technologies and services, international obligations are met, and economic growth and jobs are fostered at the same time.

Eco-efficiency of industry has been advanced in 1996-97 through:

- the Environmental Technology Verification program, which verifies performance claims for environmental technology and issues companies a Government of Canada "Certificate of Authenticity". It promotes Canada's environment industry internationally, while building sustainable industry capacity in Canada;
- two national workshops to promote sustainable product policy and extended user responsibility; and
- the publication of *Environmental Life Cycle Management — A Guide to Better Business Decisions*, which defines concepts, describes the business advantages of a life cycle management approach and gives direction on how to do it.

***Result to be achieved*:** Environment Canada to be in compliance with the *Canadian Environmental Assessment Act* (CEAA) and Cabinet directives on Environmental Assessment of policies and programs.

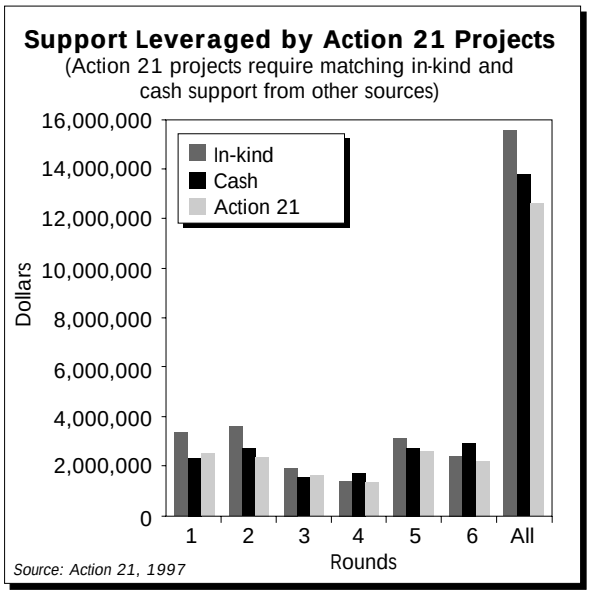
In 1996-97, the Environmental Assessment Program:

- screened 573 projects and provided expert advice on 1272 projects;
- reviewed and advised on 94 draft Memoranda to Cabinet for compliance with government policy on environmental assessment;
- provided expert scientific advice to formulate and clearly communicate the department's position on major development projects; including Sable Gas, Terra Nova Oil, Express Pipelines, McArthur River Uranium Mine and Dorval Airport;
- developed an electronic tool, the Referral Tracking System, to manage in a cost-effective manner requests for expert advice; and
- developed partnerships with other Federal government departments and the private sector to deliver two workshops in Chile on the environmental assessment of mining sector activities and seminars in Portugal and Costa Rica on environmental assessment procedures and methodologies.

In 1996/97, Environment Canada's Ontario Region conducted a survey of selected federal users of the department's advice on environmental assessment. The survey found that there were some misperceptions about the department's role and that client's were looking for clearer site specific advice with bottom-line conclusions. The survey is being used as a basis to improve client understanding and services.

***Result to be achieved*:** Public and other stakeholders to be mobilized and to have access to departmental activities, environmental information and other tools for understanding issues, making decisions and advancing Canada's environmental agenda.

Since June 1995, Environment Canada's Action 21 Program has funded over 376 projects intended to create capacity in communities. Projects yielded community involvement, partnership development, and real environmental benefits in four priority areas: preserving ecosystems, biodiversity, toxics and atmospheric change.



Action 21 provides tool kits—including news release templates—to funding recipients to help them market the results of their projects.

Action 21 has also created initiatives to:

- recognize environmental citizenship (Action 21 Network);
- promote environmental literacy and sustainability (Rescue Mission);
- support community action on climate change;
- with the media, encourage Canadians to reduce emissions from their vehicles through Action 21 TV segments that are seen on 38 major networks and stations, including WeatherNetwork/ MétéoMédia, with an estimated audience of 5.8 million. Radio segments are on approximately 160 English and French stations; and
- with youth through Action 21's Youth Round Table and Youth Journalists program, to recognize environmental citizenship and promote environmental literacy.

Environment Canada provides leadership in **sustainable development** at the federal level, builds shared agendas with other sectors of Canadian society, and promotes and protects Canadian interests internationally.

In promoting sustainable development, the challenges are to ensure that: there is clear understanding within government of the environment, its benefits and stressors; the government's policy signals reinforce (or at least do not inhibit) environmentally responsible behaviour; and links are made between global goals and the real concerns and commitments of Canadians. In short, the challenge is to create a shared policy agenda across jurisdictions, communities and departments of government for sustainable development in Canada.

***Result to be achieved*:** Visible federal leadership and action to be implemented in integrating sustainable development into government polices and operations.

The federal government is uniquely positioned—by virtue of its role in setting rules and sending signals—to encourage and provide leadership in acting on our shared environmental responsibility.

The most visible indication of the government's commitment to sustainable development was its appointment in June 1996, of the first

Commissioner of the Environment and Sustainable Development.

In 1996-97, measures of Environment Canada's commitment to building a shared policy agenda for sustainable development included:

- Environment Canada's Sustainable Development Strategy, tabled in the House of Commons on Earth Day, April 22, 1997;
- inter-departmental cooperation on sustainable development, including: an interdepartmental forum on the preparation of Sustainable Development Strategies; the Deputy Ministers' Sustainable Development Coordinating Committee; the Environmental Accountability Partnership; and the Federal Committee on Environmental Management Systems;
- a key role with other departments in developing Canada's report, *Building Momentum: Sustainable Development in Canada*, to the U.N. Commission on Sustainable Development and a working document on Environmental Assessment of Policies, Programs and Plans;
- tabling in July, 1996, of the government's response to the report of the Standing Committee on Environment and Sustainable Development, entitled *Keeping a Promise: Towards a Sustainable Budget*, by the Ministers of Environment, Finance and Natural Resources, and the examining of taxes, grants and subsidies in the context of sustainable development; and
- with Finance and other government departments, contributing to the OECD's review of subsidies and tax disincentives to sound environmental practices.

Environment Canada moved to bring its operations (as well as its policies) in line with sustainable development. Targets achieved in 1996-97 included:

- the development of an Operational Environmental Policy and Guiding Principles for the department's Environmental Management System to guide the management of internal operations;
- a 72% diversion rate from landfill of total waste generated at Environment Canada's National Capital Region facilities; anticipated annual energy savings of $850 000 at the Canada Center for Inland Waters, (CCIW) in Burlington; and an 80% reduction in the amount of water needed to produce distilled water for experiments at CCIW; and
- development, with other departments and levels of government, of standards for green accommodation, green public purchasing and the expanded "No Waste" program. Environment Canada also initiated an OECD web site for sharing best (green) operational practices.

***Result to be achieved*:** Partnerships to be established to promote, develop and rationalize environmental policies and practices.

Ensuring the highest level of environmental quality throughout Canada requires constructive working relationships and strategic partnerships at all levels. In 1996-97, milestones included:

- with the provinces and territories, the development of the *Canada-wide Accord on Environmental Harmonization,* agreed-to in principle by the Canadian Council of Ministers of the Environment on November 20, 1996, and expected to be ratified (along with sub-agreements on Standards, Inspections, and Environmental Assessment) in the fall of 1997;

- with Quebec, negotiations aimed at renewing the pulp and paper agreement, and with Ontario, a work-sharing agreement for the administration of the pulp and paper sector;

- with Quebec, Manitoba and Alberta, an agreement for provincial participation in the

North American Agreement on Environmental Cooperation (NAAEC); and
- with the provinces, a Canada-wide survey on the importance of nature to Canadians.

***Result to be achieved*:** International agreements and fora to promote and protect Canada's interests and to foster the resolution of globally common issues.

Environment Canada recognizes the importance of involving Canadians in developing its international positions and identifying pragmatic international approaches to sustainable development. Performance milestones in 1996-97 included:

- endorsement of sustainable development by APEC economic leaders as one of six priority themes for 1997, and development of an action program for sustainable development;
- development of a framework to analyze links between environmental and competitiveness issues (with other departments);
- input to the Report of the World Trade Organization (WTO) Committee on Trade and Environment, with recommendations on aligning trade and environmental policies, which was accepted by WTO trade ministers;
- promotion of sustainable development through stronger links between the NAFTA Trade Commission and the Commission for Environmental Cooperation;
- cooperation with Mexico and the United States, through the Commission for Environmental Cooperation, to resolve issues of regional and domestic importance through: regional action plans for the sound management of chemicals (PCBs, DDT, chlordane and mercury); negotiations for a binding agreement on transboundary environmental impact assessment; a North American pollutant release inventory report; training for enforcement of CFC anti-smuggling laws; and cooperation on enforcement of the Convention on International Trade in Endangered Species (CITES);
- reinforcement of Canada's commitment to link trade liberalization and environmental responsibility with the Free Trade Agreement with Chile and the related Environmental Cooperation Agreement; and
- international promotion of Canadian environmental services and technology with Industry Canada and the private sector, including environmental assessment expertise and technology in Chile, Portugal and Costa Rica, a Ministerial Trade Mission to South America, and bilateral agreements on environmental cooperation with Argentina, Brazil, Uruguay, Taiwan, Trinidad and Thailand.

Over this past year, the lessons learned in A Greener Society Business Line are that Environment Canada needs to bring a new sense of pragmatism to its international negotiations, and to protect domestic interests, while contributing to the resolution of global issues. Environment Canada is committed to delivering results that are meaningful to Canadians and to engaging communities in the resolution of environmental issues by: increasing its focus on clients by learning about their needs and how they make their decisions, marketing benefits of our services and implementing a "fair complaint mechanism" (1997); accelerating technology commercialization through the Canadian Environmental Technology Advancement Centres (1997-98); involving young Canadians in environmental programs with a target of 50 young people in 1997 and 130 in 1998; under Action 21, continuing support for community projects on national environmental priorities; and addressing Canadian interests as future agendas are defined at the UN Special Session on Sustainable Development (1997), G7 Meetings (annual), APEC Environment Ministerial (1997), OECD Environment Ministerial (1998), and the Hemispheric Summit (1998).

Business Line Goal: Corporate Management and Administration

This business line includes the management of Science and Technology; expenditure management; commercialization and cost recovery; information technology; and human resources.

The Issues

Environment Canada's management objective is to manage through innovations which will enable the continued delivery of environmental results that benefit Canadians. In so doing, the department employs a mix of approaches in the delivery of its programs and services that anticipate and respond to changing resource and issue contexts. A corporate culture well-grounded in environmental, scientific and technical capacities is being strengthened in the areas of innovative use of technology, more business-like service delivery, harmonious alliances with partners, and increased accountability for results. The department maintains and continually seeks to improve its capacity to perform well in an environment of escalating pressures and accelerating change.

***Result to be achieved*:** Integrated and innovative delivery of measurably effective results (within resource constraints) to be achieved.

Management of Science and Technology

The government's strategies, *Science and Technology for the New Century* and *A Federal Strategy and Framework for the Human Resources Management of the Federal Science and Technology Community* are intended to improve the management of S&T across all science-based departments and agencies. The strategy strikes a balance between ministerial accountability for mandate and the need for integrated S&T efforts across government.

Departmental Response to the Government's S&T Initiative

The department's response to the government's S&T strategy and framework initiatives is contained in Environment Canada's *Science and Technology — Leading to Solutions.*

In 1995, the department established a management system to improve its ability to address S&T management issues. In late 1996, Environment Canada established an external R&D advisory board to advise and report to the Deputy Minister on research, performance and planning. This accomplishment also contributed to the result commitment of a modern, affordable management capacity and infrastructure for effective science programming.

Milestones within the new S&T management system over the last year include:

- developing a framework for the management of S&T to improve information sharing across the department and to identify and foster new initiatives to improve S&T performance;
- completion of a comprehensive review of laboratories to streamline and maximize efficiency recommended with improvements are now being implemented;
- initiating a Science Horizons Program, matching 188 young scientists and university graduates with experienced scientists and program managers in domestic, public and private environmental research projects;
- initiating two pilot S&T alternative service Delivery projects, one of which is designed to bring in private sector funding and expertise to help expand the Environmental Technology Center's R&D and international business;
- undertaking an impact assessment of Environment Canada's R&D on pulp and paper, that demonstrated a net benefit of $1.5 billion to the industry from the department's research. This study also

demonstrated a methodology to assess the socio-economic impact of R&D that is now being applied to a second case study on ozone research; and
- an S&T home page as part of a new communications plan.

Interdepartmental Coordination of S&T

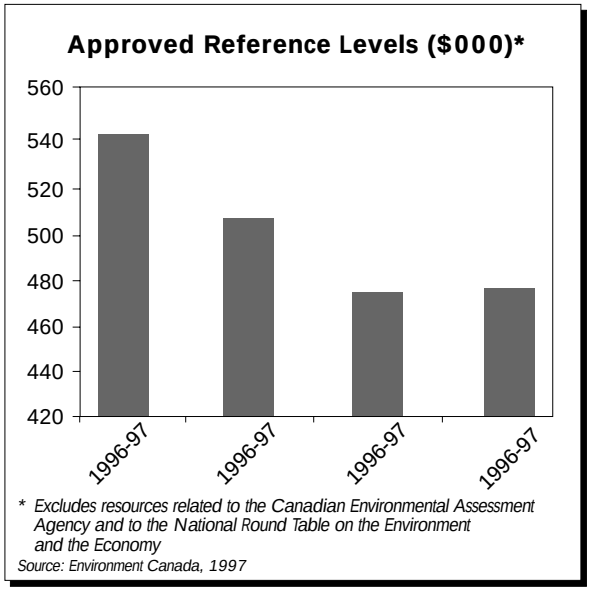
Environment Canada contributed to overall federal S&T coordination activities through:

- a renewed Memorandum of Understanding among the four natural resources (4NR) departments on S&T for sustainable development, and participation in 4NR working groups in priority areas such as UV-B radiation (report released), endocrine modifying substances, climate change, value of natural capital, nutrients, and metals in the environment;
- participation in Treasury Board's initiative to improve federal management of S&T human resources, including leading the Workforce and Mobility project team and participating in a scientific exchange project and various other pilots;
- participation in the Phase II renewal of the National Biotechnology Strategy to help ensure that it is based on principles of sustainable development; and
- significant contribution to the renewal of the Panel on Energy R&D, which encourages interdepartmental S&T collaboration through joint funding submissions of R&D energy projects.

Expenditure Management

In Environment Canada, we are striving to maintain the delivery of quality environmental services to Canadians using available resources. Between 1995–96 and 1998–99, EC's total budget will decline from $621.4M to $474.4M (see Approved Reference Levels graph below). The department is responding to these budget reductions through: revenue generation, commercialization, and alternative service delivery initiatives; selective investments in capital, and human resources; information technology; and international cooperation, federal/provincial harmonization, and sectoral partnerships. The departmental response is thus one of continuing to minimize risks to the Canadian environment by improving its results performance, wherever possible, with the resources at its disposal.

An important example of an alternate service delivery initiative at Environment Canada is the analysis for the optimal delivery of the Atmospheric Environment Program. The study will conclude in December 1997.



* *Excludes resources related to the Canadian Environmental Assessment Agency and to the National Round Table on the Environment and the Economy*

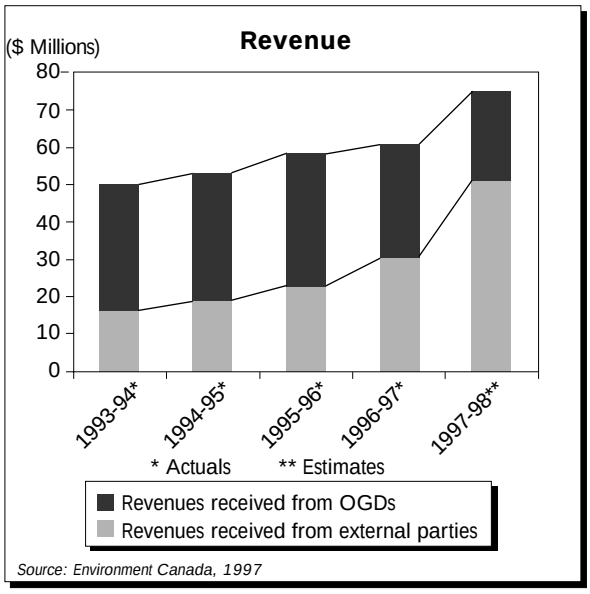
Source: Environment Canada, 1997

***Result to be achieved*:** Responsive, innovative and cost effective client services to be maintained.

Commercialization and Cost Recovery

To provide more responsive and innovative client services at lower cost, Environment Canada adopted a policy framework for commercialization — *Working in the Marketplace* — in October, 1996. Commercialization embraces partnerships, alliances, cost recovery, user fees, intellectual property and revenue generation.

In 1996–97, Environment Canada generated $60 M in revenue, primarily from scientific and professional services, most notably the provision of meteorological services (see graph below). The department is also exploring cost-recovery related to monitoring the export and import of hazardous wastes and ocean disposal sites, and for notification of new substances to be manufactured in, or imported into, Canada.



Source: Environment Canada, 1997

Service Standards

Service standards indicate service level expectations for clients against which departmental performance can be quantitatively measured. In 1996-97:

- service standards for Ice Services were developed with clients (a second round of consultations will focus on measuring performance);
- service standards and performance measures were developed for aviation services; and
- internal standards for audits, evaluations, special investigations, materiel management, accommodation, security, and access to information and privacy were adopted.

Information Technology (IT)

IT is a strategic resource integral to supporting Environment Canada's daily operations in all business lines. It helps to make the department more operationally efficient by facilitating communications, and increasing responsiveness and innovation in service provisions. In 1996-97, milestones included:

- completion of a nationally consistent Office Technology infrastructure;
- improved client service through Merlin (a financial/materiel system); and
- an Internet Use policy, and technical training for 30 IT staff in current and emerging information technologies.

***Result to be achieved*:** Capacity and results to be aligned to mission and mandate and a proactive contribution to government-wide directions to be made by Environment Canada.

Human Resources

This year, Program Review I resulted in staff reductions of 1019. The final phase will further reduce staff numbers by 280. Additional reductions in staff will also occur as a result of Program Review II. These reductions have required a realignment of the resulting human resource contingent to meet departmental responsibilities and government-wide priorities.

The focus on human resources over the recent period has consequently shifted to one of renewal and revitalization in preparation for the future. A number of human resources tools were developed to support managers and employees including:

- People and Jobs — a computerized inventory matching skills and job opportunities;
- Adaptive Computer Technology Program — a centre to assist in the workplace integration of persons with disabilities who require computer access; and
- Virtual Learning Centre — a simulated centre on Infolane which facilitates learning.

The Environment Canada framework for action with regard to human resources focuses on: managing our workforce on the basis of competencies; adjusting the knowledge and skill mix of our workforce to meet the evolving departmental mandate; and, creating a healthier and more productive workplace. Major leverage points for this framework are the development of competency profiles for those groups identified by the departmental human resources plan, and the use of the federal S&T initiative and the Learning Fund to test new concepts in human resource management.

Details of the department's human resource management approach may be found in Environment Canada's *Human Resources Management Plan* for 1997–2002.

In 1996–97, our commitment to establish a stronger results-based management culture was initiated through training for departmental managers and planners in performance measurement. In 1997–98, our objectives are to extend training to a wider range of departmental managers and staff, and to continue refining results and improving measurement methods. With the assistance of the departmental training fund, a "train the trainers" approach to performance measurement will be developed and piloted across the country.

Over the past year, Environment Canada delivered on its mandate within a context of fiscal restraint. Experience has proven the need to continue to build a flexible and adaptable department that is effective in its leadership, accountable for results and has the skills and tools to deliver on its mandate in a cost-efficient way. EC will invest in its human resource by creating opportunities for young scientists and by developing technological skills; it will continue to develop its science & technology management framework to integrate policy frameworks that bear on S&T management issues, and it will continue to improve its results management and performance measurement.

Table of Key Reviews

Review	Key Findings	Review Status
	A HEALTHY ENVIRONMENT	
Review of Enforcement	❍ Sufficient capacity, capability and a strong sense of commitment exists within the enforcement program. ❍ Program could be enhanced by implementing recommendations relating to leadership, a career policy and operational framework, and enhanced accountability mechanisms.	The review findings have been used by the program area to develop a detailed action plan to address the issues raised and provide an enhanced policy framework and operational porcedures for the program.
Migratory Birds Program	❍ A tactical framework needs to be developed to better link the operational and strategic levels of program; ❍ Improvements could be made on data management, planning for human resources, generating conservation funds by hunting permits, enhancing partnerships, as well as national communication within the program.	Management of the Canadian Wildilfe Services were supportive of the findings and receptive to begin to make adjustments in this program area.
Review of Environment Canada's components of the St. Lawrence Vision 2000 program	❍ The program is an excellent example of harmonization between federal and provincial governments and effective partnerships with stakeholders. ❍ The linkage between the operational plans and the long term strategic objectives and mission is less evident. ❍ The roles and sharing of information among the committees, and among EC employees outside of their specific projects, is less evident.	The review is underway. The results of the review will be used for the planning of Phase III of the Program.
Evaluation Framework for the Environmental Adaptation Research Group	❍ As an alternate delivery approach, the Environmental Adaptation Research (EAR) Group of Climate and Atmospheric Research Directorate has signed agreements with three universities. ❍ The Review Branch has assisted the program in establishing an evaluation framework.	The evaluation framework will be used by EAR Group to monitor the program performance on an on-going basis and will assist Review Branch in undertaking a formal review of the program in 1988.

Table of Key Reviews (continued)		
Review of EC components of the Fraser River Action Plan	❍Many results have been produced by EC in partnership with other governments and stakeholders. ❍Lessons learned from the program include: the importance of a sound program design, planning, coordination and accountability mechanisms in a multi-partnered initiative.	Findings from the review were used by EC to draft a strategy for the final phase of the Plan.
Atlantic Coastal Action Program - Lessons Learned*	❍Balance must be achieved between environmental, social and economic considerations. ❍The provinces and other departments must be engaged as stakeholders in initiatives like ACAP. ❍The governance model for the program must be clearly defined.	ACAP has successfully demonstrated a community-based approach to environmental management.
Laboratory Review*	❍The study examined options for improved efficiencies in the delivery of laboratory science through four key areas: demand management, facilities rationalization, alternative delivery mechanisms, and rational work distribution within EC.	Opportunities exist to further pursue alternative service delivery in partnership with both the provinces and other government departments, as well as with the private sector.
SAFETY FROM ENVIRONMENTAL HAZARDS		
Review of Weather Services	❍The National Weather Service delivers a quality forecast product that meets the public's needs. ❍Concerns were identified as to whether it will be able to sustain this level of performance given ongoing pressures in its operating environment. ❍Success of the program will depend on its future ability to manage change and risk and to demonstrate public accountability.	The results of the review will be used as input to the management-led Alternate Service Delivery Study.
Alternate Service Delivery Study Atmospheric Environment Program (AEP)*	❍The objective of the study is to decide how best to deliver the weather and environmental prediction programs and services that Canadians need now, and in the years to come.	

Table of Key Reviews (continued)		
	❍ To provide recommendations and advice to the Deputy Minister on the optimum structure and placement for the AEP over the longer term.	The study is now underway.
A Greener Society		
Environmental Assessment in P&N Region	❍ The objective of the review is to assess the methods by which EC in Prairie and Northern Region complies with the *Canadian Environmental Assessment Act*, and to assess the effectiveness of the Region in providing technical advice to clients.	This review is underway. The results will be used to improve the environmental assessment process in the region.
Environmental Assessment in Ontario Region - Client Survey*	❍ There is some degree of client confusion and misperception regarding EC's role. ❍ Improvements could be made by developing and implementing an information campaign to clarify EC's role, and by developing a set of guidelines to be used by both EC EA staff and their clients in order to produce better information for the client.	A regional federal authority delivery action plan has been developed to address the findings of the study; implementation of this action plan was initiated by FY 1996-97 and is continuing.
Corporate Management and Administration		
National Capital Region Financial Management Audit	❍ Departmental financial policies and training need to strengthened. ❍ An overall control framework needs to be developed. ❍ Certain areas of the departmental planning, budgeting and management reporting should be improved.	The program has developed an action plan to address the findings and recommendations. Actions will be taken in 1997 and 1998.
Post System Implementation Review of Merlin	❍ The system testing strategy and procedures were sound. ❍ Stress testing the system and the communication structure is necessary.	The program has committed to stress testing the system by December 31, 1997.

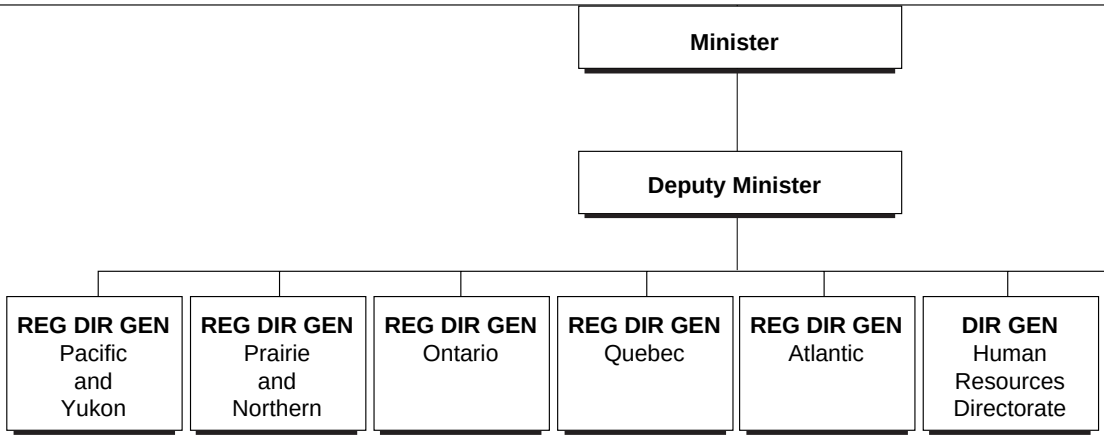
Table of Key Reviews (continued)		
EDI/ERI Audit	❍ The department has demonstrated good planning practices in identifying areas for cost reduction, conformed with applicable legislation and implemented workforce adjustment in a cost-effective manner.	The department has modified existing systems and developed new systems to ensure that relevant information is available for monitoring and management of the EDI and ERI programs.
Follow-up Review of 1994 Training and Development (T&D) Benchmark Study	❍ Human Resources Directorate (HRD) has implemented a number of the recommendations made in the 1994 study. ❍ Improvements could be made in certain areas e.g., employee career planning, comprehensive evaluation framework of T&D activities.	HRD has agreed to the need to develop a comprehensive framework for T&D activities and the need to determine value for money of T&D activities.
Adaptive Computer Technology Centre Review*	❍ Adaptive Computer Technology Centre (ACTC) delivered a recognized and valued contribution to human resource development within the department. ❍ There is a need for a clear policy statement, development of performance indicators, regular planning and reporting mechanisms, and the scoping of the Centre's activities tightly to its principle mandate.	Follow-up actions have been taken by both Systems and Informatics Directorate of Corporate Services and Human Resources (e.g., exploring cost sharing of operational expenses with clients within the Services, exploring the potential to share this expertise with other departments).
Winnipeg Office Re-Location Project (in partnership with Public Works & Government Services Canada)*	❍ The objective of the review is to assess the appropriateness of the project management practices used in the re-location initiative. ❍ A number of recommendations were made regarding clarity of roles, project planning and adequacy of policy guidelines.	A joint (EC / PWGSC) management action plan will be produced to address the recommendations flowing from this study.

Table of Key Reviews (continued)		
CROSS-CUTTING ISSUES		
Summer Student Program Evaluation	The Summer Student Program was successful in that the department achieved an overall increase in the number of students hired. The students involved increased their environmental knowledge.	The results of the evaluation were used to improve the Summer Student Program.
Measuring Environmental And Socio-Economic Impacts of EC R&D*.	Two case studies of R&D programs have been conducted to assess their environmental and socio-economic impacts. The draft report identifies and quantifies the positive impacts of the R&D.	At the end of the study, we expect to be able to demonstrate that these investments in R&D were profitable and, at the same time, to illustrate how other R&D programs can be assessed in the future.

* management-led reviews

Section IV: Supplementary Information

A. Total Planned Spending to Actual Expenditures, 1996-97 by Organization and Business Line



A Healthy Environment	25.8	17.2	24.9	23.1	10.6	
	27.7	19.0	20.8	24.6	11.2	
Safety from Environmental Hazards	12.0	25.9	11.5	10.9	10.4	
	14.3	32.6	14.2	13.2	13.7	
A Greener Society	7.9	10.6	7.6	6.6	6.5	
	8.0	13.6	8.2	9.5	6.1	
Administration	2.6	6.3	9.3	4.2	5.1	7.0
	3.4	6.0	10.5	4.6	7.3	6.8
Total – $Millions	**48.3**	**60.0**	**53.3**	**44.8**	**32.6**	**7.0**
	53.4	**71.2**	**53.7**	**51.9**	**38.3**	**6.8**
Full-time Equivalents	474	673	450	387	388	91
	506	743	482	433	403	85

ADM Policy and Communications	Corporate Offices	**ADM** Corporate Services	**ADM** Atmospheric Environment Service	**ADM** Environmental Protection Service	**ADM** Environmental Conservation Service	Total Millions	FTE
	1.0	0.0	29.7	41.2	57.1	230.6	1659
	0.0	0.0	27.9	41.1	62.9	235.2	1781
	1.0	0.0	59.2	4.5	0.0	135.4	1352
	0.0	0.0	60.8	4.1	0.5	153.4	1406
14.6	1.1	0.1	10.4	41.1	7.4	113.9	812
15.9	0.0	0.7	9.8	40.8	7.9	120.5	831
0.3	7.1	22.3	0.6	1.2	0.5	66.5	814
0.6	4.6	25.5	0.4	1.7	0.6	72.0	885
14.9	**10.2**	**22.4**	**99.9**	**88.0**	**65.0**	546.4	
16.5	**4.6**	**26.2**	**98.9**	**87.7**	**71.9**	581.1	
126	53	260	758	450	527		4637
110	62	271	792	489	534		4910

Note: Shaded numbers denote actual utilization/revenues in 1996/97. The increase of 273 Actual Full-Time Equivalents over the planned FTEs is due to hiring of students, not part of the Estimates process, and funding of additional positions from revenues. The increase of $34.7 million in the Actual Expenditures over the Planned Expenditures is explained in the Comparison of Total Planned Spending to Actual Expenditures 1996-97 by Business Line table, which appears after the Departmental Overview Section.

B. Listing of Statutory and Departmental Report

Access to Information Act
Canada Water Act — http://www.ec.gc.ca/water/index.htm
Canadian Environmental Protection Act
International River Improvements Act
Privacy Act
Sustainable Development Strategy
Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA) Annual Report

International River Improvements Act
The *International River Improvements Act* received assent on July 11, 1955. This Act provides for the licensing of international river improvements, to ensure that Canada's water resources are developed and utilized in the 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 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 1996, no licence was issued under the Regulations of the *International River Improvements Act*.

An application for a licence under the Regulations was filed during the year by Manitoba Natural Resources for the construction of Rock Lake Dam on the Pembina River. Processing of the licence is pending completion of an environmental assessment of the project and the issuance of provincial licences.

A project by Cominco Ltd. of Trail, B.C., to replace generating equipment at the Waneta powerhouse on the Pend d'Oreille River was excepted from the application of the Act in accordance with Regulations amended in 1987.

C. Contacts for Further Information

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D. Financial Summary Tables

Summary of Voted Appropriations

Authorities for 1996/97 — Part II of the Estimates

Financial Requirements by Authority ($ Millions)

Vote		1996-97 Main Estimates	1996-97 Actuals
	Environment Program		
1	Operating expenditures	439.6	466.1
5	Capital expenditures	29.7	27.9
10	Grants and contributions	40.1	48.4
(S)	Minister of the Environment — Salary and motor car allowance	0.0	0.0
(S)	Spending of proceeds from the disposal of surplus Crown assets	0.0	0.3
(S)	Contributions to employee benefit plans	36.9	38.3
	Total Program	546.4	581.1

	$ Millions
Net effect of the carryforward of the 1995-96 operating budgets received in 1996-97 and the lapsing resources of 1996-97	5.8
Additional resources in respect of employee departure programs	12.3
Severance pay and other Treasury Board Vote 5 eligible costs	8.2
Adjustments for changes in timing in the revenue collections from NAV Canada	4.0
Grant to the Wildlife Habitat Canada Foundation	1.7
Other workload adjustments	2.7
Increase	**34.7**

Revenues to the Consolidated Revenue Fund (CRF) by Business Line

($ Millions)

Business Lines	Actuals 1995-96	Total Planned 1996-97	Actuals 1996-97	Total Planned 1997-98
A Healthy Environment	5.8	2.2	4.4	4.8
Safety from Environmental Hazards	0.3	0.1	0.9	1.5
A Greener Society	1.1	0.8	0.8	0.7
Administration	3.4	0.0	1.2	0.0
Total Revenues Credited to the CRF	**10.6**	**3.1**	**7.3**	**7.0**

Explanation of change: Actual revenues realized in 1996-97 were $4.2 million higher than planned primarily because of:

	$ Millions
A Healthy Environment: Migratory Bird Hunting Permits	**2.2**
Safety from Environmental Hazards: Recovery of employee benefits under the NAV Canada Agreement	**0.8**
Administration: Administrative adjustments, including refunds of previous years expenditures	**1.2**
Increase	**4.2**

Revenues Credited to the Vote by Business Line
($ Millions)

Business Lines	Actuals 1995-96	Total Planned 1996-97	Actuals 1996-97	Total Planned 1997-98
A Healthy Environment	3.9	6.3	5.9	7.3
Safety from Environmental Hazards	22.0	24.6	25.9	38.0
A Greener Society	21.1	24.6	21.1	22.6
Administration	0.0	0.0	0.0	0.0
Total Revenues Credited to the Vote	**47.0**	**55.5**	**52.9**	**67.9**

Explanation of change: Actual revenues realized in 1996-97 were $ 2.6 million lower than planned primarily because of:

	$Millions
A Healthy Environment: Lower than anticipated number of applications for Ocean Dumping Permits and less than expected recoveries from rental of facilities	**(0.4)**
Safety from Environmental Hazards: Increased revenues from meteorological services in particular those from the Agreement with NAV Canada	**1.3**
A Greener Society: Lower than forecast recoveries from hydrometric and ice services and from publications	**(3.5)**
Net Decrease	**(2.6)**

Details of Revenues by Business Line
($ Millions)

Business Lines	Actuals 1995-96	Total Planned 1996-97	Actuals 1996-97	Total Planned 1997-98
Revenue credited to the Vote by Business Lines/Activities				
A Healthy Environment				
Information Products	0.3	0.4	0.3	0.3
Realty Revenue	0.2	0.3	0.1	0.4
Scientific and Professional Services	2.6	4.3	4.3	5.7
Regulatory Services	0.3	0.7	0.5	0.6
Miscellaneous Services	0.5	0.6	0.7	0.3
	3.9	6.3	5.9	7.3
Safety from Environmental Hazards				
Information Products	0.4	0.4	0.7	0.8
Sale of Sponsorships/Advertising	0.2	0.3	0.2	0.2
Realty Revenue	0.3	0.3	0.4	0.3
Scientific and Professional Services	20.4	21.4	23.3	35.8
Media Services	0.2	0.3	0.3	0.3
Miscellaneous Services	0.5	1.9	1.0	0.6
	22.0	24.6	25.9	38.0
A Greener Society				
Information Products	0.4	2.1	1.2	1.7
Realty Revenue	0.3	0.4	0.3	0.4
Scientific and Professional Services	20.1	21.8	19.2	20.2
Miscellaneous Services	0.2	0.3	0.4	0.3
	21.0	24.6	21.1	22.6
Total Revenues credited to the Vote	**46.9**	**55.5**	**52.9**	**67.9**

Revenue Credited to the Consolidated Revenue Fund by Business Lines/Activities ($ Millions)

Business Lines	Actuals 1995-96	Total Planned 1996-97	Actuals 1996-97	Total Planned 1997-98
A Healthy Environment				
Realty Revenue	0.5	0.5	0.5	0.5
Scientific and Professional Services	0.8	0.4	0.3	0.4
Regulatory Services	3.0	1.2	2.7	3.8
Miscellaneous Services	1.5	0.1	0.9	0.1
	5.8	2.2	4.4	4.8
Safety from Environmental Hazards				
NAVCAN Employee Benefits Plan	—	—	0.4	1.4
Miscellaneous Services	0.3	0.1	0.5	0.1
	0.3	0.1	0.9	1.5
A Greener Society				
Scientific and Professional Services	0.8	0.8	0.4	0.6
Environmental Choice Program	—	—	—	—
Miscellaneous Services	0.3	—	0.4	0.1
	1.1	0.8	0.8	0.7
Administration				
Miscellaneous Services	3.4	—	1.2	—
	3.4	0.0	1.2	0.0
Total Revenues Credited to the CRF	**10.6**	**3.1**	**7.3**	**7.0**
Total Program Revenues	**57.5**	**58.6**	**60.2**	**74.9**

Capital Projects by Business Line
($ Millions)

Business Lines	Actuals 1995-96	Total Planned 1996-97	Actuals 1996-97	Total Planned 1997-98
A Healthy Environment	10.3	8.6	6.0	6.2
Safety from Environmental Hazards	22.8	10.8	11.3	12.0
A Greener Society	13.3	8.4	9.4	6.7
Administration	3.4	1.9	1.2	1.3
Total Capital Projects	**49.8**	**29.7**	**27.9**	**26.2**

Explanation of change: The $ 1.8 million decrease in the 1996-97 Actual Expenditures over the 1996-97 Planned Expenditures is due to workload adjustments in order to reallocate funds to other priorities.

Transfer Payments by Business Line
($ Millions)

Business Lines	Actuals 1995-96	Total Planned 1996-97	Actuals 1996-97	Total Planned 1997-98
Grants				
A Healthy Environment	10.5	5.8	6.9	5.1
Safety from Environmental Hazards	1.1	0.9	0.9	0.9
A Greener Society	2.9	2.2	2.1	0.2
Administration	0.0	0.0	0.0	0.0
Total Grants	**14.5**	**8.9**	**9.9**	**6.2**
Contributions				
A Healthy Environment	21.8	19.9	22.2	18.3
Safety from Environmental Hazards	2.4	1.9	2.1	1.8
A Greener Society	15.2	9.4	14.2	7.4
Administration	0.0	0.0	0.0	0.0
Total Contributions	**39.4**	**31.2**	**38.5**	**27.5**
Total Transfer Payments	**53.9**	**40.1**	**48.4**	**33.7**

Explanation of change: The $ 8.3 million increase in the 1996-97 Actual Expenditures over the 1996-97 Planned Expenditures by Business Line is as follows:

	$ Millions
A Healthy Environment	
Grant to the Wildlife Habitat Canada Foundation	1.7
Contribution to the Multilateral Fund on the Montreal Protocol	1.2
Increased funding of various international contributions	0.5
A Greener Society	
Contribution for the Commission for Environmental Cooperation	4.1
Contribution for the International Network on Water, Environment and Health	0.3
Increased funding of various contributions to Canadian industries and non-profit organizations	0.5
Increase	**8.3**

Transfer Payments by Business Line and Category of Recipients
($Millions)

(G) Grants; (C) Contributions	Actuals 1995-96	Main Estimates 1996-97	Actuals 1996-97	Total Planned 1997-98
Business Line and Recipient				
A Healthy Environment				
Payments to:				
Non-Profit Institutions and Organizations				
Sustainable Management Program for the Fraser River Basin (C)	1.63	1.33	1.43	1.14
Implementation of the Montreal Protocol on substances which deplete the ozone layer (G)	1.85	1.85	1.33	1.67
Multilateral Fund on the Montreal Protocol (C)	0.16	—	1.19	—
St.Lawrence Vision 2000 — Community Interaction Program (C)	0.82	0.82	1.34	1.26
St.Lawrence Vision 2000 — Habitat Enhancement Program (C)	0.76	0.50	—	—
St.Lawrence Vision 2000 — Habitat Protection Program (C)	—	—	0.50	0.48
University of Guelph for the Canadian Network of Toxicology Centres (C)	1.80	1.80	1.80	1.80
Wildlife Habitat Canada Foundation (G)	2.35	—	1.67	2.80
North American Waterfowl Management Plan (C)	2.49	2.31	2.37	2.29
Royal Society of Canada for the Global Change Program Secretariat (C)	0.78	0.76	0.76	—
Fur Institute of Canada (C)	0.21	0.21	0.21	0.21
Canadian Cooperative Wildlife Health Center — University of Saskatchewan (C)	0.25	0.20	0.20	0.20
Cooperative Wildlife Research Network (C)	0.20	0.17	0.30	0.19
World Wildlife Fund — Endangered Species Recovery Fund (C)	0.20	0.18	0.18	0.18
Province of B.C. and ENGOs — Wildlife Strategy Pacific Joint Venture (C)	0.08	0.08	0.32	0.32
Canadian Petroleum Products Institute (C)	—	—	0.13	—
Nature Conservancy of Canada (C)	—	—	0.16	—
Technological Development and Demonstration Program (TDDP) — St.Lawrence River (C)	0.08	0.09	0.08	0.07
Others	0.44	0.08	0.07	0.08

(G) Grants; (C) Contributions	Actuals 1995-96	Main Estimates 1996-97	Actuals 1996-97	Total Planned 1997-98
Industry				
University of Victoria to manage and operate the Canadian Climate Research Network (C)	2.70	2.90	2.90	2.90
Technological Development and Demonstration Program (TDDP) — St.Lawrence River (C)	0.87	0.93	1.07	0.93
Cooperative Wildlife Research Network (C)	0.20	—	0.10	0.06
Others	0.02	0.16	0.03	—
Provinces and Territories				
Northern Rivers Study (Peace-Athabasca-Slave) (C)	0.79	—	—	—
Province of Quebec for the St. Lawrence Action Team (C)	2.50	2.50	2.50	2.50
North American Waterfowl Management Plan (C)	0.72	0.67	0.67	0.65
Waterfowl crop depredation (C)	—	—	—	—
Federal-Provincial water resources projects (C)	—	0.87	0.66	0.27
Others	1.22	0.74	0.01	0.01
Municipalities				
Wildlife Habitat Compensation Program - Fraser River (C)	2.23	2.23	2.25	2.25
Others	0.21	0.10	0.05	—
International Organizations				
OECD - Chemical Controls Program (C)	0.16	0.12	—	0.12
United Nations for the Convention in Trade of Rare and Endangered Species (CITES) (C)	0.20	0.14	0.21	0.14
Intergovernmental Forum on Chemical Safety (C)	—	—	0.17	—
Building International Partnerships (C)	—	—	0.31	0.20
Others	0.11	0.04	0.04	0.03
Other Federal Government Departments				
University Research Councils Program (G)	6.33	3.91	3.91	0.67
Others	—	0.01	0.21	—
	32.36	25.69	29.13	23.42

(G) Grants; (C) Contributions	Actuals 1995-96	Main Estimates 1996-97	Actuals 1996-97	Total Planned 1997-98
Safety from Environmental Hazards				
Payments to:				
Persons	0.04	0.03	0.04	0.04
Non-Profit Institutions and Organizations				
Meteorological Research (G)	1.04	0.84	0.83	0.81
Major Industrial Accidents Council of Canada (C)	0.28	0.20	0.20	0.15
Others	0.01	0.02	0.02	0.02
International Organizations				
World Meteorological Organization (C)	2.16	1.69	1.92	1.69
	3.53	2.78	3.01	2.71
A Greener Society				
Payments to:				
Persons				
Action 21 Program (C)	0.18	0.21	—	—
Canadian Environmental Citizenship Program (C)	0.27	0.31	—	—
Building International Partnerships (C)	0.15	—	—	—
International Environmental Youth Corps (C)	—	—	0.10	—
Non-Profit Institutions and Organizations				
Great Lakes Pollution Prevention Centre (C)	0.85	0.85	0.70	—
Environmental Networking Organizations under the Community Support Initiative (C)	0.60	0.60	0.60	0.60
Action 21 Program (C)	3.95	4.57	5.16	5.19
Asia-Pacific Foundation for the GLOBE Conferences (C)	0.60	0.51	0.37	—
Canadian Council of Ministers of the of the Environment (C)	0.75	0.75	0.48	0.75
Canadian Environmental Citizenship Program (C)	0.08	0.09	0.27	—
Canadian Policy Research Networks Inc. (C)	—	—	0.10	—
Others	0.02	0.02	0.24	0.04

(G) Grants; (C) Contributions	Actuals 1995-96	Main Estimates 1996-97	Actuals 1996-97	Total Planned 1997-98
Industry				
Terrachoice Environmental Services to support the management and operations of Environmental Choice Program (C)	1.12	1.25	1.34	—
Economic Instruments Initiative (C)	0.18	0.03	—	—
Northern Telecom Ltd. for the Sustainable Product Pilot Project (C)	—	—	0.19	—
Provinces and Territories				
Province of Quebec — Hydrometric Agreement (C)	0.63	0.20	0.20	0.20
Federal-Provincial water resources projects	1.03	—	—	—
Municipalities	0.29	—	—	—
International Organizations				
Commission for Environmental Cooperation to meet Canada's share of the costs of operating the Secretariat (C)	4.09	—	4.09	—
Sustainable Cities Foundation (G)	0.69	0.53	0.38	—
International Institute for Sustainable Development (G)	2.18	1.70	1.70	0.20
Building International Partnerships (C)	0.36	—	—	—
United Nations University for the establishment of the International Network on Water, Environment and Health (C)	—	—	0.34	0.58
	18.02	11.61	16.26	7.56
Total Grants and Contributions	**53.91**	**40.09**	**48.40**	**33.69**

Contingent Liabilities

($ millions)

There are currently 13 claims against the department on various grounds including breach of contract, damage to property, and physical damage.

As of March 31, 1997, the contingent liabilities associated with the claims were estimated at $6.7 million.

E. Table of Key Results Commitments and Multi-year Reporting Schedule

EC had a budget of $546.4 Million in 1996-97 to achieve results:	**Reported in 1995-96***	**Reporting in 1996/97**	**Results to be reported in 1997/98****
A Healthy Environment			
Protect health and environment of Canadians by reducing negative impacts on the atmosphere and helping Canadians better understand and adapt to these consequences			
Greenhouse gas emissions to be reduced and stabilized in Canada and international actions to reduce global concentrations promoted	pp. 6-7	✔	✔
Consumption of ozone-depleting substances to be stabilized, reduced or eliminated and ozone layer begins to recover	pp. 7-8	✔	
Canadian levels of smog and inhalable particulates to be reduced	pp. 8-9	✔	✔
Negative impacts of acid rain to be minimized	pp. 9-10	✔	
Consideration of sustainability to be increased in all Canadian energy decisions			✔
The environmental stress caused by transportation to be reduced		✔	
Knowledge of atmospheric processes to be improved to anticipate and cope with future atmospheric changes			
Eliminate the threat posed by toxics			
Sources and quantities of toxic substances, effluents, emissions and wastes requiring management to be identified to Canadians in a timely, effective manner	p. 11	✔	✔
Management actions to be implemented toward virtual elimination of persistent, bio-accumulative toxics resulting from human activity (TSMP, Track 1 Substances/PBTs)	pp. 11-13	✔	✔
Management actions to be implemented to prevent, reduce or eliminate the risks posed by toxics not meeting TSMP Track 1 criteria, and by other substances of concern	pp. 13-15	✔	✔
Conserve and enhance Canadian and global biodiversity			
Targeted wildlife populations, under federal jurisdiction, to be sustained at or increased to healthy levels	pp. 15-16	✔	
Significant wildlife habitat and ecosystems to be protected and enhanced	p. 17	✔	
Positive recovery trends to be achieved for threatened or endangered species	p. 16	✔	✔
Canada's leadership and expertise to advance the international biodiversity agenda	p. 17	✔	
National framework to be in place to guide the effective conservation of Canadian biodiversity	pp. 17-18		

Results Commitment	Reported in 1995-96*	Reporting in 1996/97	Results to be reported in 1997/98**
Conserve and restore ecosystems			
Ecosystem science to be undertaken, scientific tools to be created and information transferred in support of ecosystem management initiatives		✔	
A modern affordable management capacity and infrastructure to ensure the effective delivery of quality ecosystem science programming to be developed and maintained		✔	
Vulnerable or priority ecosystems to be identified and conserved through the development of ecosystem, regional, sectoral and other strategies/initiatives			✔
Canadians to respond to challenges to clean up and prevent pollution and to conserve Canada's water resources			
Health and sustainability of targeted ecosystems across Canada to be improved through ecosystems initiatives of national priority	pp. 18-20	✔	
Fairly and effectively enforce and promote compliance with environmental laws and regulations			
A high level of compliance with laws and regulations to be achieved	p. 21	✔	✔
Improved enforcement capacity to be developed	p. 21	✔	✔
Canadians to understand the law, know what is expected of them, and believe the law to be effectively enforced	p. 21	✔	
Federal government departments and agencies to understand the law, know what is expected of them, and act accordingly	p. 22		✔
Safety from Environmental Hazards			
Provide weather and environmental predictions as well as timely and accurate warnings of severe weather events to Canadians			
Timely and accurate weather forecasts and warnings to be delivered	pp. 23-25	✔	✔
Effective decisions to be made by adapting to changing weather andclimate	p. 25	✔	✔
Scientific capacity to assess the impacts of social and economic decisions on future states of environment	pp. 25-26		✔
Prevent or reduce the frequency, severity and environmental consequences of emergencies which affect Canada			
Accidental releases to be prevented	p. 27	✔	✔
Preparations to be made for handling environmental emergencies such as accidental releases	p. 27	✔	✔
Advice and specialized support to be provided to lead responders	pp. 27-28	✔	✔

Results Commitment	Reported in 1995-96*	Reporting in 1996/97	Results to be reported in 1997/98**
A Greener Society			
Promote responsible environmental citizenship by helping Canadians to effectively use timely environmental information and advice			
Canadians to receive products and services from Environment Canada that meet their needs	pp. 29-30	✔	✔
Products and services to be developed that help Canadians to make environmentally responsible decisions	p. 30	✔	✔
Provide Canadians with tools to prevent pollution and develop green technologies and capacity to create social, economic, and environmental benefits			
Increasing emphasis to be placed on pollution prevention domestically(governments, public, industry) and internationally	p. 32	✔	✔
Green technologies, know-how and expertise to be transferred to the public	p. 32	✔	✔
Industrial sectors to become more "eco-efficient" by adopting green technologies and services, international obligations are met, and economic growth and jobs are fostered at the same time	p. 32	✔	
Environment Canada to be in compliance with the Canadian Environmental Assessment Act (CEAA) and Cabinet directives on environmental assessment of policies and programs	p. 33	✔	
Public and other stakeholders to be mobilized and have access to departmental activities, environmental information and other tools for understanding issues, making decisions and advancing Canada's environmental agenda		✔	✔
Mobilize effective partnerships nationally and provide a strong international voice to build a sustainable development agenda			
Visible Federal leadership and action to be implemented in integrating sustainable development into government policies and operations	p. 33-34	✔	✔
Partnerships to be established to promote, develop and rationalize environmental policies and practices	p. 35	✔	✔
International agreements and fora to promote and protect Canada's interests and foster the resolution of globally common issues	pp. 35-36	✔	✔
Corporate Management and Administration			
Ensure that Environment Canada maintains and seeks to enhance its capacity to perform well in an environment of escalating pressures and accelerating change			
Integrated and innovative delivery of measurably effective results (within resource constraints) to be achieved	pp. 37, 40	✔	
Responsive, innovative and cost-effective client services to be maintained	pp. 37-39	✔	
Capacity and results to be aligned to mission and mandate and a proactive contribution to government-wide directions by Environment Canada	pp. 40-41	✔	

* Page references refer to results reporting entries in *Environment Canada 1995/96 Performance Report For the period ending March 31, 1996.* Ottawa, Canada: Canada Communication Group - Publishing, Minister of Public Works and Government Services Canada, 1996.

**Check marks indicate the results commitments upon which the department intends to report in its 1997/98 *Performance Report* as outlined on page v, Section I, *Environment Canada 1997-98 Estimates: A Report on Plans and Priorities.* Ottawa, Ontario: Canada Communications Group - Publishing, Minister of Supply and Services Canada, 1997. Reports on departmental performance towards accomplishing additional results in 1997/98 may also be forthcoming. Results with no check marks may be reporting in fiscal year 1998/9 or beyond.

F. Environment Canada's Partners in Delivering Results, 1997

Matrix 1: Weather and Environmental Prediction

ENHANCING PREDICTIVE CAPACITY	PARTNERS				
	Prov/Municipal	International Governments	OGDs	Private Sector	Universities
Development & Implementation of GEM		✔			✔
Data Assimilation		✔			✔
Modernizing Tools and Delivery of Warnings, Predictions and Advice					
Doppler Weather Radars	✔	✔	✔		
Lightning Detection Network	✔		✔	✔	
TV Crawler			✔	✔	
Road Forecasts	✔		✔	✔	
Smog Forecasts	✔		✔		✔

Matrix 2: Green Technology, Jobs and Growth

EC GREEN TECHNOLOGY INITIATIVES	PARTNERS					
	Industry Canada	DFAIT	CIDA	Other Federal Departments	Provinces/ Territories/ Aboriginal Peoples	Others — Industry, NGOs)
Canadian Environmental Industry Strategy	✔	✔		✔	✔	✔
International Environmental Management Initiative	✔	✔		✔		✔
Canada-Southern Cone Environmental Technology Initiative	✔	✔	✔	✔		✔
Technology Partnerships Canada	✔			✔		✔
Environmental Technology Loan Program	✔		✔			
International Environmental Youth Corps		✔		✔		✔
International MOUs and Agreements for Environmental Cooperation	✔	✔	✔	✔	✔	

Source: Environment Canada

G. Legislation Administered by Environment Canada

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

The Canada Water Act (Part III is repealed)	R.S.C. 1985, c. C-11 (Part III repealed by R.S.C. c. 16 (4th Supp.), s. 141)
The Canada Wildlife Act	R.S.C. 1985, c. W-9
The Canadian Environmental Assessment Act	S.C. 1992, c. 37
The Canadian Environmental Protection Act	R.S.C. 1985, c. 16 (4th Supp.)
The Canadian Environment Week Act	R.S.C. 1985, c. E-11
The Department of the Environment Act	R.S.C. 1985, c. E-10
The International River Improvements Act	R.S.C. 1985, c. I-20
The Lac Seul Conservation Act	S.C. 1928, c. 32
The Lake of the Woods Control Board Act	S.C. 1921, c. 10 and S.C. 1958, c. 20
The Manganese-based Fuel Additives Act	S.C. 1997, c. 11
The Migratory Birds Convention Act, 1994	S.C. 1994, c. 22
The National Wildlife Week Act	R.S.C. 1985, c. W-10
The Weather Modification Information Act	R.S.C. 1985, c. W-5
The Wild Animal and Plant Protection and Regulations of International and Interprovincial Trade Act	S.C. 1992, c. 52 (in force May 14, 1996)

The Minister shares responsibility to Parliament or assists other departments in administering the following Acts:

Acts administered by Environment Canada

The Access to Information Act	R.S.C. 1985, c. A-1
The Aeronautics Act	R.S.C. 1985, c. A-2
The Agricultural and Rural Development Act	R.S.C. 1985, c. A-3
The Arctic Waters Pollution Prevention Act	R.S.C. 1985, c. A-12
The Auditor General Act	R.S.C. 1985, c. A-17
The Canada Shipping Act	R.S.C. 1985, c. S-9
The Emergency Preparedness Act	R.S.C. 1985, c. 6 (4th Supp.) (April 27, 1988)
The Energy Supplies Emergency Act	R.S.C. 1985, c. E-9
The Federal Real Property Act	S.C. 1991, c. 50
The Financial Administration Act	R.S.C. 1985, c. F-11
The Fisheries Act	R.S.C. 1985, c. F-14
The James Bay and Northern Quebec Native Claims Settlement Act	S.C. 1976-77, c. 32
The Hazardous Products Act	R.S.C. 1985, c. H-3
The Health of Animals Act	S.C. 1990, c. 21
The International Boundary Waters Treaty Act	R.S.C. 1985, c. I-17
The Motor Vehicle Safety Act	S.C. 1993, c. 16 (in force 12.04.95)
The National Energy Board Act	R.S.C. 1985, c. N-7
The National Housing Act	R.S.C. 1952, c. 188/R.S.C. 1985, c. N-11
The National Round Table on the Environment and the Economy Act	S.C. 1993, c. 31 (in force April 28, 1994)
The Privacy Act	R.S.C. 1985, c. 21
The Resources and Technical Surveys Act	R.S.C. 1985, c. R-7
The Territorial Lands Act	R.S.C. 1985, c. T-7
The Transportation of Dangerous Goods Act, 1992	S.C. 1992, c. 34

R.S.C. = Revised Statutes of Canada S.C. = Statutes of Canada R.S.C. 1985 (4th Supp.) = 1988 (generally)

H. Glossary

Approved Reference Levels – The amount of resources that have been approved by the Treasury Board to carry out approved policies and programs.

Bioaccumulation – A term describing a process by which chemical substances are ingested and retained by organisms, either from the environment directly or consumption of food containing the chemicals.

Contingent liabilities – The potential debts which may become actual financial obligations if certain events occur or fail to occur (e.g. potential losses from pending or threatened litigation).

CRF - Consolidated Revenue Fund – The aggregate of all public moneys that are on deposit at the credit of the Receiver General for Canada.

Dioxins and Furans – Popular names for two classes of chlorinated organic compounds, they are 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.

DDT (dichlorodiphenyltrichloroethane) – A synthetic insecticide introduced after World War II. This chlorinated organic compound is persistent and tends to bioaccumulate. No longer in use in Canada and the U.S., it is still used in Mexico and Latin America, subject to long-range transport and found in sediment of the Great Lakes.

Ecosystem – An integrated and stable association of living and nonliving resources functioning within a defined physical location.

Endangered – A species facing imminent extirpation or extinction.

Environmental Management System – 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 to ensure that major environmental risks and liabilities are identified, minimized and managed.

Green Power – Power generated from environmentally friendly sources or in ways that do not degrade the environment (e.g. wind, solar).

Greenhouse gases (GHGs) – 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^2) — a byproduct of the burning of fossil fuels. Other greenhouse gases include methane (from agricultural sources) and nitrous oxide (from industrial sources).

Ground-level ozone – Ozone (O3) that occurs near the surface of the Earth that is detrimental to health. Its toxic effects make it a pollutant of concern in smog.

Order Paper – The common name for Order of Business and Notices, the daily agenda of the House of Commons and provincial legislatures. Items on the Order Paper when Parliament is dissolved or a session ended are said to have "died" on the Order Paper.

PBT's – Persistent Bioaccumulative Toxic Substances - Substances that produce toxic effects in living things and that stay in the environment a long time, accumulating as they are passed up the food chain.

PCB (Polychlorinated Biphenyl) – 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.

Persistent Organic Pollutants (POPs) – Organic substances such as certain pesticides (DDT, Chlrodane, Endrin, etc.); industrial chemicals (PCBs), or by-products; and contaminants (dioxins and furans). These pollutants do not break down readily in the environment, and are easily taken in by living organisms (e.g. eating contaminated food, drinking polluted water and breathing polluted air, etc.).

Program Review – A government-wide initiative (in three phases) to reduce budgets through program adjustments, technological improvements and alternative service delivery.

Revenues Credited to the Vote – Receipts credited to the appropriation which the department has the authority to reutilize.

Smog – A literal contraction of "smoke" and "fog"— it occurs when nitrogen oxides (NOx) and volatile organic compounds (VOCs) react during warm temperatures in the presence of sunlight. Stagnant air conditions aid smog formation.

SO_2 – Sulphur Dioxide. A chemical whose emissions enter the atmosphere and return to earth with precipitation as acid rain.

Stratospheric Ozone – 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 ultra-violet rays.

Sustainable development (SD) – Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Threatened – A species likely to become endangered if limiting factors are not reversed.

Transfer payments – A payment authorized by a budgetary appropriation for which no goods or services are received in exchange and neither gives rise to financial claim nor represents the liquidation of financial obligations.

VOC (Volatile Organic Compound) – The organic (containing carbon) gases and vapours that are present in the air. They are involved in ground-level ozone formation and some are toxic air pollutants.

Vote – A request to Parliament for appropriation. The term vote is commonly used in the sense of "appropriation". A vote becomes an appropriation only when the Appropriations Act in which it is contained receives royal assent.

Vote Netted Revenue – Receipts credited to the appropriation which the department has authority to reutilize.

Voted Appropriations – See vote.

I. References

Hard copy departmental publications can be obtained from the:

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1-819-997-2800

The Environment Canada Green Lane address on the World Wide Web is:
http://www.ec.gc.ca/envhome.html