

# **Environment Canada**

**2004-2005**

**Departmental Performance Report**

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Stéphane Dion  
Minister of the Environment



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## **SECTION I**

### **OVERVIEW**

# Section 1: Overview and Performance Summary

## 1.1 Minister's Message



I am pleased to present Environment Canada's Departmental Performance Report for 2004-2005. The Report identifies progress made on the priorities outlined in Environment Canada's 2004-2005 Report on Plans and Priorities.

Since balancing the budget in 1997-1998, the federal government has allocated more than \$10 billion to enhance the quality of Canada's land, air and water. Throughout 2004-2005, the Government of Canada reconfirmed its commitment to promote the highest environmental standards for Canadians. The 2005 federal budget launched Project Green and includes a \$5.2 billion set of measures to support a sustainable environment by:

- Addressing climate change by promoting reductions in greenhouse gas (GHG) emissions and encouraging the development of environmental technologies;
- Building on existing tax measures to encourage Canadian businesses to invest in more efficient and renewable energy generation;
- Investing in public infrastructure to encourage more efficient use of energy as well as the remediation of brownfield sites;
- Protecting our natural environment, including the Great Lakes and St. Lawrence River, oceans and national parks.

Project Green is the Government of Canada's broad environmental vision that links Canada's economic competitiveness and prosperity to a sustainable future. It will include a series of initiatives, programs and projects that address the full range of the environmental and sustainability challenges we face. The concrete actions we take under Project Green will be guided by a fundamentally new approach to the environment based on a new policy agenda.

Through Project Green, the government is setting a new direction in transforming the economy so that it is a model of sustainability. This will involve working with our partners to build sustainable development systematically into decision-making.

It will also involve a more strategic approach to addressing climate change. The Kyoto Protocol came into force early in 2005. Shortly thereafter, the Government launched the first phase of Project Green by releasing *Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment*. The Plan is designed to integrate climate change considerations into the day-to-day decisions of Canadians and allow Canada to meet its Kyoto commitment while improving our competitiveness. The Plan is a major step forward in integrating environmental considerations into decision-making but it is just one element of Project Green.

Environment Canada is implementing a new policy approach that aims to advance Canada's environmental performance while strengthening its overall economic prospects. The approach is designed to attain the highest level of environmental quality as a means to enhance the health and well-being of Canadians, preserve our natural environment and advance our long-term competitiveness.

We have made important progress, but more remains to be done. Environment Canada will continue to strive to improve the quality of the services and information we provide to Canadians.

Stéphane Dion, P.C., M.P.  
Minister of the Environment

## 1.2 Management Representation Statement

I submit, for tabling in Parliament, the 2004-2005 departmental performance report (DPR) for Environment Canada.

This document has been prepared based on the reporting principles contained in the Treasury Board of Canada Secretariat's Guide for the preparation of 2004-2005 Departmental Performance Reports:

- It adheres to the specific reporting requirements;
- It uses an approved Business Lines structure;
- It presents consistent, comprehensive, balanced and accurate information;
- It provides a basis of accountability for the results pursued or achieved with the resources and authorities entrusted to it; and
- It reports finances based on approved numbers from the Estimates and the Public Accounts of Canada.

Samy Watson  
Deputy Minister of the Environment

## 1.3 Summary Information

### **Raison d'être: Mandate, Vision and Mission**

#### **Mandate**

Environment Canada's mandate was established in 1971 but the range and character of the issues and challenges it faces have continued to evolve. The powers, duties and functions of the Minister of the Environment extend to and include matters relating to:

- The preservation and enhancement of the quality of the natural environment, including water, air and soil quality;
- Renewable resources, including migratory birds and other non-domestic flora and fauna;
- Water;
- Meteorology;
- The enforcement of any rules or regulations made by the International Joint Commission relating to boundary waters; and
- Coordination of the policies and programs of the Government of Canada respecting the preservation and enhancement of the quality of the natural environment.

*([Department of Environment Act](#))*

- Links to the legislation and regulations that provide Environment Canada with its mandate and allow the Department to carry out its programs can be found at: <http://www.ec.gc.ca/EnviroRegs/ENG/Default.cfm>.

#### **Mission**

Environment Canada's mission is to make sustainable development a reality in Canada. To this end, the Department's approach involves:

- Providing leadership nationally and internationally on matters pertaining to the sustainability of the environment;
- Acting on behalf of all Canadians to address environmental issues of national concern and to administer and enforce federal environmental laws and regulations;
- Delivering services to Canadians that enable them to adapt to their environment in ways which safeguard their health and safety and optimize economic efficiency; and
- Building capacity throughout society to take decisions that lead to environmental sustainability and cooperating with others having similar objectives.



## **Environment Canada's Planning and Reporting Framework**

Environment Canada's 2004-2005 Departmental Performance Report (DPR) reports against the strategic outcomes and business lines identified in the Department's 2004-2005 Report on Plans and Priorities and the Government of Canada's 2004-2005 Main Estimates. Environment Canada's future Departmental Performance Reports will report against the Department's Program Activity Architecture.

Environment Canada fulfills its mandate through the efforts of four results-based Business Lines:

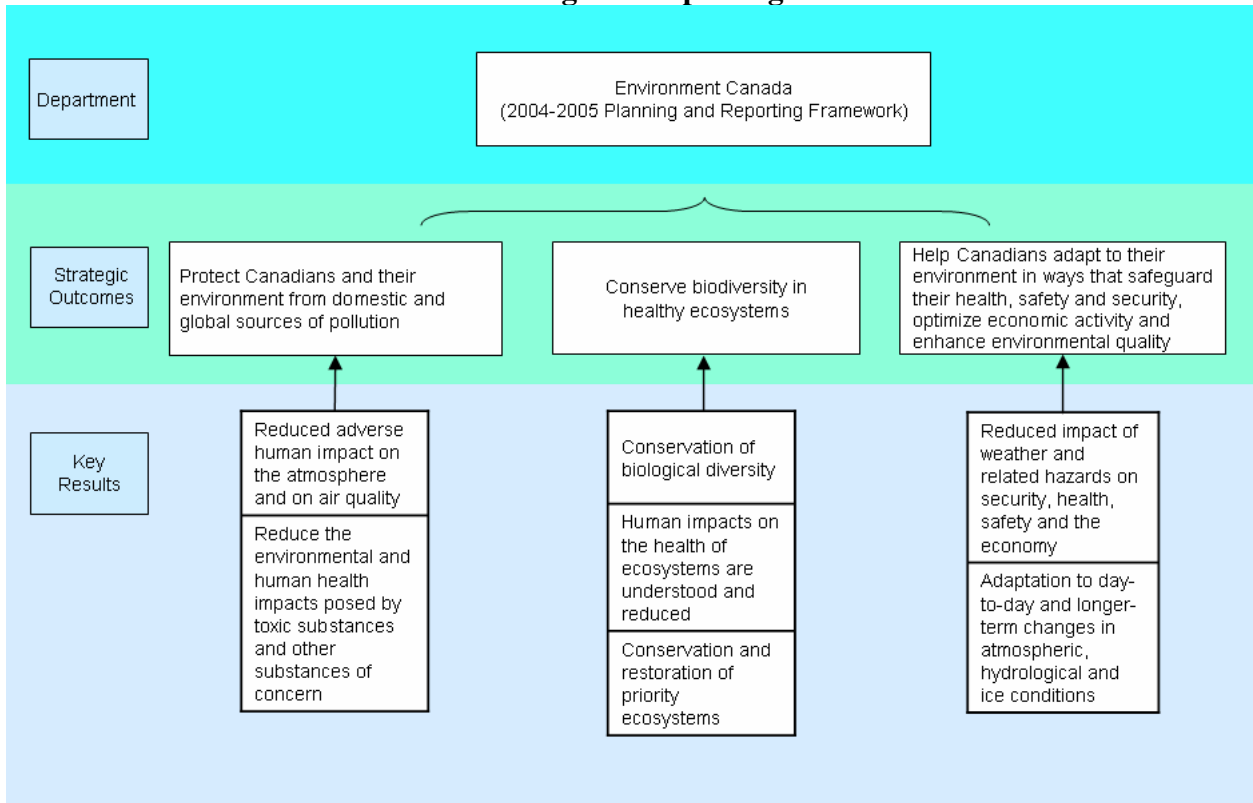
- Clean Environment;
- Nature;
- Weather and Environmental Predictions; and
- Management, Administration and Policy.

Each Business Line is set up to deliver a long-term strategic outcome. Each desired outcome includes two or three more specific long-term goals, which, in turn, are divided into a series of distinct, achievable targets. These Business Lines and associated long-term goals, called key results, provide the framework for internal accountability and management as well as for external reporting. The key results also provide a stable, results-based strategic direction against which pressures faced by the Department, and shorter-term priorities to address these pressures, are organized.

Business Lines are not isolated from each other. There are common areas of interest across Business Lines, e.g. air quality, water, climate change and environmental effects, where staff from across Business Lines work cooperatively to achieve results. This allows for coordinated, consistent programming and direction, as well as client-centred delivery in a manner that respects regional differences.

Program delivery at Environment Canada is achieved by drawing on policy expertise and scientific and technical knowledge from across the Department as well as a strong regional understanding of the social, cultural and economic factors that shape attitudes, perceptions and behaviour. In delivering the national vision for the environment, Environment Canada works in partnership with provinces, territories, communities and others across the country. It provides science-based information, tools for action and opportunities for sharing experiences and learning. Moreover, it helps build the capacity of all the players involved to effect changes that will improve quality of life. For more information, visit Environment Canada's national web site at <http://www.ec.gc.ca/envhome.html>.

## 2004-2005 Planning and Reporting Framework



### 2004-2005 Main Estimates

(millions)	Operating	Capital	Transfer Payments	Sub-Totals	Less: Revenues credited to the vote	Totals	2003-2004 Main Estimates
Clean Environment	236.0	13.4	23.7	273.1	(9.2)	263.9	228.2
Nature	178.6	2.6	29.2	210.4	(6.9)	203.5	182.5
Weather and Environmental Predictions	250.6	25.0	2.6	278.1	(64.1)	214.0	190.6
Management Administration and Policy	121.2	1.2	2.1	124.6	(0.8)	123.8	119.4
<b>Totals*</b>	<b>786.5</b>	<b>42.2</b>	<b>57.6</b>	<b>886.2</b>	<b>(81.0)</b>	<b>805.2</b>	<b>720.7</b>

\* Totals may differ between and within tables due to rounding.

#### Financial Resources

Total 2004-2005 Financial Resources		
Planned Spending	Total Authorities	Actual Spending
<b>958.7</b>	<b>980.0</b>	<b>926.7</b>

#### Human Resources

Total 2004-2005 Full Time Equivalents		
Planned Human Resources	Actual Human Resources	Difference
<b>5,871</b>	<b>6,086</b>	<b>215</b>

**Summary of Performance in Relation to  
Departmental Strategic Outcomes, Priorities and Commitments**

Strategic Outcomes	2004-2005 Priorities / Commitments	Type	Expected Results	Current Status	Planned Spending*	Actual Spending*
Clean Environment (section 2.1)	Reduce the Health and Environmental Impacts of Pollution (Clean Air and Toxic Substances)	Ongoing	Implementation of the federal government's Clean Air Agenda Implementation of the <i>Canadian Environmental Protection Act, 1999 (CEPA, 1999)</i>	On track  On track	\$416.5M	\$357.8M
	Move Forward on Climate Change	Ongoing	Development and implementation of a national climate change plan	On track		
Nature (section 2.2)	Sustain Our Natural Environment	Ongoing	Conservation, protection and sustainable use of wildlife and the natural environment	On track	\$215.1M	\$210.0M
Weather and Environmental Predictions (section 2.3)	Reduce Risks from Weather, Environmental Change and Other Hazards	Ongoing	Transformation of the Meteorological Service of Canada Increased predictive capacity and longer lead times and accuracy of forecasts	On track	\$282.4M	\$265.7M
Management, Administration and Policy (section 2.4)	Implement Innovative Approaches to Policies and Programs	Ongoing	Development and implementation of a competitiveness and environmental sustainability policy framework	On track	\$125.7M	\$167.6M
	Deliver Effective Departmental Management and Administration	Ongoing	Transformation of Environment Canada	On track		

\* Planned Spending is inclusive of revenues. Actual Spending is based on Public Accounts.

Explanation of variance between Planned Spending and Actual expenditures by Business Line:

Clean Environment: The \$58.7M variance is mainly attributable to restriction measures taken to meet the salary cap on the growth of the public service, internal reallocation to support enabling functions as well as \$15.7M reprofiling of Climate Change planned spending.

Nature: The \$5.1M variance is mainly attributable to the approved reprofiling of \$2.5M for the Agricultural Policy Framework. The other principal contributing factor is the restriction measures to meet the salary cap on the growth of the public service.

Weather and Environmental Predictions: The \$16.7M variance is mainly attributable to restriction measures taken to meet the salary cap on the growth of the public service, internal reallocation to support enabling functions as well as lower than anticipated revenue collections.

Management Administration and Policy: The \$41.9M variance is a result of internal reallocation as well as adjustments to organizational structure to support enabling services such as Human Resources, Finance, Information Management and Information Technology as well as Communication. Treasury Board reimbursable expenditures such as Maternity, Severance and Leave on departure are captured under this Strategic Outcome and account for \$11.8M of this increase. The overall expenditure for this Strategic Outcome has decreased by \$10M since 2003-2004.

## 1.4 Overall Departmental Performance

### OPERATING ENVIRONMENT

Changes to Environment Canada's operating environment have occurred since the Department's 2004-2005 Report on Plans and Priorities (RPP) was tabled. These changes were described in the Department's 2005-2006 RPP and are reviewed below.

The Government of Canada is positioning Canada to be a world leader in environmental sustainability and has signalled this intention with an ambitious agenda that recognizes that:

- Environmental sustainability is becoming more crucial than ever in terms of improving our quality of life;
- The links that bind the environment and economic competitiveness are driving change in the global economy;
- Those nations that succeed in reconciling the environment and the economy will gain an important economic advantage;
- Canada must assert itself as a leader in the new industrial revolution, that of the sustainable economy.

The clear connection between environmental considerations and economic competitiveness is leading a transformation in the way the global economy works. More and more, we see the signs of what can only be described as a new industrial revolution – a revolution in which the environment is a key driver of creativity, of innovation and of competitiveness around the world. The countries that fail to integrate both environmental and economic factors will not position themselves well to improve, or even to maintain, the quality of life of their people.

The emerging model of competitiveness is one where sustained, long-term economic growth requires a long-term, comprehensive approach to sustainability, including adaptation, and which requires buy-in from citizens, industry and governments if it is to be successful. In fact, since consumers are increasingly aware of the impact that environmental degradation has on their health and well-being, more and more of them are demanding that businesses implement sustainable practices.

Evidence of this transformation can be seen throughout society. For example, citizens are increasingly demanding action to protect the environment, and consumers are putting pressure on business to respond to their environmental choices. Investors are demanding disclosure from firms to assess environmental risks. Leading businesses are responding to these market pressures, and are seeing benefits to their bottom lines. Governments are also responding to the transformation. Leading industrialized countries understand that sustainability and environmental issues can no longer be “after-thoughts” in economic decision making.

### ***Building a new national agenda on the environment***

Project Green is the Government of Canada's comprehensive environmental vision that responds to this global movement. It recognizes that Canada's approach to environmental sustainability can be improved through greater integration and consistency, more productive collaborative relationships with key stakeholders, and environmental policies that are more often made incorporating basic economic and business principles. Project Green ensures that Canada's economic strategy and environmental policy point in the same direction. Project Green also delivers on the Government's October 2004 Speech from the Throne commitment to "...work with its partners to build sustainable development systematically into decision making."

Environment Canada is leading the development of a Competitiveness and Environmental Sustainability Framework (CESF) which will guide the implementation of Project Green on a government-wide basis. The CESF vision is to attain the highest level of environmental quality as a means to enhance the health and well-being of Canadians, preserve our natural environment, and advance our long-term competitiveness. Environment Canada is working with other federal departments and agencies, provincial and territorial governments, industry, Aboriginal peoples, non-government organizations and other key stakeholders to advance this vision. The CESF will set long-term national environmental and health objectives and will take an integrated approach to the full range of sustainability challenges, including climate change, clean air and water, land and habitat use, and biodiversity.

The Framework lays out a comprehensive vision with three overarching goals for the country as a whole:

- ***Enhancing the safety and well-being of Canadians:*** Protecting Canadians against hazards that may find their way into the environment or, in the case of extreme weather, that arise from it, thus contributing to improved health outcomes, lower health costs and greater safety and security for individuals;
- ***Preserving our natural environment:*** Protecting, conserving and restoring Canada's ecosystems to ensure the highest level of environmental quality and access to Canada's natural capital for future generations; and
- ***Advancing our long-term competitiveness:*** Advancing sustainable approaches to economic development in order to achieve increased productivity, increased efficiency, more sustainable energy use and preservation of the economic goods and services of our natural capital.

### ***Adopting new approaches to meet Environment Canada's strategic objectives***

The Department is in the process of establishing five key operating elements to frame how governments, industry, cities and citizens can work together to meet the overarching goals of the Competitiveness and Environmental Sustainability Framework. These **five pillars** are inter-related and are dependent on one another.

1. A new **decision-making** model amongst governments, industry and key stakeholders, reflecting shared responsibility for achieving ambitious environmental objectives, whereby governments set clear expectations, informed by science, and work with industry and others to ensure that business realities are taken into account.

2. Sound decision-making and clear accountability will rely upon enhanced **information** for decision-makers, through improved collection, analysis and sharing practices.
3. To drive environmental performance in industry, in a manner that supports their competitiveness, governments will work to develop flexible performance promotion and enforcement that includes one-window, streamlined, fair and predictable regulatory, **performance promotion and enforcement regimes**, including the use of market-based incentives and regulatory backstops.
4. An integrated national approach to **science and technology**, focused on key priorities, linked to market needs, and conducted in partnership between academia, non-government organizations, industry and governments will be essential to enhancing our understanding and applying solutions to changes in our natural environment.
5. An effective **education and engagement** strategy so that Canadians have the necessary information to make sustainable decisions and informed choices will be a key element of achieving sustainability in Canada.

#### ***Transforming Environment Canada's management framework***

Transforming the way we do business is critical if Environment Canada is to coordinate the government-wide environment agenda – Project Green – and deliver on Project Green through the CESF. To work more coherently with other federal departments, other governments and with the private sector, Environment Canada has begun to integrate policy, programs and management structures into “one department.”

Establishing a “one department” approach at Environment Canada is key to providing value for money to Canadians, and it will mean attaining excellence in all aspects of our work:

- Establish clear lines of accountability and responsibility
- Effective decision-making mechanisms where decisions are made with knowledge of the full range of factors to be taken into account
- Comprehensive planning and priority-setting processes where resource utilization is transparent and linked to verifiable results
- Consistent and efficient program delivery and service to clients
- Governance structures that promote a flexible team-based organization which anticipates and responds to changing government priorities and client needs

An effective departmental governance system is central to Environment Canada's overall transformation. The department's new governance system is based on providing the structures and processes needed to collaborate on horizontal policy issues and make informed decisions. A team-based organization, built around the directions set in the CESF and governed by boards of Assistant Deputy Ministers and Regional Directors General, reinforces the collaborative work and one-department approach necessary to meeting the objectives of the CESF.

### ***Planning Framework***

While this Departmental Performance Report is structured around the Business Lines and results identified in the 2004-2005 Report on Plans and Priorities, the Department has re-organized its resources and activities into a revised Program Activity Architecture (PAA). This architecture, which will be reflected in Environment Canada's 2006-2007 RPP, allows the Department to better understand how its activities interact and contribute to Environment Canada's overarching strategic objectives. As well, it provides an important new tool to senior managers for the purposes of reordering the department's efforts to higher priorities when necessary. We will also work to link the departmental PAA with other environment-based activities across the Government of Canada to better harness the total efforts of all government departments on issues affecting the environment.

### ***Budget 2005***

Through Budget 2005, Project Green builds on earlier measures through a \$5.2 billion package of measures over the next five years to support a sustainable environment by:

*Addressing climate change by promoting reductions in greenhouse gas (GHG) emissions and encouraging the development of environmental technologies including:*

- \$1 billion over five years for the Climate Fund to encourage cost-effective projects and actions that reduce greenhouse gas emissions.
- \$250 million to create a Partnership Fund for projects that are best achieved through cooperation between the federal government and provinces and territories.
- \$225 million over five years to quadruple the number of homes retrofitted under the EnerGuide for Houses Retrofit Incentive program.
- \$200 million over five years to help develop a Sustainable Energy Science and Technology Strategy.
- \$200 million over five years to further stimulate the use of wind power through the Wind Power Production Incentive and \$97 million over five years for a new Renewable Power Production Incentive to encourage the use of other renewable energy technologies such as small hydro, biomass and landfill gas.

*Building on existing tax measures to encourage Canadian businesses to invest more in efficient and renewable energy generation, including:*

- Increasing the capital cost allowance (CCA) rate to 50 per cent from 30 per cent for environmentally friendly forms of energy and extending the incentive to include district energy and biogas production systems.

*Investing in public infrastructure to encourage more efficient use of energy as well as the remediation of brownfield sites, including:*

- \$300 million for the Green Municipal Funds, \$150 million of which will be used to help communities clean up and redevelop brownfields.
- The equivalent of \$5 billion over five years from federal gas tax revenues for municipal infrastructure projects like transit, water and community energy system improvements.

- The renewal of infrastructure programs such as the Canada Strategic Infrastructure Fund and the Municipal Rural Infrastructure Fund, which invest more than 50 per cent of funding toward sustainable infrastructure.

*Protecting our natural environment, including the Great Lakes, oceans and national parks, including:*

- \$269 million over five years to restore ecological integrity and improve public infrastructure in Canada's national parks.
- \$125 million over five years to improve the ecological integrity of the Great Lakes ecosystem and minimize the risk of invasive alien species such as the sea lamprey.
- \$28 million over two years to help develop a competitive and sustainable Oceans Action Plan and \$15 million annually to discourage foreign overfishing in the Northwest Atlantic.
- An additional \$90 million over five years to conduct health risk assessments and research to reduce Canadians' exposure to toxic substances.

#### **PROGRESS AND PERFORMANCE HIGHLIGHTS**

Environment Canada's work resulted in a number of important achievements in 2004-2005. The environmental focus of the 2005 federal budget and the release of *Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment* were important milestones in embedding environmental considerations into government decision-making.

Environment Canada's 2004-2005 Report on Plans and Priorities identifies five overarching priorities for the Department:

- Reducing the health and environmental impacts of pollution
- Moving forward on climate change
- Sustaining our natural environment
- Reducing risks from weather, environmental change and other hazards
- Implementing effective policy and departmental management and administration

This section provides a summary of departmental performance in these areas. See section 2 for more information on the results achieved by Environment Canada in 2004-2005.

#### **PRIORITY 1 – REDUCE THE HEALTH AND ENVIRONMENTAL IMPACTS OF POLLUTION**

##### *Clean Air*

Environment Canada continues to implement the Government of Canada's 10-year Clean Air Agenda. In addition to the 2001 allocation of \$120 million, Environment Canada received \$40 million over two years in Budget 2003 and \$15 million in Budget 2004. Resources received in 2004 were to further the Speech from the Throne commitment to engage the United States on transboundary issues. During the reporting period:



- Progress on the Ozone Annex to the Air Quality Agreement between Canada and the United States was reviewed and both countries are on track to meet their commitments.
- Canada made significant progress in implementing its regulatory framework on cleaner vehicles, engines and fuels.
- Air quality forecasts were made available in selected areas in all provinces thereby meeting the government's 2001 commitment to have a national air quality smog forecast program in place by 2004.
- The National Pollutant Release Inventory (NPRI) was expanded to include information on criteria air contaminants, more mercury reporting and information from upstream oil and gas facilities which has greatly increased the amount of information available on air pollutant emissions. The number of facilities reporting to the NPRI increased from 2,100 in 1999 to over 8,000 in 2004.

#### *Toxic Substances and Other Pollutants*

In Budget 2003, Environment Canada received \$75 million over two years to maintain the Department's capacity to assess and manage toxic substances in collaboration with Health Canada. This investment is helping Environment Canada meet its obligations under the *Canadian Environmental Protection Act, 1999 (CEPA, 1999)*. In Budget 2004, the Government committed \$4 billion over 10 years to accelerate the cleanup of contaminated sites. During the reporting period:

- Environment Canada has produced preliminary categorization decisions on approximately 21,000 of 23,000 substances as of July 2005. Environment Canada and Health Canada assessed 768 new substance notifications.
- Environment Canada coordinated the management of the Federal Contaminated Sites Action Plan (FCSAP) in cooperation with the Treasury Board Secretariat, reviewing proposals and providing funding approval for accelerated action at 55 high priority federal sites and for 242 site assessments. Through the implementation of Budget 2004 resources over 10 years, all federal sites will be assessed and either remediated or risk managed, and the related financial liability will be effectively eliminated.
- New regulatory initiatives included Bill C-15 *An Act to Amend the Migratory Birds Convention Act, 1994 and the Canadian Environmental Protection Act, 1999* which received royal assent on May 18, 2005 and Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations that come into force on November 1, 2005.
- An evaluation of *CEPA, 1999* was conducted. It concluded that:
  - Environment Canada is addressing its obligations under CEPA 1999;
  - Environment Canada has realized significant accomplishments in most program areas; but that
  - The full potential of *CEPA 1999* has yet to be realized.
- By 2004, the quantity of corporate sustainability reports produced by Canadian corporations or trans-nationals with Canadian operations has increased by 75% from 2001 levels, exceeding Environment Canada's target of a 50% increase.
- Public access to toxic substances related information through the *CEPA* Environmental Registry has been improved. Users of the *CEPA* Registry increased from 30,000 users

per month in March 2004, to 90,000 users per month in April 2005. Over 250 *CEPA* related public documents were added to the database over the same period.

See section 2.1 for more information on Environment Canada's achievements in 2004-2005 to reduce the health and environmental impacts on pollution.

#### PRIORITY 2 – MOVE FORWARD ON CLIMATE CHANGE

Addressing climate change is important to Canada's competitiveness and the health and security of Canadians. Implementing near term and enduring emission reduction and setting long-term goals to make the deep emission reductions needed to successfully address climate change and starting to work towards them will accelerate a shift to sustainability. During the reporting period:

- The October 2004 Speech from the Throne reaffirmed Canada's commitment to meet its Kyoto Protocol commitments in a way that produces long-term and enduring results while maintaining a strong and growing economy.
- The February 2005 federal budget announced almost \$2 billion in measures to address climate change including \$1 billion over 5 years for the Climate Fund and \$250 million to create a Partnership Fund for joint federal/provincial/territorial initiatives.
- The Kyoto Protocol entered into force in February 2005. The Prime Minister announced that Canada will host the Eleventh Conference of the Parties (CoP 11) to the United Nations Framework Convention on Climate Change in Montreal from November 28 to December 9, 2005.
- The first phase of Project Green was launched on April 13, 2005 with the release of *Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment*. The Plan introduces measures that allow Canada to honour its Kyoto commitment while integrating climate change considerations into the day-to-day decisions of Canadians and improving our competitiveness in a sustainable economy.
- Environment Canada and Natural Resources Canada jointly launched the One Tonne Challenge in 2004 to encourage Canadians to reduce their greenhouse gas (GHG) emissions by one tonne or approximately 20%, by adopting energy efficiency improvements in their homes, reducing waste that goes to landfills, using water more efficiently, reducing their driving and using other forms of transportation.

See section 2.1 for more information on Environment Canada's achievements in 2004-2005 to move forward on climate change.

#### PRIORITY 3 – SUSTAIN OUR NATURAL ENVIRONMENT

Environment Canada continues to shape and promote a natural legacy agenda by encouraging the conservation, protection and sustainable use of natural resources. During the reporting period:

- Federal, provincial and territorial Ministers of Wildlife, Forestry and Fisheries and Aquaculture agreed to collaborate on the development of an outcomes-based implementation framework for the Canadian Biodiversity Strategy (CBS).

- Ministers approved an Invasive Alien Species Strategy for Canada. The Strategy received support in Budget 2005 and federal departments and agencies subsequently received \$85 million over five years to initiate implementation of the Strategy.
- The Government of Canada announced its commitment to move forward on an Oceans Action Plan in the October 2004 Speech from the Throne. This commitment was reinforced in the 2005 federal budget through the allocation of \$28 million over two years to implement Phase I of the Plan.
- The *Species at Risk Act (SARA)* came fully into force on June 1, 2004. Seventy three species were added to SARA's list of Wildlife Species at Risk from the 91 assessments submitted by COSEWIC in January 2004. The first annual report to Parliament on the administration of the *Species at Risk Act* covering the period June 2003 to December 2004 was tabled.
- Bill C-15 *An Act to Amend the Migratory Birds Convention Act, 1994 and the Canadian Environmental Protection Act, 1999* to enhance the Government's capacity to address marine pollution received royal assent on May 18, 2005.
- The Habitat Stewardship Program for Species at Risk invested \$10 million towards 165 terrestrial and aquatic habitat projects.
- Initiated RésEau, a web-based portal for sharing, discovery, access and use of water-based information from federal, provincial, and territorial and municipal agencies, volunteer groups, industry, universities and other partners.
- Initiated year 1 of the National Water Quality Indicators Program.
- New Environmental Quality Guidelines were approved by CCME.
- Improved knowledge and techniques were developed to remediate contaminated sites, improve municipal wastewater approaches and create sustainable urban storm water practices.
- Environment Canada, in collaboration with provincial and territorial governments played a key role in the development of the document titled "*From Source to Tap: Guidance on the Multi-barrier Approach to Safe Drinking*" published June 2004 by CCME [http://www.ccme.ca/assets/pdf/mba\\_guidance\\_doc\\_e.pdf](http://www.ccme.ca/assets/pdf/mba_guidance_doc_e.pdf).

See section 2.2 for more information on Environment Canada's achievements in 2004-2005 to sustain our natural environment.

#### PRIORITY 4 – REDUCE RISKS FROM WEATHER, ENVIRONMENTAL CHANGE AND OTHER HAZARDS

Environment Canada works in partnership with others to improve Canadians' capacity to anticipate, mitigate, withstand, adapt to and recover from high-impact weather events and related hazards by improving lead time, accuracy, utility and satisfaction with warnings. During the reporting period:

- Five new Storm Prediction Centres were established, along with a satellite office in Winnipeg.
- Aviation operations were consolidated in the Canadian Meteorological Aviation Centres East and West (Montreal and Edmonton).

- A production tool was implemented in all Storm Prediction Centres across the country which allows forecasters to devote greater attention to diagnosing, forecasting and providing advanced warning of high-impact weather.
- Three national service offices (NSOs) were established in 2004-2005 in Gander, Newfoundland (marine services); Rimouski, Quebec (media services); and Kelowna, British Columbia (road weather and weather-sensitive sector services).
- Implementation of the Doppler Radar Network was completed. This network consists of 31 Doppler radars that covers 95% of the population of Canada. This technology increases forecasters' ability to detect and warn Canadians of impending severe weather events, particularly as it relates to summer thunderstorms and tornados, and flash flood events.
- The Department implemented a performance measurement system to track the accuracy and lead time for warnings.
- Increased the reliability, speed of access and accuracy of information on Environment Canada's weather web site through improved infrastructure and site maintenance. Visits increased by 35% from 2003-2004 to 2004-2005, to over 155 million visits from 114 million.
- Environment Canada contributed to the development and operation of a road weather information system in partnership with other federal agencies, the provinces and the private sector.
- Interactive, web-based analysis of historical mean and extreme temperature and precipitation data for user-defined periods and areas of Canada was provided. Approximately 1.7 million pages were viewed per month in 2004-2005, a 210% increase over 2003-2004.

See section 2.3 for more information on Environment Canada's achievements in 2004-2005 to reduce risks from weather, environmental change and other hazards.

**PRIORITY 5 – EFFECTIVE POLICY AND DEPARTMENTAL MANAGEMENT AND ADMINISTRATION**  
 Environment Canada is transforming how it operates and manages to allow it to better coordinate the government-wide environment agenda and deliver on its departmental strategic outcomes. Environment Canada has focused its efforts to effect change through a Management Agenda with an overarching goal to “put in place integrated management structures and processes necessary to deliver outcomes and results and exercise accountability and control.”

Environment Canada is establishing a new planning architecture that provides a better basis for accountability, performance measurement, decision making and action. Advantages of this planning approach include increased transparency, improved strategic alignment, clarity of roles and responsibilities, and a framework to manage resources.

During the reporting period:

- A new competitiveness and environmental sustainability policy framework was approved by the Ad Hoc Committee of Cabinet on Sustainability and the Environment.

- Environment Canada launched a process of transformation designed to enable the Department to better deliver on its mandate of ensuring the highest quality of environment for Canadians.
- A new governance system was established that provides the structures and processes needed to collaborate on horizontal policy issues and make informed decisions.
- A new Program Activity Architecture (PAA) was defined to better articulate how departmental activities interact and contribute to strategic objectives and to provide a tool for reordering the department's efforts to higher priorities when necessary.
- Management systems and processes were implemented to ensure compliance with policies, regulations, and legislation and provide consistent and equitable services, relevant information and early warning on resources, results and controls.
- A new framework, entitled a Strategy for People, was designed and will form the basis of a systematic and integrated approach to leverage the collective efforts and talents of all employees.

See section 2.4 for more information on Environment Canada's achievements in 2004-2005 to implement effective policy, administration and management functions.

#### CONCLUSION

This Report provides information that corresponds with and expands upon *Canada's Performance 2005*, tabled in Parliament by the President of the Treasury Board. In addition to addressing indicators on specific aspects of environmental quality which are also addressed in Environment Canada's 2004-2005 Departmental Performance Report, *Canada's Performance 2005* also has merged themes on Economy and Environment into a single chapter, reflecting the importance given to the links between the Canadian economy and the natural environment. This is an important change that reinforces the impact of the changes to the overall operating environment presented earlier in this report.

## ENVIRONMENTAL TRENDS

Environmental science and monitoring are cornerstones in detecting and tracking ecosystem and atmospheric changes. Environmental Signals: Canada's National Environmental Indicator Series 2003 reports on 13 issue areas supported by over 50 key indicators that are intended to provide a broad overview of trends in Canada's environment in areas that are important to Canadians. A summary of indicator trends from this report is published in the President of the Treasury Board's annual report to Parliament entitled *Canada's Performance*. The following table, based on information contained in these reports, shows that trends in a number of environmental issue areas related to Environment Canada's priorities are mixed or continue to be a concern requiring action from all sectors of Canadian society.

The indicators below are a mixture of state of environment and environmental pressure measures. In general, state of the environment rankings measure the condition of air, water, land and life forms. Compared to situations elsewhere in the world, most assessments indicate that Canada's environment is in very good condition. Rankings based on environmental pressures measure the effects of human activities that can be harmful to the environment, or to humans through the environment. For example, polluting emissions and certain types of land use are environmental pressures. From this perspective, we are rarely among the best performers.

To summarize, the state of our environment is good but we are imposing significant pressures on it. The fact is that Canada has a small population in a vast and well endowed country (in terms of natural resources, such as freshwater) compared to situations in other countries. However, on a per-person basis, Canada's environmental pressures are among the greatest, particularly with respect to greenhouse gas emissions, energy consumption and residential water use.

### Trends in Environmental Indicators in Canada\*

Issue Area	Indicator Trend	Highlights
Air Quality	–	Yearly average concentrations in urban air across Canada of sulphur dioxide (SO <sub>2</sub> ) and nitrogen oxides (NO <sub>x</sub> ), volatile organic compounds (VOC), and fine particulate matter (PM <sub>2.5</sub> ) have all decreased overall since the mid- to late-1980s. Fine particulate matter (PM <sub>2.5</sub> ) concentrations have shown incremental increases since 2000. Ground-level ozone, which had shown increases since the mid-1990s, remained relatively stable between 2001 and 2003.
Biodiversity	↓	As of May 2005, the status of 147 species at risk had been reassessed. Of these, the status of 42 species worsened (28.6 percent) whereas 25 species (17 percent) were determined to be no longer at risk or placed in a lower risk category.
Climate Change	↓	Canadian greenhouse gas emissions increased by 3% between 2002 and 2003, and by 24% since 1990. Furthermore, secondary energy use increased by 4 percent between 2002 and 2003, and by 22 percent since 1990.
Toxic Substances in the Environment	–	When the <i>Canadian Environmental Protection Act</i> was first passed in 1988, there were 9 substances on the list; in 2002 there were 52, and there were 70 substances on the list when it was last updated on March 9, 2005. There are reliable matched data from 1995 to 2000 for 15 toxic substances. Of the 15, on-site releases have decreased for 7, changed little for 3 and increased for 5. Mercury emissions in air saw an overall decrease of 77% from 1990 to 2000. The concentrations of persistent organic pollutants in wildlife vary considerably among individual animals as well as among locations across the country. The contaminant levels in Double-crested Cormorant eggs are an indicator of toxic substances in the environment. Contaminant concentrations in the eggs of Double-crested Cormorants have declined since the early 1970s with most gains made before 1990.
Water Use	–	In 2001, average residential water use per person was 335 litres per day – an increase of 8 litres from the lowest rate in 1996. This is an improvement over the previous survey results from 1999 but not as good as the lowest rate in 1996 (327 litres per day).

Legend:

↑ Trend Improving

– No definitive trend noted at this time (due to lack of trend data or multiple measures with opposing trends)

↓ Trend Declining

\* indicators and information on the state of the environment have been extracted from Environment Canada's State of the Environment Infobase (<http://www.ec.gc.ca/soer-ree/English/default.cfm>).

## **SECTION II**

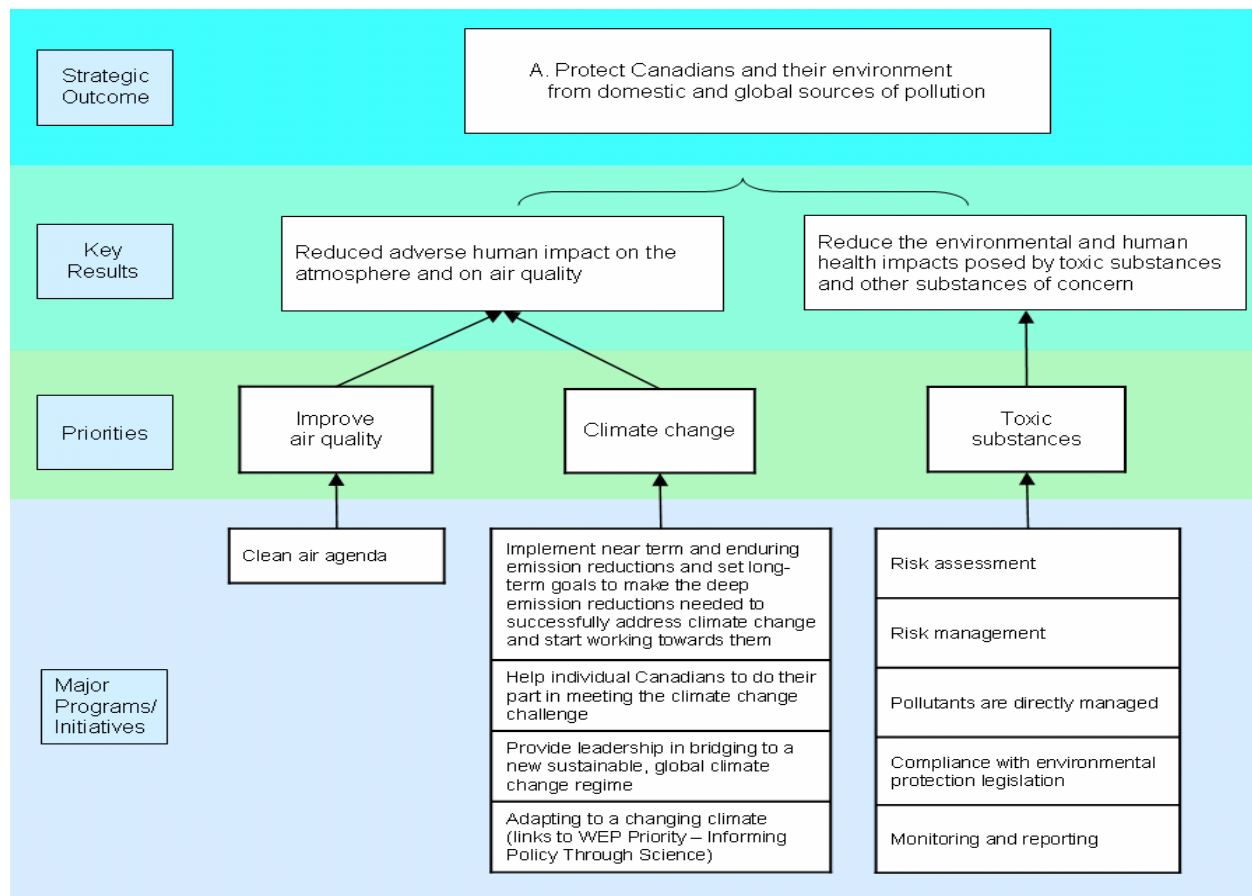
### **ANALYSIS OF PERFORMANCE BY STRATEGIC OUTCOME**

## Section 2: Performance Discussion by Strategic Outcome

### 2.1 Protecting Canadians and Their Environment from Domestic and Global Sources of Pollution

The environment is under continuous threat from a number of stressors including industrial activity, unsustainable land use and population growth. These stressors lead to increased air and water pollution, climate change and the disappearance of habitat. Protecting Canadians and the environment from domestic and global sources of pollution remains a priority for the Government of Canada.

Environmental quality is central to our long-term quality of life and economic competitiveness. It is critical to our health, our sense of well-being, and the liveability of our communities. There are strong links between air pollution and health problems – especially for the elderly, children and for those with respiratory and cardiac problems. Many studies show that, at levels seen in Canada, air pollution can contribute to premature death, increased hospital admissions, more emergency room visits and higher rates of absenteeism.





The objective of the Clean Environment Business Line is to protect Canadians from domestic and global sources of pollution, by both playing a role in cleaning up the legacy from past contamination and in pollution prevention. The key results sought are:

- To reduce the impact of human activity on the atmosphere and on air quality; and
- To understand, prevent and reduce the environmental and human health threats posed by toxic substances and other substances of concern.

Environment Canada takes an integrated policy approach to emissions reduction, emphasizing the linkages between clean air and climate change and taking a multi-pollutant approach. More specifically, Environment Canada, in collaboration with provinces and other partners undertakes to:

- Identify threats from pollutants, their sources and means of controlling them through the application of sound science;
- Develop standards, guidelines and codes of practice to ensure adequate levels of protection of environmental quality;
- Identify and implement appropriate strategies for preventing or reducing pollution;
- Administer and enforce regulations for pollution prevention and control within areas of federal jurisdiction;
- Monitor levels of contaminants in air, water, and soil;
- Represent Canada's interests in the development of international agreements and accords to reduce pollution; and
- Provide advice and tools for preventing pollution and support to the development and deployment of green technologies.

Over the past 10 years, notable improvements have been observed in the state of Canada's environment. Concentrations of toxic compounds in some wildlife species have decreased and the acidification of a number of lakes has been reversed. Air quality, while still a concern, has improved in some urban areas and agricultural soils are now better protected from erosion.

While Canadians should take credit for the improvements made in environmental quality since the 1970's, significant challenges remain. We continue to be affected by pollutants from many sources and in many different forms every day. We are feeling the effects of pressures on the environment through the pollution we breathe and toxic substances in the food and water we consume.

The following table illustrates the linkages among the Department's longer-term results and its intermediate and immediate outcomes and activities. Performance reporting is done according to the three priority concerns: Climate change; Air quality; and Toxic substances.

Clean Environment Business Line							
Strategic Outcome							
Protect Canadians and their environment from domestic and global sources of pollution							
Main Estimates	Planned Spending	Total Authorities	Actual Spending	Full Time Equivalents			
273.1	416.5	389.1	357.8	1634			
Key Results							
Reduced adverse human impact on the atmosphere and on air quality				Reduce the environmental and human health impacts posed by toxic substances and other substances of concern			
Main Estimates	Planned Spending	Total Authorities	Actual Spending	Main Estimates	Planned Spending	Total Authorities	Actual Spending
114.9	242.7	161.9	201.2	158.2	173.8	227.2	156.6
Priority Areas of Work							
Improve Air Quality		Climate Change			Toxic Substances		
Intermediate Outcomes							
<u>Air Quality</u> Targets are continuously improved Transboundary flows of air pollution are reduced Emissions from vehicles, engines and fuels are reduced Emissions from industrial and other sectors are reduced Canadians take action to reduce air pollution Canadians understand how to interpret air quality information and are aware of actions that they can take Continued national, bilateral and multilateral progress on Acid Rain, Hazardous Air Pollutants and Stratospheric Ozone				<u>Toxic Substances</u> The risks posed by toxic substances are understood and substances requiring improved management are identified. Risk management actions to address sources of greatest concern for those substances added to Schedule 1. Persistent, bioaccumulative, toxic and anthropogenic substances are virtually eliminated. International and national obligations are met with respect to the transboundary movements of hazardous waste and hazardous recyclable materials as well as with respect to Polychlorinated Biphenyls (PCBs). The negative environment impacts of land-based activities to coastal and marine environments are prevented. Soil and groundwater contamination from petroleum products and allied petroleum products storage tank systems are prevented. The direct management of pollutants that pose a risk to the environment and human health is improved. Compliance with environmental protection legislation is improved. Information collected through National Pollutant Release Inventory (NPRI), CEPA Registry, industry Environmental Effects Monitoring (EEM) and other avenues and data made available to Canadians.			
<u>Climate Change</u> Coordination and leadership on climate change issues Canadians are actively engaged in the One-Tonne Challenge and in emission reduction actions Canadians take energy efficiency/conservation considerations into account in their purchase, use and lifestyle decisions Continue to make progress in the international implementation of key provisions of the Kyoto Protocol In collaboration with key international partners, develop the framework for a new, sustainable international climate change framework that includes all industrialized countries and key developing countries. Conclude bilateral agreements with key developing countries Awareness of impacts of climate change on economic development and planning processes Scenarios and options to guide decision-making on adaptation in areas vulnerable to a changing climate Strategies for adapting to the changing climate particularly in the North and in municipalities as well as water management strategies							
Key Programs and Major Initiatives							
<u>Air Quality</u> Clean Air Agenda Acid Rain, HAPs and Stratospheric Ozone				Implementing CEPA Conducting risk assessments Implementing risk management programs Directly managing pollutants Implementing compliance programs to ensure compliance with environmental protection legislation Monitoring and reporting on levels of toxics in the environment			
<u>Climate Change</u> Implementing near-term greenhouse gas (GHG) emission reductions and setting long-term goals; developing a climate change plan for Canada Helping individual Canadians do their part with respect to climate change; implementing the One-Tonne Challenge Providing leadership in bridging to a new sustainable, global climate change regime Providing support for adapting to a changing climate							

\* Totals may differ between and within tables due to rounding.

## 2.1.1 Key Result: Reduce Adverse Human Impact on the Atmosphere and on Air Quality



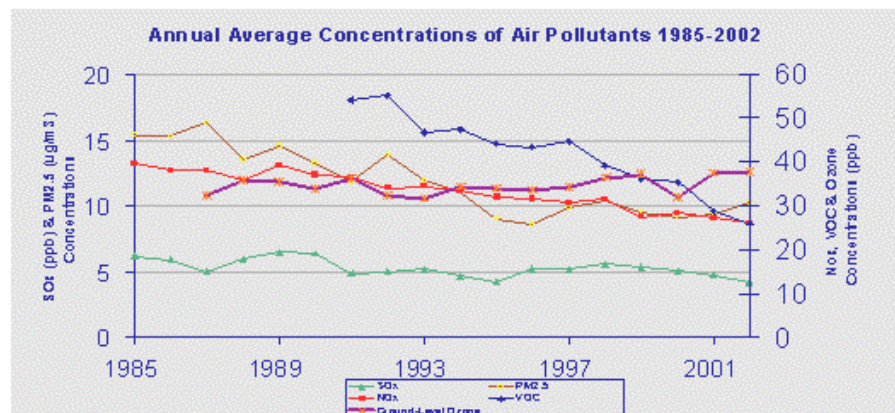
### Air Quality

#### *What is the issue?*

Air quality is a local and regional issue that is affected by human activities, weather, and topography. Air quality affects Canada's wildlife habitat, agricultural yields, forests and our health – cleaner air means healthier children and seniors, less cardiac and respiratory disease, fewer asthma attacks among children, fewer hospital admissions and fewer premature deaths.

A number of pollutants, alone or in combination, worsen air quality. Together the pollutants are often called smog; ground-level ozone and microscopic airborne particles known as particulate matter (PM) are the constituents of greatest concern in Canada. All ground-level ozone and over one-half of airborne particulate matter are produced through the reaction of other air pollutants, called precursor gases, that include nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), and sulphur dioxide (SO<sub>2</sub>). These gases come primarily from human activities, such as burning fossil fuels by motor vehicles, smelters, homes, agricultural activity thermal power plants and other industries, by evaporation of solvents and as a by-product of industrial processes. They can also come from natural sources such as the release of VOCs from vegetation. Local pollution and long range transport gives the region between Windsor and Quebec City the worst air quality in the country, but many other regions experience smog problems.

Although there have been reductions in levels of some airborne pollutants in many parts of Canada, both urban and rural, many Canadians continue to experience periods of unacceptable air quality, especially in the summer. While the yearly average concentrations in urban air across Canada of sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOC), and fine particulate matter (PM<sub>2.5</sub>) have all decreased since the mid to late 1980's, there has been no noticeable net change in fine particulate matter (PM<sub>2.5</sub>) concentrations since the mid-1990's. These decreasing or stable trends contrast with the trends in seasonal average levels for ground-level ozone, which have shown an increase over this period. (See Figure.)



### ***What are we doing about it?***

Canada's efforts to improve air quality were intensified in 2000 when the government of Canada launched a comprehensive 10-year Clean Air Agenda. The Agenda builds on a variety of domestic and international actions with a focus on:

- Canada-wide standards for particulate matter and ozone
- Transboundary flows of air pollution
- Emissions from vehicles, engines and fuels
- Emissions from major industry and other sectors
- Air quality monitoring, forecasting and reporting
- Public engagement

Environment Canada works with the provinces and territories through the Canadian Council of Ministers of the Environment (CCME) to achieve mutually agreed to air quality targets as defined in Canada-wide standards (CWS). As well, the Department supports continuous improvement, pollution prevention, and keeping-clean-areas-clean programs in areas with ambient concentrations of specific substances below the CWS target levels.

Internationally, Canada is committed to reducing transboundary sources of air pollution through international agreements, such as the Canada-U.S. Air Quality Agreement and the Stockholm Convention on Persistent Organic Pollutants (POPs). The 1991 Canada-U.S. Air Quality Agreement has been instrumental in formalizing the roles and responsibilities of the two countries on the issues of acid rain and ground-level ozone. The countries' coordinated and focused response to acid rain in the 1980s and early 1990s led to significant reductions in SO<sub>2</sub> (acid rain causing emissions). The Agreement, and subsequent Ozone Annex (2000), continue to provide the framework for ongoing cooperation on air issues. Environment Canada's focus is now on the implementation of the Ozone Annex commitments and launching the next round of border air quality projects. Canada also has agreements in place with China that support efforts to reduce long-range transport of air pollutants.

A primary mandate of air quality science is to develop and provide unbiased, relevant, and scientifically sound knowledge, advice, and data on air quality. The air quality science program provides national leadership and the scientific foundation needed to develop air quality policies and provide timely information (e.g. air quality forecasts) to Canadians. Air quality research is aimed at improving the understanding of the changing chemistry of the atmosphere in efforts to fill scientific knowledge gaps. The science involves research and development based on atmospheric constituents and their properties.

Environment Canada has established a substantial air quality monitoring network that is delivered in partnership with the provinces and territories. The key elements of the monitoring infrastructure are the National Air Pollution Surveillance (NAPS) network with nearly 300 sites, and the Canadian Air and Precipitation Monitoring Network (CAPMoN) with 24 sites. In 2000, the Department committed \$29 million over four years to upgrade the NAPS and CAPMoN networks to expand the network by 20 sites and upgrade monitoring equipment. Our goal is to ensure that Canada has the monitoring capability to report on Canada-wide standards and Ozone Annex commitments, support the National Air Quality Prediction Program and collect data that

will guide future actions on emissions reduction. Finally, considerable on-going efforts are made to enhance Canadians' access to NAPS data.

To disseminate information regarding emissions, the Department compiles the National Pollutant Release Inventory (NPRI) which provides Canadians with access to information on the emissions of key air pollutants from selected facilities across Canada.

### ***Are we succeeding?***

The Clean Air Agenda has supported gains in air quality through the vehicles, engine and fuels action plan; further gains are expected through the implementation of, among other things, the Canada-wide standards (CWS) with the provinces and territories on key air pollutants.

Canada has achieved success in a number of air quality issue areas, such as transboundary air issues management, and regulatory frameworks for transportation-related air issues management. The Department continues to provide support to provinces and territories, which are ultimately responsible for performance in a number of sectors, to meet national and international obligations including Canada-wide standards (CWS) on particulate matter (PM), ozone and mercury. Progress on the Ozone Annex to the Air Quality Agreement between Canada and the United States was reviewed in 2004 and both countries are on track to meet their commitments.

The 10-year Federal Agenda on Cleaner Vehicles, Engines and Fuels (2001) set out a series of measures to reduce emissions from on-road and off-road vehicles and engines as well as fuels, and will (largely) harmonize Canadian requirements with the stringent U.S. Environmental Protection Agency (EPA) standards. Environment Canada has made significant progress in implementing its regulatory agenda. With a regulatory framework in place, Environment Canada's role over time will also include compliance promotion, monitoring and reporting activities.

Success in the monitoring area can be measured in part by the active participation of NAPS MOU signatories (the MOU was signed by all provincial and territorial deputies during 2004-2005). During the NAPS Managers' Annual Meeting in Toronto federal, provincial and territorial contributions to the NAPS Network were reported and a collective work plan was drafted. NAPS Management will work together to address technical and administrative issues arising from their detailed annual reviews of the NAPS Network.

Through the National Pollutant Release Inventory (NPRI), industrial and commercial facilities report their air emissions of over 300 pollutants, and the data collected is made available to Canadians. As part of Canada's commitments under the Ozone Annex, the NPRI was expanded to include criteria air contaminants and facilities must now report on SO<sub>2</sub>, NO<sub>x</sub>, VOCs, PM and CO emissions. These improvements, along with the removal of the exemption for upstream oil and gas facilities and the lowered reporting threshold for mercury, lead and many other toxic substances, have greatly increased the amount of information available on air pollutant emissions. These changes have increased the number of facilities reporting to the NPRI from about 2,100 in 1999 to over 8,000 in 2004. Environment Canada also develops and makes publicly available a comprehensive inventory which includes all sources of air pollutant emissions (industry, transportation, heating, etc.), and forecasts of future emissions.

The Department continues to support international actions to control emissions of hazardous air pollutants (HAPs). The Stockholm Convention on POPs was entered into force on May 17, 2004. Canada was the first country to sign and ratify this agreement. The Department also leads Canada's participation in the United Nations Environment Programme's Global Mercury Programme and in discussions to assess the effectiveness and sufficiency of the UNECE POPs and Heavy Metals Protocols and to help develop a way to assess POPs for potential future control measures.

Performance highlights 2004-2005 of the Clean Air Agenda are described below.

<b>Major Program/Initiative:</b> Clean Air Agenda – Canada-Wide Standards for Particulate Matter (PM) and Ozone
<b>Expected Results:</b> Working in partnership with provincial and territorial environment departments to attain, review and to improve Canada-wide standards (CWS) for particulate matter (PM) and ozone.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Continue to lead CCME discussions on Canada-wide standards</i></b></p> <ul style="list-style-type: none"> <li>- Completed review of health and environmental science behind the PM<sub>2.5</sub> and Ozone Canada-wide standards. Concluded that current information is not sufficient to warrant a coarse fraction (PM<sub>2.5-10</sub>) standard at this time, but recommendation is to review again in 2010.</li> <li>- Completion of the Guidance Document on Achievement Determination (GDAD).</li> <li>- Completion of technical draft of the Guidance Document on continuous improvement and keeping clean areas clean (CI/KCAC).</li> <li>- Development of the Monitoring Protocol.</li> <li>- Completion of the third annual (2003) PM and ozone national summary.</li> <li>- Leading development of a Code of Practice for the Construction and Demolition sector, as well as implementation of a communications and outreach strategy for the sector.</li> </ul>
<p><b><i>Continue to improve the science base on air quality</i></b></p> <p>Science highlights in laboratory, field and modelling research and science assessments</p> <p>Laboratory:</p> <ul style="list-style-type: none"> <li>- The organics analysis lab (a part of Thompson Lab, a headquarters research laboratory) provided key scientific analyses in effort to determine loadings of pollutants to the Great Lakes regions. The analytical data were used in the 2004 report on atmospheric loadings to better understand trends of pollutants entering the Great Lakes.</li> </ul> <p>Field:</p> <ul style="list-style-type: none"> <li>- A major field campaign was carried out as part of the International Consortium for Atmospheric Research on Transport and Transformation (ICARTT) to understand the transport and transformation of air pollution and its impacts on the properties of clouds. The study covered northeastern US across the North Atlantic to Western Europe.</li> <li>- Measurements of aerosol chemistry and size distributions, trace gases, cloud microphysics and dynamics were made in addition to particle chemistry. For the first time, cloud droplet chemistry was measured in real time by a combination of instruments.</li> </ul> <p>Modelling:</p> <ul style="list-style-type: none"> <li>- Further improvements have been made to AURAMS (A Unified Regional Air-quality Modelling System). The new version of AURAMS runs five times faster, includes several new process representations, and was used in summer 2004 to provide real-time predictions of air quality for an MSC air quality field study.</li> </ul> <p>Assessments:</p> <ul style="list-style-type: none"> <li>- A Canada-United States Transboundary Particulate Matter Science Assessment was released in December 2004. The report was undertaken by the Canada-U.S. Subcommittee on Scientific Co-operation, in support of the Canada-U.S. Air Quality Agreement and summarizes the current knowledge of the transboundary transport of PM and PM precursors between Canada and the United States in a scientific assessment.</li> </ul>

- Air quality modelling scenarios, observations and data analysis provided the scientific foundation for the joint Canada-U.S. science assessment report on PM published in December 2004. The scientific information included the characterization of PM concentrations and deposition in the border region. Findings revealed that there is a significant relationship between the emissions of PM and PM precursors, and elevated PM levels in both Canada and the United States. The information presented in the report will be used to support the future development of joint strategies under a PM Annex pursuant to the Canada-US Air Quality Agreement.

**Acid Rain:**

- The scientific support to the 2004 Canadian Acid Deposition Science Assessment was a significant contribution. Components of the science focused on three issues: (1) establishing the levels of wet, dry and total deposition in eastern Canada, (2) determining whether wet deposition changed during the 1990s in response to North American SO<sub>2</sub> emission reductions and (3) estimating the percentage contribution of various North American SO<sub>2</sub> and NO<sub>x</sub> emission areas to wet and dry deposition at receptor sites in eastern Canada. In addition, several acid rain model simulations were carried out to examine whether additional control measures would solve the acid rain problem in eastern Canada.

**Major Program/Initiative:** Clean Air Agenda – Transboundary flows of air pollution are reduced

**Expected Results:** Transboundary flows of air pollution are reduced.

**Planned Activities and 2004-2005 Performance Highlights**

***Implement the commitments made in the Ozone Annex; The 2004 Canada-U.S. Progress Report is published describing progress to implement the Agreement***

- In June 2004, Canada and the United States reviewed progress in implementing the commitments of the Ozone Annex and, with stakeholders, discussed the emission reductions expected and charted the ozone air quality levels that will serve as benchmarks for future reviews of progress to meet the ozone air quality standards in both countries.
- In November 2004, the joint 2004 progress report on the Canada-U.S. Air Quality Agreement was released. The 2004 progress report is the seventh biennial progress report compiled under the Agreement and the first report to describe the progress on implementing the emission reduction measures committed to by Canada and the United States in the Ozone Annex.

***Work with the U.S. to develop recommendations to governments on whether to recommend further negotiations***

- On August 17, 2004, Minister Dion and U.S. Environmental Protection Agency (EPA) Administrator Leavitt endorsed a recommendation to consider a future negotiation of an annex to the 1991 Air Quality Agreement to address particulate matter (PM) and the related air pollution issues of concern such as acid rain, regional haze and visibility in the Canada-United States border region. Both Canada and the United States will discuss their readiness to negotiate an additional Annex to the Agreement at the annual meeting of the bilateral Air Quality Committee in late 2005.

**Major Program/Initiative:** Clean Air Agenda – Emissions from Vehicles, Engines and Fuels are Reduced

**Expected Results:** Emissions from vehicles, engines and fuels are reduced.

**Planned Activities and 2004-2005 Performance Highlights**

***In-use vehicle initiative***

Urban Transit Bus Retrofit Programs

- Environment Canada contributed \$520K to install diesel oxidation catalysts (DOCs), a retrofit device, on 239 urban transit buses throughout 15 cities in Canada. This pilot project was delivered in collaboration with the Canadian Urban Transit Association (CUTA). A Diesel oxidation catalyst (DOC) is a device that is installed on in-use heavy-duty vehicles in order to reduce its smog-forming emissions. DOCs can reduce PM emissions by 20 percent, CO by 40 percent and HC by 50 percent. A DOC is a technology that is reliable, cost effective and widely used in Canadian and US retrofit program.
- Environment Canada funded a pilot project to install diesel oxidation catalysts (DOCs) on 34 Sarnia and Windsor urban transit buses.

**Vehicle Scrappage Programs**

- In 2004-2005, Environment Canada funded 8 vehicle scrappage programs in 6 provinces. Through scrappage programs, cleaner forms of transportation such as public transit, bicycle usage or the purchase of new low emissions vehicles are being promoted. This is achieved by offering incentives to car owners retiring their vehicles, a voluntary action taken by individuals. Public awareness on environmental and health effects is very important.
- By replacing an older vehicle with a newer low emissions vehicle, clean air benefits are achieved. Reduction in HC, PM, CO, NO<sub>x</sub> and CO<sub>2</sub>.
- Environment Canada has developed an analysis tool to calculate the benefits by the retirement of these vehicle scrappage programs. NOVRAP (National Old Vehicle Retirement Analysis Program) is a program that assesses the amount of emission reduction achieved by early retirement from use of older vehicles, and their replacement by newer vehicles or some other transportation option. It calculates the effect of each replacement, and aggregates the effects to give a total emission reduction benefit for all the retired vehicles.

**Let's Drive Green (Vehicle Emissions Inspection Clinic Program)**

- Environment Canada has been delivering the LDG program to inform drivers on the harmful effects of vehicle emissions on both health and the environment and to encourage them to change their behaviours as they relate to their personal transportation choices and practices. In 2004-2005, 47 clinics were held across Canada and approximately 7000 cars were tested.

***Rail Sector Emission Reductions***

- Negotiations to renew the 1995 MOU with Railway Association of Canada to align emission standards for locomotives in Canada with those of the U.S. EPA are underway. The original MOU, which set a cap for NO<sub>x</sub> emissions from locomotives to 115 kilotonnes, expires at the end of 2005.
- Environment Canada and the U.S. EPA have started to work together to reduce emissions from large ships. The goal of this collaboration is to develop an application to have the coasts of North America declared as a zone where marine bunker fuel with reduced sulphur content must be used. If an analysis reveals that the application would meet the required criteria, then it would be proposed to the International Maritime Organization for approval.

***Compliance verification & investigations***

- With the coming into effect of a number of regulations to limit emissions from vehicles, engines and fuels, the need to administer these regulations has increased. Individual applications by companies to import or manufacture vehicles and engines, and applications for exemptions to the regulations, require engineering and legal assessments. Regulations that apply to small engines and off-road equipment have increased the number of regulated companies, causing the number of assessments to rise.
- Vehicle, engine and equipment exhaust testing was done to confirm that selected on-road light-duty products meet CEPA 1999 regulatory requirements. During 2004-2005, 66 light-duty vehicles were tested along with 8 utility engines.

***Actions to promote early introduction of cleaner fuels***

- Environment Canada and Friends of the Earth jointly produced a guide to help municipal, provincial, and federal governments and other organisations take leadership by procuring low sulphur fuels (LSFs) where available and feasible. The Low Sulphur Fuels Procurement Guide, released at the 2003 Toronto Smog Summit, contains guidance, case studies and other information to promote the early introduction of cleaner fuels.

**Major Program/Initiative:** Clean Air Agenda – Emissions from major industry and other sectors are reduced

**Expected Results:** Reduction of emissions from industrial and other sectors.

**Planned Activities and 2004-2005 Performance Highlights**

***Reduce emissions from industrial and other sectors***

- Consultations on the updated Continuous Emissions Monitoring (CEM) protocols for the electricity sector were held. Comments are being reviewed.
- Work to develop non-regulatory performance standards to reduce emissions of PM and ammonia from the



agriculture sector is ongoing.

- Environment Canada is developing, through a multi-stakeholder consultation process, an Environmental Code of Practice for the Iron and Steel Sector that would include recommended emission standards and practices to protect human health and the environment. Consultations were initiated in 2004, and the Code of Practice is scheduled to be finalized in 2006-2007.
- On September 25, 2004, Environment Canada published a draft Environmental Code of Practice for the base metal smelters sector which contains emission reduction recommendations and objectives.
- VOC emission factors for 50% of Canadian wood species were completed in 2005. Another 35% of the wood species will be completed by 2006. The Department is participating with the wood products industry to complete a PM emission factors inventory for Canadian wood species in 2006.

***Reduce emissions from Residential Wood Combustion***

- Environment Canada contributed to the CEPA 1999 review with respect to the inclusion of an amendment allowing the adoption of federal regulations on the sale and manufacturing of residential wood heating appliances. However, the review has not yet been completed. The deadline for the development of draft regulations on the sale and manufacture of residential wood heating appliances depends on the time line of the CEPA 1999 review.
- An overview of actions taken as part of the Canada-wide standards for Particulate Matter and Ozone was tabled and accepted by CCME's Joint Action Implementation Coordinating Committee (JAICC). The actions are considered to be complete.
- A report including recommendations on key elements of model regulations on the sale of residential wood heating appliances was completed and submitted to CCME in December 2004.
- A model municipal bylaw and companion document were also produced for municipalities and submitted to JAICC in December 2004.
- The components of a public education campaign on residential wood heating were identified and presented in August 2004. The intergovernmental group's report on the education program was submitted to JAICC in October 2004.
- Following the tabling of the feasibility assessment of a change-out / education program for residential wood combustion in April 2004, the intergovernmental working group made its recommendations to JAICC in September 2004. CCME's report on the program to exchange conventional wood stoves for advanced technology wood stoves was tabled in October 2004.

***Deliver and Implement a Federal Agenda to reduce VOC emissions from consumer and commercial products***

- The Government of Canada published a Notice of Intent in *Canada Gazette*, Part 1 in winter 2004 that describes a series of federal actions to reduce emissions of VOCs from the use of consumer and commercial products. These actions will be implemented over the period 2004-2010 and will include a mix of strategies and measures to achieve VOCs reductions from this sector. Reduction of VOCs emissions from consumer and commercial products is an important aspect of achieving the CWS for PM<sub>2.5</sub> and ozone in Canada and will result in improvements in air quality.

**Major Program/Initiative:** Clean Air Agenda – Air Quality Monitoring, Forecasting and Reporting

**Expected Results:**

Canadians understand how to interpret air quality information and are aware of actions they can take.

**Planned Activities and 2004-2005 Performance Highlights**

***National information on ambient air quality***

- The federal-provincial-territorial NAPS MOU was signed by all provinces and territories. During the NAPS Managers' Annual Meeting in Toronto, federal, provincial and territorial contributions to the NAPS Network were reported and a collective work plan drafted. NAPS Management will work together to address technical and administrative issues arising from their detailed annual reviews of the NAPS Network.
- Data have been collected at selected Canadian Air and Precipitation Monitoring Network sites on a wide range of additional pollutants, including CEPA toxics including particulate sulphate, ammonium, nitrate, gaseous sulphur dioxide and nitric acid. In excess of 25,000 samples of all types were analyzed in 2004-2005 in support of Canadian environmental research initiatives.

**Canadians have access to information on emissions of air pollutants**

- The comprehensive emissions inventory for Criteria Air Contaminants (NO<sub>x</sub>, VOCs, PM<sub>10</sub>, PM<sub>2.5</sub>, TPM, SO<sub>x</sub>, CO) for the year 2000 (including national, provincial, and territorial emission summary tables) was published. Data were also made available for major urban centres, communities, and by postal code (see [http://www.ec.gc.ca/pdb/cac/cac\\_ESummaries\\_e.cfm](http://www.ec.gc.ca/pdb/cac/cac_ESummaries_e.cfm)).
- The National Pollutant Release Inventory (NPRI) final 2003 data was released in the spring of 2005 and published online. These data include information on emissions of criteria air contaminants (NO<sub>x</sub>, VOCs, PM<sub>10</sub>, PM<sub>2.5</sub>, TPM, SO<sub>x</sub>, CO) and, for the first time, releases from the Upstream Oil and Gas Sector and of speciated VOCs. ([http://www.ec.gc.ca/pdb/querysite/location\\_query\\_e.cfm](http://www.ec.gc.ca/pdb/querysite/location_query_e.cfm)).

**Advance science and modelling related to particulate matter for inclusion in National Air Quality Forecasting Program** SDS 1.1.3

- The Canadian Air and Precipitation Monitoring Network (CAPMoN) and NAPS networks continued to support air quality measurements by providing the background information required for Environment Canada's environmental prediction and air quality forecasts.
- The CHRONOS (Canadian Hemispheric and Regional Ozone and NO<sub>x</sub> System) air quality model was run once a day over North America as an experimental tool and used to support air quality forecast services to Canadians. The model outputs in 2004 were ozone, PM<sub>2.5</sub> and PM<sub>10</sub>. Model improvements related to emissions processing were made during the fiscal year and the model was used in an international field study and comparison of models.
- In 2004, Environment Canada also applied a neural network model to the production of air quality forecasts in British Columbia for PM<sub>10</sub> and ozone.

**Develop a Canada-wide health-risk based Air Quality Index (AQI) that will be disseminated within a daily air quality forecasting program across the country, in partnership with the medical community, non-government organizations and provinces/territories.** SDS 1.3.1

- Environment Canada and Health Canada continued to lead the multilateral Air Quality Index development process. Index formulation was established for testing by jurisdiction in 2005. Health workshop and public opinion research led to recommendation and acceptance of health protection and environmental improvement messages to accompany the Index.

**Major Program/Initiative:** Clean Air Agenda – Public Engagement

**Expected Results:** Canadians take action to reduce air pollution.

**Planned Activities and 2004-2005 Performance Highlights**

**Canadians Take Action to Reduce Air Pollution**

- Environment Canada supports partners' regional and local activities/campaigns to help them reach more people, give greater relevance to national issues and have an impact on citizens' actions. Examples include:
  - Clean Air Day;
  - Smog Action Plans;
  - Smog Summit;
  - The Commuter Challenge; and
  - The Canadian Urban Transit Association (CUTA) sustainable transportation awareness campaign.
- The National Pollutant Release Inventory (NPRI) Communities Portal was launched in April 2004 as part of on-going efforts to enhance NPRI information products and on-line tools. It is intended to help the public understand, access and interpret the data contained in the NPRI and use this information to make important decisions related to their health, environment, economy, government and quality of life.
- Considerable efforts are on-track to enhance Canadians' access to NAPS data:
  - The NAPS station mapping application was updated to include all NAPS monitored pollutants and the 20 new stations;
  - The NAPS data upload web tool was completed, enabling NAPS agencies to easily upload their air quality data;
  - The NAPS web services were improved and now enable data to be delivered and grouped together on

- demand; and
- The NAPS data summary web site was created to allow the public to select, view and print the NAPS annual report in a web-friendly format.
- Access to documents related to *CEPA, 1999* was improved through enhanced coding of the *CEPA* Environmental Registry Web Site. Also, over 250 *CEPA* related public documents were added to the database. These efforts have contributed to a significant increase in the number of visitors to the Registry: traffic increased from 30,000 users per month in March 2004, to 90,000 per month in April 2005. (There were fewer than 10,000 users per month when the site was launched in 2000.) This enhanced access helps improve the public's understanding of the *Act* and promotes public participation in *CEPA, 1999* related consultations.

***National Air Quality Forecast Program***

- With the addition of forecasts for cities in Alberta, Saskatchewan and Manitoba, the air quality forecast program expanded cover all ten provinces and to reach more than 75 percent of Canadian population.
- Particulate matter was introduced into year round air quality forecasts in Ontario and British Columbia in 2004.

**Major Program/Initiative:** Clean Air Agenda – Other Areas of Work on Air: Acid Rain, HAPs, and Stratospheric Ozone

**Expected Results:**

Continued national, bilateral, and multilateral progress on Acid Rain, HAPs and Stratospheric Ozone.

**Planned Activities and 2004-2005 Performance Highlights**

***Implement Canada-wide Acid Rain Strategy for Post-2000 and conduct ecosystem monitoring.***

- Environment Canada scientists, in collaboration with provincial governments and academia, completed the 2004 Canadian Acid Deposition Science Assessment, a synthesis of the current state of science on acid deposition in Canada. Environment Canada also began engaging other federal departments as partners in the next generation of acid rain science and the development of solutions.
- As part of the CCME Acid Rain Task Group, Environment Canada led a five-year review of implementation of the Strategy. The review pointed out the significant role Environment Canada's science and monitoring activities play in tracking and reporting on acid deposition in Canada.
- Data from the Canadian Air and Precipitation Monitoring Network (CAPMoN) provided quantitative estimates of wet, dry and total deposition of sulphur and nitrogen species at a number of measurement sites across Canada.

***Hazardous Air Pollutants: Support international control regimes for persistent organic pollutants and heavy metals; Implement Canada-wide standards for mercury emissions and products.***

- In May 2001, Canada signed and ratified the Stockholm Convention on Persistent Organic Pollutants (POPs) – the global Convention on POPs. This Convention aims at reducing and eliminating the major international sources of these toxic substances that are a significant concern for all Canadians. The Convention has been ratified by 105 countries. Canada shared its draft National Implementation Plan with the international community, at the first meeting of the Conference of the Parties (COP-1) in May 2005. The Plan will be completed by May 2006 and outlines how Canada intends to comply with this legally binding agreement. The plan will also include a national action plan for reducing unintentionally produced POPs such as dioxins and furans.
- Environment Canada has also advanced international actions to control emissions of mercury, cadmium and lead. In 2003 the Heavy Metals Protocol to the Convention on Long Range Transboundary Air Pollution entered into force. Environment Canada leads Canada's participation in this forum including preparations for a review of the Protocol. During 2004-2005 Environment Canada continued to lead Canada's participation in the United Nations Environment Program's Global Mercury Program.
- The Department also led the development of Canada-wide standards (CWS) for mercury emissions from the coal fired electricity sector.
- The Global Atmospheric Passive Sampling (GAPS) pilot study was initiated in December 2004 to monitor chemicals in the environment using sampling devices that do not require electricity. This one year pilot study involves more than 50 GAPS network sites around the world on all continents and is managed by Environment Canada. Results from GAPS will contribute to Canada's obligations under international agreements on POPs,

such as the Stockholm Protocol under UNEP (United Nations Environment Program) and the UN-ECE (United Nations Economic Commission for Europe) POPs protocol.

***Stratospheric Ozone: Implement domestic ozone-depleting substances (ODS) program; Assistance to developing countries in meeting their Montreal Protocol Obligations***

- The Department participated in 3 Multilateral Fund Executive Committee (MLF) meetings in 2004-2005. Over 200 projects were reviewed and approved to phase-out ozone-depleting substances (ODS) in developing countries. As documented by the Multilateral Fund Secretariat, in 2004 34,828 tonnes of ozone-depleting substances were phased-out as a result of MLF projects.
- Under Canada's Montreal Protocol Bilateral Cooperation Program, 12 bilateral projects were in implementation in 2004-2005. Two new bilateral projects were developed. All projects are being successfully implemented. Project activities have changed participants' behaviours regarding the use of ozone-depleting substances, often directly leading to reductions in the consumption of ODS in developing countries.

## ***Looking forward***

Clean Air remains a top priority for the Government of Canada. In Budget 2005, the Government of Canada announced an additional \$50 million over the next two years.

In addition, the major new climate change investments made in Budget 2005 will also assist in achieving Canada's clean air goals. The Department will continue to integrate the clean air and climate change agendas, illustrating and supporting the environmental, human health and economic co-benefits of policies and measures. The integration will be supported through public education and outreach activities, policy coordination, technology development programs, coordinated work on emissions reporting and sector strategies where possible.

As the economy grows, continued efforts will be needed to address potential pollution that will be generated, including air emissions. This challenge becomes more complicated as international trade and new technologies are developed. A key priority is to work more closely with the United States on reducing transboundary emissions. We will also continue to leverage Ozone Annex funds to ensure co-benefits to other activities and sub-results such as climate change.

The momentum on the Federal Agenda for Cleaner Vehicles, Engines and Fuels will be continued. With on-road regulations in place, the Department will focus on completing regulations for off-road engines and vehicles and developing the compliance, monitoring and reporting functions associated with implementation of on-road regulations.

Significant opportunities lie ahead for smart regulations, federal-provincial relationships and other partnerships. Specifically, we will explore in greater depth the prospects for a possible future particulate matter (PM) annex to the Canada-U.S. Clean Air Quality Agreement. A key partnership that supports the Clean Air Agenda commitments to reduce transboundary emissions is the Canada-U.S. Border Air Quality initiative announced on June 23, 2003. Under the initiative, we will continue to identify collaborative activities and develop regional strategies to co-operatively respond to air pollution in the Great Lakes Basin and in southern British Columbia's Georgia Basin/Puget Sound airshed and to explore emissions trading. The initiative also supports our commitment to advance the Air Quality Forecast and Air Quality Index programs to cover more communities and more pollutants. The Department will also work with the medical community, provinces and non-government organizations to develop a health-risk based Air Quality Index that can be used across the country. The existing collaboration on

implementation of the Canada-wide standards for particulate matter (PM) and ozone will also continue, and in 2005-2006 will include a 5-year report on progress in implementation of the Standards. A review of the Canada-wide standards for dioxins and furans will be conducted in 2006-2007.

#### FOR FURTHER INFORMATION

Criteria Air Contaminants Emission Summaries	<a href="http://www.ec.gc.ca/pdb/cac/cac_home_e.cfm">http://www.ec.gc.ca/pdb/cac/cac_home_e.cfm</a>
National Pollutant Release Inventory (NPRI)	<a href="http://www.ec.gc.ca/pdb/npri/npri_home_e.cfm">http://www.ec.gc.ca/pdb/npri/npri_home_e.cfm</a>



## Climate Change

### *What is the issue?*

Since the beginning of the Industrial Revolution, the concentration of greenhouse gases – notably carbon dioxide, methane and nitrous oxide – in the Earth’s atmosphere has increased dramatically. The Intergovernmental Panel on Climate Change (IPCC), an international organization consisting of 2000 of the world’s top scientists, has concluded that most of this increase is due to human activities, primarily the ever-expanding global consumption of fossil fuels such as oil, gas and coal. When burned, all of these fuels release carbon dioxide.

While carbon dioxide and other greenhouse gases (GHGs) occur naturally in the atmosphere – and act as an insulating blanket for the Earth that we could not live without – rising concentrations of these gases enhance this natural “greenhouse effect.” As a result, the Earth gets warmer, and the global climate changes. Global temperature records and other data support this view. The 20<sup>th</sup> century was likely the warmest in the past 1000 years, the 1980s and 1990s were likely the warmest decades since the mid-1800s, and this general warming trend has continued through 2004.

The IPCC says the warming observed during the 20<sup>th</sup> century will continue and accelerate in the decades ahead, and it projects average global temperature increases of 1.4 to 5.8 degrees Celsius by the year 2100. Such temperature increases and related climate changes would in turn bring about changes in both environmental and socio-economic systems on Earth. In general, the larger and faster the change in climate, the more likely it is to be associated with adverse effects.

Canadians are already seeing impacts consistent with the expectations of climate science, including: changes in Western Arctic sea ice coverage and melting permafrost in the North; changes in fish stocks and migration patterns; increasing frequency and severity of fires and insect infestations in forests; extended drought conditions and receding glaciers in the West; and changes in the flowering time of trees and the freeze-up of lakes.

Further increases are inevitable given that greenhouse gases, including those already emitted, remain in the atmosphere for a long time. Thus while we need to reduce our GHG emissions to slow the rate of climate change, we also need to adapt to the changes in climate that have already

occurred and those that will occur in the future. Adaptation can take several forms, such as protecting Northern buildings from melting permafrost, planting crops that are more drought-tolerant, and managing scarce water resources wisely.

Climate change is our greatest sustainability challenge: more than half of Canada's GDP is substantially affected by climate and weather and climate change poses a danger to our health, quality of life and economic security.

### ***What are we doing about it?***

Climate Change is a priority for the government as a whole. With the release of the 2005 Climate Change Plan, *Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment*, Environment Canada, in collaboration with other government departments, plays a leadership and management role in the Government of Canada's efforts on climate change. In carrying out our activities, we also work with other departments to promote the integration of climate change considerations in related programs and ensure coordinated policy development, analysis and implementation.

Environment Canada has developed four major initiatives/programs that support the climate change priority:

- Implement near-term emission reductions and set long-term goals
- Help individual Canadians do their part in meeting the climate change challenge
- Provide leadership in bridging to a new sustainable, global climate change regime
- Address issues related to adapting to a changing climate

In 2004-2005 the Department was focused on the development of a new national climate change plan that built on the positive first steps resulting from previous efforts in Action Plan 2000 and the 2002 Climate Change Plan for Canada. The new Plan represents a departure from the Government's previous efforts to reduce GHG's and reflects a market-based approach with new, stronger tools that provide the foundation for future emission reductions, including:

- The new Climate Fund, a market-based institution for the purchase of emission reduction and removals on behalf of the Government of Canada
- A Partnership Fund to engage provincial and territorial partners (this subsumes the Opportunities Envelope)
- A commitment to work in partnership with the largest emitters, the almost 700 companies in the oil and gas, thermal electricity, mining and manufacturing sectors that produce about half of Canada's emissions, to develop emissions reduction targets and strategies
- New investment in renewable energy sources
- Innovative tax measures

As consumers, individual Canadians are responsible for more than one-quarter of Canada's GHG emissions. In 2004, Environment Canada and Natural Resources Canada (NRCan) launched the One-Tonne Challenge, a program that asks Canadians to reduce their GHG emissions by one-tonne, or approximately 20 percent by adopting energy efficiency improvements in their homes, reducing waste that goes to landfills, using water more efficiently, and modifying their method of

driving and using other forms of transportation. To encourage Canadians to meet this goal, a long-term public education and outreach initiative has been launched to provide Canadians with information on how individual consumption choices contribute to the emissions that drive climate change. Complementing the national marketing initiative are partnerships with provinces, the private sector, communities, non-government organizations, youth and educators to create broad awareness of the challenge and provide support to Canadians to take up the challenge.

The Kyoto Protocol is an important first step in addressing climate change. However, a new agreement will be needed for the long term. This agreement must include all industrialized countries and key developing countries. The commitments and timeframes in it must be based on the transformative changes that are required to successfully address climate change over the long term. Canada is committed to being an active part of the long term global solution.

The global climate is already changing due to past and current global greenhouse gas emissions and Canadians are already seeing the effects of it. Even if rapid and sustained emission reductions are achieved, the impacts of climate change will continue to be felt for many decades and adaptation actions will be required to maintain our competitiveness and ensure the health, safety and security of Canadians. Environment Canada is a key source of the climate change science, models, tools and methods necessary to produce essential information for informed decision-and policy-making on climate change.

### ***Are we succeeding?***

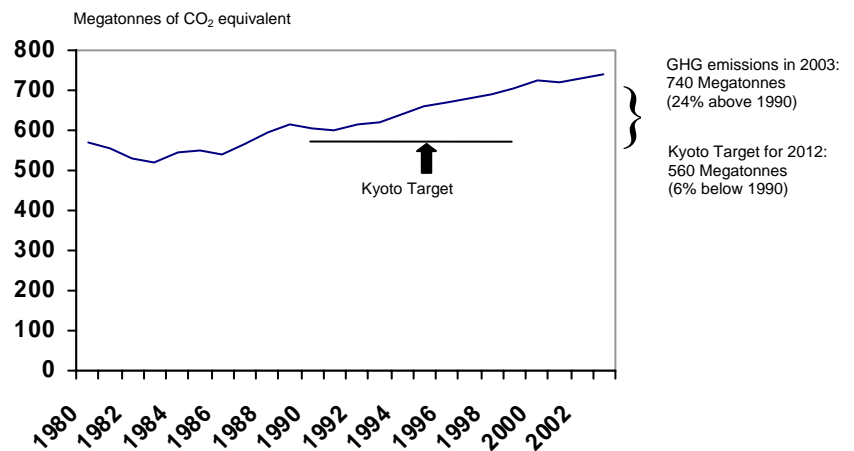
In Canada the energy industry and transportation sectors are the two largest sources of fossil fuel combustion emissions, each of which accounted for more than one-quarter of Canada's total GHG emissions in 2003.

Reducing GHG emissions will slow the rate of climate change and reduce the risk of impacts. Generally speaking, the more energy Canadians use, the more GHG emissions produced and the greater the impact on global climate change. There are generally three possible ways to reduce GHG

emissions: increase energy efficiency; transition toward no/low carbon energy; and use carbon sequestration (which prevents carbon from being emitted into the atmosphere or, if it has already been emitted, removes it from the atmosphere).

A near-term measure of success is the progress against Canada's Kyoto commitment to reduce GHG emissions to 6 percent below 1990 levels by 2008- 2012 (from 596 Mt to 560 Mt).

Canadian Greenhouse Gas Emissions, 1980 to 2003



Source: Environment Canada, Greenhouse Gas Division

Since 1990, Canadian GHG emissions have increased by 24 per cent. From 2002 to 2003, emissions increased by 3 per cent, mainly due to a colder than average winter, coupled with increases in electricity production, vehicle transport and mining activity. In 2003, Canadians contributed approximately 740 megatonnes of CO<sub>2</sub> equivalent of GHGs into the atmosphere, equating to about 2 per cent of total global GHG emissions. Canada's overall GHG emissions intensity – the amount of GHGs emitted per unit of economic activity – was 1.2 percent higher in 2003 than in 2002. However, Canada's emissions intensity has been declining by an average of 1 per cent per year since 1990. The recent positive year-over-year change in GHG intensity is a result of efficiency improvement in a number of economic sectors.

The Department's policy and program strategies to reduce GHG emissions are currently focused on the implementation of the new national climate change plan in cooperation with provinces / territories and stakeholders.

We have made some progress towards our targets but many of the measures that we have put in place have not had sufficient time to produce meaningful results. Our investments in public education and outreach have had a significant impact to-date – over 90 percent of Canadians are aware of the issue, and almost 80 percent acknowledge that there is something they can do personally to address the problem and are beginning to take steps to reduce emissions (Decima Research, 2003). However, our investments in other areas (such as new, cleaner technologies) will not bear fruit for a number of years.

**ADAPTING TO CLIMATE CHANGE**

Canada is strengthening its capacity to develop and implement community, regional and national solutions to adaptation. For example, the City of Ottawa, in partnership with Environment Canada, recently introduced a by-law requiring development of road weather maintenance adaptation solutions for changing winter climate conditions. The City of Toronto has supported Heat Alert and Response systems to protect vulnerable populations against increased mortality risks from heat waves, other weather events and poor air quality. The new Canadian Climate Scenarios Network (<http://www.ccsn.ca/index-e.html>) will allow improved national and regional climate scenarios that are tailored for decision-makers.

Early and long-term actions are being implemented to address the impacts of a warming Arctic on northern infrastructure and indigenous lifestyles, to implement water management solutions to deal with increasing drought risks, to ensure that municipal emergency and disaster reduction planning address changing climate conditions and to develop the adaptation science and technologies needed to manage invasive species and ecosystems at risk.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<p><b>Major Program/Initiative:</b> Implement near term and enduring emission reductions and set long-term goals to make the deep emission reductions needed to successfully address climate change and start working towards them.</p>
<p><b>Expected Results:</b></p> <ul style="list-style-type: none"> <li>Sustainable electricity production and use.</li> <li>Sustainable transportation.</li> <li>Clean and efficient industry.</li> <li>Sustainable cities.</li> </ul>



**Planned Activities and 2004-2005 Performance Highlights**

*Coordination and leadership on climate change issues*

*Support the development of GHG monitoring, accounting and reporting system in cooperation with federal, provincial, territorial and other partners to meet domestic and international reporting needs in a comprehensive manner*

- Developed a new national climate change plan entitled Moving Forward on Climate Change – A Plan for Honouring our Kyoto Commitment. The Plan lays the foundation for achieving our Kyoto commitment, with specific emission reduction targets for various programs and initiatives. For details on the Plan see <http://www.climatechange.gc.ca/english/>.
- Interdepartmental progress on offset system policy development was made, allowing the system to be a key element of the 2005 Climate Change Plan. The proposed rules of the offset system were released for consultation in August 2005.
- Continued to jointly implement an Opportunities Envelope (OE) to cost-share emission reduction priorities with the provinces and territories. As a result of two rounds of funding the OE is supporting 29 federal-provincial-territorial GHG reduction projects/programs, totalling approximately \$60 million. It is anticipated that these OE initiatives will realize GHG reductions of approximately two megatonnes per year during the Kyoto commitment period. As outlined in Budget 2005, the OE is being subsumed by the Partnership Fund.
- Implemented Phase 1 of mandatory GHG reporting by facilities with the launch of the one-window GHG reporting system to collect data on 2004 GHG emissions from large emitters. The ultimate objectives of this system are to provide additional detail in the National GHG Inventory, support compliance assessment with LFE regulations, provide the public with facility level data and support provincial/territorial information needs. This facility-level reporting and the National GHG Inventory (produced annually as part of the National System) are key components to support the domestic and international GHG monitoring, accounting and reporting requirements in a comprehensive manner.
- Annual GHG National Inventory Report produced as part of UNFCCC and Kyoto Protocol commitments.
- Implemented technological innovation projects that demonstrate the potential for new technologies to help Canada meet its climate change commitments. For example, under the platform for alternative fuels, project activity included:
  - The BioMer Project was finalized (platform for alternative fuels). The final and summary reports are available in French and English on the project Web site: <http://www.biomer.ca/en/index.html>.
  - A “green vehicles” project on the Lachine Canal took place in conjunction with Parks Canada (platform for alternative fuels). Hybrid and electric vehicles were purchased for the Montreal site.
  - Two Montreal projects – self-service electric vehicles and hybrid buses – will be able to be launched when provincial participation is confirmed. These projects operate within the framework of Transport Canada’s Urban Transportation Showcase Program.
- CO<sub>2</sub> reductions resulting from innovation projects in climate change have been estimated at more than 2,000 tonnes equivalent for 2004-2005. The use of this technology on a commercial scale could result in a reduction of several million tonnes equivalent (CO<sub>2</sub>).

**Major Program/Initiative:** Help individual Canadians to do their part in meeting the climate change challenge

**Expected Results:**

Canadians actively engaged in the One-Tonne Challenge and in emissions reduction actions.  
 Canadians take into account energy efficiency/conservation considerations in their purchase, use and lifestyle decisions.

**Planned Activities and 2004-2005 Performance Highlights**

*National marketing campaign to create visibility, interest and commitment among Canadians for taking on a challenge to reduce personal emissions, and to support and link a broad range of local and regional initiatives.*  
SDS 3.1.4

*Partnerships with youth, communities, private sector, provinces to encourage, provide opportunities and*

***recognize reductions in greenhouse gas emissions and promote the uptake of consumer energy efficiency programs.***

- The Government of Canada launched a national social marketing campaign to engage Canadians in the One-Tonne Challenge. The campaign is multi-faceted involving both promotion and partnerships with communities, youth, educators and the private sector. Canadians have responded to this call to action, with 2.4 million visits to the web site, 24,000 calls to the 1 800 O Canada line and more than 900,000 Guides to the Challenge distributed.
- There is evidence that the private sector has helped to extend the reach of the One Tonne Challenge marketing campaign by providing incentives and support for wise consumer purchases and behaviours. For example:
  - Hbc has developed One-Tonne Challenge promotions in their appliance sections in The Bay and Zellers stores across the country.
  - The Home Depot has linked One-Tonne Challenge information to two in-store campaigns – Mow Down Pollution and Energy Smarts.
  - Scotiabank has launched an employee awareness campaign with their 32,000 employees.
  - Utilities such as SaskEnergy and Manitoba Hydro are pointing customers to the One-Tonne Challenge in their television, radio and print promotions.
  - Discount Car and Truck Rental is linking One-Tonne Challenge information to the roll out of Hybrid cars.
  - Forty-one funded community challenges were launched across the country in 2004-2005, involving partnerships among more than 200 organizations and municipalities.
  - Educators Experts Forum is providing advice on the development of on-line climate change teaching materials and other supports to encourage educators to integrate the teaching of climate change issues in their classrooms.
  - The Youth environmental Network created Co2Zilla.ca, a web-site about the One-Tonne Challenge for youth. The Network also provided micro-grants to 20 youth groups across the country.

**Major Program/Initiative:** Provide leadership in bridging to a new sustainable, global climate change regime

**Expected Results:**

Continue to make progress in international implementation of key provisions in the Kyoto Protocol.

A framework for a new, sustainable international climate change framework that includes all industrialized countries and key developing countries and has commitments and timeframes based on the long-term transformative changes that are required globally.

Bilateral agreements with key developing countries.

**Planned Activities and 2004-2005 Performance Highlights**

***Research, analysis, consultations and policy advice on ways to increase flexibility and inclusiveness in the development of a long-term international agreement***

- In February of 2005 it was announced that Canada would host the next round of climate change negotiations, COP11 and COP/MOP1, where all decisions related to the implementation of the Kyoto Protocol would be adopted. In addition, it is at this meeting that the international community must begin to entertain discussions on the role of a future climate change regime beyond 2012.
- The ongoing research will be supplemented by extensive international consultations concerning the shape of a future climate change regime, and Canada will play an integral role throughout this process. Canada continued to engage key partners on a bilateral and multilateral basis in an effort to enhance synergies between countries, create opportunities for Canadian companies, and forge a common ground for beginning discussions on the shape of a future climate change regime.

***Increase bilateral cooperation with key partners***

***Management of Canada's international climate change relationships***

- Completion of the Canada-China Cooperation on a Climate Change Project. A three year initiative (May 2002- June 2005) to build China's capacity to better address the causes and effects of climate change. Project

components included: awareness and outreach; national communications; adaptation and impacts; and Clean Development Mechanism. Additionally, strong partnerships were created and environmental dialogue enhanced between Chinese and Canadian governments.

- Ongoing implementation of the Cuban LB-12 Hydrocarbon project, demonstrating Canadian greenhouse gas reduction technology in Cuba, through the design and implementation of a hydrocarbon refrigerant production facility.
- Participation on the Steering Committee of the Clean Air Initiative in Latin American Cities, including participation in multilateral discussions to bring forward technology-based opportunities to maximize emission reductions and advance clean air technologies. City-specific action plans have been developed or enhanced, and workshops have been completed in Lima-Callao, Mexico City, Rio de Janeiro, Buenos Aires, Santiago de Chile and São Paulo. These plans will continue to be advanced.
- Continued discussions, that began in March 2005 and will continue throughout the duration of the Canadian Presidency of the UN COP (ending in 2006), on methods for engaging large developing nations and developed nations who are not Parties to the Protocol.
- Signed bilateral cooperation agreements on climate change with South Korea and South Africa.
- Held regular meetings with China and the U.S. under the auspices of bilateral climate change partnership agreements.
- Canada continued to engage key partners on a bilateral and plurilateral basis in an effort to enhance synergies between countries, create opportunities for Canadian companies, and forge a common ground for beginning discussions on the shape of a future climate change regime.

***Integrate international climate change strategies into Canada's foreign policy***

- Provided input into Canada's International Policy Statement (*A Role of Pride and Influence in the World*) that was tabled in Parliament in April 2005.

**Major Program/Initiative:** Adapting to a changing climate  
(Refer also to Weather and Environmental Predictions Priority Area: Informing Policy Through Science)

**Expected Results:**

Awareness of impacts of climate change on economic development and planning processes  
Scenarios and options to guide decision-making on adaptation in areas vulnerable to a changing climate  
Strategies for adapting to the changing climate particularly in the North and in municipalities as well as water management strategies.

**Planned Activities and 2004-2005 Performance Highlights**

***Collaborate with NRCan and OGDs, Provinces, Territories, Municipalities, academics and the private sector in the development of strategies to help Canadians adapt to a changing climate***

- Completed a multi-partnered study on synergistic impacts of heat, cold, other weather and air quality on mortality risks under current and future climate change conditions for development of alert and response systems.
- Undertook a study on road-weather and climate change adaptation requirements.
- Launched the Canadian Climate Scenarios Network (CCSN).
- Canadian and international support to Convention on Biological Diversity on policies and practices, encouraging synergies between biodiversity conservation and climate change adaptation.
- Successfully completed Phase 1 of the Canada-China Cooperative Climate Change Project.
- Developed atmospheric hazards information, including climate trends, for Municipalities in Ontario and Quebec to meet legislated requirements for improved disaster management planning.
- Continued science and technology development for wind energy and green building technologies in support of mitigation and adaptation.
- Initial atmospheric hazards web pages released for Ontario and Quebec in support of provincially legislated requirements for municipal disaster management planning.

## ***Looking forward***

Between 1998 and 2004 the Government committed significant funding (\$3.7 billion) to begin the transformational process needed to address the climate change issue. These investments have been allocated to a number of activity streams: almost 50 percent (\$1.7 billion) will be used to address mitigation; \$700 million will be allocated to technology and innovation, \$145 million to science, \$445 million to impacts and adaptation, \$200 million to international leadership, \$100 million to public education and outreach, and \$100 million to policy development. Budget 2005 committed an additional \$1.75 billion and confirmed the allocation of PetroCanada proceeds of \$0.75 billion (as announced in 2004), bringing the Government's current commitment to climate change to \$6.2 billion.

However, actual expenditures to-date are considerably less than the total allocated. Time has been needed to establish program infrastructure and access target audiences; allocation profiles reflect this ramping up of program activities. Also, under many programs there is a time lag between a spending commitment and the actual expenditure (e.g. the Wind Power Production Incentive supports the first ten years of operations of a new wind farm; capital contributions to ethanol plants will begin only after the construction of the plants).

In order to ensure that we are on-track to meeting our commitments and are achieving our results in a cost-effective manner, Treasury Board is leading a Government-wide effort to develop a Management Framework for climate change. This Framework supports our commitment in the new Plan to implement annual reporting by 2008 and will provide the tools to determine the effectiveness of our investments. The Framework will help us to:

- Gain a comprehensive understanding of government expenditures, commitments and results.
- Develop a web-based tool, accessible across government, which provides up-to-date financial and non-financial performance information for managing climate change.
- Develop risk management strategies at the program and strategic levels.

In recognizing that climate change is a global issue and we share a common border with the United States, Canada recently became the 16th member of the Methane to Markets Partnership, an international initiative that promotes the recovery and use of methane, prevents greenhouse gas emissions, and provides valuable sources of clean energy to communities, businesses and industry. By participating in this exciting international initiative, Canada will have the opportunity to promote and market Canadian expertise in the area of methane-emissions-reducing technologies, particularly in the oil and gas sector. This partnership will demonstrate Canada's commitment to both technology transfer and technology deployment as a way of achieving global greenhouse gas reductions. Environment Canada has been asked to lead this initiative providing policy advice and leadership on technology advancement.

In November 2005, Canada will host the first meeting of the Parties to the Kyoto Protocol in Montreal in conjunction with the eleventh session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC). This conference will be known as the United Nations Climate Change Conference – Montreal 2005. This conference provides a unique opportunity for Canada to demonstrate leadership on global climate change by hosting

the first UN climate negotiating session following the entry-into-force of the Kyoto Protocol. According to the stipulations of the UNFCCC, it is at this meeting that a preliminary discussion on the shape of a global climate change agreement beyond 2012 must begin, and Canada will play a significant role in setting the tone for this important dialogue.

Environment Canada will be conducting formal evaluations of a number of important climate change programs in order to better inform further policy and program development. Planned evaluations include evaluations of the One Tonne Challenge, the Opportunities Envelope and the Pilot Early Removals, Reductions and Learnings (PERRL) programs.

#### FOR FURTHER INFORMATION

Arctic Climate Impact Assessment	<a href="http://www.acia.uaf.edu/">http://www.acia.uaf.edu/</a>
Government of Canada Climate Change site	<a href="http://www.climatechange.gc.ca/english/">http://www.climatechange.gc.ca/english/</a>
Greenhouse Gas Reporting Site	<a href="http://www.ghgreporting.gc.ca">http://www.ghgreporting.gc.ca</a>
National Greenhouse Gas Inventory	<a href="http://www.ec.gc.ca/pdb/ghg/ghg_home_e.cfm">http://www.ec.gc.ca/pdb/ghg/ghg_home_e.cfm</a>
Intergovernmental Panel on Climate Change (IPCC)	<a href="http://www.ipcc.ch/">http://www.ipcc.ch/</a>
Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment	<a href="http://www.climatechange.gc.ca/kyoto_commitments/">http://www.climatechange.gc.ca/kyoto_commitments/</a>
One-Tonne Challenge	<a href="http://www.climatechange.gc.ca/onetonne/english/">http://www.climatechange.gc.ca/onetonne/english/</a>
Pilot Emission Removals, Reductions and Learnings Initiative (PERRL)	<a href="http://www.ec.gc.ca/PERRL/home_e.html">http://www.ec.gc.ca/PERRL/home_e.html</a>
Sustainable Development Technology Canada	<a href="http://www.sdtc.ca/en/index.htm">http://www.sdtc.ca/en/index.htm</a>
United Nations Framework Convention on Climate Change	<a href="http://unfccc.int/2860.php">http://unfccc.int/2860.php</a>

## 2.1.2 Key Result: Reduce the Impacts Posed by Toxic Substances



### Toxic Substances

#### *What is the issue?*

Addressing the risks to the environment and human health associated with toxic substances is multifaceted. Toxic substances and other substances of concern come from many industrial, agricultural, domestic and international sources. Once released into the environment, they can disperse to remote regions in air and water currents, or pool into particular environmental compartments (air, water, soil or sediment). They can be dangerous in and of themselves (e.g. mercury, a neurotoxin) or can combine with other substances to contaminate air, water or soil. While some toxic substances are produced through human activity, others such as heavy metals also occur naturally in the environment.

Some toxic substances are persistent in the environment and, build up or bioaccumulate in living organisms over time. Levels and impacts of these substances can increase up the food chain as creatures accumulate the substance that was in their food through a process known as biomagnification. Aboriginal peoples, Inuit and others who consume contaminated foods on a regular basis are particularly vulnerable. While toxic substances can potentially affect all Canadians, populations such as young children and the elderly are particularly susceptible to the health risks posed by these substances.

The *Canadian Environmental Protection Act 1999 (CEPA, 1999)* defines a substance as toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that:

- (a) has or may have an immediate or long-term harmful effect on the environment or its biological diversity;
- (b) constitutes or may constitute a danger to the environment on which life depends; or
- (c) constitutes or may constitute a danger in Canada to human life or health.

### ***What are we doing about it?***

*CEPA, 1999* provides the legislative authority for Environment Canada and Health Canada to prevent and manage the risks posed by toxic substances. The *Act* recognizes that the management and control of toxic substances and hazardous waste reduces threats to Canada's ecosystems and biological diversity and the health of Canadians. Environment Canada has primary responsibility for the implementation of *CEPA, 1999* and jointly administers the research, categorization, assessment and management of toxic substances with Health Canada.

The *Act* also provides the framework to implement the Toxic Substances Management Policy which sets out two overall objectives within a preventive and precautionary approach:

- Virtual elimination from the environment of toxic substances that result predominantly from human activity and that are persistent and bio-accumulative (Track I substances); and
- Management of other toxic substances and substances of concern, throughout their entire lifecycle, to prevent or minimize their release to the environment (Track II substances).

*Risk assessment* is the first step in safeguarding Canadians from toxic substances and environmental contaminants. *CEPA, 1999* mandates Environment Canada to categorize, by September 2006, all of the approximately 23,000 substances that may be in commercial use in Canada, in order to determine whether they are persistent, bioaccumulative, inherently toxic or present an important exposure risk for individuals. Canada is the first country in the world to undertake such a comprehensive and systematic approach to evaluating chemicals already in commerce. The *Act* also requires that substances new to Canada be assessed before manufacture or importation occurs, and if necessary, that risk management measures be applied to safeguard human health and the environment.

Substances meeting categorization criteria, including those identified by Health Canada as posing the greatest potential for human exposure, will be considered for further action under *CEPA, 1999*. The introduction of screening assessments in *CEPA, 1999* allows for a more efficient method to assess existing substances. A guidance manual for Screening Assessments is

currently being developed, and a pilot project is under way to gain experience with data collection and assessment processes.

Under *CEPA, 1999*, there are three possible outcomes to a screening assessment:

- No further action;
- Added to Schedule 1 of *CEPA, 1999*; or
- Added to the Priority Substances List for further assessment.

Central to managing those substances determined to be toxic is the development of *risk management* strategies. Each strategy sets an objective, identifies instruments or management tools to address the risks posed by the use or release of the substance(s) and provides a basis for consultations with stakeholders. Potential measures may target a specific substance, or adopt a sectoral approach that addresses the release of multiple substances. Measures include regulations, pollution prevention plans, environmental emergency plans, codes of practice, environmental objectives or guidelines, economic instruments, voluntary initiatives (e.g. Environmental Performance Agreements (EPAs), or action under other Acts of Parliament, such as the *Fisheries Act*. The choice of measure is consistent with current thinking on “smart regulation” and is therefore driven by a number of considerations, including: the ability to meet the risk management objective, the effect on the targeted industries, the cost to government, compatibility with existing measures, and environmental and human health co-benefits. In addition to environmental considerations, socio-economic considerations are being integrated in management tools and decision-making.

In 2004-2005, an evaluation of Departmental progress towards achieving the *CEPA, 1999* outcomes was completed by an independent consultant. The Study concluded that:

- The Department is addressing its obligations under *CEPA, 1999* – e.g. it has established the organizational base and relevant processes, and secured the necessary resources to ensure that all of its obligations are met.
- The Department has realized significant accomplishments in most program areas – e.g. is on-track to satisfy the requirement to categorize all DSL substances prior to the deadline, has met all legislated timeline requirements associated with developing risk management measures and tools, and has strengthened industry and interjurisdictional cooperation on environmental protection matters.

The Department is engaged in providing expert advice and knowledge for *environmental assessments* in order to identify, understand and prevent or mitigate the effects of proposed projects on the bio-physical environment (air, water, soil, plants, and animals). The renewed *Canadian Environmental Assessment Act (CEAA)* provides for more meaningful public participation and the delivery of assessments in a more certain, predictable and timely manner. Several changes in the *Act* strengthen the inclusion of Aboriginal perspectives into assessments, including the formal recognition of Aboriginal traditional knowledge.

Environment Canada’s main reporting vehicle is the National Pollutant Release Inventory (NPRI). Through the NPRI, information on release, disposal and recycling of toxic substances and other substances of concern from industrial facilities are reported and made available to Canadians. Approximately 300 contaminants are reported to the NPRI. The number of industrial facilities reporting pollutant emissions has increased from 2,100 in 1999 to more than 8,000 in 2004.

Our activities can best be explained through a cycle that goes from identifying and assessing risk, managing those risks through the development of risk management strategies, ensuring that risk management measures are complied with and monitoring and reporting on progress. We also seek to influence the development of environmental technologies to ensure environmental solutions are available in the market. The five major programs/initiatives that support the management of risks to the environment and to human health associated with toxic substances are:

- Risk assessment of existing and new substances
- Risk management
- Pollutants are directly managed
- Compliance with environmental protection legislation
- Monitoring and reporting

### ***Are we succeeding?***

Environment Canada and Health Canada continue to work on delivering the requirement under *CEPA, 1999* to categorize all of the approximately 23,000 existing substances on the Domestic Substances List (DSL) by September 14, 2006 according to characteristics of inherent toxicity, persistence or bioaccumulation, and greatest potential for human exposure. As of July 2005, preliminary categorization decisions have been made for approximately 21,000 of the 23,000 substances on the DSL. The departments have invited industry and other interested stakeholders to participate in the categorization process by voluntarily providing information to help improve or refine preliminary ecological categorization decisions, which were based on experimental and modeled data (where experimental data was not available). This information will be considered prior to any final categorization decisions being taken.

As of July 2003, data used to complete the categorizations have been made available through communications with stakeholders, the Internet and CD-ROMs. As of the spring of 2004, updated decisions are made available every three months. Approximately 3,500 substances currently meet the ecological categorization criteria. Substances meeting the categorization criteria, including those identified by Health Canada as posing the greatest potential for human exposure and those which are persistent and/or bioaccumulative and inherently toxic to humans, will undergo risk assessment.

Environment Canada and Health Canada, under the New Substances Program (NSP), are also preventing new sources of pollution. The departments administer the *New Substances Notification Regulations* under *CEPA, 1999*. Under these regulations, notification of any new substance, chemical, polymer, biochemical, biopolymer or animate product of biotechnology (i.e. living organisms) is required prior to import or manufacture. The Government receives approximately 800 such notifications per year. All substances are assessed by both Environment Canada and Health Canada to determine if there is a risk to the environment or human health and appropriate control measures are put in place to manage any such risks.

Internationally, we continue to work towards coordinated and harmonized science-based approaches to the assessment and management of chemicals.



Key accomplishments in 2004-2005 in each of the major program areas are described below.

<b>Major Program/Initiative:</b> Risk Assessment
<p><b>Expected Results:</b>  The risks posed by toxic substances are understood and substances requiring improved management are identified.  Priority will be given to developing research and science strategy for emerging threats, including endocrine disrupting substances, persistent organic pollutants, genetically modified organisms, and pharmaceuticals.  New Substances Program – Unauthorized use of new substances or new use of existing substances prevented.</p>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b>Existing Substances</b></p> <ul style="list-style-type: none"> <li>- As of July 2005, Environment Canada has collected and reviewed information in existing databases from around the world, on substances on the Domestic Substances List (DSL) that need to be categorized, and has produced preliminary categorization decisions on approximately 21,000 substances.</li> <li>- A Pilot Project for the post-categorization screening assessment phase is currently being completed by Environment Canada and Health Canada. The objectives of the pilot project are to: <ol style="list-style-type: none"> <li>1. Ensure a manageable but sufficient number of chemicals are categorized and screened so that experience is gained and recommendations can be made to modify processes or technical considerations as needed.</li> <li>2. Identify characteristics of substances that are more likely to be of concern in the Canadian environment.</li> </ol> </li> <li>- This project identified 123 from the DSL substances which met the categorization criteria. Each substance in the pilot phase will be evaluated to determine whether the substance poses a risk to humans or the environment. Substances being examined in the pilot phase encompass a broad range of chemical classes.</li> <li>- The approaches and processes for conducting screening assessments are currently being developed and refined during the pilot phase. Opportunity to comment on these approaches and processes, as well as on the results of screening assessments, is being given to other government departments, stakeholders and other interest groups.</li> <li>- In 2004-2005 Environment Canada continued to be active in publishing notices in the Canada Gazette.</li> <li>- PSL 1 Follow-up <ul style="list-style-type: none"> <li>• 7 PSL 1 follow-up substances had Final Assessment Reports published. (5 Chlorobenzenes, 3,5-dimethylaniline, bis (2-chloroethyl) ether)</li> <li>• Chlorinated Paraffins assessment reports were published for public comments</li> <li>• 2 substances were proposed to be added to CEPA Schedule I. (Tetra and penta chlorobenzenes).</li> </ul> </li> <li>- PSL 2 <ul style="list-style-type: none"> <li>• 2 PSL 2 substances were added to Schedule I of CEPA, the List of Toxic Substances (2-ethoxy ethanol, 2-butoxy ethanol)</li> </ul> </li> <li>- Screening Assessments <ul style="list-style-type: none"> <li>• 2 draft screening assessments were published and made available for public comment. (Polybrominated diphenyl ethers, Perfluoro octyl sulphonate, its salts and its precursors)</li> </ul> </li> </ul> <p><b>Meet responsibilities for growing area classification under the Canadian Shellfish Sanitation Program (CSSP)</b></p> <ul style="list-style-type: none"> <li>- In collaboration with the Department of Fisheries and Oceans and the Canadian Food Inspection Agency, Environment Canada met responsibilities for shellfish area classification under the Canadian Shellfish Sanitation Program (CSSP) and continued work to address emerging marine issues and program improvement. In 2004-2005, Environment Canada made recommendations on the water quality of 7 new shellfish growing areas and resurveyed 293 areas. Approximately 11,900 square kilometres of intertidal area and 15,074 square kilometres of sub tidal area are classified as approved. Differences from 15,000 square kilometres reported last year are due to refining of boundaries of intertidal areas and not reporting sub-tidal areas.</li> </ul>
<p><b>New Substances</b></p> <ul style="list-style-type: none"> <li>- In 2004-2005, Environment Canada and Health Canada assessed 768 new substance notifications within prescribed timeframes.</li> <li>- Environment Canada funded a series of biotechnology-related research projects to support the risk assessment and risk management of new micro-organisms under the New Substances Program. The investigation of “the</li> </ul>

ecotoxicological impact of different groundwater bioremediation strategies, including the addition of microbes, in support of the NSNR under *CEPA, 1999*” was one of them. In 2004-2005, results from this specific initiative were presented at two international conferences and a paper was published in a peer-reviewed scientific journal. To guide future decision-making and priority-setting for such research initiatives to be undertaken over the next 6-10 years under the New Substances Program and facilitate a continuing partnership with regional laboratories and other federal biotechnology regulatory departments, Environment Canada has initiated the development of a research strategy for biotechnology. Clear communication of the program’s strategy will foster greater understanding about the role research plays in Canada’s New Substances Program. A workshop was held in May 2004 to gather views on knowledge needs, identify priorities and provide recommendations that will feed into the research strategy.

- Environment Canada and Health Canada have also initiated the review of the living organisms provisions of the New Substances Notification Regulations. The first phase of this review process (i.e., the development of a Consultation Plan) was finalized in December 2004. The report can be viewed at [http://www.ec.gc.ca/substances/nsb/html/cplan1204\\_e.htm](http://www.ec.gc.ca/substances/nsb/html/cplan1204_e.htm).
- In line with a public commitment, Environment Canada, Health Canada and Fisheries and Oceans Canada (DFO) have concluded a Memorandum of Understanding in May 2004 which clearly delineates how the departments will work together on the environment and human health risk assessment of aquatic organisms with novel traits (such as transgenic fish) under *CEPA, 1999*, until such time as regulations are developed under DFO’s legal authorities.
- Amendments to the New Substances Notifications Regulations were published in Canada Gazette Part 1 in October 2004. They are part of the Smart Regulation initiative.
- Implementation of the 76 recommendations from the multi-stakeholders consultations continued in 2004-2005.
- Finding Common Ground: An International Strategy for Canada’s New Substances Program (Chemicals and Polymers) was implemented in 2004 to provide direction and transparency to the New Substances Program’s international activities for chemicals and polymers.
- Environment Canada continues to support the activities of Health Canada for the environmental assessment of substances under the *Food and Drugs Act*, including the development of new environmental assessment regulations.

Note: More information on regulatory initiatives can be found at the end of the document in [Table 9](#).

<b>Major Program/Initiative:</b> Risk Management
<p><b>Expected Results:</b>  Risk management actions to address sources of greatest concern for those substances added to Schedule 1 of <i>CEPA, 1999</i>.  Persistent, bioaccumulative, toxic and anthropogenic (resulting from human activity) substances are virtually eliminated.  International and national obligations are met with respect to transboundary movements of hazardous waste and hazardous recyclable materials as well as with respect to Polychlorinated Biphenyls (PCBs).  The negative environment impacts of land-based activities to coastal and marine environments are prevented.  Soil and groundwater contamination from petroleum products and allied petroleum products storage tank systems are prevented.</p>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b>Existing Substances</b></p> <ul style="list-style-type: none"> <li>- Approximately 3,500 substances currently meet the ecological categorization criteria and those found to be persistent and/or bioaccumulative and inherently toxic to humans will be considered for further action.</li> </ul> <p><b>Pollution Prevention Plans</b></p> <ul style="list-style-type: none"> <li>- Textile mills effluents using wet processing (December 2004).</li> <li>- Nonylphenol and its Ethoxylates in Products (December 2004).</li> <li>- Inorganic Chloramines and Chlorinated Wastewater Effluents (December 2004). This legislation ensures that the release of wastewater effluents does not pose unacceptable risks to human and ecosystem health and fishery</li> </ul>

resources. A *CEPA* Guideline addressing ammonia dissolved in water found in wastewater effluents was also published simultaneously. The guideline includes standards for both acute and chronic toxicity caused by ammonia.

- These Notices target over 400 facilities which may be subject to Pollution Planning Requirements and will require the facilities to prepare and implement Pollution Prevention Plans to reduce the use and releases of the identified toxic substances. As these Pollution Prevention Notices are applied – and plans are prepared and implemented by facilities – the Department will continue to assess the success of the instruments and the results achieved.
- The Department also published two Proposed Canada Gazette Notices for base metal smelters and wood treatment facilities. All Notices are available at <http://www.ec.gc.ca/NOPP/P2P/en/P2notices.cfm>.
- Parallel compliance promotion activities are under way. Compliance rates will be evident at the time of the first reporting requirement in July 2007 for the pollution prevention planning requirements for inorganic chloramines and chlorinate wastewater effluents.
- EnviroClub™ – Three new clubs representing 39 plants were established in 2004–2005 in the Beauce region, Montreal and the Montréal region. An EnviroClub is a group of about 15 companies from a given region that have each carried out a pollution prevention project. Through the projects, the participating companies realize annual savings of millions of dollars. The environmental benefits include the following annual reductions:
  - 242,000 litres of petroleum products and propane,
  - 730,000 cubic metres of natural gas,
  - 470,000 cubic metres of water,
  - 127 tonnes of chemicals,
  - 1,900 tonnes of greenhouse gases (in CO<sub>2</sub> equivalent),
  - 76 tonnes of hazardous waste,
  - 290 tonnes of other waste.

#### Guidelines and Codes of Practice

- Environment Canada published the final notice for the Code of Practice for environmental management of Road Salts in April, 2004.
- Environment Canada is developing, through a multi-stakeholder consultation process, an Environmental Code of Practice for the Iron and Steel Sector that would include recommended emission standards and practices to protect human health and the environment. Consultations were initiated in 2004, and the Code of Practice is scheduled to be finalized in 2006-2007.
- Environment Canada also published a draft Environmental Code of Practice for the Base Metals Smelting sector which contains emission reduction recommendations and objectives.

#### Innovative Risk Management and Voluntary Approaches

- Developed and continued to promote the implementation of innovative risk management measures (e.g. Extended Producer Responsibility and Life Cycle Management)
- Environment Canada and provincial environment ministers work collaboratively through the CCME to publish a set of electronics product stewardship principles and a recommended list of electronics and electrical products which should be considered for inclusion in Extended Producer Responsibility (EPR) programs. These initiatives explicitly support the development of a harmonized national program. The task force which prepared these documents was chaired by Environment Canada.
- The Department continues to work with the provinces on the design and implementation of EPR programs for electronics. Alberta adopted the first such program in February 2005 and Ontario, Saskatchewan and Nova Scotia are either implementing programs or developing regulations.
- Environment Canada has successfully supported the establishment and funding through the North American Commission for Environmental Cooperation (CEC) of the Clean Electronics Partnership (CEP). The CEP is designed among other things to promote the harmonization of standards for toxics use reduction in electronics across North American and consistency with regulated standards in Europe and elsewhere.
- Environment Canada and NRCan have formed an interdepartmental committee on life cycle management (LCM) with the intent to develop tools and instruments to facilitate the use of LCM across federal departments and to assist industry.
- Several voluntary Environmental Performance Agreements (EPAs) are in various stages of development and

completion with select industrial sectors. An EPA signed with Dow Chemical in 2001 for the control of 1-2 dichloroethane from two Canadian facilities (Fort Saskatchewan, Alberta and North Vancouver, British Columbia) is ahead of schedule for meeting their reduction targets for 2005. Dow has reported a 40% reduction from their Fort Saskatchewan Facility and a 55% reduction from their North Vancouver facility (from the base year of 2001). The flexibility of the EPA process allowed for experimental design changes and continuous improvement to take place. An EPA was signed with the Specialty Graphic Imaging Association (SGIA) in 2004 for reduction of VOCs from member facilities. In the first year of the agreement five companies have signed on to the agreement and succeeded in reducing VOC emission by 44% from base year emissions. The SGIA continues to recruit new companies to participate.

- Since the original MOU (1994) between the Canadian Chemical Producers Association (CCPA), Environment Canada, Health Canada, Industry Canada and the Provinces of Alberta and Ontario, significant progress has been made by CCPA member companies with respect to the reduction of releases of toxics and substances of concern. Toxic substances under *CEPA* (such as benzene and 1,3 butadiene) were reduced by more than 65% (from 2,500 to 800 tonnes/year) between 1994 and 2003. An Annex to address VOC emissions resulted in a 25% reduction of VOC releases between 1997 and 2002 (from 15,800 to 11,800 tonnes/year). The present MOU expires December 2005. Steps are underway to develop a renewed MOU between current signatories with the possibility that additional provinces will participate.
- Under the Smart Regulation Initiative, a group of experts drawn from federal and provincial governments, industry and the Aboriginal and environmental communities came together under the Pulp and Paper Air quality Forum, which met for the first time in February 2005. The air quality forum launched a major initiative to develop a ten-year agenda to reduce air emissions from pulp and paper mills. Environment Canada launched another Smart Regulation Project in the fall 2004 to explore ways to improve the efficiency and effectiveness of the Environmental Effects Monitoring program under the Pulp and Paper Effluent Regulation.

#### National and International Standards/Agreements

- Working with the key stakeholders through the Canadian Council of Ministers of Environment (CCME), the Department is on-track to develop a Canada-wide Strategy for the management of municipal wastewater effluents. The Strategy will include a harmonized regulatory framework, coordinated science and research, and an environmental risk management model.
- First Nations Water Management Strategy (FNWMS): Participated, with Indian and Northern Affairs Canada and Health Canada, in the development and publication of an interdepartmental framework for the review of infrastructure projects and other framework documents to help address high and medium risk wastewater systems. The development of the Canada-wide strategy for the management of municipal wastewater effluents (see above) is expected to help deliver on the national standards part of the FNWMS.

#### ***Contaminated Sites***

- In cooperation with TBS, the Department coordinated the management of the Federal Contaminated Sites Action Plan (FCSAP), reviewing proposals and providing funding approval for accelerated action at 55 high priority federal sites and 242 site assessments. Through the implementation of Budget 2004 resources over 15 years, all federal sites will be assessed and either remediated or risk managed, and the related financial liability will be effectively eliminated.

#### ***Hazardous Waste***

- The proposed Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations were published in Canada Gazette Part II on June 1, 2005. These Regulations will come into force on November 1, 2005.

#### ***Creating Partnerships to Support Sustainability Leadership***

- Through an extensive network of government, financial institutions, industry and academia contacts, the CETACs have assisted SMEs clients to build strategic partnerships and access financing from public and private investors and funders, as well as funding available through domestic and international public policy initiatives (e.g. TEAM, IRAP, SDTC, FCM, UNEP, CIDA). An important aspect of CETAC assistance to SMEs is linking SME technology developers with potential users of their technology innovation. In 2004-2005, the CETACs helped secure funding and organize 23 technology demonstration projects (an increase of 53 percent from 2003-2004) for a total of \$23.6 million of which \$13.7 million was public investment and \$9.9 million was private sector investment.

**Promoting pollution prevention and habitat protection in the coastal and marine environment**

- Continued to work with federal/provincial/territorial partners to implement Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA) through activities including: reassessing NPA priority ranking for sewage and nutrients; managing projects on fish plant effluent and microbial source tracking; developing a website targeted to youth entitled "NPA Youth Zone;" and collaborating with partners to produce Oceans Day educational material.
- Participated in the development of the Arctic Council Arctic Marine Strategic Plan. The Plan provides a coordinated and integrated approach to the challenges in the Arctic coastal and marine environment. The Plan was approved by Arctic Ministers in November 2004.
- The department also continued to Address Marine Pollution from Dumping or Disposal at Sea. Through ongoing assessment, permit controls and disposal site monitoring, risk to the environment and human health posed by uncontrolled dumping of waste or other matter at sea is reduced. Environment Canada continued its work to meet CEPA 1999 and international obligations to protect coastal and marine environments from sea-based activities and sources of pollution. Specifically, Environment Canada undertook activities and negotiations to prevent ocean disposal of harmful substances through a permitting process and a disposal site monitoring system. These activities were reported to Parliament and to the International Maritime Organization. Ten year trends for the disposal of dredged material show disposal of acceptable material remains fairly constant, varying with port needs and storm conditions. Environment Canada continued work on an access system to improve access to ocean disposal permit decisions electronically. Environment Canada continued an evaluation of its regulations and policies with respect to disposal at sea.

**Preventing pollution from petroleum product and allied petroleum products storage tank systems on federal and Aboriginal lands.**

- Continued consultations with stakeholders, including, industry, provincial & territorial governments, and other government departments (INAC). The proposed *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* includes requirements for removal of leaking systems as well as requirements for spill reporting and emergency planning.

**Major Program/Initiative:** Pollutants are directly managed

**Expected Results:** The direct management of pollutants that pose a risk to the environment and human health is improved.

**Planned Activities and 2004-2005 Performance Highlights**

**Address Marine Pollution from Ships**

- Passage of Bill C-15 – *An Act to Amend the Migratory Birds Convention Act (1994)*. The objective of Bill C-15 is to conserve migratory marine bird populations and to protect the environment in Canada's exclusive economic zone from illegal deposits of bilge oil from ships. The legislation provides clarity for enforcement officials, as well as owner operators of vessels in waters under Canadian jurisdictions. All fines received under the *Act* will be directed to the Environmental Damages Fund. The Fund provides financial support for non-government groups to develop projects to help restore the damage from pollution incidents. The Bill received Royal Assent in May 2005.

**Conduct Environmental Assessments**

- Developed and delivered training on specific amendments to the *Canadian Environmental Assessment Act (CEAA)* to Environment Canada officials across the country. In addition, in order to improve its Strategic Environmental Assessment (SEA) management system, Environment Canada held 6 training sessions, 30 briefings and completed 13 SEA's.
- Contributed scientific and technical expertise to over 1800 environmental assessments nationally and was the responsible authority for over 330 projects.

**Address Environmental Emergencies**

- Carried out compliance promotion activities for the Environmental Emergency (E2) Regulations. As a result, over 1700 facilities filed notifications indicating that they have implemented E2 plans in accordance with the regulations and associated guidelines.
- Evaluated 94 substances of which 39 are being proposed for addition to the s.200 Environmental Emergency

<p>Regulations.</p> <ul style="list-style-type: none"> <li>- Provided scientific or technical advice to first responders at approximately 1500 environmental emergency incidents.</li> </ul>
<p><b>Contribute to National Security</b></p> <ul style="list-style-type: none"> <li>- Participated in initiatives in support of the National Security Policy, including the development of a Chemical, Biological, Radiological and Nuclear Strategy and a National Emergency Response System.</li> <li>- Participated in international, national, and regional emergency management exercises, including TOPOFF 3.</li> </ul>
<p><b>Contaminated Sites Remediation</b></p> <ul style="list-style-type: none"> <li>- In cooperation with TBS, the Department coordinated the management of the Federal Contaminated Sites Action Plan (FCSAP), reviewing proposals and providing funding approval for accelerated action at 55 high priority federal sites and 242 site assessments. Through the implementation of Budget 2004 resources over 15 years, all federal sites will be assessed and either remediated or risk managed, and the related financial liability will be effectively eliminated.</li> <li>- A proposal for the Sydney Tar Ponds was developed that includes an MOU with Nova Scotia. The policy development process highlighted the critical success factors for addressing shared responsibility contaminated sites that can be applied in future Memoranda of Understanding.</li> </ul>
<p><b>Develop, demonstrate and adopt innovative Canadian environmental technologies (SDS 3.2.2)</b></p> <ul style="list-style-type: none"> <li>- The CETACs assisted over 320 SMEs (an increase of 91 percent over 2003-2004) with the development, demonstration and commercialization of innovative environmental technologies. The CETACs helped secure funding and organize 23 technology demonstration projects (an increase of 53 percent from 2003-2004) for a total of \$23.6 million of which \$13.7 million was public investment and \$9.9 million was private sector investment. This has a potential to significantly speed up deployment and uptake of innovative environmental technologies and services in the marketplace.</li> </ul>
<p><b>Catalyze deployment of new technological innovations to reduce pollutants and emissions impacting air, water and climate change, through the Network for Environmental Technology Innovation, the technology node of the Canadian Environment Sciences Network.</b> <sup>SDS 3.2.4</sup></p> <ul style="list-style-type: none"> <li>- Six regionally-tailored NETI workshops were delivered across Canada (Montreal, Toronto, Moncton, Vancouver, Calgary and Edmonton), in partnership with regional development agencies, associations and the provinces. Presentations and networking venues provided opportunity to over 460 participants to learn more about available funding from federal programs and to develop partnerships. Attendance at the 2004-2005 workshops was higher by 31 percent compared to the 2003-2004. Participants noted the usefulness of shared intelligence towards securing funding for technology research, development, demonstration and deployment and appreciated the forum for networking and forming of partnerships.</li> </ul>

<p><b>Major Program/Initiative:</b> Compliance with environmental protection legislation</p>
<p><b>Expected Results:</b> Compliance with environmental protection legislation is improved (ongoing).</p>
<p style="text-align: center;"><b>Planned Activities and 2004-2005 Performance Highlights</b></p>
<p><b>Implement new tools for compliance; Implement compliance promotion priority setting criteria; National Inspection Plan</b></p> <ul style="list-style-type: none"> <li>- Continued to develop the Compliance Analysis and Planning database to improve Environment Canada's planning and reporting activities. Standardized and reconciled data on the regulated community and developed software tools for storing, manipulating and displaying this data.</li> <li>- Continued to pilot 4 projects to measure the performance of compliance promotion and enforcement activities, including one on the Tetrachloroethylene Regulations.</li> <li>- Developed and implemented priority-setting criteria for compliance promotion and delivered compliance promotion activities for all new risk management tools.</li> <li>- Developed a national inspection plan (NIP) that identifies priority regulations (based on factors such as the risk to the environment and human health, compliance rates, new and amended regulations, nature of the regulatory provisions, operational complexity and capacity, and domestic and international commitments and obligations).</li> </ul>

The Plan identified the following regulations under *CEPA, 1999* and the *Fisheries Act* as national priorities:

- Gasoline Regulations;
  - Fuels Information Regulation, No. 1;
  - Sulphur in Diesel Fuel Regulations;
  - Sulphur in Gasoline Regulations;
  - Benzene in Gasoline Regulations;
  - Export and Import of Hazardous Wastes Regulations;
  - Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations;
  - Metal Mining Effluent Regulations; and
  - *Fisheries Act* – general prohibition (s. 36(3)).
- Carried out 5,274 inspections and 43 investigations under *CEPA, 1999* and the *Fisheries Act*, resulting in 13 prosecutions, 23 charges, one conviction, 4 Environmental Protection Alternative Measures and 100 Environmental Protection Compliance Orders. In addition, 1162 warnings were issued.

**Major Program/Initiative:** Monitoring and Reporting

**Expected Results:**

To collect information through the National Pollutant Release Inventory (NPRI), *CEPA* Registry, industry Environmental Effects Monitoring and other avenues and make data available to Canadians.

**Planned Activities and 2004-2005 Performance Highlights**

***Improve capacity to extract and integrate data from all databases (NPRI, NAPS, etc.)***

- Data on toxic substances (dioxins, PAHs) from NPRI database was incorporated into the NAPS public website. In 2004-2005, the NAPS data upload web tool was completed, which enables NAPS agencies to easily upload their air quality data to the NAPS database via the web and the NAPS data summary web site was created allowing the public to select, view and print the NAPS annual report in a web friendly format.
- Public access to toxic substances related information through the *CEPA* Environmental Registry has been enhanced through improvements to coding and search capabilities of the on-line Registry. Users of the *CEPA* Registry increased from 30,000 users per month in March 2004, to 90,000 users per month in April 2005. Over 250 *CEPA* related public documents were added to the database over the same period. Since the launch of the Registry in 2000, the average number of users has increased from less than 10,000/month to more than 90,000/month in 2005.

***Provide information on the impacts of regulated effluents on Canadian aquatic receiving environments***

- The electronic reporting system for the pulp and paper industry was launched in December 2003. The Ontario facilities are currently using the system. Other regions will launch the system in 2006.

***Accelerate sustainability innovation and improved environmental performance in the corporate sector through the department's Corporate Environmental Innovation initiative*** <sup>SDS 3.2.1</sup>

- The quantity of corporate sustainability reports produced by Canadian corporations or trans-nationals with Canadian operations has increased by 75% from 2001 levels (by 2004), exceeding Environment Canada's target of a 50% increase. Environment Canada, in collaboration with other government departments, continues to support corporate sustainability reporting in Canada through its online Sustainability Reporting Toolkit, the delivery of training workshops and ongoing benchmarking of trends in Canadian reporting.
- Environment Canada has continued to work with experts from industry, banking, investment, academic, non-profit and public sectors to examine, develop, support and communicate the link between environmental performance and financial value and to make this link more relevant to business and financial sector audiences. In collaboration with these stakeholders, Environment Canada has conducted and begun disseminating research on the business value case for sustainability, the current state of integration of environmental sustainability information in mainstream financial analysis as well as methods for communicating such information in a format and manner that is useful to the financial sector.

## ***Looking forward***

The *CEPA, 1999* evaluation study concluded that the full potential of *CEPA, 1999* to serve as the primary means of protecting environmental and human health has yet to be realized. The Department will continue to strengthen the role of *CEPA, 1999* by promoting enhanced interjurisdictional cooperation (e.g. through the National Advisory Committee), identifying implementation barriers (e.g. the use of economic instruments), and looking for opportunities for enhanced federal coordination on new substances.

Environment Canada will continue its cooperation with other government departments to build the federal government's capacity to respond effectively to security issues by enhancing the interoperability of information systems, participating in international, national and regional emergency management exercises and working in support of the National Security Policy. Maintaining Environment Canada's capacity to meet its environmental emergencies responsibilities will also remain a priority. These responsibilities include assessing chemicals in use in Canada to determine whether they pose a significant risk to human health or environmental quality if released in an unplanned, uncontrolled or accidental manner thereby causing an environmental emergency. The Department will continue to implement the new *Environmental Emergency (E2) Regulations*, which require commercial and industrial facilities who own or control listed dangerous substances (currently 174 on the list) above the specified threshold quantities to prepare and implement environmental emergency plans. In 2005-2006, efforts will be directed toward achieving a higher level of compliance with the regulation through both compliance promotion and enforcement actions. In addition, public consultations on the listing of additional substances to Schedule 1 of the E2 Regulations will proceed with a view to amending the regulations in the spring of 2006.

Environment Canada is committed to assuring compliance with environmental protection legislation. Compliance is best achieved by educating and informing the regulated community about Canada's pollution prevention laws and regulations and by carrying out compliance promotion and enforcement activities. In the coming years, the Department will continue to develop the compliance assurance function, to better direct enforcement activities. An important piece will be the continuing development and implementation of the Compliance and Analysis Planning (CAP) database that enables strategic assessments of the risks of non-compliance at the facility, industry sector, and regulatory instrument level. This will enable Environment Canada to report on compliance rates by industry sector, region, and regulation. The compliance promotion focal point will continue to develop criteria to better identify compliance promotion priorities and to build a framework to ensure that compliance promotion is both effective and nationally consistent.

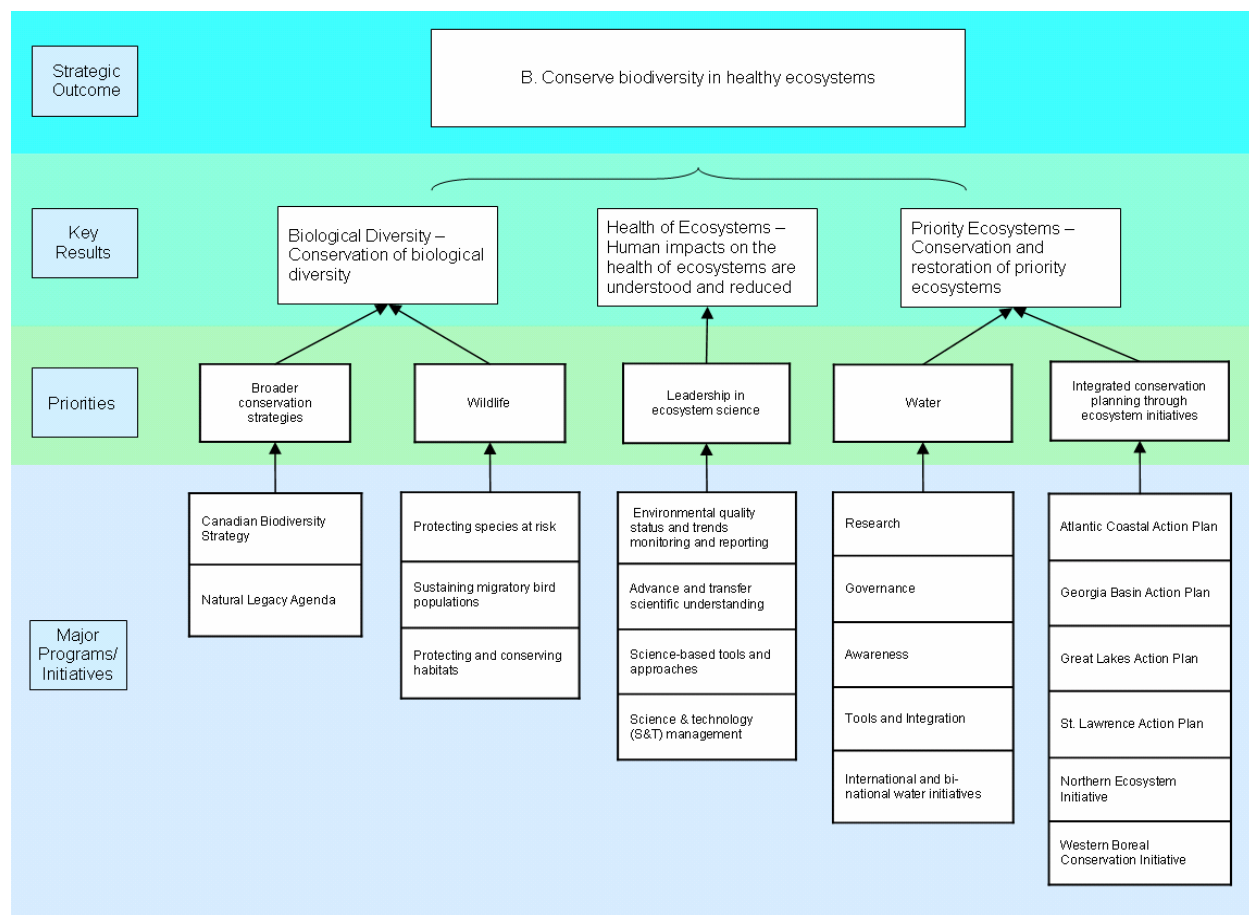
### FOR FURTHER INFORMATION

Ontario Centre for Environmental Technology Advancement (OCETA)	<a href="http://www.oceta.on.ca">http://www.oceta.on.ca</a>
Enviro-Access	<a href="http://www.enviroaccess.ca/eng/index.html">http://www.enviroaccess.ca/eng/index.html</a>
CETAC-West	<a href="http://www.cetacwest.com">http://www.cetacwest.com</a>
Environmental Assessment	<a href="http://www.ec.gc.ca/ea-ee/home/home_e.asp">http://www.ec.gc.ca/ea-ee/home/home_e.asp</a>
Environmental Emergencies	<a href="http://www.ec.gc.ca/ee-ue/home/home_e.asp">http://www.ec.gc.ca/ee-ue/home/home_e.asp</a>
Environmental Enforcement	<a href="http://www.ec.gc.ca/ele-ale/home/home_e.asp">http://www.ec.gc.ca/ele-ale/home/home_e.asp</a>



## 2.2 Biodiversity – Conserving Biodiversity in Healthy Ecosystems

Nature provides us with many key life-supporting goods and services (e.g. water, food, and medicine), regulating services (e.g. carbon sequestration) as well as recreational services. In addition to being essential to the health and well-being of Canadians, nature also contributes to Canada’s economic welfare and to our ability to compete in a global economy, e.g. agriculture, forestry, natural resources (oil and gas). Nature sustains and delivers these key assets and services for no readily apparent cost, but they are of immense social and economic value – some literally priceless, and some with few or no substitutes. Canada’s natural capital is also a source of potential future economic opportunities – for example, the emerging “bio-based economy” relies on our natural capital of species and genetic diversity to develop new knowledge and new technologies of potential social and economic significance.



The objective of Environment Canada’s Nature Business Line is to conserve biodiversity in healthy ecosystems. The Nature strategic outcome is supported by three key results, to: understand and reduce the human impacts on the health of ecosystems; conserve biological diversity; and conserve and restore priority ecosystems.

Canada is known around the world for its wealth of natural capital (clean, safe and secure water, abundance of plants and animals, and its wilderness areas). Notwithstanding this richness of natural assets, human interventions such as increased urbanization and intensified agriculture are altering the capacity of nature to deliver these critical goods and services.

Ecosystems are under continuous threat from a number of stressors. Disruption in ecosystem function can impact on human well-being in a variety of ways and through complex pathways (e.g. alter food production capabilities, increase the spread of disease and the frequency and severity of natural disasters). Clean, safe and secure water is essential for humans, wildlife, and plants and to ensure sustainable production and diversity. Population growth, industrialization, and unsustainable land use contribute to over-consumption of natural capital, increased air and water pollution, as well as habitat loss, degradation and fragmentation. The impact continues to be significant on populations of species of animals and plants, including declines in numbers of some species and an overabundance (excess) of others. It is, therefore, essential that we understand the human impacts and human-induced pressures on ecosystems and transfer this knowledge to Canadians and decision-makers so that they have information they need to make informed decisions with regard to sustainability and landscape use.

Environment Canada's efforts to conserve biodiversity and the health of ecosystems are directed towards building shared conservation and sustainable use strategies both globally and within Canada. These strategies aim to ensure the sustainability of wildlife and the ecosystems of which they are a part, contribute to the scientific understanding of ecosystems and to the development of partnerships to improve the health of nationally significant ecosystems. Environment Canada discharges federal responsibilities for managing migratory birds, species at risk, freshwater and wetland resources and also develops departmental science and technology (S&T) policies and practices and contributes to the development of federal S&T policy.

The objective is to conserve biodiversity in healthy ecosystems. Specifically, through the Nature Business Line, in collaboration with provincial/territorial governments, federal departments and other partners, Environment Canada:

- Develops the scientific knowledge and tools needed to understand and respond to the effects of human activities on ecosystems;
- Works to ensure the conservation of migratory bird populations; leads efforts to protect species at risk, with a particular focus on those species under federal jurisdiction; and leads in the conservation, protection and rehabilitation of habitats of significance to migratory birds and species at risk in Canada;
- Applies an integrated approach to conserving and restoring significant ecosystems, and provides tools to build local capacity to continue this work;
- Promotes Canada's interests in international arenas dealing with wildlife, ecosystem health and biodiversity; and facilitates domestic implementation of international biodiversity-related agreements.
- Provides federal leadership in conserving and protecting Canada's water resources.<sup>1</sup>

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<sup>1</sup> From the Nature Business Line Description in the Main Estimates.

The following table demonstrates how, within Environment Canada's Management Framework, the Nature Business Line strategic outcome is supported by three key results.

Consistent with the structure provided in the departmental Report on Plans and Priorities, departmental priority concerns are grouped under the key results to which they relate. This logic structure is shown in the table and the narrative performance comments that follow.

For additional nature-related information, you can visit the following web sites:

For more information on Canada's species at risk, visit:  
<http://www.cws-scf.ec.gc.ca/theme.cfm?lang=e&category=12>

For more information on Canada's biodiversity, visit: <http://www.cbin.ec.gc.ca/>

<b>Nature Business Line</b>											
<b>Strategic Outcome: Conserve biodiversity in healthy ecosystems</b>											
<b>Main Estimates</b>		<b>Planned Spending</b>		<b>Total Authorities</b>		<b>Actual Spending</b>		<b>Full Time Equivalents</b>			
210.4		215.1		220.6		210.0		1374			
<b>Key Results</b>											
Conservation of biological diversity				Human impacts on the health of ecosystems are understood and reduced				Conservation and restoration of priority ecosystems			
Main Estimates	Planned Spending	Total Authorities	Actual Spending	Main Estimates	Planned Spending	Total Authorities	Actual Spending	Main Estimates	Planned Spending	Total Authorities	Actual Spending
95.2	99.2	103.5	100.6	48.2	48.1	48.9	56.0	67.0	67.8	68.1	53.3
<b>Priority Areas of Work</b>											
Broader Conservation Strategies		Wildlife		Leadership in Ecosystem Science				Water		Integrated Conservation Planning Through Ecosystem Initiatives	
<b>Intermediate Outcomes</b>											
Facilitate delivery of a broader conservation agenda Species at risk are protected Migratory birds are conserved Habitats significant to migratory birds and species at risk are conserved, restored and rehabilitated				Canadians receive sound and timely information and advice on the status and trends of the health of ecosystems Understanding of the impacts of human activities on the health of ecosystems is advanced Contribute to science-based advice and solutions to reduce human impacts on the health of ecosystems Strategic management of Environment Canada's science and technology, in alignment with federal S&T policy				Federal leadership and expertise, through partnerships, is provided to conserve and protect Canada's water resources and aquatic ecosystems Innovative tools are provided for sound ecosystem and environmental decision-making Ecosystem Initiatives			
<b>Key Programs and Major Initiatives</b>											
Canadian Biodiversity Strategy/ fulfilling Canada's key international obligations under the UN Convention on Biological Diversity (UNCBD)/Access and Benefit-Sharing (ABS) policy frameworks and pilot projects Natural Legacy Agenda Protecting species at risk Implement the North American Bird Conservation Initiative; Sustaining migratory bird populations Protecting and conserving habitats				Environmental quality status and trends monitoring and reporting Advance and transfer scientific understanding of the effects of human activities on the health of ecosystems Science-based tools and approaches S&T management				<b>Ecosystem Initiatives (EI)</b> Atlantic Coastal Action Plan St. Lawrence Action Plan Great Lakes Action Plan Western Boreal Conservation Initiative Northern Ecosystem Initiative Georgia Basin Action Plan <b>Water</b> Research Governance Awareness Innovative tools and instruments International and bi-national water initiatives			

\* Totals may differ between and within tables due to rounding.

## 2.2.1 Key Result: Biological Diversity



### Broader Conservation Strategies

#### *What is the issue?*

Canada's natural capital is essential to human health and is a key component of the country's economic and social well-being. There is a need to develop partnerships with all sectors to promote and advance integrated conservation planning and management (in particular with those involved in natural resource development and land use decisions).

More needs to be done to influence a wider range of private and public lands by engaging networks of stakeholders in habitat conservation strategies.

#### *What are we doing about it?*

##### **CANADIAN BIODIVERSITY STRATEGY**

In Canada, collaborative action related to nature and biodiversity is guided by the Canadian Biodiversity Strategy (CBS). The Strategy was developed to support the implementation of the United Nations Convention on Biological Diversity (CBD) and it was endorsed by federal, provincial and territorial governments in 1996. (<http://www.cbin.ec.gc.ca/index.cfm?lang=e>)

Over the years, the Canadian Biodiversity Strategy has led to the National Accord for the Protection of Species at Risk, the *Species at Risk Act*, the Habitat Stewardship Program for Species at Risk, and the Ecological Gifts Program.

Since September 2001, Ministers of Fisheries and Aquaculture, Forestry and Wildlife have been working together to advance work on four cross-cutting Canadian Biodiversity Strategy implementation priorities: stewardship; science and information; monitoring and reporting on biodiversity status and trends; and invasive alien species.

Targeted investments of new funding will be made to enhance support for science activities, strengthen national surveillance efforts, and raise public awareness and understanding of harmful practices that introduce invasive alien species into Canada.

##### **CANADA'S NATURAL LEGACY AGENDA**

Canada's Natural Legacy Agenda supports the ongoing implementation of the Canadian Biodiversity Strategy and advances federal sustainable development strategies by promoting a more cohesive agenda for the nature component of the environment agenda. Within the Government of Canada, more than 20 departments have specific mandates for nature conservation; all departments and agencies have a responsibility for sustainable development.

Through the Natural Legacy Agenda, the federal government is working toward a more integrated approach to the protection, conservation and sustainable use of Canada's natural

resources. The Natural Legacy Agenda focuses on wild living resources, public and private stewardship on Canada's land and waters, protected areas and science.

With regard to the stewardship of land and waters, the Government of Canada announced in the October 2004 Speech from Throne its commitment to move forward on an Oceans Action Plan (OAP). Based upon the principles contained in Canada's Oceans Strategy announced in 2002, the OAP will maximize the use and development of Canada's oceans technology, establish a network of marine protected areas, implement integrated management plans, and enhance the enforcement of rules governing oceans and fisheries, including straddling fish stocks. This commitment was reinforced in the February 2005 federal budget through the allocation of \$28 million over two years for Phase 1 of the OAP which will focus on improving oceans management and preserving the health of Canada's oceans.

In working with the Department of Fisheries and Oceans (DFO) and other departments and agencies in implementing the OAP, Environment Canada will build upon ongoing activities, including the development of a federal marine protected areas strategy. Within this context, Environment Canada will (as announced in January, 2005) maintain a year-round human presence on Sable Island to operate its weather station and help protect its unique scientific and ecological value.

### ***Are we succeeding?***

Environment Canada continues to play critical policy coordination, catalyzing, and facilitating roles in leading national efforts to define Canada's response to the Convention on Biological Diversity and to advance national implementation of the Canadian Biodiversity Strategy. Since 2001 the department has led and coordinated the development and implementation of a national biodiversity agenda focused on four cross-cutting priorities including stewardship, science and information management, monitoring and reporting on biodiversity status and trends and addressing the threat of invasive alien species. Significant progress has been achieved in the areas of stewardship and invasive alien species but enhancing our biodiversity science, information, monitoring and reporting capacity will continue to be a priority and an essential underpinning to the development of shared outcomes with our federal, provincial and territorial partners.

In the fall of 2002 federal, provincial, and territorial Resource Ministers endorsed *Canada's Stewardship Agenda (CSA)*. In the fall of 2003 Ministers were provided with a progress report on implementation priorities. The CSA policy initiative supports the *National Accord for the Protection of Species at Risk* and complements several successful national stewardship programs – the Habitat Stewardship Program for Species at Risk, Ecological Gifts Program and the North American Waterfowl Management Plan (NAWMP). Since 2003 results have included fostering the formation of a *National Land Trust Coalition*, and the creation of a *Canadian Stewardship Community Network* and a *Stewardship Canada Web Portal*. These stewardship initiatives have resulted in the protection and restoration of thousands of hectares of conservation land for wildlife.

In 2003, Ministers approved in principle a draft biodiversity science agenda and also agreed on a set of principles with respect to the management of biological information in Canada. Work is

continuing to identify biodiversity science priorities for Canada as well as to improve the quality of and access to biological information. To that end the Federal Biodiversity Information Partnership, consisting of six federal departments, was created to ensure a more coordinated federal approach.

Ministers also approved a draft framework for a Canadian Biodiversity Index in 2003. Since then, a practitioner’s guide has been developed and proof of concept testing is going on in several jurisdictions. New web-based tools have been developed to provide one-window access to status and trends information in Canada and new partnerships such as the Alberta Biodiversity Monitoring Program are being developed to meet the need for better information on the state of Canada’s Biodiversity.

Ministers approved an *Invasive Alien Species Strategy for Canada* in the fall of 2004. The Strategy provides a comprehensive and integrated framework to minimize the risk of invasive alien species to the environment, economy, and society. The Strategy received support in Budget 2005, and federal departments and agencies subsequently received \$85 million over five years for targeted investments in key federal priorities to initiate implementation of the Strategy.

An incremental \$2 million per year over the next five years, for the Sea Lamprey Control Program, will fulfill Canada’s international obligation in controlling this costly aquatic invader. In addition, the Government of Canada will enhance capacity of the plant protection program to address plant pests and invasive alien plants; strengthen measures to detect, assess, and respond to aquatic invasive species; and develop performance promotion activities.

In September 2004, federal, provincial and territorial Ministers of Wildlife, Forestry and Fisheries and Aquaculture agreed to build on the on-going implementation efforts on the initial four cross-cutting Canadian Biodiversity Strategy implementation priorities by collaborating on the development of an outcomes-based implementation framework for the Canadian Biodiversity Strategy.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<b>Major Program/Initiative:</b> Canadian Biodiversity Strategy
<p><b>Expected Results:</b></p> <ul style="list-style-type: none"> <li>Develop a biodiversity science agenda for Canada including a biological information management component.</li> <li>Enhance capacity to monitor and report on the status and trends of biodiversity.</li> <li>Address the threat of invasive alien species (IAS).</li> <li>Engage Canadians through biodiversity stewardship.</li> <li>Develop recommendations for new/emerging inter-jurisdictional priorities.</li> </ul>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Biodiversity Science and Information</i></b></p> <ul style="list-style-type: none"> <li>- Agreement on a federal-provincial-territorial (FPT) information coordinating mechanism as a partnership between the Federal Biodiversity Information Partnership, NatureServe Canada, and the Federal-Provincial-Territorial Biodiversity Working Group that oversees implementation of the CBS.</li> <li>- Approval of a draft Biodiversity Science Agenda as a basis for setting priorities and on a set of principles with</li> </ul>

<p>respect to the management of biological information in Canada.</p> <ul style="list-style-type: none"> <li>- Creation of the Federal Biodiversity Information Partnership, (six federal departments) to ensure a more coordinated federal approach.</li> </ul>
<p><b>Monitoring and Reporting</b></p> <ul style="list-style-type: none"> <li>- Finalization of initial results of proof of concept testing for Canadian Biodiversity Index.</li> <li>- Development of new web-based tools and partnerships to provide one-window access to status and trends information on the state of Canada's Biodiversity.</li> </ul>
<p><b>Invasive Alien Species</b></p> <ul style="list-style-type: none"> <li>- Adoption of an Invasive Alien Species Strategy for Canada.</li> <li>- Commitment in Budget 2005 to address invasive alien species. Departments and agencies subsequently received \$85 million over five years for targeted investments in key federal priorities to initiate implementation of the Strategy.</li> </ul>
<p><b>Biodiversity Stewardship</b></p> <ul style="list-style-type: none"> <li>- Enhanced delivery of three key national stewardship programs (Ecological Gifts Program, North American Waterfowl Management Plan, and Habitat Stewardship Program) in which Environment Canada is the leader or active partner.</li> <li>- Fostering the creation of a National Land Trust Coalition, a Canadian Stewardship Community Network and a Stewardship Canada Web Portal.</li> <li>- A significant degree of stewardship programming by non-government and a broad suite of "communities of interest" is evolving and engaging Canadians as envisioned in <i>Canada's Stewardship Agenda</i>, thereby continuing efforts to advance stewardship nationally, regionally and locally.</li> </ul>
<p><b>New/emerging inter-jurisdictional priorities</b></p> <ul style="list-style-type: none"> <li>- Agreement to develop, in conjunction with Canadian jurisdictions and federal government departments, an outcomes-based implementation framework for future reporting on the CBS, and to seek FPT Ministerial approval to complete the framework by fall 2006.</li> <li>- FPT Ministerial approval to establish FPT Working Group on Access and Benefit Sharing of Genetic Resources (ABS) and to draft a national ABS policy scoping paper and stakeholder engagement strategy.</li> </ul>
<p><b>Major Program/Initiative:</b> Natural Legacy Agenda</p>
<p><b>Expected Results:</b></p> <p>Wild living resources are conserved. (Refer also to expected results under "Protecting species at risk" and "Sustaining Migratory Bird Populations" major programs/initiatives)</p> <p>Public and private stewardship on Canada's lands and waters have extended and advanced forward.</p> <p>Canada's protected areas are established, expanded and restored (refer also to expected results under "Protecting and conserving habitats" major initiative/program).</p> <p>Strengthen the scientific information base.</p>
<p align="center"><b>Planned Activities and 2004-2005 Performance Highlights</b></p>
<p><b>Wild Living Resources</b></p> <ul style="list-style-type: none"> <li>- Please see the <a href="#">Wildlife section</a>.</li> </ul>
<p><b>Canada's lands and waters</b></p> <ul style="list-style-type: none"> <li>- Commitment in October 2004 Speech from the Throne to move forward in the development of an Oceans Action Plan (OAP) that builds upon the principles of Canada's Oceans Strategy.</li> <li>- Allocation of \$28 million in Budget 2005 for Phase 1 of the OAP in order to improve oceans management and preserve the health of Canada's oceans.</li> <li>- Under the National Agri-Environmental Initiative (NAESI), there are four thematic teams. Each thematic area is responsible for developing national agri-environmental standards, e.g. quantitative and qualitative measures</li> </ul>



of desired environmental performance, for air quality, biodiversity, pesticides, and water quality and conservation. During 2004-2005, activities included scoping, research planning, research and inventory development as well as coordination with other thematic areas under the Agricultural Policy Framework (APF) programs. In addition, possible options for suitable national standards in agricultural settings were identified and assessed. This activity is ongoing to 2007-2008.

***Canada's Protected Areas***

- A new agreement was reached to ensure year-round human presence on Sable Island to operate of its weather station and help protect its unique scientific and ecological value.

***Scientific Information***

- Please see the [Biodiversity Science and Information section](#).

***Looking forward***

Development of the outcomes-based implementation framework for the Canadian Biodiversity Strategy will enable more focused implementation and evaluation of progress, both in implementing the Canadian Biodiversity Strategy and progressing towards the 2010 target to significantly reduce the rate of biodiversity loss (agreed to by Parties to the United Nations Convention on Biological Diversity in 2004). The implementation framework will include measurable outcomes, timelines, indicators and a mechanism for monitoring and reporting. Ministerial approval will be sought on the plan to complete the framework by fall 2006.

The Department will work towards developing a coordinated system to integrate ideas and suggestions from its partners, including responding to recent reports such as the National Round Table on the Environment and Economy (NRTEE) report *Securing Canada's Natural Capital: A Vision for Nature Conservation in the 21<sup>st</sup> Century*; *The Status of Wildlife Habitats in Canada* from the Wildlife Habitat Canada (WHC) and the *Nature Audit 2003* from the World Wildlife Fund (WWF)-Canada.

**FOR FURTHER INFORMATION**

Canadian Biodiversity Strategy	<a href="http://www.cbin.ec.gc.ca/issues/strategy.cfm?lang=e">http://www.cbin.ec.gc.ca/issues/strategy.cfm?lang=e</a>
Canadian Wildlife Service	<a href="http://www.cws-scf.ec.gc.ca/index_e.cfm">http://www.cws-scf.ec.gc.ca/index_e.cfm</a>
Canadian Wildlife Service Strategic Plan 2000	<a href="http://www.cws-scf.ec.gc.ca/publications/strateg/cont_e.cfm">http://www.cws-scf.ec.gc.ca/publications/strateg/cont_e.cfm</a>
CITES	<a href="http://www.cites.ec.gc.ca/">http://www.cites.ec.gc.ca/</a>
Ecological Gifts Program	<a href="http://www.cws-scf.ec.gc.ca/ecogifts/intro_e.cfm">http://www.cws-scf.ec.gc.ca/ecogifts/intro_e.cfm</a>
Habitat Stewardship Program for Species at Risk	<a href="http://www.cws-scf.ec.gc.ca/hsp-pih/">http://www.cws-scf.ec.gc.ca/hsp-pih/</a>
National Round Table on the Environment and Economy (NRTEE)	<a href="http://www.nrtee-trnee.ca/eng/index_e.htm">http://www.nrtee-trnee.ca/eng/index_e.htm</a>
Nature Audit 2003 (World Wildlife Fund-Canada)	<a href="http://wwf.ca/AboutWWF/WhatWeDo/TheNatureAudit/">http://wwf.ca/AboutWWF/WhatWeDo/TheNatureAudit/</a>
United Nations Convention on Biological Diversity	<a href="http://www.biodiv.org/default.shtml">http://www.biodiv.org/default.shtml</a>
Securing Canada's Natural Capital: A Vision for Nature Conservation in the 21 <sup>st</sup> Century (NRTEE)	<a href="http://www.nrtee-trnee.ca/eng/programs/Current_Programs/Nature/Natural-Heritage/Documents_E.htm">http://www.nrtee-trnee.ca/eng/programs/Current_Programs/Nature/Natural-Heritage/Documents_E.htm</a>
<i>Species at Risk Act</i>	<a href="http://laws.justice.gc.ca/en/S-15.3/index.html">http://laws.justice.gc.ca/en/S-15.3/index.html</a>



## Wildlife

### *What is the issue?*

Despite abundant natural resources and Canadians' appreciation of nature, Canada's natural capital is at risk. Human induced pressures are contributing to significant declines in many species of animals and plants. In Canada, 455 species are currently identified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as extirpated, endangered, threatened or of special concern.

Conserving biodiversity requires not only that we maintain those populations of wild species that are healthy, but also that we protect and recover species at risk. An important element of biodiversity conservation from Environment Canada's perspective is the conservation of migratory birds given the clear federal mandate for their conservation and protection, stemming from both the Canada-U.S. Convention on migratory birds and the *Migratory Birds Convention Act, 1994* (first enacted in 1917 with recent revisions in 1994 and 2005).

### *What are we doing about it?*

Environment Canada discharges the federal government's responsibilities for managing wildlife – particularly migratory birds and species at risk – and their habitats. Environment Canada's responsibilities for wildlife derive from the *Migratory Birds Convention Act* (MBCA), the *Canada Wildlife Act* (CWA), the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA), and the *Species at Risk Act* (SARA), as well as components of other federal environmental legislation and a range of international conventions, agreements and related policies such as the Ramsar Convention on wetlands, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity, and the Canadian Biodiversity Strategy.

The Canadian Wildlife Service (CWS) Strategic Plan 2000 sets out the direction and scope of the Department's wildlife and conservation efforts through 2010. The Plan has an overarching goal of preserving biological diversity, with a focus on protecting species at risk, sustaining migratory bird populations and protecting and conserving habitats.

#### MIGRATORY BIRDS

The core of CWS's mandate is the migratory bird program. In order to meet the objective of sustaining healthy levels of migratory bird populations by 2020, the Migratory Bird Program Plan focuses on three key elements: generating science-based information on status and trends of migratory bird populations; undertaking conservation actions that contribute to the conservation of migratory birds and their habitats; and, developing, revising and implementing migratory bird policies and legislation (and associated regulations).

In the spring of 2005 the Government of Canada passed Bill C-15, which amended both the *MBCA* and *CEPA* to improve the government's capacity to deal with marine pollution. In passing the Bill, the Government of Canada demonstrated its commitment to conserving birds and Canadian ecosystems and finding ways for environmental considerations and economic interests to be reconciled. The Bill also resulted in an important change to the *MBCA* that would allow for a modernized approach to the conservation of birds to be adopted.

Environment Ministers from Canada and Mexico and the U.S. Secretary of the Interior committed to collaborate in the conservation of migratory birds in signing the Declaration of Intent for the North American Bird Conservation Initiative (NABCI) in the spring of 2005. Under NABCI the three countries recognize the importance of conserving migratory birds and recognize the need for international collaboration to ensure success. Implementation of the goals and objectives of the NABCI Declaration of Intent is underway at the regional, national and international levels. In many cases these efforts build on successful partnerships underway, such as those developed to deliver the North American Waterfowl Management Plan and other bird plans. Efforts to apply the approach developed through NABCI to other key international partners (e.g., South America, Arctic, and Asia) are also underway.

#### SPECIES AT RISK

In April 2000, the Minister of the Environment announced the five-year National Strategy for the Protection of Species at Risk. The Strategy consists of three parts, the Accord for the Protection of Species at Risk, the federal *Species at Risk Act (SARA)*, and complementary stewardship initiatives.

The Accord for the Protection of Species at Risk commits federal, provincial and territorial governments to adopt legislation, programs and policies and to work together to protect species at risk in Canada.

The *Species at Risk Act* establishes an arms-length scientific species assessment process, a listing process, and prohibitions on killing or harming of listed extirpated, endangered or threatened species and the destruction of their residences and critical habitat. The *Act* also requires the development of species recovery strategies, action plans and critical habitat protection measures. The *Species at Risk Act* received royal assent in December 2002. The majority of the provisions of the *Act* came into force in June 2003 and the final provisions came into effect on June 1, 2004.

In 2003, the federal government committed \$33 million over two years for the implementation of *SARA* by the responsible departments: Environment Canada, Fisheries and Oceans Canada, and the Parks Canada Agency. This amount is in addition to the \$180 million allocated for the national strategy for species at risk in 2000.

In 2004-2005 Environment Canada focused on the development of key policies and instruments necessary for the implementation of *SARA*. Terms of reference were drafted for the National Aboriginal Council on Species at Risk (NACOSAR) and the membership was established. Terms of reference were also finalized for the Aboriginal Traditional Knowledge Subcommittee of COSEWIC. The Species at Risk Stakeholder Advisory Committee (SARAC) was established. National policies and operational guidelines were drafted and consultations were initiated in

areas such as identification of critical habitat, description of residence, permitting, socio-economic analysis, and recovery-related matters.

The Canadian Endangered Species Conservation Council is composed of federal, provincial and territorial Wildlife Ministers. The Council is responsible for providing national leadership and direction for preventing wild species from becoming at risk.

#### HABITATS

Environment Canada maintains 143 National Wildlife Areas (NWAs) and Migratory Bird Sanctuaries (MBAs) which contribute 12 million hectares to support the conservation of biological diversity in Canada, including species at risk.

The Habitat Stewardship Program helps to maintain and restore habitat critical to species at risk throughout Canada by encouraging the implementation of conservation projects by community groups, private landowners, Aboriginal Peoples and local governments. The Program was launched in 2000 with a commitment of \$45 million over five years. In 2003, it was renewed until 2008. To date, the Program has invested approximately \$44 million in 716 projects, leveraging an additional estimated \$94 million from project participants, in the form of cash and in-kind contributions. The total amount of protected habitat for species at risk is now over 250 000 ha and more than 110 000 ha of habitat has been improved since 2000.

Habitat Stewardship Program Funding

Year	Government of Canada Funding	Number of Projects
Year 1 (2000-2001)	\$5.0 million	37
Year 2 (2001-2002)	\$9.6 million	148
Year 3 (2002-2003)	\$10.0 million	155
Year 4 (2003-2004)	\$9.5 million	164
Year 5 (2004-2005)	\$10.0 million	179
Year 6 (2005-2006)	\$9.2 million	153
Total over 6 years	\$53.3 million	836

The Ecological Gifts Program provides income tax incentives to donors of ecologically sensitive land and conservation easements. Since 1995, over 462 eco-gifts have been donated to environmental not-for-profit organizations and governments across Canada. The eco-gifts total nearly 41,000 hectares worth more than \$124 million. Approximately 18 percent of the gifts so far include habitat for species at risk and over 25 percent support migratory bird populations. To date, wetland habitats are found on 40 percent of the lands secured through ecological gifts.

#### ***Are we succeeding?***

While we have established the legal and program frameworks for species at risk (e.g. recovery strategies and action plans), achieving on-the-ground results remains a long-term challenge.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which has been assessing the status of Canadian species at risk of extinction or extirpation since its inception in 1978, is now established, under *SARA*, as an advisory body, ensuring that species will continue to be assessed under a rigorous and independent scientific process. COSEWIC conducts species

assessments that are then considered for listing under SARA. To date, COSEWIC has assessed 455 species as being at risk, including 22 extirpated species, 172 endangered species, 120 threatened species, and 121 special concern species. To date a total of 306 species have been listed on Schedule 1 under SARA.

Under SARA, the listing of species as extirpated, endangered or threatened will trigger the preparation of recovery strategies. To date, of the 238 recovery strategies in different stages of development, Environment Canada is responsible for the development of 171 strategies. In addition, Environment Canada has recovery programs in place for 40 species or ecosystems. There are 99 recovery strategies due in 2006, all for endangered species. Two (2) are in approval stage and an additional 43 are in development.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<b>Major Program/Initiative:</b> Protecting species at risk
<p><b>Expected Results:</b></p> <p>The National Strategy for the Protection of Species at Risk and <i>Species at Risk Act</i> are implemented.</p> <ul style="list-style-type: none"> <li>• Species are assessed and considered for listing under SARA;</li> <li>• Recovery strategies are prepared for species listed as extirpated, endangered and threatened;</li> <li>• Provincial and territorial governments and Aboriginal organizations are engaged;</li> <li>• Stakeholder consultations contribute to desired results;</li> <li>• Enforcement capability for species at risk is established; and</li> <li>• International obligations related to species at risk are met.</li> </ul>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Program Development and Management</i></b></p> <ul style="list-style-type: none"> <li>- As of March 31, 2005, the bilateral agreement with British Columbia was in the signing stage while other bilateral agreements, such as with Quebec and Prince Edward Island were well advanced.</li> <li>- A Stakeholder Advisory Committee was established to provide advice on the administration of the Act. Membership for 2004-2005 includes 10 participants from industry, 9 from ENGOs, and 2 scientists.</li> <li>- The SARA Public Registry was further developed and was instrumental in carrying out public consultations on policies and guidelines and the species listing process.</li> </ul>
<p><b><i>Assessment, Response and Listing</i></b></p> <ul style="list-style-type: none"> <li>- COSEWIC met in May 2004 and November 2004 and assessed the status of 58 species, subspecies and populations.</li> <li>- COSEWIC submitted for consideration to the Federal Minister a list of 59 species, subspecies and populations for listing (resulting from COSEWIC assessment meetings of November 2003 and May 2004) with its first post SARA Annual Report in July 2004.</li> <li>- 73 species were added to SARA's list of Wildlife Species at Risk from the 91 assessments submitted by COSEWIC in January 2004.</li> </ul>
<p><b><i>Recovery and critical habitat conservation</i></b></p> <ul style="list-style-type: none"> <li>- There were no recovery strategies required to be approved and published on the public registry in 2004-2005. The production of the 99 recovery strategies for endangered species due for 2006 for which Environment Canada is responsible (in cooperation with provinces and territories) is progressing. Of these, 2 were in their approval stage and an additional 43 were in development at the end of March 2005.</li> </ul>

<p><b>Critical habitat conservation</b></p> <ul style="list-style-type: none"> <li>- The Critical Habitat Policy and Residence Policy were finalized in 2004 after collaboration and consultation with other federal departments, provinces/territories, industry, ENGOs, and a public posting. These policies are now providing direction to the protection of residences and the development of Recovery Strategies.</li> <li>- Draft Technical Guidelines for Identifying Critical Habitat have been developed.</li> </ul>
<p><b>Enforcement</b></p> <ul style="list-style-type: none"> <li>- SARA training for wildlife officers was completed across Canada.</li> <li>- Wildlife Officers responded to 6 occurrences and undertook one investigation under the new <i>Act</i>.</li> </ul>
<p><b>Aboriginal involvement</b></p> <ul style="list-style-type: none"> <li>- The terms of reference of the National Aboriginal Council on Species at Risk (NACOSAR) were drafted, and its membership was established.</li> <li>- The terms of reference for the COSEWIC Aboriginal Traditional Knowledge (ATK) Subcommittee were approved in September 2004.</li> </ul>
<p><b>Implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) through the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA)</b></p> <ul style="list-style-type: none"> <li>- Canada was an active and visible participant at the 13th Conference of the Parties to CITES (COP 13) which met in October 2004 and assessed 50 proposals to amend the CITES species lists (CITES Appendices) and 62 proposals related to CITES interpretation and administration.</li> <li>- Decisions taken by COP 13 came into effect in Canada through the regulatory amendment of Schedule 1 of the regulations under WAPPRIITA.</li> <li>- A new addition to the CITES Identification Guide series was developed. The new CITES Identification Guide – Amphibians will be completed in 2005-2006.</li> <li>- Wildlife Officers responded to 550 occurrences and conducted 1520 inspections. 1273 investigations were active in 2004-2005.</li> </ul>

<p><b>Major Program/Initiative:</b> Sustaining migratory bird populations</p>
<p><b>Expected Results:</b></p> <p>Knowledge of the status of migratory bird populations is acquired and conservation measures undertaken.</p> <p>Compliance with the <i>Migratory Bird Convention Act</i> is promoted and enforced.</p> <p>Awareness of stakeholders and the public is increased and support for migratory bird conservation initiatives obtained.</p> <p>Cooperative management processes and structures are established to accommodate and respond to Aboriginal and treaty rights in land claim settlements.</p> <p>Partnership initiatives for migratory bird conservation are developed and implemented.</p> <p>Impacts of toxic substances and diseases on migratory birds are understood and mitigated.</p>
<p align="center"><b>Planned Activities and 2004-2005 Performance Highlights</b></p>
<p><b>CWS Migratory Bird Program Plan</b></p> <ul style="list-style-type: none"> <li>- The CWS Migratory Bird Program Plan has now been finalized although it remains a “working draft” that will be amended as required to reflect emerging and changing priorities and new approaches.</li> <li>- A bill to amend the <i>MBCA</i> and <i>CEPA</i> to enhance our capacity to address the issue of marine pollution (Bill C-15) received royal assent on May 18, 2005.</li> </ul>
<p><b>The North American Bird Conservation Initiative (NABCI) – this initiative covers four sub-components that address four bird groups: waterfowl, waterbirds, landbirds and shorebirds.</b></p> <ul style="list-style-type: none"> <li>- Canada, the United States and Mexico finalized and signed the 2004 North American Waterfowl Management Plan (NAWMP) Update, and initiated its implementation with the review and approval of wetland project</li> </ul>

<p>proposals at regional, national, and international levels submitted by the Joint Ventures to the North American Wetland Conservation Council of Canada.</p> <ul style="list-style-type: none"> <li>- Ministers of the Environment for Canada and Mexico and the United States Secretary of the Interior signed the Declaration of Intent for the Conservation of North American Birds and their Habitat in early 2005 affirming their support for NABCI.</li> </ul>
<p><b><i>Migratory Birds Enforcement</i></b></p> <ul style="list-style-type: none"> <li>- Implementation of the Space for Habitat Project has begun. This project will develop the capability to use Earth Observation technologies to monitor and protect the ecological integrity of targeted Protected Areas, and to monitor incidental take of migratory birds.</li> <li>- Wildlife Officers responded to 277 occurrences, conducted 135 inspections. 382 investigations were active during 2004-2005.</li> </ul>
<p><b><i>Migratory Birds Outreach</i></b></p> <ul style="list-style-type: none"> <li>- Used stakeholder consultations and participation to achieve desired results.</li> </ul>
<p><b><i>Migratory Birds Partnerships</i></b></p> <ul style="list-style-type: none"> <li>- Environment Canada endorsed the concept of the Western Hemisphere Migratory Species Initiative (WHMSI) and, through the Canadian Wildlife Service, is continuing to work with partners in the United States (the US Fish and Wildlife Service - Division of International Conservation) and with organizations in other countries (BirdLife International – Quito, Ecuador) to develop the WHMSI concept into a functioning initiative.</li> <li>- NABCI-Canada is continuing to work with other national NABCI councils to develop partnerships in Mexico similar to the Joint Ventures that deliver conservation for NABCI in the United States and Canada in areas with habitat of tri-national importance.</li> </ul>
<p><b><i>Aboriginal Cooperative management</i></b></p> <ul style="list-style-type: none"> <li>- Participated in the finalization of the Labrador Inuit Final agreement as well as negotiation of the Labrador Innu, James Bay Northern Quebec Offshore and the Makivik offshore agreements.</li> <li>- Contributed to the development of policies and strategies regarding Métis harvesting rights, including the Interim Enforcement Policy accepted by Cabinet.</li> <li>- Negotiated a new contribution agreement on funding of research with the Fur Institute of Canada, and participated in the Canadian Furbearer Managers Committee and the Trap Research and Development Committee of the Institute.</li> </ul>
<p><b>Major Program/Initiative:</b> Protecting and conserving habitats</p>
<p><b>Expected Results:</b></p> <p>Species at risk and their habitats are conserved through the Habitat Stewardship Program.</p> <p>National Wildlife Areas, Marine Wildlife Areas, Migratory Bird Sanctuaries and RAMSAR sites are established and maintained.</p> <p>Land donations to support conservation are enabled through the Ecological Gifts Program.</p> <p>Aboriginal organizations and communities continue to be engaged.</p> <p>Stakeholder consultations and participation continue to be used to contribute to desired results.</p>
<p><b>Planned Activities and 2004-2005 Performance Highlights</b></p>
<p><b><i>Protected Areas</i></b></p> <ul style="list-style-type: none"> <li>- The marine component of a federal protected areas strategy was completed and announced by Ministers of Environment and Fisheries and Oceans in early 2005.</li> </ul>
<p><b><i>Ecological Gifts Program</i></b></p> <ul style="list-style-type: none"> <li>- In 2004-2005, Environment Canada continued to implement the Ecological Gifts Program SDS 2.1.5. Since 1995, over 462 eco-gifts have been donated to environmental not-for-profit organizations and governments across Canada. The eco-gifts total more than nearly 41,000 hectares worth more than \$124 million.</li> </ul>

- Expansion of the program included the implementation of enhanced income tax incentives, development of promotional materials and a website, and establishment of procedures to streamline low-value gifts.

***Habitat Stewardship Program***

- In 2004-2005, the Habitat Stewardship Program for Species at Risk invested \$10 million towards 165 terrestrial and aquatic habitat projects.

***Looking forward***

Environment Canada has entered a new phase of program development and implementation in order to meet significantly increased responsibilities under the *Species at Risk Act (SARA)*. Most notably, the Department is developing or acquiring new expertise to evaluate and respond to threats for a much broader spectrum of species and their habitats than before. *SARA* has also brought clear cooperation and consultation requirements (with a wider variety of stakeholders).

The magnitude of the species at risk agenda has resulted in the conservation community devoting considerable attention to this issue. However, concerns about habitat loss, the need for more protected areas in Canada, wildlife diseases and invasive alien species are now moving up on the conservation agenda. Calls to complete and expand the scope of Canada’s system of protected areas networks are intensifying as the general decline in the quality and quantity of the habitat base in Canada becomes increasingly evident. Also, across the conservation agenda, there is a need to develop better tools (such as monitoring systems and data sharing) to evaluate how wildlife populations respond to habitat change and other stressors and to make greater use of innovative incentives and programs (e.g. tax policies, conservation easements) to influence land use planning and decision-making.

The Department, in partnership with Fisheries and Oceans and Parks Canada, is conducting a formative evaluation of *SARA* programs to ensure that they continue to provide effective support to the implementation of the *Act*.

The Department’s conservation challenges and obligations have continued to expand. For example, pressure continues to mount on Environment Canada to expand the use of National Wildlife Areas as a key mechanism to enhance federally protected areas across the country. As a result, our partnerships are more important than ever. Non-government partners are increasingly recognized as integral players in wildlife conservation, bringing expertise, resources and alternative approaches to the table. The Department will continue to foster our partnerships with wildlife conservation organizations, universities, industry associations and landowners across Canada.

**FOR FURTHER INFORMATION**

Committee on the Status of Endangered Wildlife in Canada (COSEWIC)	<a href="http://www.cosepac.gc.ca/eng/sct5/index_e.cfm">http://www.cosepac.gc.ca/eng/sct5/index_e.cfm</a>
COSEWIC annual report on the status of species at risk	<a href="http://www.sararegistry.gc.ca/gen_info/default_e.cfm">http://www.sararegistry.gc.ca/gen_info/default_e.cfm</a>
Recovery of Nationally Endangered Wildlife (RENEW) annual report	<a href="http://www.speciesatrisk.gc.ca/publications/default_e.cfm">http://www.speciesatrisk.gc.ca/publications/default_e.cfm</a>
Species at Risk	<a href="http://www.speciesatrisk.gc.ca/default_e.cfm">http://www.speciesatrisk.gc.ca/default_e.cfm</a>



Species at Risk Public Registry	<a href="http://www.sararegistry.gc.ca/default_e.cfm">http://www.sararegistry.gc.ca/default_e.cfm</a>
WAPPRIITA	<a href="http://www.cites.ec.gc.ca/eng/sct0/index_e.cfm">http://www.cites.ec.gc.ca/eng/sct0/index_e.cfm</a>

## 2.2.2 Key Result: Health of Ecosystems



### Leadership in Ecosystem Science

#### *What is the issue?*

The ability to secure a clean and healthy environment for Canadians is dependent upon our capacity to understand how our ecosystems are affected by human-induced stressors and to transfer that knowledge to Canadians, decision-makers and the global community.

#### *What are we doing about it?*

Environment Canada works in collaboration with other federal departments, provinces and territories (individually or through the Canadian Council of Ministers of the Environment), non-governmental organizations, science networks related to work on the environment, academia, municipalities and the public to provide timely and integrated scientific information and advice to decision-makers, share information and determine monitoring and research priorities related to the impacts of human activities on the health of ecosystems.

Environment Canada's focus in the ecosystem health priority area is to:

- Determine “*what is changing*” within ecosystems – ensure that Canadians receive timely information and advice on the status and trends of the health of ecosystems;
- Assess “*why things are happening/changing*” – advance the scientific understanding of the impacts of human activities on the health of ecosystems;
- Determine “*what we can do about it*” – provide science-based advice and solutions that contribute to reducing human impacts on the health of ecosystems; and
- “*Ensure excellence in managing science and technology*” (S&T) – ensure strategic management of Environment Canada's S&T is in alignment with federal S&T policy.

#### *Are we succeeding?*

Canadians continue to be concerned about the impacts of land use practices and the ecosystem effects of stressors such as toxic substances and other substances of concern, climate change, and biodiversity change on aquatic ecosystem health. Work conducted under this Result is providing new scientific knowledge, approaches and techniques on priority issues of concern (e.g. release of the Arctic Climate Impact Assessment and the Canadian Acid Deposition Science Assessment which reported on the state of knowledge on the issue and an understanding of the effects on the health of aquatic ecosystems) to water resource managers and decision-makers. The development of the National Water Quality Indicators Program will result in Canada's first national report on water quality planned for fall 2005. All of this work is the result of close collaboration with other federal departments, provinces and territories, science networks.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<p><b>Major Program/Initiative:</b> Environmental quality status and trends monitoring and reporting</p>
<p><b>Expected Results:</b>            Enhanced linkages with networks in Canada and improved information sharing on ecosystem changes.            Integrated approach to the generation, acquisition and dissemination of information and knowledge.            More accessible information on ecosystem health and enhanced public awareness of ecosystem changes.            Policy- and decision-makers and Canadians have the scientific information on the status of and trends in ecosystem health to make informed decisions to protect and conserve the environment.</p>
<p style="text-align: center;"><b>Planned Activities and 2004-2005 Performance Highlights</b></p>
<p><i>Design and implement a system to improve accessibility and management of federal and provincial environmental data bases</i></p> <ul style="list-style-type: none"> <li>- Completed national comparative analysis of ENVIRODAT, confirmed national comparability for priority parameters and validate their use in the upcoming 2005 national water quality report.</li> <li>- Initiated RésEau a web-based portal for sharing, discovery, access and use of water-based information from federal, provincial, and territorial and municipal agencies, volunteer groups, industry, universities and other partners.</li> </ul>
<p><i>Assess and enhance the ability of the current national environmental reporting to support requirements</i></p> <ul style="list-style-type: none"> <li>- Initiated year 1 of the National Water Quality Indicators Program including: successful CCME F/P/T planning workshop confirming national support for initiative; developed Environment Canada, federal and national governance model to oversee the program. Canada's first national report on water quality planned for November 2005 deadline.</li> </ul>
<p><i>Produce focused and improved water quality information on priority issues of national importance such as pesticides, emerging chemicals in source water and aquatic biodiversity monitoring</i></p> <ul style="list-style-type: none"> <li>- Environment Canada interim report on the findings from the 2004 pesticide water quality surveillance field season under the Pesticide Science Fund has been prepared.</li> <li>- New research on knowledge of sewage plant treatment processes; understanding of factors affecting sustainability and management of both Canadian and international stocks of Atlantic and Pacific salmon; detection and monitoring of the survival and persistence of transgene DNA in aquatic environments and pulp mill studies identifying potential for regulation and elimination from effluents.</li> <li>- Research and program coordination are continuing to progress in the design and implementation of a Canadian Aquatic Biodiversity Monitoring Network.</li> </ul>
<p><b>Major Program/Initiative:</b> Advance and transfer scientific understanding</p>
<p><b>Expected Results:</b>            Improved understanding of stressors and improved decision-support tools, through partnerships, to assess, predict and communicate the health of Canada's national, bi-national and international watersheds/ecosystems.            Policy- and decision-makers and Canadians have the knowledge and information required to make decisions to protect and conserve the environment; to change policies; and to make changes in their activities.</p>
<p style="text-align: center;"><b>Planned Activities and 2004-2005 Performance Highlights</b></p>
<p><i>Advance scientific understanding of the impacts of land use practices on aquatic ecosystem health e.g. agriculture and forestry</i></p> <ul style="list-style-type: none"> <li>- New research on sources of bacterial pollution found on beaches and in beach sand; a program to develop performance standards for nutrients, sediments and instream flows and initiation of a research and science assessment program has been initiated to ascertain potential impacts of the proposed Mackenzie Pipeline on the hydrology, water quality and ecology of river, lake and pond ecosystems in the Mackenzie basin corridor. This</li> </ul>

<p>information will be used in the Environmental Impact Assessment process for the proposed development.</p>
<p><b><i>Improve knowledge of the effects of toxics and other substances of concern, climate changes and biodiversity changes on aquatic ecosystems</i></b></p> <ul style="list-style-type: none"> <li>- New knowledge to enable prediction of the potential effects of genetically modified organisms (GMOs) on the environment; knowledge of the impacts of anthropogenic activities on aquatic environments and particularly on the immune system of fish/bivalve and their resistance to disease; and development of fish developmental and reproductive tests for detection of endocrine disrupting substances (EDS).</li> <li>- New knowledge on climate change impacts of urban effluents and their receiving waters; on hydrology and ecology of regionally sensitive aquatic ecosystems; to determine the effect of climate change on meteorological factors affecting taste and odour events.</li> <li>- Work initiated to identify a series of instrumented research/monitoring basins that will be used to generate knowledge to improve our capabilities to assess the impacts of climate changes, toxics and other substances of concern and biodiversity changes on aquatic ecosystems.</li> </ul>
<p><b><i>Conduct and publish science assessments on key environmental issues</i></b></p> <ul style="list-style-type: none"> <li>- Three publications were completed on taste and odour in drinking water sources. An overall assessment report has been published. The Arctic Climate Impact Assessment (ACIA) overview/key findings report was released November 2004, and the corresponding technical documents will be released in 2005. The 2004 Canadian Acid Deposition Science Assessment was released. A science assessment on contaminated sediments is in progress.</li> </ul>

<p><b>Major Program/Initiative:</b> Science-based tools and approaches</p>
<p><b>Expected Results:</b></p> <p>More and improved application of guidelines across Canada and in shared watersheds/ecosystems.  Improved tools and approaches for integrated resource management and ecosystem remediation.  Improved engagement and support for solutions to conserve, protect and rehabilitate ecosystems.  Requirements arising from acts, regulations and national and international agreements and environmental assessments are met.</p>
<p style="text-align: center;"><b>Planned Activities and 2004-2005 Performance Highlights</b></p>
<p><b><i>Modernize and enhance Canadian Environmental Quality Guidelines and other science-based tools to sustain, protect and enhance the quality of the environment and its major beneficial uses</i></b></p> <ul style="list-style-type: none"> <li>- New Canadian Environmental Quality Guidelines approved by the Canadian Council of Ministers of the Environment (CCME) include a Guidance Framework for the Management of Phosphorus in Freshwater Systems, as well as Soil Quality Guidelines for benzene, toluene, ethylbenzene and xylene. Others are under development. Revised protocols for the development of Canadian Soil Quality Guidelines are under review and will be approved in 2005-2006. Review of protocols for the development of Sediment Quality Guidelines will begin in 2005-2006. Review and revision of protocols for development of Canadian Water Quality Guidelines are underway and will be completed in 2005-2006. An Environment Canada strategy for the uptake on Canadian Environmental Quality Guidelines was developed, and a priority setting scheme for guideline development was prepared and presented to the CCME.</li> </ul>
<p><b><i>Improve our ability to provide advice and decision support tools for integrated water resource management</i></b></p> <ul style="list-style-type: none"> <li>- Several initiatives were undertaken across the country e.g. EcoAltas has been applied to the prairie provinces; preliminary discussions have taken place with B.C. and the Okanagan Basin Water Board on information needs and approaches to water governance; and a Canada-Ontario Sediment Decision Making Framework has been drafted for the management of the risk associated with contaminated sediments. It is recognized internationally as being the first such formalized framework anywhere in the world and an environmental synthesis regarding water availability for the St. Lawrence River is in production.</li> <li>- Improved knowledge and techniques developed to remediate contaminated sites, improve municipal wastewater approaches and create sustainable urban storm water management practices.</li> </ul>

***Contribute to the development of best management practices for agriculture***

- In support of the Agricultural Policy Framework led by Agriculture and Agri-Foods Canada, there are four thematic teams under the National Agriculture Environment Sustainability Initiative (NAESI): air, biodiversity, pesticides, and water. Year 2004-2005 activity included scoping, research planning, research, and inventory development as well as coordination with other thematic areas and Agriculture Policy Framework (APF) programs. Each theme used the scoping year (2004-2005) to identify and assess priority parameters for the future development of agri-environmental performance standards. These standards will be quantitative or qualitative measures of desired environmental performance.

**Major Program/Initiative: Science and Technology (S&T) Management**

**Expected Results:**

Environment Canada's science and technology are high quality.

Environment Canada's science and technology efficiently and effectively support the Department's mission and contribute to achieving the federal government's goals.

Environment Canada's science and technology are integrated with federal, Canadian and international environmental science and technology capacity.

Environment Canada's science and technology effectively address the environmental and sustainable development needs of Canadians.

**Planned Activities and 2004-2005 Performance Highlights**

***Strategically manage the department's S&T and develop S&T policy for the department***

- An external advisory panel to the Deputy Minister was convened to review S&T management at Environment Canada.
- The S&T Management Map internal web site was launched to provide regular updates to S&T managers on S&T management issues.

***Establish and promote environmental science and technology networks and partnerships***

- The department began to develop a national strategy for environmental S&T, which is aimed at engaging users, performers and facilitators of environmental S&T in identifying policy-relevant priorities. A workshop was held to explore the challenges of and opportunities for Environment Canada partnering for S&T. A searchable database of environmental networks in Canada was created and published on a publicly-accessible website, and *Smart Partners: Innovations in Environment Canada – University Research Relationships* was published to promote existing innovative partnerships [http://www.cesn-rcse.ec.gc.ca/eng/docs/sp01\\_index.html](http://www.cesn-rcse.ec.gc.ca/eng/docs/sp01_index.html).

***Enhance the integration of federal S&T focused on issues of national importance***

- The federal government ADM S&T Integration Board made progress on advancing integration on nine issues, including water and invasive alien species. It provided oversight for the organization of the 2005 Federal S&T Forum, *Moving from Collaboration to Integration*.
- An on-line "community of practice" on the Ecosystem Effects of Novel Living Organisms (EENLO) was designed and implemented in order to facilitate communication amongst scientists and clients involved in EENLO issues. An EENLO research strategy was developed.
- 16 new developing countries joined UPEP GEMS/Water Quality Network. Youth initiative launched – see <http://www.gemswater.org>. New modular course outline available at <http://www.gemswater.org>.
- The Federal Freshwater Research Agenda drafted and reviewed by partners and stakeholders including federal departments, provinces and territories and other key water associations and interest groups. Six priority areas for federal research were identified.

## ***Looking forward***

The focus of the work in the Ecosystem Health Result during the planning period will be on delivering the National Water Quality Indicator Report; designing and implementing a Canadian Aquatic Biodiversity Monitoring Network; reporting research results in key areas such as pesticides, impacts of climate change and the development of agri-environment performance standards. Efforts will continue to enhance existing partnerships and build new ones to provide scientific information essential to support departmental programs and achieve results.

### FOR FURTHER INFORMATION

Canadian Environmental Quality Guidelines	<a href="http://www.ec.gc.ca/CEQG-RCQE/English/default.cfm">http://www.ec.gc.ca/CEQG-RCQE/English/default.cfm</a>
National Water Research Institute	<a href="http://www.nwri.ca/nwri-e.html">http://www.nwri.ca/nwri-e.html</a>
Science and Technology Management	<a href="http://www.ec.gc.ca/scitech/">http://www.ec.gc.ca/scitech/</a>
Threats to Water Availability in Canada	<a href="http://www.nwri.ca/threats2full/intro-e.html">http://www.nwri.ca/threats2full/intro-e.html</a>

## **2.2.3 Key Result: Priority Ecosystems**



### **Water Initiatives**

#### ***What is the issue?***

Water is a life sustaining part of our ecosystems, critical not only to human health and well-being, but also to sustainable growth and biodiversity. The ongoing availability of clean, safe and secure water for people and ecosystems continues to be a shared vision for governments domestically and internationally.

In Canada, water quality, quantity and use issues are complex, and multi-jurisdictional. The federal government has a key science-based role to play which includes identifying water quality threats and threats to water availability. Science is vital to helping all levels of government set priorities and take actions to ensure that Canadians have clean, safe and secure water.

There are pressures on both water supply and water quality in parts of Canada. Incidents such as the contamination of drinking water undermine public confidence in water systems management. Events involving floods or droughts increase concerns for economic stability in other regions (e.g. Prairies and Maritimes). Consumption of water is high per capita in Canada and ultimately impacts on the sustainability of infrastructure facilities.

#### ***What are we doing about it?***

Responsibility for the management of freshwater is shared among governments, industry and individual Canadians. Provinces and territories have primary jurisdiction over most areas of water management and protection, and most governments delegate some of these authorities to municipalities. Federal jurisdiction applies to conservation and protection of oceans and their

resources, fisheries, navigation, shipping, and international relations and agreements (e.g. Canada-U.S. boundary waters). The federal government is also responsible for water on federal lands including Territories, parks and First Nations communities. Although not expressly stated in the Constitution, the federal government plays a lead role in providing water science and monitoring to support water management by all jurisdictions. Canada also plays a key role in developing science-based water quality guidelines. There is a need to apply these guidelines within the federal house (e.g. National Parks) as well as in other jurisdictions and sectors.

Environment Canada works in collaboration with other federal departments, provinces and territories (e.g. individually or through the Canadian Council of Ministers of the Environment), science networks related to work on the environment, as well as the public (including non-governmental organizations, academia and municipalities) to share information, determine priorities for monitoring and research, provide timely and integrated scientific information and advice to decision-makers and promote sustainable water use in Canada and build best management practices for sustaining efficient use of Canada’s water.

***Are we succeeding?***

Over the past year the federal government has achieved further success on water through collaborative efforts with the Provinces and Territories. As partners, we have advanced the protection of water from source to tap; strategies are being developed for more sustainable use of water and for dealing with wastewater effluent. Further development and updating water quality guidelines has also strengthened the safety net for drinking and surface water quality. The federal government also developed scientific assessments on related water issues and threats and will be increasing this effort in the future. Positive results have been delivered through six Ecosystem Initiatives across the country – all of the Ecosystem Initiatives address water quality issues, including clean up, restoration and pollution.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<b>Major Program/Initiative:</b> Research (Integrated Watershed Management – Implementation with Domestic Partners and Water Policy, Program Coordination and Instruments Support Priorities and Strategies)
<b>Expected Results:</b> Collaborative approaches with stakeholders using models and tools for integrated analysis of water quality, quantity and use to address sustainable water management issues. Application of Sustainable Water management strategies to selected rivers and watersheds.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Source Water Protection</i></b> - Environment Canada, in collaboration with provincial and territorial governments played a key role in the development of the document titled “ <i>From Source to Tap: Guidance on the Multi-barrier Approach to Safe Drinking</i> ” published June 2004 by CCME <a href="http://www.ccme.ca/assets/pdf/mba_guidance_doc_e.pdf">http://www.ccme.ca/assets/pdf/mba_guidance_doc_e.pdf</a> . - Environment Canada in partnership with Health Canada and Indian and Northern Affairs Canada are working towards the implementation of the First Nations Water Management Strategy. Environment Canada contribution is to address source water protection needs on First Nations Communities.
<b><i>Using efficient tools and models to address sustainable water management issues</i></b> - Work is underway on the development of a River Ice Numerical Model (RIVICE) in partnership with other government departments and non-governmental organizations.

- A modelling study on the impacts of climate change on water in the South Saskatchewan River Basin is in its second year. The study is a collaborative effort with the University of Saskatchewan. Environment Canada's Water Use Analysis Model (WUAM) is being used as the primary tool for the integration of water supply and demand considerations into basin water balance, in response to impacts of climate change (<http://www.parc.ca/ssrb/index.html>)

***Support the development of a federal water policy***

- Integrated Water Resources Management (IWRM) reporting with provinces and territories completed for summer 2005; a global engagement strategy has been developed for water guided interventions at the UN Commission on Sustainable Development (CSD-13) and other international events.
- The Interdepartmental Water ADM Committee endorsed 6 top priorities for water. Federal departments are now pursuing those priorities for action (e.g., drinking water purveyors guidance, Agriculture and Agri-Food Canada water strategy development).

**Major Program/Initiative:** Governance (Integrated Watershed Management – Implementation with Domestic Partners)

**Expected Results:**

CCME Water Action Plan is implemented.  
 An integrated, watershed approach to water management in Canada is advanced.  
 First Nations Water Management Strategy is delivered in First Nations communities through a partnership approach (Environment Canada, Health Canada, Indian and Northern Affairs Canada).

**Planned Activities and 2004-2005 Performance Highlights**

***Federal/Provincial/Territorial Canadian Council of Ministers of the Environment Water Action Plan***

- Environment Canada participates actively in the CCME's work on water issues, including, the development of Environmental Quality Guidelines, and Water Quality Index, multi-barrier approaches to the protection of drinking water, water demand and use management and water quality and aquatic ecosystems.
- Five Canadian case studies on source water protection were developed with provinces and municipalities and have been posted on Environment Canada's website. ([http://www.ec.gc.ca/water/en/manage/qual/e\\_multi.htm](http://www.ec.gc.ca/water/en/manage/qual/e_multi.htm))

***Advance Integrated Water Resource Management (IWRM) in Canada***

- An approach to collecting information and reporting on Canada's implementation of integrated water resource management (IWRM) was agreed and pursued with provinces and territories as a means of reporting Canadian actions toward World Summit on Sustainable Development commitments and UN Millennium Development Goals involving IWRM and water efficiency plans.
- Environment Canada provided policy and technical support including integration of Integrated Water Resource Management approaches on the Great Lakes-St. Lawrence-Gulf of St. Lawrence Greater Ecosystem Initiative.
- Six new case studies highlighting best practices on source water protection in Canada were released on the Freshwater website ([http://www.ec.gc.ca/water/en/manage/qual/e\\_multi.htm](http://www.ec.gc.ca/water/en/manage/qual/e_multi.htm)).
- Environment Canada in partnership with Pollution Probe, City of Ottawa and Ville de Gatineau are contributing to the development of an integrated, watershed based information system, to enable a wide range of users to make better informed decisions about managing and protecting the watersheds of the Ottawa-Gatineau region.

***Support First Nations Water Management Strategy (FNWMS)***

- A Memorandum of Understanding (MOU) was signed with Indian and Northern Affairs Canada (INAC) for the Implementation of the FNWMS. The MOU confirms Environment Canada's contribution and funding until 2008. Environment Canada also continues to coordinate the source water protection and sustainable water use areas of Environment Canada's contribution to the FNWMS strategy.

<b>Major Program/Initiative:</b> Awareness (Sustainable Water Use Strategies – Development and Promotion)
<b>Expected Results:</b> Knowledge and understanding of water use is developed and disseminated to Canadians in a targeted and integrated manner.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Build knowledge on water use and provide timely analysis and information to decision makers and Canadians on water related issues</i></b> <ul style="list-style-type: none"> <li>- Environment Canada has administered the Water Use and Pricing Survey since the early 1980s, providing information on wastewater and water use, treatment and pricing; approximately 70,000 visitors per year visit Environment Canada’s Biosphere in Montreal (<a href="http://biosphere.ec.gc.ca/">http://biosphere.ec.gc.ca/</a>); the Freshwater Publication Series and the Freshwater web site provide easy to understand information relevant to emerging water issues and policy; and <i>Municipal Water Use 2001</i> has been published and the 2001 Water Pricing Report has been drafted. (<a href="http://www.ec.gc.ca/water/en/manage/use/e_data.htm">http://www.ec.gc.ca/water/en/manage/use/e_data.htm</a>).</li> <li>- An Industrial Water Use Survey will be undertaken in 2005-2006 and 2006-2007.</li> </ul>
<b><i>Raise awareness and develop outreach materials on water quality, quantity and use</i></b> <ul style="list-style-type: none"> <li>- <i>Did You Know? Freshwater Facts for Canada and the World</i> was released on the Freshwater Website (<a href="http://www.ec.gc.ca/water/en/info/facts/e_contnt.htm">http://www.ec.gc.ca/water/en/info/facts/e_contnt.htm</a>).</li> <li>- A portal has been added to the Freshwater web site to make it easier to access Freshwater maps through the Atlas of Canada <a href="http://www.ec.gc.ca/water/en/map/e_maps.htm">http://www.ec.gc.ca/water/en/map/e_maps.htm</a>.</li> <li>- The Freshwater web site received approximately 100,000 visits per month.</li> </ul>

<b>Major Program/Initiative:</b> Tools and Instruments (Sustainable Water Use Strategies – Development and Promotion)
<b>Expected Results:</b> The Water Quality Index as recommended by NRTEE Report (Environment and Sustainable Development Indicators (ESDIs) is refined and reported regularly at the national and regional level. Promote the application of various tools and instruments for water management.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Tools and Instruments for Water Management</i></b> <ul style="list-style-type: none"> <li>- Environment Canada, in conjunction with Canada Mortgage and Housing Corporation and Infrastructure Canada, held a workshop on Urban Sustainable Water Use in Canada to seek input from interested stakeholders on sustainable water policies and practices in Canada. A set of recommendations were developed for further discussion by all stakeholders including CCME, the FPT Committee on Health and the Environment (CHE) and the Canadian Water and Waste-Water Associations (CWWA).</li> <li>- Environment Canada, in support of the Agricultural Policy Framework led by Agriculture and Agri-Food Canada, is developing agri-environmental standards.</li> </ul>
<b><i>Water Quality Index</i></b> <ul style="list-style-type: none"> <li>- The CCME Water Quality Index (WQI) is a science-based communication tool that is being used nationally and regionally to disseminate complex, scientific information on water quality in a simple, understandable way to water managers, water policy developers, and the public. Under the auspices of the CCME, Environment Canada worked with federal, provincial and territorial partners to refine the Water Quality Index and work towards regular reporting of the index at the national and regional level as one of there Canadian Environmental Sustainability Indicators (built on the NRTEE ESDIs, above). A sediment quality index based on the WQI will also be available for review in this fiscal year. The sensitivity analysis is complete; results have been incorporated into a revised index calculator.</li> </ul>



<b>Major Program/Initiative:</b> International and Bi-National Water Initiatives (Canada-US Boundary Waters – Conservation and protection and Canadian Water Related Interests – Protection and Promotion Globally)
<b>Expected Results:</b> Canadian Global Water Strategy is developed. Consensus on Canada-U.S. Transboundary Water.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Reinforcing Environment Canada’s contribution to global water issues</i></b> - An Environment Canada proposal for international engagement has been developed which will overlay a consistent, supportive approach to Environment Canada involvement and messaging in global environmental events. Plans for Environment Canada participation in CSD-13m include a delivery strategy for Canada’s report on WSSD and MDG commitments (i.e. IWRM implementation and efficiency plans). The Canada Report being developed through CCME forms the basis for reporting. An internal Environment Canada international engagement strategy was drafted to serve as the guiding document for the CSD-13 preparatory meeting and the full meeting of the Commission in April 2005. Environment Canada is involved in a wide range of global organizations and events (e.g. CEC, UNECE, UNEP, bi-laterals etc.) Environment Canada developed the Government of Canada position paper on water, prepared and delivered interventions, preferred policy options and identified follow-up actions for the 2005-2006 fiscal year.
<b><i>Build consensus on Canada-U.S. Transboundary Water Issues</i></b> - In cooperation with Foreign Affairs Canada, Environment Canada conducted analysis and prepared materials on draft Great Lakes Charter Annex implementing agreements as part of developing Government of Canada’s comments to Council of Great Lakes Governors. Final comments were transmitted November 2004. - Environment Canada provided support to the International Missisquoi Bay Task Force report to the IJC on questions regarding possible transboundary implications of the Alburg-Swanton Bridge. - Environment Canada provided support to the International River Improvements Act-Long Lake license application. In cooperation with Foreign Affairs Canada, Environment Canada contributed to development of the Government of Canada’s submission to the International Joint Commission (IJC) pertaining to the 1921 apportionment order for the St. Mary and Milk rivers. (ongoing) - Environment Canada participated in an international transboundary water issues group for assessing and responding to North Dakota water initiatives (Devil’s Lake, Garrison, Red River Valley Water Supply Project). (ongoing)

***Looking forward***

While water availability is not seen to be a critical problem in most of Canada, ever-increasing demands for water coupled with burgeoning populations and the looming impacts of climate change, have raised concerns in many jurisdictions about our ability to manage this vital resource in a sustainable manner.

Significant efforts are underway to improve information on the status of water quality at national and local levels across Canada but successful programs involve significant leveraging of in-kind services and resources from provinces, communities, non-governmental organizations, and other government departments. There is a need to enhance existing partnerships and build new ones at the national and international level to have an integrated approach and agenda for addressing these issues.

In addition, responsibilities for research on water are shared by several federal departments. Issues such as agriculture, groundwater, transportation, manufacturing, mining, energy (hydro and thermal), forestry and fisheries are some key examples of how this issue cuts across various

departments and jurisdictions. Progress is occurring at different rates within each of these sectors and an important challenge over the next three years will be how to better integrate and coordinate the work of these sectors.

#### FOR FURTHER INFORMATION

Freshwater Web Site	<a href="http://www.ec.gc.ca/water/e_main.html">http://www.ec.gc.ca/water/e_main.html</a>
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## 2.2.4 Key Result: Priority Ecosystems



### **Integrated Conservation Planning Through Ecosystem Initiatives**

#### ***What is the issue?***

Canada's landscapes and seascapes are diverse, containing varying habitats and ecosystems including tundra, grasslands, estuaries and forests. Many resources and assets are associated with these ecosystems – either on the ground (e.g. trees, wildlife, wetlands, soils) or below the ground or sea (e.g. oil and gas, minerals, groundwater).

Understanding how ecosystems work and how human activities impact them is key to integrated conservation planning and having that information available for Canadians, decision-makers and the global community at large.

The challenge with integrated conservation planning is to develop a comprehensive approach that integrates the more independent resource-based, species-based, habitat-based or protected areas-based management approaches into a more encompassing framework that serves both broader conservation and resource management goals.

We need to understand how our ecosystems work and how they are affected by human-induced stressors so that we can transfer that knowledge to Canadians and the global community and use it to make sound and informed decisions.

#### ***What are we doing about it?***

Integrated conservation planning is often used as a synonym for other terms such as ecosystem management, landscape management, ecosystem approaches, and watershed management. These concepts all encourage a whole-system approach to managing resources.

Ecosystem Initiatives (EIs) are examples of integrated conservation planning. Ecosystem initiatives respond to the unique problems of targeted areas and communities and address environmental, economic, and social concerns. They are characterized by a number of principles, including:

- An ecosystem approach – recognizing the interrelationships between land, air, water, wildlife, and human activities;
- Decisions based on sound science – including natural and social sciences combined with local and traditional knowledge;
- Federal–provincial–territorial partnerships – governments working together to achieve the highest level of environmental quality for all Canadians;
- A citizen/community base – working with individuals, communities, Aboriginal peoples, industry, and governments in the design and implementation of initiatives;
- Pollution prevention – promoting a precautionary approach.

Environment Canada has six Ecosystem Initiatives in place – the Atlantic Coastal Action Program; Georgia Basin Action Plan; Great Lakes Action Plan; St. Lawrence Action Plan; Northern Ecosystem Initiative; and Western Boreal Conservation Initiative.

Environment Canada contributes \$24.5 million each year to Ecosystem Initiatives. This investment is augmented by other sources including significant contributions from partners.

### ***Are we succeeding?***

Ecosystem initiatives are providing important tools and information to assist Canadians and communities in understanding how ecosystems work, their importance, and in increasing knowledge and awareness with regard to environmental and conservation issues. The wide variety of information and tools that are developed increase the capacity of partners and communities concerning environmental matters. Priority ecosystem initiatives also work through various community engagement activities with citizens and stakeholders to influence behaviour to take action to restore and protect the environment. Specific ecosystem initiatives in various areas of the country are working to restore elements of environmental quality in targeted ecosystems. On balance, though, the shift by governments, industry and other stakeholders toward ecologically based management of Canadian ecosystems has not been completed, particularly with respect to more integrated approaches to decision making.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<b>Major Program/Initiative:</b> Atlantic Coastal Action Program
<b>Expected Results:</b> Improve public awareness and enhance scientific understanding of environmental issues. Build capacity to assume a leadership role for sustainability in their communities. Improve and enhance the environment through action identified in comprehensive environmental management plans.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Sustainable Development</i></b> - ACAP organizations and other groups involved in the initiative offer their own programs and services focused on improving the environment and the economy, and enhance the delivery of Environment Canada and other government programs concerned with issues such as Climate Change, Clean Air, Clean Water, Biodiversity and Land Use. - The ACAP Climate Change Resource Kit was produced. This resource package for implementing community-based climate change activities, while designed for the ACAP groups, is be readily amendable for use by other community-based groups.

- The Sustainable Communities Initiative's (SCI) unprecedented approach to inter-governmental and government-community collaboration was recognized in 2004-2005 with the awarding of the Institute of Public Administration Canada (IPAC) Silver Award.
- The positive results obtained from a survey report that compiled information on ACAP monitoring programs, data dissemination and management, as well as the effectiveness of data delivery and its impacts on policy and decision-making, revealed numerous examples of effective monitoring throughout the ACAP community. Many of these were national programs which ensure that standard parameters and protocols are used so that the data collected by ACAP can be compiled and used regionally and nationally. The report "*Ecological Monitoring and Reporting: A Survey of the Atlantic Coastal Action Program*," funded by the Ecological Monitoring and Assessment Network (EMAN), is available on the ACAP website: <http://atlantic-web1.ns.ec.gc.ca/community/acap/default.asp?lang=En&n=085FF7FC-11>.
- Restoration/remediation plans were put in place by ACAP groups in 2004-2005 including for the St. Stephen waterfront.

#### ***Fostering Partnerships***

- Fostering Partnerships is central to the ACAP Program. All four Atlantic provinces, for example, contribute substantially to the ACAP program every year – in the order of \$1M in this past year.
- A goal for many ACAP projects is to achieve integrated management of the water and land within their ecosystems. To help achieve this, ACAP groups and the other Ecosystems and Communities Initiative organizations are constantly developing new partnerships and nurturing existing ones with other local and regional organizations. For instance, in 2004-2005, Société d'aménagement de la rivière Madawaska et du lac Témiscouata Inc. (SARMLT) staff worked with the Municipality of Edmundston in cleaning-up the Rivière à la Truite and Rivière Iroquois (tributaries that serve to supply drinking water for the City of Edmundston). Other 2004-2005 ACAP projects such as the development of regional Airshed Management Plans has brought many more industrial partners to the ACAP tables.

#### ***Capacity Building***

- Based on more than a decade of community experiences, ACAP responds to requests to speak with service groups, interest groups, schools, at conferences etc. on ACAP initiatives, program results or current issues some of which include: promoting the benefits of water conservation and water efficient fixtures, restoring habitat, green home visits to expose things like costly home heat loss sources, etc.
- In 2004-2005, the Southeast Environment Association (SEA) and the Southern Gulf of St. Lawrence Coalition on Sustainability (SGSLCS) co-hosted a very successful workshop focused on on-site sewage. Individuals from governments, industry and other NGOs from all across the Atlantic provinces attended to explore available technology, related management issues and awareness activities and challenges. As a result, an Atlantic-wide on-site sewage committee has been put in place and a report, including recommendations for 'next steps', was produced. Other 2004-2005 regional workshops, held by ACAP and/or Ecosystem Initiative groups, dealt with topics such as: coastal erosion, climate change, carrying capacity, water quality/quantity and, alternative energy, and provided similar training and products.
- The ACAP program also moved ahead with numerous projects and programs aimed at making communities a better place. Examples include:
  - Coordinating water conservation education in industrial Cape Breton. The goal is to reduce water usage in the Cape Breton Regional Municipality through various incentive programs, education programs and water reduction methods.
  - Helping to develop new technology such as microbial source tracking (MST) in DNA profiles for tracking bacteria, etc.
  - Developing means of ENGO data sharing and data distribution as well as related technology used for ACAP monitoring, extending on-line databases, making data OGC compliant, etc.
  - Working with local farmers to provide useful data on agricultural runoff and to help determine the effectiveness of buffer zones and vegetative composition in reducing pesticide inputs and toxicity to PEI waterways.
  - Involving community volunteers in water quality monitoring. In 2004-2005, SEA trained and supported 20 volunteers to conduct physical and chemical parameter sampling in the local region and another 7 volunteers to use the reference index approach to sample for invertebrates.

**Major Program/Initiative:** Georgia Basin Action Plan

**Expected Results:**

Collaborative stewardship actions support the sustainability of the Georgia Basin. Sustainable land, aquatic and resource planning and management support the conservation, protection and restoration of the environment, enhance human well-being, and contribute to a strengthened economy. Scientific and indigenous knowledge supports improved decision-making by advancing the understanding of key ecosystem stresses. Targeted ecosystems are protected from harmful human activities and affected key ecosystem components are restored.

**Planned Activities and 2004-2005 Performance Highlights**

***Existing Substances***

Rock Bay Contaminant Reduction Initiative

- The education and business pollution prevention program in the automotive industry sector in the Rock Bay watershed provides information and support to automotive businesses in the Watershed area that are or are open to considering, implementing environmental Best Management Practices (BMPs) for their operations.

Municipal Waste Water Study

- A study has been undertaken in the Fraser River, where the Annacis Island treatment plant discharges. This area has been chosen because this is a modern treatment facilities therefore if there are effects to fish caused by the effluent there, the problem will likely occur at other operations.

***Air Quality***

Health and air quality – health effects of ambient air quality in the Lower Fraser Valley

- In 2004, the health effects and the related costs of reduced air quality in the Lower Fraser Valley were identified.
- Researchers have not found a lower threshold for air quality impacts on public health, which indicates that any amount of air pollutants, even in low concentrations, is harmful to human health.

***Hazardous Air Pollutants***

Inventory (and ranking) of air toxics in the Lower Fraser Valley

- An emission inventory of agricultural sources in the Lower Fraser Valley was conducted and a series of Best Management Practices (BMPs) were developed in 2004 that will potentially reduce or prevent air pollution from agricultural operations.

***Migratory Birds***

- In cooperation with National Wildlife Research Centre, Environment Canada conducted a retrospective study of polybrominated diphenyl ether flame retardant contaminants in eggs of marine birds (great blue herons, double crested cormorants) from the Strait of Georgia, using archived samples from the CWS specimen bank, collected over the period, 1980 to 2002. The results showed exponential increases in concentrations of those chemicals in those key indicator species over that time period, and that they are approaching concentrations of potential toxicological concern. The results have been published in the journal Environmental Science and Technology (2005, 39:5584-5591).

- CWS completed a multi-year study of the exposure and effects of various contaminants (butyltin antifouling compounds, cadmium, mercury, lead, zinc) on the health of surf scoters populations wintering in the Strait of Georgia. Results show significant exposure particularly to butyl tin chemicals, and associations with declines in body mass, a critical variable to survival and successful reproduction of seaducks. Scoters are of particular concern, as populations are undergoing long term and unexplained declines across western North America.

***Habitat***

Gulf Islands National Park Reserve

- The Province of B.C. transferred approximately 90 parcels of land to Parks Canada that had been acquired jointly through the Pacific Marine Heritage Legacy Program. The parcels, spread over 15 islands and many islets in the southern Gulf Islands, became part of Gulf Islands National Park Reserve.
- Further land acquisitions in 2004-2005 totalled 180.9 hectares, including parcels with lakes, ponds, wetlands, Garry Oak woodlands, Douglas-fir forest, and a watershed area for one of the only active salmon creeks in the

<p>southern Gulf Islands.</p> <ul style="list-style-type: none"> <li>- On Saturna Island the acquisition included the donation of one parcel, the purchase of another and a land swap/donation; two properties were bought on South Pender Island and another parcel was donated on North Pender Island.</li> </ul> <p>Saving Garry Oak Ecosystems</p> <ul style="list-style-type: none"> <li>- The Garry Oak Ecosystem Recovery Team (GOERT) is a conservation partnership that has developed a comprehensive, holistic strategy to recover and restore decimated Garry Oak ecosystems.</li> <li>- GOERT is conducting outreach and education programs to motivate public and private stewardship activities, and works with regional governments to provide biological and technical information about the ecosystems.</li> </ul>
<p><b>Broader Biodiversity Agenda</b></p> <p>Coastal Management Plans</p> <ul style="list-style-type: none"> <li>- Provincial Coastal Management Plans are being developed to diversify and expand the economies of many of B.C.'s coastal communities.</li> <li>- In the Georgia Basin, the Malaspina-Okeover Coastal Plan was completed in 2004 and encompasses approximately 1,800 hectares of marine waters and 61 km of shoreline along Malaspina, Okeover, Lancelot, and Theodosia Inlets. The plan addresses land and resource conflicts, and protects the environment to benefit the economic future of the community.</li> </ul>
<p><b>Canadians Receive Timely Info</b></p> <p>Online Stewardship Information</p> <ul style="list-style-type: none"> <li>- The Stewardship Centre for British Columbia is a "one stop shop" or online clearing house for stewardship resources in B.C. The Centre provides easy access to information and Best Management Practices needed to care for the land, water and biodiversity resources of B.C. in a responsible manner.</li> </ul>
<p><b>Advance Understanding</b></p> <p>Georgia Basin Puget Sound Research conference 2005</p> <ul style="list-style-type: none"> <li>- Approximately 300 technical papers and 100 posters were presented at the Conference. Technical papers and/or posters presented ranged in subject areas from toxic substance management, international airshed management, the application of science at the small watershed scale, the Coastal Zone Canada Association partnership, bird use of hedgerows in southwestern British Columbia, and meeting ongoing challenges through the Georgia Basin Action Plan.</li> </ul> <p>Public Input to Proposed National Marine Conservation Area</p> <ul style="list-style-type: none"> <li>- A feasibility study is being conducted to determine whether a new National Marine Conservation Area (NMCA) should be established in the southern Strait of Georgia.</li> </ul> <p>CABIN Training</p> <ul style="list-style-type: none"> <li>- CABIN (Canadian Aquatic Biomonitoring Network) provides stream assessment tools for the province, municipalities and stewardship groups to collect similar data so that it can be analyzed and compared. CABIN is a national program to assess the biological health of fresh water in Canada.</li> </ul>
<p><b>Sustainable Development</b></p> <p>Maple Ridge: the First Smart Growth on the Ground Community</p> <ul style="list-style-type: none"> <li>- Maple Ridge is revitalizing its downtown, combining Smart Growth principles with the objectives of the City's Official Community Plan to lay the foundations for redeveloping the historic area.</li> <li>- Maple Ridge was the first project of the Smart Growth on the Ground (SGOG) initiative, a partnership between the UBC Sustainable Communities Program, Smart Growth B.C., and the Real Estate Institute of B.C.</li> </ul>
<p><b>Major Program/Initiative:</b> Great Lakes Action Plan</p>
<p><b>Expected Results:</b></p> <p>Restored environmental quality in two Areas of Concern, resulting in the removal of the designation "Area of Concern."</p> <p>Completion of all required actions for Remedial Action Plans in at least six Areas of Concern.</p> <p>Progress towards the rehabilitation of ecological systems in the remaining Areas of Concern.</p> <p>Progress towards the virtual elimination or significant reductions for persistent bioaccumulative toxic substances</p>

such as mercury, dioxins, furans and PCBs.

### **Planned Activities and 2004-2005 Performance Highlights**

#### ***Great Lakes Ecosystem Initiative***

- In 2004, the Governments of Canada and the U.S. developed, and are now finalizing, an open, transparent and inclusive process for the review of the Great Lakes Water Quality Agreement (GLWQA). A 60-day public comment period on the proposed process for the review of the Agreement was undertaken and recently closed in March 2005. The Governments received comments from key Great Lakes stakeholders.
- During the reporting period, Environment Canada worked with other federal departments and engaged the Province of Ontario, municipalities, First Nations, non-governmental organizations and industry representatives to develop a renewed federal program for the Great Lakes.
- In February 2005, the federal government announced \$40 million to bring forward the next phase of the Great Lakes Action Plan, specifically aimed at continuing the restoration of key aquatic areas of concern in the Great Lakes basin.

#### ***Restore Areas of Concern***

- Efforts to assist the Nipigon Bay Area of Concern in their quest to obtain infrastructure funding for a sewage treatment plant, were successful. The first round of COMRIF funding included an announcement that the Township of Nipigon will receive \$3.8 million.
- "How Much Habitat is Enough?" An updated edition of "A Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern" was released in 2004 and reprinted in 2005. The Framework's 18 habitat guidelines have been used to guide habitat rehabilitation and protection both within AOC's and beyond.
- For example, the Framework has been used as a basic conservation biology primer and rationale for habitat protection by various conservation authorities across Ontario. The National Agri-Environmental Standards Initiative as part of Canada's Agricultural Policy Framework has cited the guidelines as examples of proposed habitat standards and provincial, municipal agencies and non-government organizations from across Canada have expressed interest in, or used, the guidelines in the revision of policies, regulations and official plans.
- Through collaborative efforts, Abitibi-Consolidated Inc., Northern Wood Preservers Inc., and Canadian National Railway Co., along with Environment Canada and Ontario Ministry of the Environment, have successfully remediated the contaminated sediment around the Northern Wood Preservers Site along the Thunder Bay Harbour. Environment Canada contributed approximately \$6 million to this \$ 20 million project. During this project 11,000 cubic meters of highly contaminated sediment was removed, treated and reused, 21,000 cubic meters of contaminated sediment was contained, the contaminated site was isolated and 5 hectares of fish habitat was created. Long term monitoring of harbour sediment, fish habitat and buffer zone is ongoing.
- The Institute for Research and Innovation in Sustainability (IRIS) in association with York University of Toronto has undertaken an analysis of the economic and non-monetary benefits associated with the remediation of contaminated sediments at Randle Reef. The purpose of the study is to provide an estimate of the benefits (economic, social and environmental) and beneficiaries (government, public, business) and to develop a generic method for benefits assessment that could be used for other remediation projects, and for assessing the benefits associated with the delisting of AOCs. A draft report has been prepared and peer review will take place prior to finalization.
- In 2004-2005 GLSF provided approximately \$4.5 million to support nearly 100 projects to implement restoration actions in the AOCs. These projects are spread throughout the Canadian AOCs and focus on GLSF's key priorities of contaminated sediment remediation, municipal wastewater management, habitat restoration and agricultural pollution reduction.
- Through extensive programs supported by GLSF in the Toronto and Niagara AOCs, hundreds of kilometres of watercourse have been made accessible to spawning fish populations through the removal or mitigation of barriers to fish passage.
- GLSF previously supported a muskellunge (*Esox masquinongy*) re-introduction program in the Spanish River to restore muskie populations to the Spanish Harbour Area of Concern. The muskies, once common in this Area of Concern, had been absent since the 1950s because of habitat degradation and over-exploitation of fish stocks. More stringent angling restrictions, combined with both improvements in water quality and the restoration of fish habitat, provided suitable conditions for efforts to restore the wild population.
- A total of 8,100 fall musky fingerlings (6-8 inches long) and 1,300 musky yearlings (12-14 inches long) were released into the river over the course of the project. In 2004, Ontario Ministry of Natural Resources initiated

an assessment of the musky populations and in July collected two 3½ inch musky (young of the year). This demonstrates that the stocked fish are now successfully reproducing in the wild. Successful projects like this one have contributed to the change in status of Spanish Harbour from an Area of Concern to an Area in Recovery.

#### ***Reduce Harmful Pollutants***

- Existing agency programs, supported by commitments under COA and the Great Lakes Bi-national Toxics Strategy (GLBTS), are on track to make significant reductions. Reductions from 1988 to date include 89% for PCB waste, over 84% (11,929 kilograms) for mercury, almost 87% (227 grams) for dioxins and furans, 61% (32 kilograms) for hexachlorobenzene, and 48% (11,496 kilograms) for benzo(a)pyrene.
- As of April 2004, approximately 815 tonnes (gross weight) of high-level PCBs were both moving into storage sites from service and moving out of storage to destruction. Approximately 122 additional storage sites (both federal and private) have become PCB-free during fiscal year 2004-2005 (From 2004 GLBTS report).

#### **Major Program/Initiative: St. Lawrence Action Plan**

##### **Expected Results:**

Improve our knowledge of the St. Lawrence ecosystem (impacts of stresses, biodiversity, monitoring).  
Increase public knowledge of the state of the ecosystem's health (Cyber St. Lawrence, Biosphère).  
Support local community groups (14 ZIP committees) and build new partnerships (with Biosphère, coastal management groups).  
Work collectively to implement actions that contribute to the health and prosperity of the St. Lawrence ecosystem.

##### **Planned Activities and 2004-2005 Performance Highlights**

##### ***Integrated management of the St. Lawrence***

- At the request of the Quebec government, a working group was established to bring together all teams working on the St. Lawrence. The Intergovernmental Working Group on Integrated Management of the St. Lawrence began its work, holding pre-consultations with target groups and producing a public consultation document.

##### ***Community involvement and awareness***

- A prototype of *St. Lawrence Cyberspace* was developed. This tool is a one-stop source of information on all aspects relating to the St. Lawrence River and enables the partners to make their information available. These innovative efforts make it possible to establish the relationships between the physical environment and living organisms (ecosystem approach) using numerical modelling. The information made available to communities will serve as decision aids.

##### ***Ecological integrity***

- The State of the St. Lawrence Monitoring Program moved forward with the continuation of the Canada-Quebec partnership, which was given concrete expression in the 2005-2010 Canada-Quebec Agreement on the St. Lawrence. In the past year, Environment Canada focused its studies on water quality at three reference stations and on the contamination of herons. Surface sediment sampling was conducted at two locations. Sampling at the third location and analysis of the samples collected in the previous program should be carried out next year.
- Spatial coverage was improved for indicators of water and sediment quality and wetlands monitoring. An activity to monitor the state of the shorelines is being developed for the Great Lakes–St. Lawrence basin in cooperation with the Canadian Space Agency (CSA). Three collaborative data collection projects with the communities were proposed to address the gaps identified with respect to the indicators: 1) the monitoring of invasive wetland plants in Lake Saint-Pierre with the ZIP Committee and *Société de la Baie Lavallière*, 2) monitoring of benthic invertebrates by the *Comité de valorisation de la rivière Beauport*; and 3) monitoring of marsh birds with Bird Studies Canada.
- With a view to improving the dissemination of information, a collaboration agreement was reached between the St. Lawrence Centre, Biosphere and *Stratégies Saint-Laurent* to develop a concept for a travelling outreach tool based on the program results and local knowledge of the ZIP committees. A workshop on the state of Lake Saint-Pierre was held under the auspices of the Ecological Monitoring and Assessment Network (EMAN). A workshop on invasive species was also held during the year.



***Environment-friendly economic activities***

- The sustainable navigation strategy was developed in cooperation with the partners of the St. Lawrence Action Plan involved in this sector. It will be disseminated and implemented after the signing of the Canada-Quebec agreement. It is an innovative tool that will serve to more effectively manage and guide this activity in the context of sustainable development.

**Major Program/Initiative:** Northern Ecosystem Initiative

**Expected Results:**

- Enhance the future health and sustainability of northern communities and ecosystems.  
Increased knowledge and awareness of ecosystem impacts of contaminants, climate change and resource use activities.  
Further development of a northern monitoring network able to provide information on ecosystem status and trends.  
Enhanced capacity in northern communities and Aboriginal organizations.

**Planned Activities and 2004-2005 Performance Highlights**

***Partner-capacity Building***

- Renewed partnership agreement with Inuit Tapiriit Kanatami to work collaboratively on shared priorities important to ecosystem and related community health across the Canadian North.

***Climate Change Impacts***

- A number of multi-year studies were identified and initiated in several locations across the Canadian North investigating climate effects on sea-ice and its integrator role within the larger marine system and with a focus on people and key northern biota (migratory birds and seals).

***Contaminant Impacts***

- Supported a number of projects investigating local contaminant concerns including a Phase II environmental assessment of the former military site in Hopedale Saskatchewan.

***Resource Use Activities***

- The Integrated Ecosystem Thresholds Project convened a major workshop in the Kaska Region of the Yukon and thus completed the ground-work for solidifying community-level partnerships needed to develop an "ALCES North" Model that will integrate terrestrial, aquatic and social-economic thresholds.

***Monitoring***

- The EMAN-North website was expanded and reorganized to include Plantwatch North, CANTTEX and new datasets. As well, a plain language version of the Northern Water Quality Manual was completed.

**Major Program/Initiative:** Western Boreal Conservation Initiative

**Expected Results for Phase I (2003-2008):**

- Production of knowledge and action that has worked towards conservation of boreal forests, and to sustain or increase populations of migratory birds in the boreal forest.  
Working through partnerships, management of boreal forests in Canada are moving towards a model of conservation-based landscapes, based on the principles of protected areas and sustainable development.  
Partnerships and resources are in place that will allow Phase II of WBCI to function as a nationally-based program across the boreal forest.  
No new species have become at risk in the boreal forest and contribution has been made to ensure recovery of species that were at risk.  
There is an increased awareness and appreciation of boreal forests and their biodiversity in Canada.

**Planned Activities and 2004-2005 Performance Highlights**

***Sustainable Development***

- Delivery of WBCI strategic and action plans.
- Development and delivery of science (natural and social) in partnership to inform conservation planning and

<p>sustainable development.</p> <ul style="list-style-type: none"> <li>- Provision of science-based information to key agencies and decision-makers.</li> <li>- Successful engagement with range of partners invested in boreal forest conservation issues.</li> </ul>
<p><b><i>Program Development</i></b></p> <ul style="list-style-type: none"> <li>- WBCI strategic and action plans developed and implementation underway.</li> <li>- National projects and partnerships initiated to build national presence and facilitate national expansion.</li> </ul>
<p><b><i>Communication of Conservation Knowledge and Technical Support</i></b></p> <ul style="list-style-type: none"> <li>- WBCI strategic plan broadly distributed and various workshops and meetings were held with partners, researchers, etc.</li> <li>- Provision of technical support internally and externally, including support for Alberta Biodiversity Monitoring Program, Canadian Standards Association Sustainable Forest Management Technical Committee, Cumulative Effects Management Association, National Round Table on the Environment and Economy Boreal Task Force, provision of advice and information to private and government sector and public advisory groups.</li> </ul>
<p><b><i>Coordination and Cooperation through Partnerships</i></b></p> <ul style="list-style-type: none"> <li>- Over 90 partnerships at program and project level, across provincial, territorial, Aboriginal and federal governments (U.S. and Canada), universities and research institutions, communities and Aboriginal groups, forestry and energy industries, and non-governmental agencies.</li> </ul>
<p><b><i>Conservation Knowledge and Action for Boreal Biodiversity</i></b></p> <ul style="list-style-type: none"> <li>- Boreal bird monitoring: Formal proposal and national technical committee established; initial research conducted.</li> <li>- Partnership-based research on conservation of boreal biodiversity: Projects established and ongoing in following project areas: <ul style="list-style-type: none"> <li>• Development of predictive bird-habitat models to inform conservation frameworks for boreal forests in Canada;</li> <li>• Response of migratory birds to salvage logging and implications for best practices, policy;</li> <li>• Natural and harvesting disturbance effects on waterbirds;</li> <li>• Effects of riparian harvesting policy on migratory birds and cavity-nesting species;</li> <li>• Assessment of cumulative effects of anthropogenic disturbance in wetlands;</li> <li>• Best practices vs. business-as-usual harvesting effects on migratory birds; and</li> <li>• Policy analysis to support biodiversity conservation and local benefits for Métis communities in Saskatchewan.</li> </ul> </li> </ul>

### ***Looking forward***

Working through diverse multi-stakeholder partnerships creates challenges in establishing consistent agendas and priorities for action. The Ecosystem Initiatives have been successful in building partnerships and consensus and have resulted in environmental gains. Challenges remain, however, in setting the agendas and priorities for each Initiative, making environmental results transparent, making the best use of limited financial resources, dealing with the capacity issues of our partners, and ensuring a strong national approach. The department is developing an evaluation framework to assess whether ecosystem initiatives are aligned with new and emerging departmental strategic priorities.

### **FOR FURTHER INFORMATION**

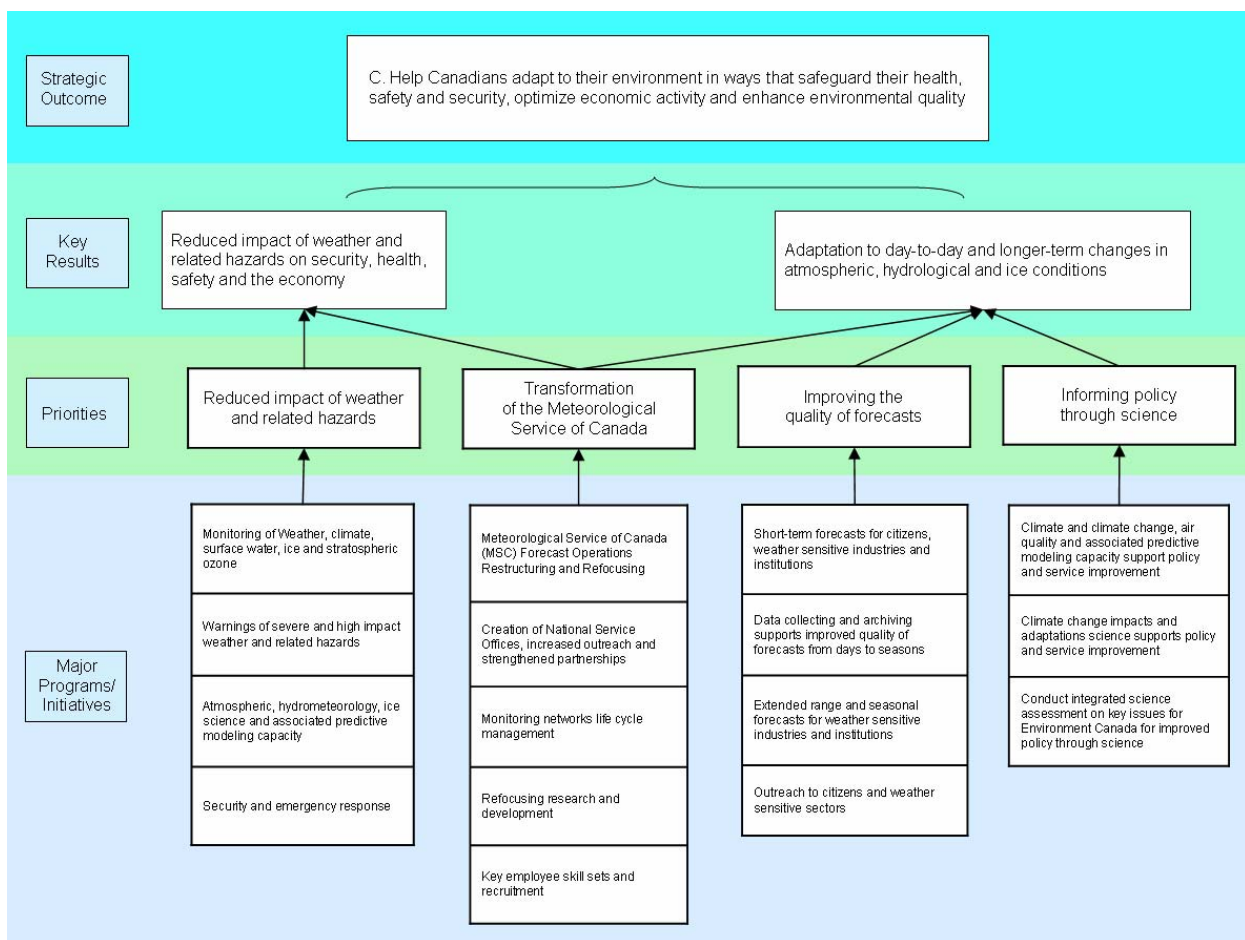
Ecosystem Initiatives	<a href="http://www.ec.gc.ca/ecosyst/backgrounder.html">http://www.ec.gc.ca/ecosyst/backgrounder.html</a>
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## 2.3 Helping Canadians Adapt to Their Environment

Canadians are affected by environmental conditions on many time and space scales – from minutes to centuries and from cities to continents. We are affected by weather and environmental conditions such as tornados, winter storms, floods, droughts, smog, variable lake levels, sea ice conditions and extremes in temperature and precipitation. These conditions can affect our health and safety, our businesses, the economy, and the environment.

The objective of the Weather and Environmental Predictions Business Line is to help Canadians adapt to their environment in ways which safeguard their health and safety, optimize economic activity and enhance environmental quality. The key results sought are:

- Reduced impact of weather and related hazards on health, safety and the economy; and
- Adaptation to day-to-day and longer-term changes in atmospheric, hydrological and ice conditions.



More specifically, the Weather and Environmental Predictions Business Line:

- Monitors the state of the atmosphere (weather, climate, air quality and ultraviolet radiation), hydrosphere (water) and cryosphere (ice and snow);
- Provides information on the past, present and future states of the physical environment;
- Issues warnings of severe weather and environmental hazards;
- Engages in scientific research on the causes of severe weather, the mechanisms which transport chemicals and weather through the atmosphere and around the world, and the impacts of human activity on the atmospheric environment; and
- Provides advice on adaptation to changing weather and climate.

The Meteorological Service of Canada (MSC) – the core service supporting the Weather and Environmental Predictions (WEP) Business Line – operates 24 hours per day, 365 days per year, to forecast weather and environmental conditions from coast to coast to coast. The Service works to reduce risks to Canadians from weather-related and environmental hazards by providing warnings of hazardous and severe weather and by supporting other government departments and agencies in their decision-making. The Service’s work helps weather-sensitive industries (e.g. transportation, energy, fisheries, forestry and tourism) to improve productivity and competitiveness, as well as assisting them to make their operations environmentally sustainable. The MSC provides the federal government with essential scientific information to support the development of effective policies on key issues such as clean air, clean water and water management, and climate change.

In March 2003, the MSC received an investment of \$75 million over five years (and \$5 million per year thereafter) to modernize its operations, and to improve the quality of its forecasts and services to Canadians in all regions. This investment is helping the Service better integrate its research capabilities and strengthen its partnerships with weather-sensitive sectors and industries, other levels of government, and the university community. The investment will also be used to ensure that Canadians have continuing and sustainable access to quality weather and climate information to safeguard their health, safety and security, as well as their social and economic well-being.

The following table illustrates the linkages among the Business Line’s longer-term results and its intermediate and immediate outcomes and activities. Performance reporting is done according to the four priority concerns: reduced impact of high impact weather and related hazards; improving the quality of forecasts; informing policy through science; and transformation of the MSC.

#### FOR FURTHER INFORMATION

Weather Forecasts and Observations	<a href="http://weatheroffice.ec.gc.ca/canada_e.html">http://weatheroffice.ec.gc.ca/canada_e.html</a>
Meteorological Service of Canada	<a href="http://www.msc-smc.ec.gc.ca/contents_e.html">http://www.msc-smc.ec.gc.ca/contents_e.html</a>
MSC Annual Reports	<a href="http://www.msc-smc.ec.gc.ca/information_publications_e.html">http://www.msc-smc.ec.gc.ca/information_publications_e.html</a>
Air Quality Services	<a href="http://www.msc-smc.ec.gc.ca/aq_smog/index_e.cfm">http://www.msc-smc.ec.gc.ca/aq_smog/index_e.cfm</a>
Top 10 Weather Stories	<a href="http://www.msc.ec.gc.ca/media/top10/index_e.html">http://www.msc.ec.gc.ca/media/top10/index_e.html</a>

<b>Weather and Environmental Predictions Business Line</b>							
<b>Strategic Outcome</b>							
Help Canadians adapt to their environment in ways that safeguard their health, safety and security, optimize economic activity and enhance environmental quality							
<b>Main Estimates</b>	<b>Planned Spending</b>	<b>Total Authorities</b>	<b>Actual Spending</b>	<b>Full Time Equivalents</b>			
278.1	282.4	274.3	265.7	1785			
<b>Key Results</b>							
Reduced impact of weather and related hazards on security, health, safety and the economy				Adaptation to day-to-day and longer-term changes in atmospheric, hydrological and ice conditions			
<b>Main Estimates</b>	<b>Planned Spending</b>	<b>Total Authorities</b>	<b>Actual Spending</b>	<b>Main Estimates</b>	<b>Planned Spending</b>	<b>Total Authorities</b>	<b>Actual Spending</b>
200.9	204.2	198.8	193.6	77.3	78.2	75.5	72.1
<b>Priority Areas</b>							
Reduced impact of weather and related hazards		Transformation of the Meteorological Service of Canada (MSC)		Improving the quality of forecasts		Informing policy through science	
<b>Intermediate Outcomes</b>							
Monitoring and reporting on the atmosphere hydrosphere and cryosphere meet client needs and support decision-making. Knowledge of the past, present and future states of the atmosphere, hydrosphere and cryosphere meets client needs and supports decision-making. Environmental forecasts and warnings are produced and disseminated and Canadians take action to protect their safety, security and well-being. Partners use meteorological information to make sound environmental and economic decisions. Environmental information and services empower Canadians to take action on environmental priorities.							
<b>Immediate Outcomes</b> (*based on 2004-2005 RPP Major Initiative tables, expected results)							
Modernization of MSC infrastructure Improved detection of dangerous or changing weather/environmentally related conditions Improved weather forecasts Enhanced access to information on high-impact weather and other hazards Increased accessibility, use and reliability of forecasts Enhanced warning-related science capacity Improved service to weather sensitive sectors (e.g. fisheries, agriculture, forestry, energy, transportation)				Improved coordination of local, regional, national and global climate change science among federal departments and others Enhanced science and modelling related to climate change Increased assessment and understanding of the impacts of climate change and adaptation strategies Strong Canadian participation in international climate change assessment fora			
<b>Key Programs and Major Initiatives</b>							
Monitoring of weather, climate, surface water, ice and stratospheric ozone Warnings of severe and high impact weather and related hazards Atmospheric, hydrometeorology and ice science and associated predictive modelling capacity Security and emergency response				Short-term forecasts for citizens, weather sensitive industries and institutions Data collection and archiving to support improved forecast quality Extended range and seasonal forecasts for weather sensitive industries and institutions Outreach to citizens and weather sensitive sectors Climate and climate change, air quality and associated predictive modelling Climate change impacts and adaptations science Integrated science assessments on key policy issues			
<i>Implementing MSC Transformation:</i> MSC forecast operations restructuring and refocusing Creation of National Service Offices, increased outreach and strengthened partnerships Monitoring networks life cycle management Refocusing R&D Key employee skill sets and recruitment							

\* Totals may differ between and within tables due to rounding.



## Transformation of the Meteorological Service of Canada

### *What is the issue?*

A cornerstone of government is to reduce social and economic vulnerability by providing federal services for the safety and security of Canadians. Moreover, Canadians want those services kept modern and adaptive to changing economic and social needs. Rapid advances in science and technology have caused parts of the Service's monitoring infrastructure to rust out or become obsolete, putting the integrity of observed data at risk. In some cases, the remediation of older monitoring sites to meet present environmental standards is required.

### *What are we doing about it?*

The transformation of the MSC involves important changes to its way of doing business. A cornerstone of these changes is the consolidation of public, marine and severe weather forecasting operations from 14 centres across the country to five larger Storm Prediction Centres located in Vancouver, Edmonton (with a satellite office in Winnipeg), Toronto, Montreal and Halifax. These restructured operations will have improved forecasting tools that increasingly automate more routine tasks and allow more concerted attention to forecasting severe weather. Forecasters in these offices will have more time away from the production desk to maintain their training, analyze performance and key events, and keep in step with and contribute to scientific advances related to forecasting techniques thereby contributing to service improvements. In Edmonton and Montreal, the consolidated operations also include forecasting services for the aviation industry, ensuring that service levels can be maintained at lower cost and that eventual service improvements can be effectively pursued.

#### **Temperature and Precipitation (T&P) Climate Observer Network**

MSC is modernizing the reporting infrastructure for its Temperature and Precipitation (T&P) Climate Observer Network, the largest of its monitoring networks. The T&P Network is comprised of 1,400 stations situated on privately owned land from which volunteers observe maximum and minimum temperatures, as well as rainfall, snowfall, and snow-depth measurements. Traditionally, observations were recorded on a paper form and mailed to MSC. As a result, up to 18 months could pass before data was accessible through the archive. In response to user requests, the MSC is converting the T&P Network to near real-time electronic and as of November 2004 T&P observers have been able to report electronically. By May 2005, over 490 T&P stations were reporting electronically.

Through an internal reallocation of resources, five new National Research laboratories are being established, co-located with the Storm Prediction Centres. Through these small labs, the MSC will increase the R&D and training capacity in the regions, as well as the transfer of technology. MSC regional organizations will be more involved with the existing science networks and universities.

Finally, new National Service Offices will be created to focus on key stakeholders such as the marine community and media organizations, and on weather-sensitive industries such as forestry, transportation and agriculture.

The five major initiatives/program areas that support this transformation are:

- MSC forecast operations restructuring and refocusing
- Creation of National Service Offices, increased outreach and strengthened partnerships
- Monitoring networks life cycle management
- Refocusing R&D
- Key employee skill sets and recruitment

### ***Are we succeeding?***

With the completion of the \$75 million investment in 2008, Canadians will see improvements in the accuracy and timeliness of day-to-day forecasts, longer-term forecasting and in the prediction of extreme weather events. The transformation and on-going investment in the MSC infrastructure (\$5 million annually) will ensure that Canadians have continuing and sustainable access to quality weather and climate information to safeguard their health, safety and security, as well as their social and economic well being.

Consolidation of facilities has freed up resources and allowed for the Service to concentrate more on outreach.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<b>Major Program/Initiative:</b> Meteorological Service of Canada (MSC) Forecast Operations Restructuring and Refocusing
<p><b>Expected Results:</b></p> <p>5 new Storm Prediction Centres and the satellite office in Winnipeg established.</p> <p>Improved warnings and forecasts of high impact events through improved training to professional meteorologists, operational tools, performance management and automation.</p>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>5 new Storm Prediction Centres and the satellite office in Winnipeg established</i></b></p> <ul style="list-style-type: none"> <li>- Five new Storm Prediction Centres were established, along with a satellite office in Winnipeg.</li> <li>- Aviation operations were consolidated in the Canadian Meteorological Aviation Centres East and West (Montreal and Edmonton).</li> </ul>
<p><b><i>Improved warnings and forecasts of high impact events through improved training to professional meteorologists, operational tools, performance management and automation</i></b></p> <ul style="list-style-type: none"> <li>- The performance measurement group is developing tools to identify gaps to better identify training needs and improve operational tools.</li> <li>- A production tool (called SCRIBE) was implemented in all Storm Prediction Centres across the country. This tool allows the forecaster to focus efforts on the high impact weather situation.</li> </ul>
<b>Major Program/Initiative:</b> Creation of National Service Offices, Increased Outreach and Strengthened Partnerships
<p><b>Expected Results:</b></p> <p>Improved services for and strengthened partnerships with key stakeholders and weather-sensitive clients by establishing new service delivery structures.</p> <p>Three National Services Offices and one National Services Unit are created.</p>

Increased use and effectiveness of atmospheric data and services by partners and clients by establishing a new outreach network across Canada.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Establish new service delivery structures to enable improved services for and strengthened partnerships with key stakeholders and weather-sensitive clients; Create three National Services Offices and one National Services Unit</i></b></p> <ul style="list-style-type: none"> <li>- Three national service offices (NSOs) were established in 2004-2005 in Gander, Newfoundland (marine services), Rimouski, Quebec (media services); Kelowna, British Columbia (road weather and weather-sensitive sector services). A fourth NSO in Regina, Saskatchewan (agricultural services) will be established by 2006.</li> <li>- Engagement with sector clients and partners has commenced and language training is in progress to establish bilingual capacity in all offices.</li> </ul>
<p><b><i>Establish a new outreach network across Canada to increase use and effectiveness of atmospheric data and services by partners and clients</i></b></p> <ul style="list-style-type: none"> <li>- New outreach capacity was established at the NSOs by dedicating additional resources (outreach officers) to partnerships with, and services for, the MSC's key stakeholders and clients (e.g. media, emergency responders, private meteorological service providers and weather sensitive industries).</li> <li>- Warning Preparedness Meteorologists (WPMs) were established in all regions to focus on high impact weather and emergency preparedness.</li> </ul>

<b>Major Program/Initiative:</b> Monitoring Networks Life Cycle Management
<p><b>Expected Results:</b></p> <p>Enhanced quality assurance of and access to key atmospheric, water, ice and air quality data. Improved forecasts by providing new and improved measurement of upper atmosphere conditions.</p>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Enhance quality assurance of and access to key atmospheric, water, ice and air quality data</i></b></p> <ul style="list-style-type: none"> <li>- 41 climate and weather monitoring sites were modernized and this work will continue over the next three years.</li> <li>- Life cycle management practices were established for monitoring networks across the country to ensure the needs for this data are met in a sustainable way.</li> <li>- The last Doppler radar was installed thereby completing a network of 31 Doppler radars that covers 95% of the population of Canada. This technology increases forecasters' ability to detect and warn Canadians of impending severe weather events, particularly as it relates to summer thunderstorms and tornados, and flash flood events.</li> </ul>
<p><b><i>Provide new and improved measurement of the upper atmosphere conditions to enable improved forecasts</i></b></p> <ul style="list-style-type: none"> <li>- The Canadian AMDAR (aircraft borne weather sensing system) data were evaluated and are now part of the operational system that is used to better initialize numerical weather prediction models.</li> <li>- Upper-air data from AMDAR systems on Canadian aircraft are now being included operationally into numerical weather predictions models and shared with the international community. Problems with the development of the system to be deployed have delayed expansion of the AMDAR network to include First Air aircraft until 2005-2006.</li> </ul>

<b>Major Program/Initiative:</b> Refocusing Research and Development (R&D)
<p><b>Expected Results:</b></p> <p>5 new National R&amp;D laboratories are created in the Regions to support Storm Prediction Centres (SPC). The broader research community is engaged in the Meteorological Service of Canada's research agenda.</p>



<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>5 new National R&amp;D laboratories created in Regions to support Storm Prediction Centres (SPC)</i></b></p> <ul style="list-style-type: none"> <li>- The Halifax national R&amp;D laboratory is functional; the Montreal lab is now fully staffed and its scientific program has started. The other laboratories will be completed in 2005-2006. Science networks relevant to the focus of each lab are being established.</li> </ul>
<p><b><i>Engage the broader research community</i></b></p> <ul style="list-style-type: none"> <li>- Science networks relevant to the focus of each lab are being developed and will be established by 2005-2006. Collaborators to-date have included CFCAS (Canadian Foundation for Climate and Atmospheric Sciences), McGill University, York University, Dalhousie University and research networks in Vancouver, Edmonton, Montreal and Halifax.</li> </ul>
<b>Major Program/Initiative: Key Employee Skill Sets and Recruitment</b>
<p><b>Expected Results:</b></p> <p>Meteorological Service of Canada employees are mobilized to realize the vision of the Weather and Environmental Predictions (WEP) Business Line and accomplish its mission.</p> <p>A productive workforce and new capacity to meet current and future needs.</p> <p>Work environment is safe and healthy and meets the needs of Meteorological Service of Canada staff.</p> <p>A sustainable workforce.</p>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Provide leadership and guidance to ensure that MSC employees are mobilized to realize the WEP vision and accomplish its mission.</i></b></p> <ul style="list-style-type: none"> <li>- The second annual MSC transition employee survey was administered. Managers met with MSC staff to discuss its results.</li> </ul>
<p><b><i>Develop and maintain a productive workforce and new capacity to meet current and future needs.</i></b></p> <ul style="list-style-type: none"> <li>- Training is an ongoing activity. All Storm Prediction Centres are striving to implement the norm of meteorologists devoting 20% of their time to non-operational activities in order to improve and restore skill sets. Personal training plans have been developed in most cases. Replacement solutions were found for surplus employees to allow them to continue employment with the Department.</li> </ul>
<p><b><i>Ensure that the work environment is safe and healthy and meets the needs of MSC staff.</i></b></p> <ul style="list-style-type: none"> <li>- Plans to ensure the health and safety of the workplace, including developing Task Hazard Analysis and Safe Work Procedures for various positions, and staffing MSC OHS officers were completed.</li> <li>- All tools and materials are made available in both official languages.</li> </ul>
<p><b><i>Ensure a sustainable workforce</i></b></p> <ul style="list-style-type: none"> <li>- A Human Resources Strategy for the MSC Transition was implemented. The recruitment of new meteorologists with appropriate skills is an ongoing process. The demand for new personnel will be increasing in the next five years as baby boomers retire from the MSC.</li> </ul>

## ***Looking forward***

Now that the foundation for the MSC Transformation has been laid, the focus in the coming years will be to:

- Introduce product and service enhancements and innovation;
- Invigorate the MSC's monitoring capacity; and
- Restore and develop the MSC's key skill sets.

In particular, work has begun on a comprehensive Human Resources plan that will ensure the MSC has the necessary expertise and a sustainable demographic profile to meet all the future challenges we will face related to service needs and advances in science and technology.

The new National Service Offices and outreach officers represent a significant change in the traditional service model. The effectiveness of the governance model, the required personnel competencies and external and internal work relationships will continue to be assessed and refined.

Environment Canada will be conducting an evaluation of the transformation of the MSC in 2008-2009.

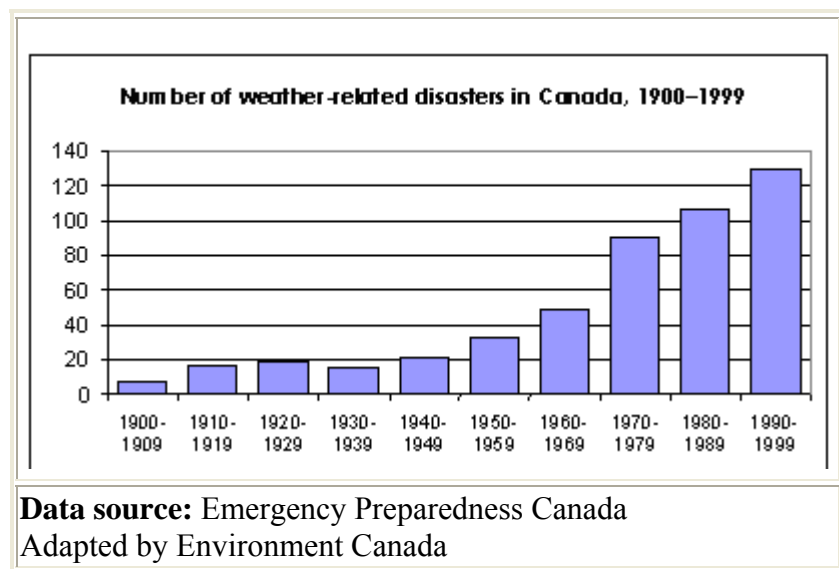
### 2.3.1 Key Result: Reduced Impact of Weather and Related Hazards



#### High Impact Weather

##### *What is the issue?*

The risks to health, safety, property and the economy from naturally occurring hazards are increasing. Economic and property losses due to environmental hazards have risen significantly in recent years. For example, Canada spent \$3 billion in 1998 to repair damage from high impact weather and related hazards and the cost of battling British Columbia's 2004 wildfires was nearly \$500 million. According to the Insurance Bureau of Canada, disaster recovery payments (from insurance companies and taxpayers) doubled every five years throughout the 1980s and 1990s. This trend is expected to continue.



The MSC's mandate for leadership in meteorology means we must monitor our atmosphere, surface water, ice in navigable waters and stratospheric ozone on a 24/7 basis. Data collected on a minute by minute basis helps us to understand the weather or quickly changing severe weather that is nearly upon us, while longer records of data collected over years and decades help us to understand what is 'normal' or what our climate is or should be.

Monitoring approaches range from fully automated ground-based equipment to manual measurements to satellite-based remote sensing to sophisticated Doppler Radar and lightning detection equipment and networks. The MSC manages the purchase, installation, maintenance and updating of more than \$208 million in MSC owned monitoring assets, while also maintaining the complex local, national and international partnerships and agreements that are required to meet the monitoring requirements for Canada.

### ***What are we doing about it?***

In partnership with others, Environment Canada is improving the capacity to anticipate, mitigate, withstand and recover from high-impact events and related hazards by improving lead time, accuracy, utility and satisfaction with warnings. Government, industry and universities have joined efforts to ensure that Canada maintains a high level of expertise in this area. For example, the MSC continues to support the Canadian Foundation for Climate and Atmospheric Sciences (CFCAS) which funds university-based research in climate and atmospheric sciences.

To further the benefits derived from warnings, MSC continues to look at innovative ways to deliver weather warnings and information to Canadians in time for them to take action to protect themselves and their property. Technologies such as cell phones, personal data assistants, the Internet and digital radio offer a variety of opportunities.

Water is a growing priority in Canada and the MSC plays a key role in monitoring and predicting the impacts of weather on Canada's water resources. Through the Water Survey of Canada and in cooperation with provincial partners, the Department helps ensure that information on current and forecast conditions of rain, snow and ice is available so that the impacts of drought and flood hazards may be mitigated.

In January 2005, British Columbia and the Yukon were subjected to a series of high impact weather events. Beginning with a prolonged period of heavy snowfalls and strong winds, the weather then shifted to another extreme pattern, culminating in heavy rains over much of the South Coast. Impacts ranged from flooding, landslides, ice jams and avalanches to traffic tie-ups and accidents. There were a number of weather-related casualties – some fatal – and much of the public was faced with considerable inconvenience and risk. The economic cost of the event was significant. MSC warnings, forecast and data, besides being used by Provincial and national media, were critical to the operations of Emergency response agencies in Municipalities throughout the affected area and to the Provincial Emergency Program. The responsiveness of MSC staff and the accuracy of the forecasts were well received by media and Emergency Measures Organizations.

The Department has identified four major initiatives/program areas that support this priority:

- Monitoring of weather, climate, surface water, ice and stratospheric ozone to increase the likelihood of early detection of severe weather and its precursors
- Warnings of severe and high impact weather and related hazards
- Atmospheric, hydrometeorology and ice science and associated predictive modelling capacity
- Security and emergency response

## ***Are we succeeding?***

The MSC has responded to a number of serious weather events over the last year, while maintaining a focus on streamlining its services (e.g. recent consolidation of forecast prediction into five Storm Prediction Centres) and improving outreach.

By automating routine forecast production and providing enhanced professional development for staff, our meteorologists are now able to devote greater attention to diagnosing, forecasting and providing advanced warning of high-impact weather.

Environment Canada's five new National Labs will be focused on increasing its warning-related science efforts with a view of transferring new knowledge to operational forecasting.

The MSC will continue to work with media, emergency responders and other partners to inform and educate Canadians about how best to prepare and react in order to reduce the number of injuries, casualties and damage from natural disasters.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<b>Major Program/Initiative:</b> Monitoring of Weather, Climate, Surface Water, Ice and Stratospheric Ozone
<p><b>Expected Results:</b></p> <p>Monitor the weather, climate, surface water, ice and stratospheric ozone</p> <p>Manage national water survey monitoring relationships and activities</p> <p>Manage ice monitoring relationship and activities with Department of Fisheries and Oceans – Coast Guard</p> <p>Ensure optimization, contribution and continuing access to international monitoring data through initiatives such as the Global Earth Observation (GEO) initiative</p> <p>Better detect dangerous or changing weather/environmentally-related conditions by continuing modernization of monitoring equipment</p> <p>Continue to demonstrate leadership in environmental stewardship by cleaning up contaminated federal monitoring sites</p>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Monitor the weather, climate, surface water, ice and stratospheric ozone</i></b></p> <ul style="list-style-type: none"> <li>- Continued to deliver the services to collect, quality control and archive data for all Environment Canada, Meteorological and stakeholder networks.</li> </ul>
<p><b><i>Manage national water survey monitoring relationships and activities</i></b></p> <ul style="list-style-type: none"> <li>- Completed the successful negotiation of the Federal/Provincial/Territorial hydrometric cost-sharing agreement national template. Seven jurisdictions are ready to go forward with signing. The agreements cover ongoing activities to manage water level and river flow data collection and dissemination with these partners.</li> </ul>
<p><b><i>Manage ice monitoring relationship and activities with DFO – Coast Guard</i></b></p> <ul style="list-style-type: none"> <li>- Agreements with Natural Resources Canada (NRCan), Radarsat International, and the European Space Agency for continuity of access to satellite radar for ice monitoring were developed and/or maintained. An interdepartmental arrangement with Transport Canada, Canadian Coast Guard and Environment Canada was established for continuity of airborne ice monitoring.</li> </ul>
<p><b><i>Ensure optimization, contribution and continuing access to international monitoring data through Global Earth Observation (GEO) initiative</i></b></p> <ul style="list-style-type: none"> <li>- Canada participated in the third Earth Observation Summit held in Brussels, Belgium, in February 2005.</li> </ul>

***Continue modernization of monitoring equipment to better detect dangerous or changing weather/environmentally-related conditions***

- Implementation of the Doppler Radar Network was completed. This network consists of 31 Doppler radars that covers 95% of the population of Canada. This technology increases forecasters' ability to detect and warn Canadians of impending severe weather events, particularly as it relates to summer thunderstorms and tornados, and flash flood events.
- A subsequent agreement between Environment Canada and the Canadian Coast Guard (CCG) to amalgamate the ice reconnaissance program and the oil pollution patrol program was developed. The latter is a Transport Canada (TC) program operated by the CCG. As a result, one single TC aircraft is used for both programs, and Environment Canada aircraft is being decommissioned. Since TC is installing a radar on its aircraft, there is no need for Environment Canada to undertake this action.

***Continue to demonstrate leadership in environmental stewardship by cleaning up contaminated federal monitoring sites***

- This is delayed due to Northern Land Claim issues.

**Major Program/Initiative: Warnings of Severe and High Impact Weather and Related Hazards**

**Expected Results:**

Seamless, continued production of warnings by forecasters from the newly consolidated Storm Prediction Centres  
Warning improvements through scientific knowledge transfer to operations, more training and professional development for forecasters and automation of routine production  
Increased accessibility, use and reliability of warnings delivered through Environment Canada service channels (web, phone and Weatheradio) and partnered channels (media, radio and TV)

**Planned Activities and 2004-2005 Performance Highlights**

***Seamless, continued production of warnings by forecasters from the newly consolidated Storm Prediction Centres***

- Continued to produce warnings (public, marine, aviation, ice) of high-impact and related hazards. A review of the warning program has been done. Warning names (types) are being consolidated and implemented in all production software and will be the same across the country.
- Procedures are in place in all Storm Prediction Centres to ensure a high degree of coordination across all centres.
- The Department implemented a performance measurement system to track accuracy and lead time for warnings.

***Warning improvements through scientific knowledge transfer to operations, more training and professional development for forecasters and automation of routine production***

- Continued to automate routine forecast production. All Storm Prediction Centres are striving to implement the norm of operational forecasters devoting 20% of their time to non-operational activities in order to improve and restore skill sets.
- See also section on transformation activities.

***Increased accessibility, use and reliability of warnings delivered through Environment Canada service channels (web, phone and Weatheradio) and partnered channels (media, radio and TV)***

- Formats for standardized marine warnings, to improve automatic dissemination, have been established and are currently being implemented (will be complete early 2006).
- A warning protocol has been developed with the Canadian Association of Broadcasters and is available to all media. The Department is waiting for its implementation by the Association's members.
- Conversion of the Weatheradio network to an all Hazard Warning network is in progress. Implementation of all of changes will be completed by October 2005.
- With partners, Environment Canada advanced the implementation of national public alerting systems for weather warnings (will be complete by 2005-2006). Collaborative work continues with Industry Canada and

PSEPC and the Provinces on the development and implementation of a Canada wide public alerting system.

**Major Program/Initiative:** Atmospheric, Hydrometeorology and Ice Science and Associated Predictive Modelling Capacity

**Expected Results:**

Forecast improvements through advancements in numerical weather prediction  
Focus and grow warning related science efforts through new national labs  
Better understanding of the nature and characteristics of high-impact vulnerabilities and adaptations by conducting scientific analyses, with partners as appropriate  
Improved hydro-meteorological prediction and modelling capacity by work with others

**Planned Activities and 2004-2005 Performance Highlights**

***Forecast improvements through advancements in numerical weather prediction***

- Improvements were implemented to numerical weather prediction models. They resulted in a significant reduction of errors. Canadian models are now in the leading pack of global weather models.

***Focus and grow warning related science efforts through new national labs***

- A number of R&D activities related to weather warnings have been initiated through the national network of laboratories. Examples include:

- Vancouver Laboratory: Mesoscale mountain meteorology;
- Edmonton Laboratory: Convective weather (evapotranspiration, dry line near Rocky Mountains), Surface winds (Alberta foothills, Arctic complex terrain), Arctic blowing snow, blizzards, and polar lows;
- Toronto Laboratory: Severe weather detection;
- Montreal Laboratory: Quantity of precipitation forecast, Mesoscale modelling of severe weather, Ensemble prediction system; and
- Halifax Laboratory: Hurricane prediction, Atmospheric-ocean modelling, Fog prediction.

***Conduct scientific analyses, with partners as appropriate, of the nature and characteristics of high-impact vulnerabilities and adaptations***

- Collaborated with the provinces, municipalities, media and others to improve emergency readiness and planning according to provincial legislation in Ontario and Québec.  
- Reported on the socio-economic evaluation of frequency, extremes and trends of atmospheric, hydrological change on the integrity of the built environment.  
- Specific examples of analyses provided:

- Providing Ontario Ministry of the Environment with both ozone and particulate matter data for the prediction program for most regions of Southern Ontario. Particulate matter still in “pilot mode.”
- Three air quality stations were set up near border locations (Washington state / British Columbia) that have had provincial concern related to cross-border pollution events.

***Work with others to develop improved hydro-meteorological prediction and modelling capacity***

- High resolution, integrated modelling of the St. Lawrence ecosystem contributed significantly to the International Joint Commission (IJC) study on Lake Ontario/St. Lawrence River.  
- With the National Water Research Institute (NWRI), developed an interdepartmental network for water hazards research.

**Major Program/Initiative:** Security and Emergency Response

**Expected Results:**

Increased access to information, particularly by media and first responders, on high-impact weather and other hazards to ensure that Canadians are aware of their vulnerability, understand our products and services and are

<p>prepared for hazardous events.</p> <p>Completion of Canadian Meteorological Centre (CMC) fortification to ensure availability and reliability during high impact weather and security events.</p> <p>Support to national security and national emergency events preparedness and response.</p>
<p><b>Planned Activities and 2004-2005 Performance Highlights</b></p>
<p><b><i>Increased access to information, particularly by media and first responders, on high-impact weather and other hazards to ensure that Canadians are aware of their vulnerability, understand our products and services and are prepared for hazardous events.</i></b></p> <ul style="list-style-type: none"> <li>- Expanded the Warning Preparedness Meteorologist (WPM) Program by increasing the number of staff to liaise with and support the media, emergency responders, and other key clients.</li> <li>- Made improvements to media services through a dedicated media web site based on client feedback and needs.</li> </ul>
<p><b><i>Completion of CMC fortification to ensure availability and reliability during high impact weather and security events</i></b></p> <ul style="list-style-type: none"> <li>- The underground computer room in the CMC was consolidated and is now fully operational.</li> </ul>
<p><b><i>Support to national security and national emergency events preparedness and response</i></b></p> <ul style="list-style-type: none"> <li>- Contributed to federal initiatives to strengthen Canada's ability to respond to security threats of a chemical, radiological, biological or nuclear nature. Modified models to help the Canadian Food Inspection Agency (CFIA) prepare against and manage outbreaks of highlight contagious animal diseases. With federal partners, began planning for a tsunami warning system for Atlantic Canada.</li> </ul>

## Looking forward

The importance of weather and environmental services is increasing as Canadians become more vulnerable to changing weather and environmental conditions. The challenge to Environment Canada is to improve the timeframes within which environmental hazards and issues such as climate change and environmental health are addressed to allow Canadians and government the time to anticipate, prevent, withstand or adapt to such conditions more effectively.

Overall, the Meteorological Service of Canada must continue on its path of continuous improvement through focused renewal and reallocation to this priority. It must continue to leverage its contributions with those of key partners and must seek innovative ways of delivering these vital warning services to Canadians.

## 2.3.2 Key Result: Adaptation



### Improving the Quality of Forecasts

#### *What is the issue?*

Climate variability, air quality and high-profile weather events impact Canadians and these issues are of interest to many sectors, including agriculture, shipping, construction, media, health, environmental conservation, forestry and recreation. These sectors seek longer lead times, increased accuracy of warnings, increased predictive capacities for long term climate and environmental conditions, and improved ability to predict the presence and levels of threats in air and water.

Canadians, weather-sensitive industries and institutions depend on the availability of information from the Meteorological Service of Canada to make daily, weekly, monthly and seasonal decisions related to their plans, their quality of life, their health and their economic welfare. Canadians have come to expect and rely upon the weather services provided by Environment Canada; over 90 percent of Canadians seek weather information at least once a day. The Meteorological Service of Canada leverages its very large investment in monitoring and predictive capacity targeted at safety and security considerations to provide the required information to answer to this immense need.

Information users are becoming more sophisticated and are demanding full access to raw data, to live data and to extensive archives in order to customize the use of this information or to make some of the assessments of future states themselves or with private sector meteorological service providers. Computer and telecommunication technological capability changes have enabled this trend.

### ***What are we doing about it?***

The MSC is committed to providing quality citizen- and client-centered weather forecasting services. Service and information improvements are being realized through increased training and

The MSC's weather website continues to grow in popularity. The average number of visits per day increased from 325 000 in 2003-2004, to 430 000 in 2004-2005. This site receives 40 percent of total visits of all federal government web sites.

professional development for our staff, improvement of internal forecasting processes and tools, improvement of information access and service delivery channels and key partnerships, and targeted attention to key weather sensitive sector information and service needs. The quality of information collected by the MSC is critical also to specialized clients and the research community and the Service is committed to improving access to all of its real-time and archived data holdings.

Through its internal reallocation exercise (see Section 2.3.1) the MSC has increased its investment in outreach – the act of seeking out citizens, weather-sensitive sectors, schools, media, private meteorological service providers and other partners in order to catalyze and facilitate improved use of atmospheric, hydrometeorological, air quality, and ice data and forecast information. This reallocation will leverage the Department's investments in outreach by placing 28 MSC outreach officers throughout the country to act as a conduit for consultation among the Department, the MSC and key clients and partners. This investment in education and outreach will help ensure that MSC products are interpreted properly and used appropriately.

Through improvements to our monitoring networks (see Section 2.3.2) the Department has also improved its support to national security and national emergency preparedness and response efforts, including in the areas of nuclear or volcanic emergency response, and flood warnings.

The four major initiatives/program areas that support this priority are:

- Short-term forecasts for citizens, weather sensitive industries and institutions
- Data collecting and archiving supports improved quality of forecasts
- Extended range and seasonal forecasts for weather sensitive industries and institutions



- Outreach to citizens and weather sensitive industries

### ***Are we succeeding?***

The Meteorological Service of Canada's weather web site averages approximately 430,000 visits per day with major peaks on significant weather days (e.g. when hurricanes Juan and Isabel approached Canada). Each year the MSC provides approximately 500,000 public weather forecasts, 400,000 aviation forecasts, 200,000 marine weather forecasts and issues approximately 14,000 severe weather warnings and 3,500 ice hazard warnings.

Environment Canada continually refines its monitoring, production and service delivery infrastructure as technology and science advance.

Environment Canada has improved the accuracy of, and access to, short-term, extended range and seasonal forecasts for citizens, weather-sensitive industries and institutions. The department has also improved access to its basic meteorological, hydrometric and climatological data by the public, private and academic sectors.

The department is making improvements to its key services for highly weather-sensitive industries including fisheries, agriculture, forestry, energy and transportation. With respect to transportation:

- *Road transport* – Working with Transport Canada, the provinces, and the private sector significant progress was achieved in 2004-2005 on the deployment of a national network of Road Weather Information Systems (RWIS). RWIS are automatic weather reporting stations with special road sensors embedded into and installed along the roadway. Agreements between Transport Canada and three provinces (Nova Scotia, New Brunswick, and Alberta) governing the purchase and installation of a number of RWIS have been reached. The MSC will provide data quality control and integration services, the basis for the production of specialized road forecasts that are a key element in pro-active winter road maintenance decisions – providing safer roads during winter events while using less environmentally-damaging road treatment chemicals.
- *Aviation* – In January 2005, the minimum vertical separation required between aircrafts flying at altitudes between 29,000 ft and 41,000 ft was reduced from 2,000 ft to 1,000 ft over southern Canadian domestic airspace, the United States and Mexico. This change has effectively increased airspace capacity by nearly 50 percent giving NAV CANADA air traffic control additional flexibility, which translates into fuel savings and other economies

#### **Forecasters Support Military Exercises in the North**

In August 2004, 600 Canadian Forces personnel, aircraft, naval vessels, and an unmanned air vehicle (UAV) relied on meteorological support from 18 MSC forecasters to carry out military exercises in the Arctic. The goal of the exercise was to strengthen Canada's presence in the Arctic and explore its capability to operate in the region.

The MSC routinely supports re-supply operations and surveillance patrols in the North; however, these military exercises were unique in their length, scope, and needs. For example, the testing of the UAV required detailed graphical forecasts of surface pressure systems, clouds, turbulence, icing, wind, temperature, and humidity to an altitude of 15,000 metres.

The MSC anticipates more opportunities to provide weather services in the Arctic as the warming climate opens the region to greater marine traffic, and UAVs extend surveillance and reconnaissance operations into even more remote areas.

for domestic and international air carriers. The MSC's two Canadian Meteorological Aviation Centres contributed to making this change possible by introducing new turbulence forecast products. This service is an excellent illustration of Environment Canada's forecasting services being used to enhance public safety while contributing to economic efficiency.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<p><b>Major Program/Initiative:</b> Short-term Forecasts for Citizens, Weather Sensitive Industries and Institutions</p>
<p><b>Expected Results:</b>  Forecast improvements through training of forecasters and improvement of tools and work environment.  Increased accessibility, use and reliability of forecasts delivered through Environment Canada service channels (web, phone and Weatheradio) and partnered channels (media, radio and TV).  Improvements to key services for highly weather-sensitive economic sectors such as Fisheries, Agriculture, Forestry, Energy and Transportation.  Increased capacity and role of the private sector in serving meteorological and hydrological needs in Canada.  Expand attribution in daily media broadcasts to Environment Canada for weather information.</p>
<p style="text-align: center;"><b>Planned Activities and 2004-2005 Performance Highlights</b></p>
<p><b><i>Forecast improvements through training of forecasters and improvement of tools and work environment</i></b>  - National recruiting is an ongoing process. The 2004-2005 recruitment saw an increase in the number and quality of candidates.  - The marine weather bulletin tool (marine SCRIBE) has been delayed and will now to be delivered in 2005-2006.</p>
<p><b><i>Increased accessibility, use and reliability of forecasts delivered through Environment Canada service channels (web, phone and Weatheradio) and partnered channels (media, radio and TV)</i></b>  - Increased the reliability, speed of access and accuracy of information on the MSC weather web site through improved infrastructure and site maintenance. The visits/sessions increased by 35% from 2003-2004 to 2004-2005, to over 155 million visits/sessions.  - Developed and began making use of a public forecast performance measurement system.  - The 511 Consortium was formed. Members include all Provinces and the Yukon Territory. An application filed with the CRTC seeks assignment of the 511 telephone number for use as a Canada wide Weather and Traveller information service.</p>
<p><b><i>Improvements to key services for highly weather-sensitive industries such as, fisheries, Agriculture, Forestry, Energy and Transportation</i></b>  - Contributed to the development and operation of a road weather information system in partnership with other federal agencies, the provinces and the private sector.</p>
<p><b><i>Act as a catalyst and strategic partner to increase the capacity and role of the private sector in serving meteorological and hydrological needs in Canada</i></b>  - Implemented better cost-recovery practices to encourage the growth of the private sector and increase the use of weather information.</p>
<p><b><i>Expand attribution in daily media broadcasts to Environment Canada for weather information</i></b>  - Work is ongoing to ensure that Environment Canada's products are properly attributed.</p>

<b>Major Program/Initiative:</b> Data collecting and archiving supports improved quality of forecasts from days to seasons
<b>Expected Results:</b> Improved access to basic meteorological, hydrometric and climatological data by the public, private and academic sectors. Enhanced data sets to effectively document and understand climatic processes.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Improved access to basic meteorological, hydrometric and climatological data by the public, private and academic sectors</i></b> - Provided interactive, web-based analysis of historical mean and extreme temperature and precipitation data for user-defined periods and areas of Canada. In 2004-2005, approximately 1.7 million pages were viewed per month, a 210% increase over 2003-2004. - Developed on-line tools for use by the private and academic sectors to locate and download large volumes of selected meteorological, climatological and hydrometric data.
<b><i>Enhance data sets to effectively document and understand climatic processes</i></b> - Upgraded selected existing GSN (Global Climate Observing System Surface Network) stations to provide temperature and total precipitation data sets along with the measurement of wind speed and direction, humidity, rate-of-rainfall, snow cover and radiation.

<b>Major Program/Initiative:</b> Extended Range and Seasonal Forecasts for Weather Sensitive Industries and Institutions
<b>Expected Results:</b> Improved extended range and seasonal forecasts. More effective use of longer-range environmental prediction information leads to sustainable development decision-making.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Improve extended range and seasonal forecasts</i></b> - The seasonal (90-day) forecasts are now issued on a monthly basis both in deterministic and probabilistic formats. These forecasts are made available on the web. Continued to investigate the improvement of seasonal and extended range forecasts.
<b><i>Facilitate sustainable development decision-making through the more effective use of longer-range environmental prediction information</i></b> - Developed a model to forecast three months in advance the date of the open water route from Davis Strait into Churchill, MB. Validation with ice records for 1972-2004 shows a marked improvement over current methods.

<b>Major Program/Initiative:</b> Outreach to Citizens and Weather Sensitive Sectors
<b>Expected Results:</b> Expanded outreach program to catalyze increased effectiveness and use of Meteorological Service of Canada data, forecasts and services.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Implement an expanded outreach program to catalyze increased effectiveness and use of MSC data, forecasts and services</i></b> - Implemented an expanded outreach program to better support the effectiveness and use of MSC data, forecasts and services; this involved hiring and training 28 new outreach officers. - Launched in the summer of 2003, the on-line archive of weather data and climate information saw record traffic in January 2005 (2.2 million web pages viewed). New information on weather extremes and availability of data

in new formats contributed to the increased traffic.

## FOR FURTHER INFORMATION

Meteorological Service of Canada	<a href="http://www.msc-smc.ec.gc.ca/contents_e.html">http://www.msc-smc.ec.gc.ca/contents_e.html</a>
National Climate Data and Information Archive	<a href="http://climate.weatheroffice.ec.gc.ca/Welcome_e.html">http://climate.weatheroffice.ec.gc.ca/Welcome_e.html</a>



## Informing Policy Through Science

### *What is the issue?*

Climate change is showing real signs of effect on our lives, our environment and our economy. It is only through assessment of climate change scenarios, at the global, national and local levels that adaptation actions can be initiated by individuals, governments and industries.

In general, scientific assessment of the status of environmental stressors and progress in mitigating the impact of these on our society is a critical function that enables decisions related to current and future directions and actions by governments and others.

### *What are we doing about it?*

The MSC provides scientific leadership and support for domestic and international policies and protocols on global environmental issues. In doing so, it draws on its over 300 scientists and researchers, \$23 million in scientific laboratory assets and the \$13 million/year supercomputing facility in the Canadian Meteorological Centre (CMC) in Montréal. The key outputs of these activities are improved global and local climate models that assess scenarios for future air quality and climate conditions. The results of these efforts inform government policies related to adaptation and/or mitigation of the environmental stressors that contribute to or accelerate climate and air quality changes. This science-policy partnership is key to ensuring Canada's health in this century and beyond.

#### **Understanding the Impacts of Changing Ice Conditions in Canada's Northwest Passage**

MSC researchers are in the middle of a three year project investigating the impacts of changing sea ice conditions on transportation related activities in the Northwest Passage. In 2004-2005, the project team began a series of engagements with major sea ice users with the goal of identifying the type and range of sea ice transportation. In March, sea ice users from the hamlet of Resolute, Nunavut worked with visiting MSC project team members to baseline their sea ice travel use. The community expressed its concern that a reduction of sea ice in the Northwest Passage would have serious implications for its ability to hunt and gather local food. In the remaining two years, the project will re-engage users to assess potential impacts of sea ice change, and will work with users to identify adaptation strategies.

For example, with the help of climate change models Canadians and their institutions can begin to adapt to future climate scenarios so that we construct the buildings, bridges, roads and economy of the future in full consideration of our changed climate and its associated weather, water, ice, and air quality conditions.

The three major initiatives/program areas that support this priority are:

- Climate and climate change, air quality and associated predictive modelling
- Climate change impacts and adaptations science supports policy and service improvement
- Integrated science assessments on key policy issues

***Are we succeeding?***

As the federal lead on climate change science, the MSC undertakes and supports a broad range of scientific research in climate modelling and impacts, adaptation research and climate change assessments. The Service also participates in initiatives of the Canadian Centre for Climate Modelling and

Analysis, provides support for the Biosphere Implications of CO<sub>2</sub> Policy (BIOCAP), and participates in the work of the Inter-governmental Panel on Climate Change Canada. Through these efforts, Canada has developed a significant capacity and international reputation in climate change science.

**Impacts of Sea-Level Rise and Climate Change**

The MSC is a key partner in a multi-disciplinary Climate Change Impacts and Adaptation research project – Impacts of Sea Level Rise and Climate Change on the Coastal Zone of South-eastern New Brunswick. The region’s vulnerability to high tides, storm surges, and high winds, the latter two of which are expected to increase in frequency as a result of the warming effect of climate change, are increasing the risks of erosion and flooding on the Atlantic coast. The impacts on human activities and natural habitat are an important focus of the \$2.5-million project, which involves scientists from over a dozen federal departments, provincial ministries, universities, municipalities, and planning commissions.

GIS maps depicting storm surge flood risk regions and study results will be made available to agencies and the public when the project’s final report is complete in 2006. The results of the study will be helpful in developing a coastal-zone action plan to limit development and manage wildlife and plant habitat within the coastal zone.

In partnership with the National Water Research Institute, MSC brought together experts from academia, industry, and various levels of government to identify and present our state of knowledge about water availability. The document, *Threats to Water Availability in Canada*, serves water science decision-makers, resource managers, and the research community as an important reference for developing future research directions and priorities, and for sound management policies and practices related to both water availability and water quantity issues.

Key accomplishments in 2004-2005 in each of the major program areas are described below.

<b>Major Program/Initiative:</b> Climate and Climate Change, Air Quality and Associated Predictive Modelling
<b>Expected Results:</b> A coordinated approach to climate change science among federal government departments, universities and others Improved local, regional, national and global science and modelling of climate and climate change as a key contribution to sustainable development in Canada and internationally Air quality science and prediction improvement to support decisions
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Set out and implement coordinated approach to climate research among federal government departments, universities and others</i></b> - Developed a Federal Climate Change Science Plan as a coordinated response to climate change science by federal government departments. The Plan provided basis for input on budget planning and the National

Climate Change Plan.
<p><b><i>Improved national and global science and modelling of climate and climate change as a key contribution to sustainable development in Canada and internationally</i></b></p> <ul style="list-style-type: none"> <li>- Improvements to CGCM3 (Canadian Global Climate Model) are ongoing – increased resolution, better computational efficiency and biogeochemical cycle components are being developed. The preliminary version of CGCM4 is being tested; there are improvements to radiative transfer, aerosols, radiatively active gases, SST and sea ice. Work is continuing on identification and reduction of model biases.</li> <li>- The International Society of Biometeorology conference on biometeorology and adaptation under the Canada/China MOU is being held in September 2005.</li> </ul>
<p><b><i>Improved regional and local science and modelling of climate and climate change as a key contribution to sustainable development in Canada and with specific communities</i></b></p> <ul style="list-style-type: none"> <li>- Improved regional and local science and modelling of climate and climate change (e.g. provided Canada-wide climate change projections at 45 km resolution and established a scientific group to provide a focus on regional climate modelling and data analysis).</li> </ul>
<p><b><i>Air quality science and prediction improvements for decisions</i></b></p> <ul style="list-style-type: none"> <li>- In July 2004, the installation of the CRUISER (Canadian Regional and Urban Investigation System for Environmental Research) mobile lab was completed and used in health exposure studies with Health Canada. CRUISER worked in tandem with another mobile lab known as RASCAL (Rapid Acquisition SCanning Aerosol Lidar) to characterize air quality as part of the Canada-US Border Air Quality Strategy. Some of the data will also be used in source receptor studies.</li> </ul>

<b>Major Program/Initiative:</b> Climate Change Impacts and Adaptation Science Supports Policy and Service Improvement
<b>Expected Results:</b> Increased assessment and understanding of the impacts of climate change and adaptation strategies
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Increased assessment and understanding of the impacts of climate change</i></b></p> <ul style="list-style-type: none"> <li>- As part of its ongoing commitment to international assessment of climate change impacts, Environment Canada continued to receive data from more climate monitoring stations in the north.</li> <li>- Provided project management and scientific input to a three year, multi-disciplinary project to study the impacts of climate change and sea-level rise on the southeast coast of New Brunswick. This study integrates results from the physical, ecological and social sciences. The storm surge and meteorological modelling was completed during 2004-2005; project completion will be in 2006.</li> </ul>

<b>Major Program/Initiative:</b> Conduct Integrated Science Assessments on Key Policy Issues
<b>Expected Results:</b> Strong Canadian participation in global/international climate change science assessment Continue assessment of water threats Continue supporting sustainable development by applying integrated air issues to key policy areas
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Manage the process of ensuring strong Canadian participation in global/international climate change science assessment</i></b></p> <ul style="list-style-type: none"> <li>- Canada is heavily involved in IPCC activities, with four lead/co-lead authors participating. Environment Canada is providing support for approximately 40 Canadian contributing authors to the 4<sup>th</sup> IPCC assessment. Many of the required IPCC scenario runs are complete, with runs for additional ensemble members underway. Approximately 2 terabytes (20 million megabytes) of model output will be provided to the IPCC. We are</li> </ul>

continuing to contribute to multi-model ensemble approaches to produce seasonal probability forecasts and climate change projections as part of the input to the IPCC.

***Continue assessment of water threats***

- Continued assessment of water threats which included hosting special session at the June 2004 Canadian Water Resource Association conference to gather input on the *Threats to Water Availability in Canada* document.

***Continue supporting sustainable development by applying integrated air issues to key policy areas***

- Over the last year, a national R&D program on atmospheric ammonia was implemented.

## ***Looking Forward***

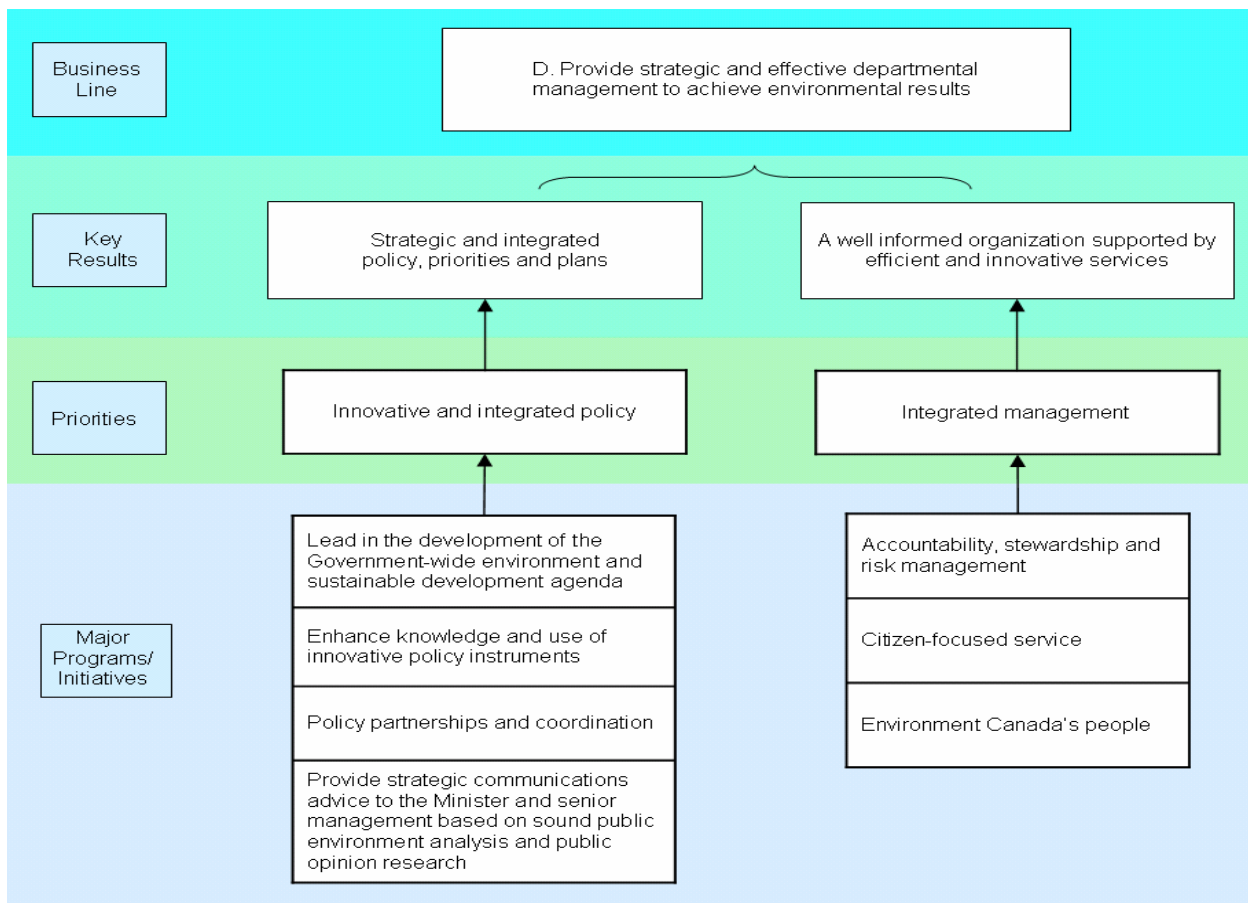
The ultimate key to the success of Environment Canada's research and development lies in securing long-term funding. The recent implementation of a strategic plan for the Meteorological Service of Canada's Research and Development activities is an important step in achieving this objective.

In addition, attracting, developing and retaining talented scientists is a critical challenge faced by the Department, as competitors can often offer attractive positions more rapidly to candidates. This challenge is particularly important given the large numbers of retirements expected over the next five years.

## 2.4 Providing strategic and Effective Departmental Management to Achieve Environmental Results

Environment Canada's operating context is complex. Environmental issues are global in nature, jurisdictions are shared and there are significant challenges associated with embedding environmental considerations into decision-making.

While Environment Canada has clear policy, leadership and coordination responsibilities, most activities that impact the environment and much of the work that is undertaken in Canada and around the world to conserve, protect and enhance our natural environment is beyond the direct control of Environment Canada. Other government departments, other levels of government, other countries, the private sector, environmental non-government organizations (ENGOS), individuals or a number of different players may have direct leadership or implementation responsibility.





Environment Canada needs to maintain a strong policy capacity and the ability to deliver effective and efficient services in order to successfully address complex and cross-cutting issues, achieve results for the environment and make the best use of taxpayers' dollars.

The role of Environment Canada's Management Administration and Policy (MAP) Business Line is to provide strategic and effective policy coordination and departmental management to achieve environmental results. Specifically, the Management Administration and Policy Business Line provides:

- Departmental leadership;
- Strategic policy advice;
- Socio-economic analysis;
- Coordination of international activities of the department;
- Leadership and coordination in fostering partnerships with industry, non-governmental organizations, Aboriginal peoples, provinces and other government departments;
- Communications and public outreach services;
- Support services to decision making, management and accountability, including planning and financial systems and services, information technology, records and information holdings, human resources, audit and evaluation, security and the management of assets and accommodations and environmental management systems.

Transforming the way Environment Canada operates and manages and developing a clear policy agenda will help us focus our work, set priorities and build on our previous successes so that we can implement a comprehensive one department approach to achieving our goals.

Transforming the way Environment Canada works will allow us to provide more informed and coherent advice, maximize the results we achieve for the investment made and become a more agile organization that knows its capacity, continues to evolve and can effectively address immediate and ongoing priorities.

<b>Strategic Outcome:</b> Provide strategic and effective departmental management to achieve environmental results.							
Main Estimates	Planned Spending	Total Authorities	Actual Spending	Full Time Equivalents			
124.6	125.7	177.0	167.6	1293			
<b>Key Result</b>				<b>Key Result</b>			
Strategic and integrated policy priorities and plans				A well performing organization, supported by efficient and innovative services			
Main Estimates	Planned Spending	Total Authorities	Actual Spending	Main Estimates	Planned Spending	Total Authorities	Actual Spending
21.9	27.1	33.7	28.6	102.6	98.6	143.3	139.0
<b>Intermediate Outcomes</b>				<b>Intermediate Outcomes</b>			
<p>Leadership on the government-wide environment and sustainable development agenda</p> <p>Environmental policy goals are achieved through the use of innovative instruments, such as economic instruments and incentives, voluntary approaches and information tools, when these instruments are shown to be the most efficient, effective and practical tools</p> <p>Environment Canada's knowledge base to support policy research and sustainable development is enhanced through improved indicators and better information</p> <p>Progress toward sustainable development is enhanced through the development and implementation of innovative approaches for working with key partners</p> <p>Leadership necessary for setting out a government-wide framework for moving the agenda forward in a collaborative manner is provided</p> <p>International leadership on Canadian priorities is provided</p> <p>Strategic approaches to departmental, interdepartmental and international communications are developed</p>				<p>Tools are available to improve Environment Canada's management capacity and practices</p> <p>New IM practices are facilitated throughout the Department</p> <p>Sustainability of key Departmental systems and operations</p> <p>Environment Canada's ability to make integrated decisions is enhanced through new decision support tools</p> <p>Innovative and responsive services are delivered internally and to Canadians</p> <p>Better response to evolving client needs</p> <p>Knowledge is strategically managed and readily shared, internally and externally</p> <p>Environment Canada's leadership in Federal House in Order and Greening Government Operations is established</p> <p>Environment Canada's people feel valued and supported in a workplace that develops, retains and attracts the diverse talent needed to achieve its mandate</p>			
<b>Key Programs and Major Initiatives</b>							
<p>Lead in the development of government-wide environment and sustainable development agenda</p> <p>Enhance knowledge and use of innovative policy instruments</p> <p>Policy partnerships and coordination</p> <p>Strategic communications advice to the Minister and senior management</p>				<p>Accountability, stewardship and risk management</p> <p>Citizen-focused service</p> <p>People Strategy</p>			

\* Totals may differ between and within tables due to rounding.

## 2.4.1 Key Result: Strategic and Integrated Policy, Priorities and Plans



### Innovative and Integrated Policy

#### *What is the issue?*

Over the last year, the Government of Canada has worked with key stakeholders to examine its overall approach to environmental management and concluded that Canada requires a new approach.

The imperative for this new approach is being driven by two key trends – the globalization of economic and environmental concerns; and an increasing awareness of the economic and health impacts of environmental damage. These trends are leading to the emergence of environmental sustainability as a key driver of competitiveness.

Evidence of this transformation can be seen throughout our society. For example, citizens are increasingly demanding action to protect the environment, and consumers are putting pressure on business to respond to their environmental choices. Investors are demanding disclosure from firms to assess environmental risks. Leading firms are responding to these market pressures, and are seeing benefits to their bottom lines.

Governments are also responding to the transformation. Leading industrialized countries such as the United States, Germany, Japan and the United Kingdom understand that sustainability and environmental issues can no longer be “after-thoughts” in economic decision-making. These countries are developing their plans for a sustainable economy, and they are sharing their visions in international fora, such as the G-8.

#### *What are we doing about it?*

In response to this global movement, the Government of Canada has developed a Competitiveness and Environmental Sustainability Framework (CESF) which seeks to better align environmental and economic signals.

The CESF vision is to attain the highest level of environmental quality, as a means to enhance the health and well-being of Canadians, preserve our natural environment, and advance our long-term competitiveness – improving Canadians’ quality of life.

The Framework focuses on developing 5 key pillars to support action under the CESF. A new **decision-making** model amongst governments, industry and key stakeholders will reflect shared responsibility for improving environmental performance.

Sound decision-making and clear accountability will rely upon enhanced **information** for decision-makers, through improved collection analysis and sharing practices.

To drive environmental performance in industry, in a manner that supports their competitiveness, governments will work to develop streamlined, fair and predictable regulatory, **performance promotion and enforcement** regimes, including the use of market-based incentives and regulatory backstops.

An integrated national approach to **science and technology**, focused on key priorities, linked to market needs, and conducted in partnership between academia, NGOs, industry and governments will be essential to enhancing our understanding and applying solutions to changes in our natural environment.

An effective **education and engagement** strategy will be used to provide the necessary information for Canadians, industry and make informed choices.

Environment Canada is the lead department on the coordination of the Government of Canada's policies and programs with respect to the preservation and enhancement of the quality of the natural environment. The CESF will be used to guide the Government of Canada's sustainable development actions.

Environmental performance improvement requires federal/provincial/territorial coordination. Environment Canada has entered into discussions with provinces and territories on advancing the CESF across the country. A series of bilateral agreements is envisioned based on the common principles and pillars of the CESF. These agreements will be an integral element in achieving a national approach to sustainability by outlining bilateral and regional initiatives that would contribute to national long-term environmental objectives.

In addition, the Government is putting in place the structures needed to deliver on this vision. In recent months, the Government has established a new Ad Hoc Committee of Cabinet on Sustainability and the Environment, a new Deputy Ministers' Policy Committee on Environment and Sustainability; and a new departmental structure within Environment Canada.

Implementing this framework will require that the Government better informs its policy making, using a wide range of stakeholder views and expert knowledge that exists outside of governments. Doing so means government transforming the way in which it works with stakeholders. A key mechanism being developed to implement this transformation will be Sector Sustainability Tables.

Sector Sustainability Tables (SSTs) are to be permanent multi-stakeholder Tables representing an individual sectors' full value-chain and a range of key stakeholder views. The purpose of the Tables will be to provide well informed advice on how best to attain the highest level of environmental quality, as a means to enhance the health and well-being of Canadians, preserve our natural environment, and advance our long-term competitiveness.

## ***Are we succeeding?***

The Government of Canada is committed to fundamentally re-shaping its approach to environmental management to achieve this vision. Last year, the Federal Cabinet endorsed the Framework and committed in the October 2004 Speech from the Throne to “work with its partners to build sustainable development systematically into decision-making.”

The endorsement of the Competitiveness and Environmental Sustainability Framework and commitments in the October 2004 Speech from the Throne and the 2005 federal budget are significant milestones in embedding environmental considerations into government decision-making.

Realizing this vision will require important changes to how we manage our environment. To improve Canada’s environmental performance, we will need to:

- Take collaborative approaches to align environmental and economic signals;
- Recognize business realities in making environmental policy decisions;
- Take a comprehensive approach by integrating priorities and focusing on achieving long-term environmental outcomes;
- Provide greater predictability;
- Focus on outcomes
- Create collaborative, coherent regimes with “single-window” access for business and stakeholders;
- Use of a broader range of policy tools to align economic and environmental decisions, create a level playing field to drive compliance, and reward industry leaders.

Innovative and integrated policy in the Department is focused on:

<b>Major Program/Initiative:</b> Lead in the development of the Government-wide Environment and Sustainable Development Agenda
<b>Expected Results:</b> Integrated strategic policies and approaches to advance departmental priorities. Coordinated departmental strategic directions on crosscutting environmental issues (e.g. Sustainable Development Strategies, greening government, environment and health, urban agenda). Integrated decision-making is enhanced through new decision support tools. Leadership on the Government-wide Environment and Sustainable Development Agenda.
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<b><i>Strategic Policy and Horizontal Initiatives</i></b> - Following consultation with stakeholders, we have developed, and are implementing, an approach for the Sector Sustainability Tables which has been endorsed. Within in the Department, we have identified the structures and resources necessary to launch and support the Tables on an ongoing basis. - Throughout the last fiscal year, we have been engaged in a comprehensive and detailed initiative with provinces and territories through the Canadian Council of Ministers of the Environment (CCME) to develop a national approach to the Competitiveness and Environmental Sustainability Framework (CESF). The next step is to finalize an agreement and to launch the process for implementing and developing concrete delivery on a bilateral and regional basis with the provinces and territories under the CCME umbrella.

- Coordinated preparation of materials in support of the Ad Hoc Committee of Cabinet on Sustainability and the Environment.
- Worked with Health Canada through the federal/provincial committee on Health and the Environment to identify priorities and develop work plans and deliverables with the provinces and territories in support of a Health and Environment Agenda.
- We launched, consulted on and received general endorsement of CESF as the key mechanism for development of the government sustainable development policy agenda and in that process have established a dialogue with the Commissioner on Environment and Sustainable Development, central agencies and other federal departments on re-invigorating the federal approach to sustainable development.
- North America is on track to be the first region in the world to publish a set of indicators of children's health and the environment. The goal is to provide decision-makers and the public with periodic, understandable information on the status of key parameters related to children's health and the environment as a means of measuring and promoting change. The report marks an initial step toward the goal of improving reporting over time through trilateral collaboration with the United States and Mexico.
- In developing the environmental sustainability dimensions of the New Deal for Cities, a major horizontal effort was launched: to increase the sustainability planning capacity for communities including work to develop a proposal for incorporating this into the umbrella agreement with Provinces/Territories; to enhance the adoption of cleaner transportation options with cities and communities; and to enhance the role of cities in the 2005 climate change plan in meeting GHG reductions.
- Federal colleagues from Canada Lands Company, Parks Canada, Infrastructure Canada, and Canada Mortgage and Housing Corporation all actively provided information to Environment Canada in support of the development of a departmental urban sustainability strategy. A workshop comprised of approximately 60 federal civil servants met with local agencies in Toronto in May 2004. The workshop afforded an opportunity to both inform and validate policy directions being put forward in the draft urban sustainability strategy.
- Environment Canada has provided, or is currently developing, strategic policy advice to Infrastructure Canada regarding sustainable infrastructure, integrated sustainable community planning, and performance measurement related to environmental quality.
- The Federal Interdepartmental Group on Sustainable Development (FIGSD), which is headed up by Environment Canada, consists of some 150 representatives of roughly 30 federal departments and agencies present in Quebec. Its achievements in 2004-2005 have contributed significantly to ensuring that the principles of sustainable development are fully integrated into the departments' and agencies' programs and activities, not only in terms of greening of operations, environmental assessment and the environment industry but also of sustainable transportation and the development of projects for the sustainable development of communities.

**Major Program/Initiative:** Enhance Knowledge and Use of Innovative Policy Instruments

**Expected Results:**

Environmental policy goals are achieved through the use of innovative instruments, such as economic instruments and incentives, voluntary approaches and information tools, when these instruments are shown to be the most efficient, effective and practical tools.

Environment Canada's knowledge base to support policy research and sustainable development is enhanced through improved indicators and better information.

**Planned Activities and 2004-2005 Performance Highlights**

***Innovative Policy Instruments***

- In developing the 2005 Climate Change Plan, several impact analyses were completed to support both the development of emission reduction targets for the Large Final Emitter System and the scoping of the Offset System and Partnership Fund (#2, 5, SDS 2.1.1). In addition, conducted the supporting analysis for three greenhouse gas reduction measures: Wind Power Production Incentive, Renewable Power Production Incentive and expansion of Class 43.1, accelerated capital cost allowance for energy efficient and renewable energy technologies (# 2, 7, SDS 2.1.3). These programs and instruments will help move Canada towards achieving its emissions reduction target under the Kyoto Protocol.

- Developed an instrument assessment guide (Quality Screening Management Tool) for choosing the most appropriate instrument(s), focusing on the full range of potential instruments including market-based instruments and voluntary approaches, to address an environment issue. The QSMT promotes the selection of instruments that will achieve the stated environmental objective with the least possible economic impact (# 2, 5, SDS 2.1.1.). To support the implementation of the QSMT, workshops were held for Environment Canada staff and other federal departments to provide training on how to use the tool (# 2, 5, 6, SDS 2.1.1. and 2.1.2.).
- In the context of the Smart Regulation initiative, completed a discussion paper on use of market-based instruments domestically and internationally. In its September 2004 report, the External Advisory Committee on Smart Regulation acknowledged the usefulness of market-based instruments and recommended that the government examine expanding the appropriate use of these types of instruments in Canada (#3, 6, SDS 2.1.2.).
- Actively worked with a number of other federal government departments and external organizations in promoting the market-based instruments agenda, including analytical pieces on specific market-based instruments (#3, 7, SDS 2.1.3.). Also worked with the National Roundtable on Environment and Economy and other stakeholders such as the Green Budget Coalition, to assess various market-based instrument proposals (#7, SDS 2.1.3.).
- Internationally, organized a workshop for market-based instruments practitioners. The workshop was attended by experts from various countries and representatives from provincial governments, stakeholders, and federal departments including Finance (#3, 6, SDS 2.1.2.). Worked with the Organization on Economic Cooperation and Development (OECD) on the development of market-based instruments database (#6, SDS 2.1.2.). The OECD emphasizes market-based instruments as a tool for achieving environment-economy efficiency in official comments on a number of their documents (#6, SDS 2.1.2.).
- Developed a checklist on trade and investment obligations for risk managers pre-selecting the most appropriate tools for achieving the risk management objective of a substance. Provided integrated trade policy advice to risk managers, environmental policy makers and Multilateral Environmental Agreement (MEA) negotiators.
- In partnership with Foreign Affairs Canada (FAC) and economic departments, participated in World Trade Organization (WTO) negotiations on the relationship between trade rules and MEAs, and the liberalization of environmental goods and services. Provided environmental perspectives on other regulatory aspects of WTO negotiations.
- Provided to International Trade Canada (ITCan) and other economic departments environmental perspectives on market access issues.
- In partnership with FAC, promoted analytical work and participated in discussions in the Organisation for Economic Co-operation and Development (OECD) on the mutual supportiveness of trade and environment.
- Worked interdepartmentally to integrate environmental considerations into the proposed Canada-Korea and Canada-Caribbean Community (CARICOM) Free Trade Agreements and participated in exploratory negotiations.
- Continued the development of a Trade and Environment Strategic Plan under the North American Agreement on Environmental Cooperation.
- Monitored developments within the Free Trade Area of the Americas and worked interdepartmentally to ensure environment considerations are integrated in trade arrangements such as the Canada-Japan Economic Framework, the Canada-E.U. Trade and Investment Enhancement Agreement and the Canada-U.S.-Mexico Security Prosperity Partnership.

**Major Program/Initiative:** Policy Partnerships and Coordination

**Expected Results:**

Progress toward sustainable development is enhanced through the development and implementation of innovative approaches for working with key partners.

Leadership necessary for setting out a government-wide framework for moving the agenda forward in a collaborative manner is provided.

International leadership on Canadian priorities is provided.

### Planned Activities and 2004-2005 Performance Highlights

#### *National/international partnerships and coordination*

- Through the provision of strategic advice on international affairs and relations, and by working with governmental and non-governmental partners, raised the profile of environmental considerations in the context of Canada's international relationship.
- Strengthened bilateral cooperation on the environment with several countries such as India, China, Costa Rica, Mexico and Chile through policy dialogues and joint environmental projects.
- Strengthened bilateral cooperation with the U.S. through a number of formal and informal institutions, organizations and partnerships such as the Air Quality Committee and the International Joint Commission.
- Implemented environmental cooperation agreements and worked to support Canadian environmental priorities by participating in bilateral, hemispheric and North American fora such as the Health and Environment Ministers of the Americas (HEMA), and the CEC.
- At the CEC Council Session in June 2004, the Environment Ministers from Canada, Mexico, and the U.S. adopted the Puebla Declaration. The Puebla Declaration reaffirmed the three governments' commitment to the CEC and established three priority areas to guide the organization's work in a way that will serve to better protect and enhance the North American environment.
- Canada, as led by Environment Canada, participated in the 23<sup>rd</sup> session of UNEP's Governing Council at which Ministers focused on forging stronger links between the environment and development agendas.
- In April 2004, the Minister of Environment led Canada's delegation to the 12th Session of the United Nations Commission on Sustainable Development, where countries shared experience and examined progress towards international commitments on water, sanitation and human settlements.
- Provided policy support for Canada's participation in the Arctic Council, including the November 2004 Ministerial Council meeting, where the Arctic Climate Impact Assessment was presented to Ministers.
- In March 2005, the Minister of Environment led Canada's delegation to the G8 meetings of Energy and Environment Roundtable and the G8 Environment and Development Ministerial Meeting, which laid the groundwork for G8 leaders' decisions on climate change and Africa.
- Coordinated Canada's participation in the environmental program of the Organisation for Economic Co-operation and Development (OECD), as well as the OECD Environment Ministers meeting in April 2004, where Ministers set direction for work at the global, regional and national levels.
- Scientific cooperation with the AGRHYMET regional centre and MSC aimed at increasing the climate change adaptation capacity of Sahel countries has produced interesting results for the communities. Negotiations are under way to extend Phase I of the cooperation agreement to December 31, 2005, and it is anticipated that a second, five-year phase (2006-2011) will be considered and negotiated. Given the success of the EC-AGRHYMET scientific cooperation project, AGRHYMET is in a good position to be heavily involved in the drafting of the 2007 report of the UN Intergovernmental Panel on Climate Change for the nine Sahel countries.

**Major Program/Initiative:** Provide strategic communications advice to the Minister and senior management based on sound public environment analysis and public opinion research

#### **Expected Results:**

Strategic approaches to departmental, interdepartmental and international communications are developed. Departmental priorities and policy directions are presented in a consistent, coherent and coordinated manner. Communications advice, issues management and operations support are provided to the Minister, the Deputy Minister and Environment Canada's senior management.

### Planned Activities and 2004-2005 Performance Highlights

#### *Strategic Communications*

- Environment Canada continued to develop and implement strategic approaches to departmental, interdepartmental and international communications as a part of its departmental transformation agenda and one department approach.



### *Profile Departmental Programs*

- Environment Canada continued to improve the consistency, coherence and coordination of the communications of departmental priorities and policy directions.

## *Looking forward*

### ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

Project Green is the Government of Canada's broad environmental vision that links Canada's economic competitiveness and prosperity to a sustainable future. Project Green also delivers on the Speech from the Throne commitment to, "...work with its partners to build sustainable development systematically into decision making."

The Competitiveness and Environmental Sustainability Framework (CESF), being led by Environment Canada, will guide the implementation of Project Green on a government-wide basis. The CESF vision is to attain the highest level of environmental quality, as a means to enhance the health and well-being of Canadians, preserve our natural environment, and advance our long-term competitiveness – improving Canadians' quality of life.

The Framework is designed to take an integrated and comprehensive approach to a full range of sustainability challenges, linking policy to action. Departmental sustainable development strategies will be a key mechanism for implementation of the Framework.

Environment Canada will continue a leadership role in advancing the CESF and promoting the Government's environment and sustainable development agenda. To advance these objectives, it considers a range of policy instruments and uses strategic partnerships with both key domestic and international stakeholders.

### POLICY INSTRUMENTS

In support of the environment and sustainable development agenda, the Department will also continue to develop new approaches to policy instruments, including Environment and Sustainable Development indicators, and support policy research and development analysis. Emissions trading of greenhouse gases, for example, has been included as a key element of Canada's Climate Change Action Plan. This recognition of the important role of market-based instruments reflects work undertaken over a number of years within Environment Canada and other federal agencies in collaboration with the provinces, territories and stakeholders. Work will also be undertaken with the Department of Finance and other departments to implement fiscal measures (taxes, charges and other market-based instruments) to achieve the objectives of climate change policies. Environment Canada will continue to support the broader federal initiative to move forward on a smart regulation strategy.

### POLICY PARTNERSHIPS

Environment Canada will continue to build on Canada's strong international presence as an environmentally progressive nation, through its participation in organizations and fora like the United Nations Environment Programme (UNEP), the Organization for Economic Co-operation and Development (OECD), the G8 and the Arctic Council. The Department will also work in partnership with other federal departments to promote the mutual supportiveness of trade and

environment in international trade agreements, such as the North American Free Trade Agreement (NAFTA) and the World Trade Organization (WTO). For instance, the Department will continue to play a key role in the environmental assessment of trade negotiations. With regard to its bilateral relationships, Environment Canada will continue to implement environmental cooperation agreements with the United States, Mexico, Chile and Costa Rica and negotiate similar agreements with the Republic of Korea, Singapore and the Central America Four Countries. Environment Canada will foster Memorandums of Understanding and other arrangements with, amongst others, China. In particular, the Department will seek ways to strengthen its relationship with the United States through bilateral and trilateral institutions, organizations, and partnerships. Moreover, Environment Canada will work with its hemispheric partners to improve human and environmental health in the Americas.

#### FOR FURTHER INFORMATION

Environment Canada's International Relations web site	<a href="http://www.ec.gc.ca/international/index_e.htm">http://www.ec.gc.ca/international/index_e.htm</a>
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## 2.4.2 Key Result: A Well Informed Organization Supported by Efficient and Innovative Services



### Integrated Management

#### *What is the issue?*

The Government of Canada is committed to strengthening public sector management especially in the areas of governance, accountability, transparency, and financial management.

Environment Canada is transforming how it does its business so that it can meet the management expectations of parliamentarians and Canadians and deliver on its commitments in a meaningful and cost-effective way.

Environment Canada needs to transform the way business is conducted from both inward looking and outward looking perspectives. Environment Canada focuses internally on strengthening management capacity, and improving accountability and information for decision-making to respond to increasingly complex and urgent environmental concerns, shared governance and increased public demands for transparency. This internal capacity building will support the Department in providing better, more innovative and responsive services to Canadians, having a richer dialogue with the citizens, and improving results for the environment. In addition to addressing internal capacity issues, the integrated management agenda also focuses on the Department's approaches to delivering services. This enables us to be responsive to individuals, communities and businesses and to transform our services when necessary to ensure we are providing the best environmental results for Canadians. We must also ensure that the department, and the whole government, practice what we preach in terms of environmental management in our own operations.

### ***What are we doing about it?***

Environment Canada is implementing a new governance structure that promotes decision-making informed by perspectives from across the department. Under the Deputy Minister and the departmental Executive Management Council, Boards of Assistant Deputy Ministers and Regional Directors General are responsible for providing the leadership and direction required for Environment Canada to deliver results. The Strategic Integration and Departmental Management Services Boards contribute to delivering on Environment Canada's priorities in the areas of management, administration and policy.

Government-wide management initiatives are also helping Environment Canada transform how it does its business. Work related to populating the government-wide Expenditure Management Information System (EMIS) and departmental Program Activity Architectures and Management, Resources and Results Structures (MRRS) is being reinforced by the development of a comprehensive set of plans and the collection of detailed performance information to support internal management, priority-setting and allocation and reallocation decisions.

We are also using the Management Accountability Framework (MAF) and are focusing on its 10 elements to strengthen our management practices and accountability tools, systems and policies. Compared to the Environment Canada Modern Management Action Plan (MMAP) launched three years ago, MAF provides a wider and more comprehensive perspective. MAF indicators are now used to assess Environment Canada management improvement on an annual basis.

Environment Canada has launched an initiative to examine how corporate functions are being delivered and to propose improvements. Recognizing that corporate services functions are essential to the work of programs, services and science, recommendations on a new model were formulated to allow us to introduce department-wide business practices and service standards.

The department's audit and evaluation functions are being strengthened. Changes in management accountabilities and governance will ensure the independence of these functions. The department has allocated more resources for audit and evaluation projects and is implementing a more rigorous and integrated, risk-based planning process to ensure that audits and evaluations support the priorities of the department.

We will continue to evolve our internal management framework as we transform the department and get organized to deliver on the goals of the Competitiveness and Environmental Sustainability Framework.

We are also taking measures within the Department to demonstrate leadership in the environmental management of our own operations, in such areas as the management of our fleet of vehicles, of our contaminated sites, and in reducing greenhouse gas emissions. These also allow us to play a leadership role in improving the government's overall performance in these areas and others.

## *Are we succeeding?*

<b>Major Program/Initiative:</b> Accountability, Stewardship and Risk Management
<p><b>Expected Results:</b></p> <p>Tools are available to improve Environment Canada's management capacity and practices.</p> <p>New IM practices are facilitated throughout the Department.</p> <p>Sustainability of key departmental systems and operations.</p>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>Management Capacity Development and Business Transformation</i></b></p> <ul style="list-style-type: none"> <li>- Environment Canada continues to support the establishment of management tools and processes to provide for effective decision-making and capacity alignment in an organized manner over the longer-term. In doing so, the Department focused on advancing Results-Based Management through the deployment of Outcome Project Plan and Outcome Project Grouping that promote result-based management practices across the Department. Environment Canada also undertook the review of the Department's Corporate Services to enhance various aspects of the services being delivered to ensure improved accountability, equitable services and integrated business processes.</li> <li>- Established the approach and business logic for integrating financial and non-financial information to support the one department approach to planning.</li> <li>- Development and implementation of cost management system key component has been subsumed by the Department effort deployed in meeting TBS MRRS and related PAA requirements that link costs to specific results.</li> <li>- Establishment of an Integrated Risk Management function within Environment Canada: <ul style="list-style-type: none"> <li>▪ Efforts to operationalize integrated risk management through the planning process have been undertaken and are continuing.</li> <li>▪ Efforts are underway to develop risk management training for Environment Canada employees.</li> </ul> </li> <li>- Internal Control Processes have progressed by the introduction of the Procurement Review Board.</li> <li>- The Results Management Tool, a web-based management information system, is being prepared for implementation throughout the Department.</li> </ul>
<p><b><i>Planning and Reporting</i></b></p> <ul style="list-style-type: none"> <li>- Established a one department approach to planning which provides greater consistency and more efficient allocation of planning capacity across the Department.</li> <li>- Completed assessment of planning capacity and required organizational changes; organizational changes will take place based on experience gained in the current cycle.</li> </ul>
<p><b><i>Financial Systems and Operations</i></b></p> <ul style="list-style-type: none"> <li>- The Finance and Material System was upgraded to a more recent version of Oracle financials on schedule and within budget.</li> </ul>
<p><b><i>IT Operations and Applications</i></b></p> <ul style="list-style-type: none"> <li>- Provided uninterrupted 24/7 service delivery to Environment Canada employees. Ongoing improvement to safeguard operations and safeguard information integrity. Operational consolidation/rationalization to achieve efficiencies. Ongoing development and maintenance of program focused applications.</li> </ul>
<p><b><i>Information Management</i></b></p> <ul style="list-style-type: none"> <li>- Development of a departmental file plan to facilitate safeguarding of critical information assets. Deployment of EnSuite (records and data management solution) to key client groups.</li> </ul>

<b>Major Program/Initiative:</b> Citizen-Focused Service
<p><b>Expected Results:</b></p> <p>Innovative and responsive services are delivered internally and to Canadians.</p> <p>Better response to evolving client needs.</p> <p>Knowledge is strategically managed and readily shared, internally and externally.</p> <p>Environment Canada's leadership in Federal House in Order is established.</p>
<b>Planned Activities and 2004-2005 Performance Highlights</b>
<p><b><i>External Communications and Client Engagement</i></b></p> <ul style="list-style-type: none"> <li>- Environment Canada can demonstrate leadership in environmental management in government operations in two ways. First it should ensure that its own operations are well managed and provide best practices that can be exported to other federal departments and other organizations. Secondly, it has an important role to play in setting the direction that all federal operations should follow, so that the federal government can lead by example. Within the Department, most objectives (including results in the areas of fleet management, green purchasing, GHG reduction, measurement and others) are being met. For the role Environment Canada plays across government (which includes building engagement and promotion), most of the objectives involve several other stakeholders and results are expected to take more time to achieve, but are still largely being met.</li> <li>- Sustainable Communities Initiative: The SCI, which Environment Canada champions, took a silver medal for excellence in innovative management in a prestigious national competition hosted by the Institute of Public Administration of Canada (IPAC).</li> <li>- SCI was singled out for excellence in leadership in horizontal collaboration and community sustainability. It competed against 95 other entries across Canada. The award ceremony was held on September 1, 2004 at the annual IPAC conference in Vancouver.</li> </ul>
<p><b><i>Knowledge Integration Activities</i></b></p> <ul style="list-style-type: none"> <li>- Over 2004-2005, Environment Canada has developed additional approaches to managing and sharing knowledge internally and externally. In particular, work undertaken through RésEau, a collaborative demonstration project that focuses on water data in the Atlantic region has resulted in information and data on water being more accessible and integrated. Additionally, in alignment with the Canadian Information System for the Environment (CISE) vision, collaborative practices have been further enhanced through participation in interdepartmental information projects such as Agriculture and Agri-food Canada's National Land and Water Information Service. In accordance with the Government of Canada's commitment in Budget 2004, work on indicators of air, water, and greenhouse gas emissions has been undertaken, in partnership with Statistics Canada and Health Canada. Also, the development of the "Indicators and Reporting Strategy" committed to by the Department was completed in 2004 and implementation of the strategy has been ongoing during 2004-2005.</li> <li>- Environment Canada has continued to develop innovative approaches to manage and share knowledge both internally and externally. One example of this is RésEau, a demonstration project under the Government On-Line initiative that has been developing partnership opportunities for sharing, discovering, accessing and using water-based data and information across Canadian jurisdictions on the Web. The purpose of RésEau is to demonstrate accessible water-based content and information from a joint Environment Canada, Health Canada and Natural Resources Canada partnership and to foster additional partnership opportunities that will demonstrate these values on the Internet.</li> <li>- Environment Canada has been furthering the CISE vision/strategy through ongoing efforts to ensure that data providers and users work together to improve the access to and use of data. Environment Canada has been employing these principles while working with other federal departments, such as Agriculture and Agri-Food Canada in relation to the National Land and Water Information Service (NLWIS).</li> <li>- Environment Canada, in partnership with Statistics Canada and Health Canada, have been working to complete the first annual report on the Competitiveness and Environmental Sustainability Indicators. The three indicators covered by this initiative, on air quality, water quality and greenhouse gas emissions, are part of those which were recommended by the National Round Table on the Environment and the Economy. This initiative represents a significant step in fulfilling the Government of Canada's commitment in Budget 2004 to "to</li> </ul>

develop and report better environmental indicators on clean air, clean water and greenhouse gas emissions.”

- Environment Canada’s “Indicators and Reporting Strategy” was completed in May 2004. Implementation of the Strategy is ongoing, including research and development of national reporting products (Competitiveness and Environmental Sustainability Indicators, Environmental Signals 2005), national synthesis of regional reporting (State of Canada’s Watersheds), integration of indicators into performance reporting, a network of indicator practitioners (Canadian Sustainability Indicators Network) and indicators applications (e.g. modelling).
- Improvements to Environmental Signals have been proceeding, including the development of new or revised indicators for water quality, air quality, toxic substances, biodiversity, working landscapes, soils and the consequences of climate change in order to better reflect new science and monitoring, and make them more accessible to decision-makers.

#### ***Internal Communications & Engagement***

- Efforts to implement the Integrated Departmental Intranet continued in 2004-2005. Specific projects included testing of the proposed new Intranet structure with employees from across the department and the development of the Quick Reference for Managers section which provides quick access to information on departmental and Treasury Board policies that are needed to manage day-to-day activities.

#### ***Service Innovation***

- The RésEau demonstration project has focused on the development of partnership opportunities across multiple jurisdictions to enable seamless access, sharing, discovery, and use of water based data and information across Canadian jurisdictions of the Web.

#### ***Environmental Management Leadership***

- There have been significant developments over the past year with respect to leadership of greening government operations, through the Minister of Public Works and Government Services (PWGSC) with the support of the Minister of Environment and the President of the Treasury Board. PWGSC is creating an office to act as a centre of advice and guidance for the federal community regarding greening operations. A streamlining / revision of the existing governance structure for Sustainable Federal House in Order (SFHIO) is being undertaken.
- Environment Canada continues to maintain two sites related to greening government (Federal House in Order which deals specifically with GHG emissions from buildings, vehicle fleets and outside emissions; and Greening Government which addresses other operational areas such as green procurement and solid waste management).
- Environment Canada continues to encourage the implementation of greenhouse gas emissions reduction strategies within the Canada Post Corporation and the Canada Revenue Agency, the two federal entities that have previously signed on to the Leadership Challenge. Environment Canada continues to promote employee commuting and business travel throughout the Government of Canada.
- In 2004-2005, Environment Canada initiated the development of a shared environmental management system (EMS) at one of its leased facilities; further progress on this target will be reached in 2005-2006.
- With a renewed commitment to its fleet, Environment Canada has prepared a Business Case for Fleet Leadership and a draft Green Fleet Management Policy that addresses such topics as vehicle sizing, proper operation and maintenance, authorized purchasing and fuel efficiency standards. The department has also undertaken a number of positive actions, including the installation of anti-idling devices in departmental vehicles and the increased purchase of hybrid vehicles.
- Environment Canada has prepared a Greenhouse Gas Emissions Reduction Plan for its operations and is currently on track for meeting its share of the Federal House in Order Target of reducing greenhouse gas emissions by 31 percent from 1990 to 2010. To date, the Federal Government has achieved an overall reduction of 24 percent.
- The Department’s Green Procurement Policy was updated to reflect the draft 2003 federal policy. The internal policy will need further revision in line with government-wide objectives, targets and performance measures that will be part of the new federal policy and guidelines. The Department has developed a draft IM/IT Assets Management and Greening Policy, which looks at the full life-cycle of these assets. The department has also successfully negotiated a green printing/publishing contract which ensures that environmental criteria and life

cycle costing are considered.

- Environment Canada has offered training on the use of acquisition cards and green procurement to over 90 percent of the staff and managers who required it within Ontario Region. This course focused on ensuring that staff were aware of the rules and policies regarding the use of low dollar acquisition tools and the department's green procurement policy. In addition, the course introduced employees to available green procurement tools.

**Major Program/Initiative:** Environment Canada's People

**Expected Results:**

Environment Canada's people feel valued and supported in a workplace that develops, retains and attracts the diverse talent needed to achieve its mandate.

**Planned Activities and 2004-2005 Performance Highlights**

***Human Resource Services***

- Environment Canada's success in achieving departmental results is fundamentally dependent on its capacity to recruit, develop and retain a competent, representative, highly effective and innovative workforce. Increased challenges related to recruitment, skill set development, and the government-wide HR modernization initiative emphasized the importance of ensuring that Environment Canada's human resources be managed strategically as a corporate resource. The Human Resources organization continues to be responsible for developing and implementing people management strategies to assist the Department in being positioned for the future and for bringing HR management practices in line with public service HR legislation. Key initiatives completed include Values and Ethics, Environment Canada's People Strategy, Official Languages Strategy and Action Plan, and an enhanced OHS Program and resource capacity.
- In support of the CESF and key departmental priorities that support Environment Canada's transition and the modernizing of how we manage people, HR's focus will include competency-based approaches, generic work descriptions, learning and development plans, recruitment and other capacity-building strategies and processes.

***Looking forward***

The services delivered by the MAP Business Line are fundamental to delivering on both policy and program priorities and to meeting Management Accountability Framework expectations. Promoting an active Environment Canada service culture through service transformation efforts and ensuring sustainability of core systems and operations will be significant challenges for the Business Line.

## **SECTION III**

### **SUPPLEMENTARY INFORMATION**



## **Financial Performance Overview**

This Section contains a summary of Environment Canada's financial performance for the fiscal year 2004-2005.

The Department spent \$926.7 million in 2004-2005. This amount is lower than the planned spending identified in our 2004-2005 Report on Plans and Priorities as the Department took measures to meet the government expenditure review exercise. The cap on growth in the public service also had an impact on the Department as well as a decision to reprofile resources to future years to address revised requirements for key initiatives:

- Climate Change initiatives;
- Environmental Indicators; and
- Agriculture Policy Framework.

In addition, Environment Canada proceeded with a reallocation exercise in 2004-2005 in order to deal with internal financial pressures to meet corporate level priorities such as:

- Litigation costs;
- Increasing capacity of water policy and coordination;
- Supporting the development of a national environmental research agenda;
- Advancing the Department's knowledge agenda;
- Upgrading the departmental financial system;
- Modernizing human resources services;
- Improving departmental information technology and physical security;
- Sustaining the communications function; and
- Sustaining the core support functions.

## **Financial Summary Tables**

Summary financial data, such as the information presented in Table 1, are displayed using four separate headings. For clarity, these headings are defined as:

- Main Estimates – Amounts shown in the 2004-2005 Main Estimates;
- Planned Spending – Amounts shown in the 2004-2005 Report on Plans and Priorities;
- Total Authorities – Planned spending plus any additional amounts approved by Parliament to reflect changing priorities and unforeseen events; and
- 2004-2005 Actual Spending – Amounts actually spent for the fiscal year as per Public Accounts.

Note: Some totals may differ from one table to another due to the rounding of figures.

**Table 1: Comparison of Planned Spending and Full Time Equivalents**

This table offers a comparison of the Main Estimates, Planned Spending, Total Authorities, and Actual Spending for the most recently completed fiscal year, as well as historical figures for Actual Spending.

(\$ millions)	2002–2003 Actual Spending	2003–2004 Actual Spending	2004–2005			
			Main Estimates	Planned Spending	Total Authorities	Actual Spending
Clean Environment Business Line	226.2	369.8	263.9	407.3	379.9	348.5
Nature Business Line	180.6	213.8	203.5	208.2	213.7	203.7
Weather and Environmental Predictions Business Line	200.6	252.0	214.0	218.3	210.1	207.1
Management, Administration and Policy Business Line	149.9	171.9	123.8	124.9	176.2	167.5
<b>Total Cost</b>	<b>757.2</b>	<b>1,007.5</b>	<b>805.2</b>	<b>958.7</b>	<b>980.0</b>	<b>926.7</b>
<b>Total</b>	<b>757.2</b>	<b>1,007.5</b>	<b>805.2</b>	<b>958.7</b>	<b>980.0</b>	<b>926.7</b>
Less: Non-Responsible revenue	(8.2)	(8.0)	(10.0)	(10.0)	(10.0)	(9.0)
Plus: Cost of services received without charge *	63.0	70.9	--	66.0	66.0	72.2
<b>Net cost of Department</b>	<b>812.0</b>	<b>1,070.4</b>	<b>795.2</b>	<b>1,014.7</b>	<b>1,036.0</b>	<b>989.8</b>
<b>Full Time Equivalents</b>	<b>5,746</b>	<b>5,982</b>	<b>--</b>	<b>5,871</b>	<b>--</b>	<b>6,086</b>

Totals may differ between and within tables due to rounding of figures.

Note: Excludes responsible revenues

\* Services received without charge usually include accommodation provided by PWGSC, the employer's share of employees' insurance premiums, and expenditures paid by TBS (excluding revolving funds), Workers' Compensation coverage provided by Social Development Canada, and services received from the Department of Justice Canada (see Table 4).

The \$80.8 million decrease in total costs from 2003-2004 to 2004-2005 is mainly attributable to one-time grants provided in 2003-2004. Funding to the Sustainable Development Technology Canada Foundation decreased by \$25 million (\$125 million in 2003-2004 vs. \$100 million in 2004-2005) and funding of \$50 million was provided to the Canadian Foundation for Climate and Atmospheric Sciences in 2003-2004. The increase in FTEs is supported by new authorities granted through supplementary estimates for new initiatives.

**Table 2: Use of Resources by Business Line**

This table explains the use of resources by input factor and by business line for Environment Canada.

2004–2005								
(\$ millions)	Operating*	Capital	Grants and Contributions	Subtotal: Gross Voted Expenditures	Statutory Grants and Contributions	Total Gross Expenditures	Less: Respendable Revenue	Total Net Expenditures**
<b>Clean Environment Business Line</b>								
Main Estimates	236.0	13.4	23.7	273.1	--	273.1	(9.2)	263.9
Planned Spending	264.9	13.4	38.1	316.5	100.0	416.5	(9.2)	407.3
Total Authorities	243.5	14.2	31.4	289.1	100.0	389.1	(9.2)	379.9
Actual Spending	213.0	14.2	30.6	257.8	100.0	357.8	(9.3)	348.5
<b>Nature Business Line</b>								
Main Estimates	178.6	2.6	29.2	210.4	--	210.4	(6.9)	203.5
Planned Spending	183.3	2.6	29.2	215.1	--	215.1	(6.9)	208.2
Total Authorities	185.3	3.1	32.2	220.6	--	220.6	(6.9)	213.7
Actual Spending	175.2	3.1	31.7	210.0	--	210.0	(6.3)	203.7
<b>Weather and Environmental Predictions Business Line</b>								
Main Estimates	250.6	25.0	2.6	278.1	--	278.1	(64.1)	214.0
Planned Spending	254.4	25.5	2.6	282.4	--	282.4	(64.1)	218.3
Total Authorities	246.2	22.7	5.5	274.3	--	274.3	(64.1)	210.1
Actual Spending	238.6	21.6	5.4	265.7	--	265.7	(58.6)	207.1
<b>Management Administration and Policy Business Line***</b>								
Main Estimates	121.2	1.2	2.1	124.6	--	124.6	(0.8)	123.8
Planned Spending	122.4	1.2	2.1	125.7	--	125.7	(0.8)	124.9
Total Authorities	171.8	1.5	3.6	177.0	--	177.0	(0.8)	176.2
Actual Spending	162.6	1.5	3.5	167.6	--	167.6	(0.1)	167.5
<b>Totals</b>								
Main Estimates	786.5	42.2	57.6	886.2	--	886.2	(81.0)	805.2
Planned Spending	825.0	42.7	72.0	939.7	100.0	1039.7	(81.0)	958.7
Total Authorities	846.8	41.5	72.7	961.0	100.0	1061.0	(81.0)	980.0
Actual Spending	789.4	40.4	71.2	901.0	100.0	1001.0	(74.3)	926.7

Totals may differ between and within tables due to rounding of figures.

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

\*\* Total Net Expenditures excludes respendable revenues.

\*\*\* Main Estimates under Management, Administration and Policy business line includes payments to the Queens Quay West Land Corporation under Operating. The resource was transferred to the Department of Infrastructure Canada during the fiscal year 2004-2005.

**Explanation of Total Net Expenditures variance from Planned Spending to Actual Spending:**

The \$32.0 million decrease in actual spending from planned spending is mainly due to the following:

Operating	This decrease of \$35.6 million is mainly due to the reprofiling of resources to future years for the following: various Climate Change Initiatives which affect all Business Lines; Environmental Indicators under Management, Administration and Policy; and also for Agriculture Policy Framework under Nature. Another large portion is explained by Planned spending for Opportunities Envelope under Clean which did not occur in 2004-2005. The reduction in Management, Administration and Policy for the Advertising Reserve is also another major cause of the decrease.
Capital	This decrease of \$2.3 million is mainly due to the transfer of resources to Grants and Contributions to appropriately deliver on various programs.
Respendable Revenues	This decrease of \$6.7 million is mostly tied to the service level required by NAV CANADA, as well as with its interdepartmental agreements with the Canadian Coast Guard and National Defence under WEP.

### Table 3: Voted and Statutory Items

This table explains the way that Parliament votes resources to Environment Canada.

Vote or Statutory Item	Truncated Vote or Statutory Wording	2004–2005 (\$ millions)			
		Main Estimates	Planned Spending	Total Authorities	Actual Spending
Vote 1	Operating expenditures	626.4	667.3	689.0	638.5
Vote 5	Capital expenditures	42.2	42.7	41.5	40.4
Vote 10	Grants and Contributions	57.6	72.0	72.7	71.2
Vote 15	Payments to Queens Quay West Land Corporation	4.0	0.0	0.0	0.0
(S)	Minister of the Environment – Salary and motor car allowance	0.1	0.1	0.1	0.1
(S)	Contributions to employee benefit plans	75.0	76.6	76.1	76.1
(S)	Sustainable Development Technology Canada	0.0	100.0	100.0	100.0
(S)	Spending of proceeds from the disposal of surplus Crown assets	0.0	0.0	0.5	0.3
	<b>Total Department</b>	<b>805.2</b>	<b>958.7</b>	<b>980.0</b>	<b>926.7</b>

Totals may differ between and within tables due to rounding of figures.

Note: Excludes spendable revenues.

## Table 4: Net Cost of Department

This table is designed to show the net cost of a department.

(\$ millions)	2004–2005
Total Actual Spending	926.7
<i>Plus: Services Received without Charge</i>	
Accommodation provided by Public Works and Government Services Canada (PWGSC)	34.6
Contributions covering employers' share of employees' insurance premiums and expenditures paid by TBS (excluding revolving funds)	33.4
Worker's compensation coverage provided by Social Development Canada	1.3
Salary and associated expenditures of legal services provided by Justice Canada	2.9
<i>Less: Non-respendable Revenue</i>	(9.0)
<b>2004–2005 Net cost of Department</b>	<b>989.8</b>

Totals may differ between and within tables due to rounding of figures.

## Table 5: Contingent Liabilities

As of March 31, 2005, Environment Canada was facing 15 litigation cases. The total amount of contingent liabilities for the 15 cases is unknown as these cases are in various stages of litigation. It is not Environment Canada's policy to comment on their expected outcomes, however they must be recognized as potential liabilities against the Crown.

Contingent Liabilities	March 31, 2004		March 31, 2005	
	# of cases	(\$ millions)	# of cases	(\$ millions)
<i>Claims, Pending and Threatened Litigation</i>	19	Unknown	15	Unknown
<b>Total Contingent Liabilities</b>	19	Unknown	15	Unknown

## Table 6a: Sources of Respendable Revenue

This table identifies respendable revenues received by Environment Canada.

(\$ millions)	Actual Revenue 2002-2003	Actual Revenue 2003-2004	2004-2005			
			Main Estimates	Planned Revenue	Total Authorities	Actual Revenue
<b>Respendable Revenues</b>						
<b>Clean Environment Business Line</b>						
Scientific and Professional Services	7.4	7.4	6.4	6.4	6.4	7.1
Information Products	0.1	0.1	0.3	0.3	0.0	0.0
Regulatory Services	1.7	1.6	2.5	2.5	2.6	2.0
Realty (Accommodation)	0.1	0.2	0.1	0.1	0.1	0.1
<b>Business Line Total</b>	<b>9.3</b>	<b>9.3</b>	<b>9.2</b>	<b>9.2</b>	<b>9.2</b>	<b>9.3</b>
<b>Nature Business Line</b>						
Scientific and Professional Services	5.4	5.8	5.6	5.6	5.8	5.2
Information Products	0.4	0.3	0.2	0.2	0.4	0.4
Regulatory Services	0.2	0.3	0.3	0.3	0.3	0.3
Realty (Accommodation)	0.5	0.5	0.9	0.9	0.5	0.5
<b>Business Line Total</b>	<b>6.6</b>	<b>6.8</b>	<b>6.9</b>	<b>6.9</b>	<b>6.9</b>	<b>6.3</b>
<b>Weather and Environmental Predictions (WEP) Business Line</b>						
Scientific and Professional Services	13.4	12.4	14.2	14.2	16.7	13.0
Information Products	44.6	46.0	49.7	49.7	46.6	44.8
Realty (Accommodation)	0.2	0.2	0.1	0.1	0.3	0.3
Co-marketing initiatives*	0.0	0.0	0.1	0.1	0.0	0.0
Miscellaneous	0.5	0.6	--	--	0.5	0.5
<b>Business Line Total</b>	<b>58.7</b>	<b>59.3</b>	<b>64.1</b>	<b>64.1</b>	<b>64.1</b>	<b>58.6</b>
<b>Management Administration and Policy (MAP) Business Line</b>						
Scientific and Professional Services	0.1	0.1	--	--	0.0	0.1
Information Products	0.1	0.0	--	--	--	0.0
Regulatory Services	--	--	--	--	0.1	--
Realty (Accommodation)	0.6	0.6	0.8	0.8	0.7	0.0
<b>Business Line Total</b>	<b>0.9</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.1</b>
<b>Total Respendable Revenue</b>	<b>75.4</b>	<b>76.1</b>	<b>81.0</b>	<b>81.0</b>	<b>81.0</b>	<b>74.3</b>
<b>Total Revenues (Tables 6A and 6B)</b>	<b>83.6</b>	<b>84.1</b>	<b>91.0</b>	<b>91.0</b>	<b>91.0</b>	<b>83.4</b>

\* Previously referred to as Sale of Sponsorships in previous Report on Plans and Priorities and related to commercial advertising on EC's Automated Telephone Answering Device System.

Totals may differ between and within tables due to rounding of figures.

The following explains the significant differences between planned and actual respendable revenues in 2004-2005.

The most significant decline in anticipated revenue was under the WEP contract with NAVCAN, as well as with its interdepartmental agreements with the Canadian Coast Guard and National Defence. The minor variances in the other business lines are mainly due to fewer than planned rentals of laboratories and other facilities.

**Table 6b: Sources of Non-Respendable Revenue**

This table identifies non-respendable revenues received by Environment Canada.

(\$ millions)	Actual Revenue 2002-2003	Actual Revenue 2003-2004	2004-2005			
			Main Estimates	Planned Revenue	Total Authorities	Actual Revenue
<b>Non-Respendable Revenues</b>						
Clean Environment Business Line						
Fines	0.1	--	--	--	--	0.0
Royalties	0.5	0.2	--	--	--	0.3
Miscellaneous	0.2	0.4	0.1	0.1	0.1	0.4
<b>Business Line Total</b>	<b>0.7</b>	<b>0.7</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.8</b>
Nature Business Line						
Scientific and Professional Services	--	--	0.2	0.2	0.2	--
Licences and Permits	2.3	2.9	--	--	--	2.7
Fines	0.0	0.1	--	--	--	0.1
Regulatory Services	0.2	0.2	4.4	4.4	4.4	0.2
Realty (Accommodation)	0.0	0.0	--	--	--	0.1
Third Party Agreements	0.2	0.2	--	--	--	0.2
Miscellaneous	0.8	0.8	0.2	0.2	0.2	0.8
<b>Business Line Total</b>	<b>3.5</b>	<b>4.1</b>	<b>4.8</b>	<b>4.8</b>	<b>4.8</b>	<b>4.0</b>
Weather and Environmental Predictions (WEP) Business Line						
Information Products	0.6	0.1	2.0	2.0	2.0	0.7
Realty (Accommodation)	0.0	0.0	--	--	--	--
Royalties	0.3	0.1	0.4	0.4	0.4	0.2
Miscellaneous	2.7	2.7	2.7	2.7	2.7	3.0
<b>Business Line Total</b>	<b>3.6</b>	<b>2.9</b>	<b>5.1</b>	<b>5.1</b>	<b>5.1</b>	<b>3.9</b>
Management Administration and Policy (MAP) Business Line						
Realty (Accommodation)	0.1	0.2	--	--	--	0.2
Miscellaneous	0.3	0.1	--	--	--	0.2
<b>Business Line Total</b>	<b>0.4</b>	<b>0.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>0.3</b>
<b>Total Non-Respendable Revenue</b>	<b>8.2</b>	<b>8.0</b>	<b>10.0</b>	<b>10.0</b>	<b>10.0</b>	<b>9.0</b>
<b>Total Revenues (Tables 6A and 6B)</b>	<b>83.6</b>	<b>84.1</b>	<b>91.0</b>	<b>91.0</b>	<b>91.0</b>	<b>83.4</b>

Totals may differ between and within tables due to rounding of figures.

The following explains the significant differences between planned and actual non-respendable revenues in 2004-2005.

The increased revenue received under the Clean business line mainly comes from two technology licence agreements, refunds on expenditures made in the previous year and revenues received on behalf of Health Canada under the New Substances Notification program. The Nature business line had lower than anticipated sales of Migratory Bird Hunting Permits and Stamps. The WEP business line had fewer receipts against its NAVCAN capital advance and some royalties had been invoiced but not yet received lowering actual revenues reported. MAP received unanticipated revenues through the refund of previous years' expenditures as well as proceeds from the disposal of surplus crown assets.

**Table 7: Resource Requirements by Organization and Business Line (\$ millions)**

This table is designed to explain the distribution of funding to a department at the Branch or Sector level.

2004-2005													
Organization	RDG Pacific and Yukon	RDG Prairie and Northern	RDG Ontario	RDG Quebec	RDG Atlantic	ADM P&C	Corporate Offices	ADM HRSI	ADM MSC	ADM EPS	ADM ECS	Total	% of Total
<b>Clean Environment</b>													
Main Estimates	14.0	13.2	15.7	12.5	15.5	25.4	--	3.1	18.9	146.4	8.4	273.1	
Planned Spending	14.3	13.4	15.7	12.8	20.8	54.2	--	3.2	18.7	255.0	8.4	416.5	
Total Authorities	19.1	16.9	17.0	16.3	22.4	31.7	0.3	6.4	15.2	234.2	9.6	389.1	
Actual Spending	18.1	16.2	14.5	14.6	21.9	19.7	0.2	4.8	15.9	222.7	9.2	357.8	35.7
<b>Nature</b>													
Main Estimates	17.0	18.7	26.9	24.2	10.7	--	--	3.3	--	--	109.6	210.4	
Planned Spending	17.2	19.1	27.3	24.6	11.1	--	--	3.4	--	--	112.4	215.1	
Total Authorities	22.6	27.4	30.3	32.1	15.7	--	--	6.0	0.9	0.2	85.3	220.6	
Actual Spending	22.5	26.7	28.8	30.6	15.8	--	--	3.5	0.9	0.2	81.0	210.0	21.0
<b>WEP</b>													
Main Estimates	17.8	31.8	16.8	12.1	11.3	--	--	--	187.9		0.4	278.1	
Planned Spending	19.5	38.6	17.7	13.2	12.4	--	--	--	180.6		0.4	282.4	
Total Authorities	21.3	46.4	20.8	19.6	14.5	--	--	--	151.0		0.6	274.3	
Actual Spending	19.7	46.3	19.5	19.3	14.9	--	--	--	145.4		0.6	265.7	26.5
<b>MAP</b>													
Main Estimates	10.9	9.4	10.2	6.0	6.0	22.5	4.3	51.7	1.2	1.7	0.5	124.6	
Planned Spending	11.0	9.3	10.2	6.0	6.0	22.7	4.9	52.2	1.2	1.7	0.5	125.7	
Total Authorities	15.9	13.9	14.0	8.9	10.8	27.7	8.0	73.4	3.0	0.7	0.8	177.0	
Actual Spending	15.1	12.5	15.7	8.3	10.1	25.7	8.7	66.6	3.5	0.7	0.7	167.6	16.7
<b>Department</b>													
Main Estimates	59.7	73.1	69.6	54.8	43.6	47.9	4.3	58.1	208.0	148.1	119.0	886.2	
Planned Spending	61.9	80.4	70.8	56.6	50.4	76.9	4.9	58.8	200.5	256.7	121.7	1039.7	
Total Authorities	78.9	104.6	82.1	76.9	63.4	59.4	8.2	85.8	170.2	235.1	96.3	1061.0	
Actual Spending	75.5	101.7	78.5	72.8	62.7	45.3	8.9	74.9	165.6	223.7	91.5	1001.0	100

Totals may differ between and within tables due to rounding of figures.

Note: includes responsible revenues

ADM	Assistant Deputy Minister		HRSI	Human Resources and Service Innovation
RDG	Regional Director General		MSC	Meteorological Service of Canada
ECS	Environmental Conservation Service		P&C	Policy and Communications
EPS	Environmental Protection Service			



**Table 8: 2004-2005 User Fee Reporting Template – *User Fees Act***

The User Fees Act came into force on March 31, 2004. It applies to all organizations listed in Sections I, I.I and II of the *Financial Administration Act* that have the power to fix a fee under the authority of an Act of Parliament. Environment Canada did not create any user fees in 2004-2005 or modify any existing fees and therefore is not required to complete Table 8: 2004-2005 User Fee Reporting Template – *User Fees Act*. To address the spirit of the Act, however, the following information has been provided to ensure transparency to Parliament and the public and to provide a foundation for future fee reporting. The fee programs identified will fall within the purview of the *User Fees Act* if, in the future, these fees are modified, and may then be subject to the requirements under the Act, including providing up-to-date cost and performance information.

User Fee and Fee Category	Fee Type	Fee Setting Authority	Date Last Modified	2004-2005	2004-2005	Planning Years	
				Forecast Revenue (\$millions)	Actual Revenue (\$millions)	Fiscal Year	Forecast Revenue (\$millions)
<b>Regulatory</b>							
Ocean Disposal Permit Application	Regulatory	<i>Financial Administration Act</i> (FAA) 19.1 (a); <i>Canadian Environmental Protection Act, 1999</i> (CEPA, 1999) ss. 135(1)	2001	0.3	0.2	2005-2006	0.2
						2006-2007	0.2
						2007-2008	0.2
Ocean Disposal Monitoring Fees	Regulatory	FAA 19.1 (a); CEPA, 1999 ss. 135(1)	2001	1.4	1.3	2005-2006	1.4
						2006-2007	1.4
						2007-2008	1.4
New Chemical Notification	Regulatory	CEPA, 1999 section 328	2002	0.4	0.5	2005-2006	0.4
						2006-2007	0.4
						2007-2008	0.4
Migratory Birds Program – Migratory game bird hunting permit	Regulatory	Migratory Birds Convention Act	1998	2.0	1.6	2005-2006	2.0
						2006-2007	2.0
						2007-2008	2.0
Migratory Birds Program – Habitat conservation stamp	Regulatory	Migratory Birds Convention Act	1991	2.2	1.7	2005-2006	2.2
						2006-2007	2.2
						2007-2008	2.2

User Fee and Fee Category	Fee Type	Fee Setting Authority	Date Last Modified	2004-2005	2004-2005	Planning Years	
				Forecast Revenue (\$millions)	Actual Revenue (\$millions)	Fiscal Year	Forecast Revenue (\$millions)
Migratory Birds Program – Avicultural, Taxidermist and Eiderdown permits	Regulatory	Migratory Birds Convention Act	1985	0.0	0.0	2005-2006	0.0
						2006-2007	0.0
						2007-2008	0.0
Cap Tourmente – Permit Sales	Regulatory	FAA 19.1 (a); Canadian Wildlife Act section 12	2000	0.2	0.2	2005-2006	0.2
						2006-2007	0.2
						2007-2008	0.2
<b>Sub Total (Regulatory)</b>				<b>6.5</b>	<b>5.5</b>	<b>2005-2006</b>	<b>6.4</b>
						<b>2006-2007</b>	<b>6.4</b>
						<b>2007-2008</b>	<b>6.4</b>
<b>Other Products and Services</b>							
Fees charges for processing requests filed under the Access to Information Act	Other	Access to Information Act	1992	0.0	0.0	2005-2006	0.0
						2006-2007	0.0
						2007-2008	0.0
Entry fees – Cap Tourmente	Other	FAA 19.1 (a); Canadian Wildlife Act section 12	2003	0.2	0.2	2005-2006	0.2
						2006-2007	0.2
						2007-2008	0.2
<b>Sub Total (Other Products and Services)</b>				<b>0.2</b>	<b>0.2</b>	<b>2005-2006</b>	<b>0.2</b>
						<b>2006-2007</b>	<b>0.2</b>
						<b>2007-2008</b>	<b>0.2</b>
<b>Total</b>				<b>6.7</b>	<b>5.7</b>	<b>2005-2006</b>	<b>6.7</b>
						<b>2006-2007</b>	<b>6.7</b>
						<b>2007-2008</b>	<b>6.7</b>

Totals may differ between and within tables due to rounding of figures.

**Table 9: Major Regulatory Initiatives**

Regulations	Expected Results	Performance Measurement Criteria	Results Achieved
Regulation Amending the Ozone Depleting Substances Regulation, 2004	The amendments to the regulations are administrative in nature and continue to foster further reductions in HCFCs as per the spirit of the Montreal Protocol.	Canada's HCFC consumption has been reduced by 35 percent starting January 1, 2004	Published in Canada Gazette Part II on December 29, 2004
Prohibition of Certain Toxic Substances Regulations, 2005 (proposed under Total, Partial or Conditional Prohibition of Certain Toxic Substances Regulations)	Prohibit toxic substances (2-methoxyethanol(2-ME), tetrachlorobenzenes (TeCBs) and pentachlorobenzene (QCB) that pose serious risks to Canadians' health or their environment, to ensure the substances are not introduced into the Canadian market.		Published in Canada Gazette Part II on March 9, 2005
<i>Chromium Electroplating, Chromium Anodizing, and Reverse Etching Regulations (targeting publication in Canada Gazette Part I)</i>	Prevent and minimise emissions of chromium from chromium electroplating/anodizing/reverse etching operations that will result in facilities reducing chromium emissions by 50 to 90 percent.		Published in Canada Gazette Part I on November 6, 2004
<i>Regulations Amending the Sulphur in Diesel Fuel Regulations (targeting publication in Canada Gazette Part I)</i>	Set limits for sulphur in off-road, rail and marine diesel fuels at 500 mg/kg starting in 2007, with off-road diesel fuel reduced to 15 mg/kg in 2010. This will result in environmental and health benefits and ensure that the level of sulphur in diesel fuel used in off-road vehicles in Canada will not impede the effective operation of advanced emission control technologies.		Published in Canada Gazette Part I on October 2, 2004
<i>Marine Spark-Ignition Engines and Off-Road Recreational Vehicle Emission Regulations (targeting publication in Canada Gazette Part I)</i>	Introduce, for the first time, emission standards for outboard engines, personal watercraft, snowmobiles, all-terrain vehicles and off-road motor cycles. These emission standards will result in significant reductions of pollutants emitted from these categories of vehicles.		Environment Canada prepared a Discussion Document of the <i>Marine Spark-Ignition Engine and Recreational Vehicles Emission Regulations</i> for review and comment.
<i>Off-Road Compression-Ignition Engine Emission Regulations (targeting publication in Canada Gazette Part I)</i>	Establish emission standards for diesel engines such as those used in power construction, agricultural and forest machines. As a result of implementing these standards NO <sub>x</sub> and PM emissions from these engines will be reduced.		Published in Canada Gazette on May 8, 2004 Published in Canada Gazette Part II on February 23, 2005
<i>Regulations Amending the Pulp and Paper Effluent Regulations (targeting publication in Canada Gazette Part II)</i>	The Amendments will ensure requirements are clearer and more understandable, thereby making the Regulations easier to comply with and enforce.		Published in Canada Gazette Part II on May 19, 2004
<i>Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (targeting publication in Canada Gazette Part I)</i>	Integrate the relevant changes to international agreements' definitions of hazardous waste and hazardous recyclable material in Canada; enable progress towards a federal-provincial-territorial harmonized approach to the management of hazardous recyclable material. Establish reduction plans for export of hazardous waste for final		The Regulations were published in Canada Gazette Part I on March 20, 2004

	disposal and establish Environmentally Sound Management (ESM) criteria to allow the Minister to determine whether to refuse an export, import or transit permit.		
<i>Amendments to the New Substances Notification Regulations (Chemicals and Polymers (targeting publication in Canada Gazette Part I)</i>	Publication for comment of a streamlined and simplified regulatory framework that uses plain language.	N/A	Amendments to the New Substances Notification Regulations (Chemicals and Polymers) published in Canada Gazette Part I October 2004
<i>Amendments to the legal list and compensation regulation (publish regulations in 2004-2005).</i>	Amend schedule 1 and provide procedure to apply for compensation.	Published in the Canada Gazette Part II, January 2005	76 species added to Schedule I for the first time in January 2005. Resulting in protection for species on federal lands
<i>Annual hunting regulations establishing hunting season dates and bag and possession limits for migratory game birds (publish regulations by the 1<sup>st</sup> quarter of 2004-2005).</i>	Through best available science allow hunting at sustainable levels.	Published <i>Canada Gazette, Part II</i> , June 2004.	Update to seasons, bag limits to reflect changing population levels of certain Migratory Birds
<i>Overabundant Snow Goose regulation to establish special conservation seasons (publish regulation in the 4<sup>th</sup> quarter 2004-2005).</i>	Maintain a spring hunting season for snow goose as a population control measure where needed.	Published <i>Canada Gazette, Part II</i> , March 2005	Population control measures by setting seasons, bag limits to address increasing snow goose population levels
<i>Amendments to update regulations and establish and enlarge Iles-aux-Herons MBS (QC); adjust legal survey description for Anderson River MBS (NWT); enlarge Baie des Loups MBS (publish regulations by the 4<sup>th</sup> quarter of 2004-2005)</i>	Update current Migratory Bird Sanctuaries to reflect current distribution of Migratory birds as well as new land holdings.	Under development	N/A
<i>Amendments to enlarge Alaksen NWA (B.C.), Columbia NWA (B.C.), Qualicum NWA (B.C.), St. Clair NWA (ON), Long Point NWA (ON), Prince Edward Point NWA (ON), Iles-de-L'Estuaire NWA (QC) and Chignecto NWA (NS), Pointe de L'Est, Lac Saint-François and Baie de l'Isle Verte NWAs (QC) (publish regulations by the 4<sup>th</sup> quarter of 2004-2005).</i>	Update current National Wildlife Areas to reflect new land holdings, for the protection of wildlife in Canada.	Under development	N/A

**Table 10: Details on Project Spending**

This table identifies Environment Canada's projects and the amount of resources expended.

(millions \$)	Current Estimated Total Cost	2002-2003 Actual Spending	2003-2004 Actual Spending	2004-2005			
				Main Estimates	Planned Spending	Total Authorities	Actual
Clean Environment							
Ozone – Construction of a Vehicle and Fuel Testing Facility (1)	13.4	4.3	1.8	1.9	1.9	--	--
Ozone – National Air Pollution Surveillance Network and Canadian Air and Precipitation Monitoring Network (NAPS and CAPMON)	16.5	4.1	4.0	3.9	3.9	3.9	3.9
Weather and Environmental Protection							
Weather station construction Eureka NWT (2)	14.7	0.1	3.4	2.5	2.5	2.5	3.4
Modernization of the Climate Observing Program	8.6	0.7	0.5	0.5	0.5	0.5	1.8
Hydrometric Program	10.0	3.2	1.8	2.0	2.0	2.0	1.8
Canadian Meteorological Centre – Facility Extension	8.3	5.4	0.9	0.6	0.6	0.6	0.5
Total Projects	71.5	17.8	12.4	11.4	11.4	9.5	11.2

Totals may differ in and between tables due to rounding of figures.

Table 10 lists major projects by business line exceeding the departmental project approval. Environment Canada's delegated authority is \$2.5M for general projects, \$2M for new technology (with a \$5M replacement limit) and \$2.5M for real property projects. All of the major projects listed have received Effective Project Approval (EPA). EPA implies Treasury Board's approval of, and expenditure authorization for, the objectives of the project implementation phase. Sponsoring departments and agencies are to submit for EPA only when the scope of the overall project has been defined and when the estimates have been refined to the substantive level.

(1) The project was completed in 2003.

(2) Treasury Board submission in progress to increase EPA for capital projects.

**Table 11: Details on Transfer Payment Programs (TPPs)**

The following tables provide details on the results of Environment Canada's Transfer Payment Programs (TPPs) or the progress made to date for each TPP where total transfer payments exceed five million dollars for the reporting fiscal year.

1) Name of Transfer Payment Program: Contributions to support environmental research and development						
2) Start Date: August 1999		3) End Date: March 31, 2009		4) Total Spending: \$35.9M		
5) Description of Transfer Payment Program: This class contribution emphasizes increasing the effectiveness of federally supported research and capturing the benefits of partnering. Financial support is provided for stimulating research and the development of mechanisms for coordinating and disseminating research-related information.						
6) Objective(s), expected result(s) and outcomes: The objectives of this class contribution are: <ul style="list-style-type: none"> <li>- To stimulate, increase or improve scientific knowledge and information;</li> <li>- To support the promotion and coordination of research and development in areas that support Environment Canada's objectives, priorities, programs and activities, in such areas as wildlife, toxicology, climate change, atmospheric studies;</li> <li>- To stimulate the development, demonstration, application and commercialization of innovative environmental technologies; and</li> <li>- To encourage the development or maintenance of linkages within the scientific and business communities by supporting the establishment and operation of networks and partnerships among researchers, research groups, universities and other research facilities, and the private sector.</li> </ul> This class contribution is in support of any of the following departmental key results: <ul style="list-style-type: none"> <li>- Reduced adverse human impact on the atmosphere and on air quality;</li> <li>- Understanding, and prevention or reduction of the environmental and human health threats posed by toxic substances and other substances of concern;</li> <li>- Conservation of biological diversity;</li> <li>- Understanding and reduction of human impacts on the health of ecosystems;</li> <li>- Conservation and restoration of priority ecosystems;</li> <li>- Reduced impact of weather and related hazards on health, safety and the economy;</li> <li>- Adaptation to day-to-day and longer-term changes in atmospheric, hydrological and ice conditions;</li> <li>- Strategic and integrated policy priorities and plans; or</li> <li>- A well-performing organization supported by efficient and innovative services.</li> </ul>						
7) Achieved results or progress made: The achieved results and progress made are reflected through the program delivery. This class contribution facilitates access from a national level to existing knowledge, tools and methods for making good policy decisions related to the environment and health, and that are appropriate given the social, cultural and economic context.						
<b>Contributions by Business Line</b>	8) Actual Spending 2002-03	9) Actual Spending 2003-04	10) Planned Spending 2004-05	11) Total Authorities 2004-05	12) Actual Spending 2004-05	13) Variance(s) between 10 and 12
Clean Environment	1.6	2.1	0.9	1.4	1.4	0.5
Nature	1.4	1.9	1.0	2.4	2.4	1.4
Weather and Environmental Protection	2.1	1.5	0.5	2.3	2.3	1.8
Management, Administration and Policy	--	0.8	--	1.1	1.1	1.1

<b>16) Total Transfer Payment Program (TPP)</b>	<b>5.0</b>	<b>6.3</b>	<b>2.4</b>	<b>7.2</b>	<b>7.2</b>	<b>4.8</b>
17) Comments on Variances: Variance is due to varying annual contribution requirements within the programs. Only long-term contributions are reflected in planned spending amounts. Non multi-year contribution agreements which vary annually cause variance.						
18) Significant Evaluation Findings and URL to last evaluation: Contributions made through this class can cover all business lines and departmental priorities. Audits and evaluations are planned in accordance to a departmental framework based on departmental priorities, timing and frequency, for which programs or initiatives will be subject to evaluation. For this class approach, it means that individual transfer payments will be subject to evaluation as part of the identified program or initiative evaluation conducted. In 2003, an audit was conducted and found that: funds were being directed to eligible recipients for projects in line with the objectives of this class; projects were completed in accordance with the terms and conditions of the contribution agreements. The audit found weaknesses in managers' awareness of the requirements associated with contributions as well as weaknesses in some areas of the management control framework. URL: <a href="http://www.tbs-sct.gc.ca/rma/database/NewDeptView_e.asp">http://www.tbs-sct.gc.ca/rma/database/NewDeptView_e.asp</a> .						

1) Name of Transfer Payment Program: Contributions to support environmental and sustainable development initiatives						
2) Start Date: August 1999		3) End Date: March 31, 2009		4) Total Spending: \$132.9M		
5) Description of Transfer Payment Program: The objective of this class contribution is to enable Canadian groups, associations and organizations to become actively involved in environmental and sustainable development initiatives while accommodating regional ecosystem and socio-economic considerations. Contributions enable recipients to plan, manage and complete environmental and sustainable development initiatives at the regional or ecosystem level. This funding also serves to increase awareness and understanding of environmental and sustainable development issues and to encourage environmentally responsible action.						
6) Objective(s), expected result(s) and outcomes: This class contribution is in support of any of the following departmental key results: <ul style="list-style-type: none"> <li>- Reduced adverse human impact on the atmosphere and on air quality;</li> <li>- Understanding, and prevention or reduction of the environmental and human health threats posed by toxic substances and other substances of concern;</li> <li>- Conservation of biological diversity;</li> <li>- Understanding and reduction of human impacts on the health of ecosystems;</li> <li>- Conservation and restoration of priority ecosystems;</li> <li>- Reduced impact of weather and related hazards on health, safety and the economy;</li> <li>- Adaptation to day-to-day and longer-term changes in atmospheric, hydrological and ice conditions;</li> <li>- Strategic and integrated policy priorities and plans; or</li> <li>- A well-performing organization supported by efficient and innovative services.</li> </ul>						
7) Achieved results or progress made: The achieved results and progress made are reflected through the program delivery. This class contribution facilitates access from a national level to existing knowledge, tools and methods for making good policy decisions related to the environment and health, and that are appropriate given the social, cultural and economic contexts.						
<b>Contributions by Business Line</b>	8) Actual Spending 2002-03	9) Actual Spending 2003-04	10) Planned Spending 2004-05	11) Total Authorities 2004-05	12) Actual Spending 2004-05	13) Variance(s) between 10 and 12
Clean Environment	0.5	1.2	4.3	7.7	7.5	3.2
Nature	18.0	17.7	11.1	13.2	13.2	2.1

Weather and Environmental Protection	0.3	0.3	0.2	0.3	0.3	0.1
Management, Administration and Policy	0.5	--	1.6	1.9	1.8	0.2
<b>16) Total Transfer Payment Program (TPP)</b>	<b>19.3</b>	<b>19.2</b>	<b>17.2</b>	<b>23.1</b>	<b>22.8</b>	<b>5.6</b>
17) Comments on Variances: Variance is due to varying annual contribution requirements within the programs. Only long-term contributions are reflected in planned spending amounts. Non multi-year contribution agreements which vary annually cause variance.						
18) Significant Evaluation Findings and URL to last evaluation: The evaluation found that the objectives of this class contribution are being met, to varying degrees. The evaluation made recommendations to enhance effective program management and improve the process. The audit found weakness in areas such as monitoring, consideration of recipient audits, official languages and in specific instances where responsibilities under section 34 of the <i>Financial Administration Act</i> were not appropriately discharged. Overall, there was an acceptable level of compliance with most of the policy and legislative requirements covering contribution agreements. URL: <a href="http://www.tbs-sct.gc.ca/rma/database/NewDeptView_e.asp">http://www.tbs-sct.gc.ca/rma/database/NewDeptView_e.asp</a> .						

1) Name of Transfer Payment Program: Contributions to support Canada's international commitments						
2) Start Date: August 1999		3) End Date: March 31, 2009		4) Total Spending: \$33.3M		
5) Description of Transfer Payment Program: This class contribution provides funding to ensure that Canada's interests are represented in international fora; to sustain and enhance Canada's participation in international organizations and multilateral and bilateral discussions; and to strengthen Canada's linkages to the international community regarding global environmental issues.						
6) Objective(s), expected result(s) and outcomes: This class contribution is in support of any of the following departmental key results: <ul style="list-style-type: none"> <li>- Reduced adverse human impact on the atmosphere and on air quality</li> <li>- Understanding, and prevention or reduction of the environmental and human health threats posed by toxic substances and other substances of concern;</li> <li>- Conservation of biological diversity;</li> <li>- Understanding and reduction of human impacts on the health of ecosystems;</li> <li>- Conservation and restoration of priority ecosystems;</li> <li>- Reduced impact of weather and related hazards on health, safety and the economy;</li> <li>- Adaptation to day-to-day and longer-term changes in atmospheric, hydrological and ice conditions;</li> <li>- Strategic and integrated policy priorities and plans; or</li> <li>- A well-performing organization supported by efficient and innovative services.</li> </ul>						
7) Achieved results or progress made: The achieved results and progress made are reflected through the program delivery. This class contribution facilitates access from an international level to existing knowledge, tools and methods for making good policy decisions related to the environment and health, and that are appropriate given the social, cultural and economic contexts.						
<b>Contributions by Business Line</b>	8) Actual Spending 2002-03	9) Actual Spending 2003-04	10) Planned Spending 2004-05	11) Total Authorities 2004-05	12) Actual Spending 2004-05	13) Variance(s) between 10 and 12
Clean Environment	2.6	1.3	0.5	1.5	1.4	0.9
Nature	1.1	1.4	1.3	1.5	1.5	0.2
Weather and Environmental Protection	1.8	1.7	1.7	2.2	2.2	0.5



Management, Administration and Policy	0.4	0.4	0.5	0.6	0.6	0.1
<b>16) Total Transfer Payment Program (TPP)</b>	<b>5.9</b>	<b>4.8</b>	<b>4.1</b>	<b>5.8</b>	<b>5.7</b>	<b>1.7</b>

17) Comments on Variances: Variance is partially due to fluctuations in foreign exchange rates as well as in-year contributions (i.e. Inter-American Institute), which vary annually and are not reflected in planned spending amounts.

18) Significant Evaluation Findings and URL to last evaluation: Contributions made through this class can cover all business lines and departmental priorities. Audits and evaluations are planned in accordance to a departmental framework based on departmental priorities, timing and frequency, for which programs or initiatives will be subject to evaluation. For this class approach, it means that individual transfer payments will be subject to evaluation as part of the identified program or initiative evaluation conducted.

In 2003, an audit was conducted and found that: funds were being directed to eligible recipients for projects in line with the objectives of this class; that projects were completed in accordance with the terms and conditions of the contribution agreements. The audit found weaknesses in managers' awareness of the requirements associated with contributions as well as weaknesses in some areas of the management control framework. URL: [http://www.tbs-sct.gc.ca/rma/database/NewDeptView\\_e.asp](http://www.tbs-sct.gc.ca/rma/database/NewDeptView_e.asp).

1) Name of Transfer Payment Program: Contributions to EcoAction Community Funding Initiative

2) Start Date: 1998

3) End Date: March 31, 2009

4) Total Spending: \$32M

5) Description of Transfer Payment Program: Provide financial support to non-profit organizations to undertake environmental projects that yield positive, measurable results and increase public capacity and awareness at the community level.

6) Objective(s), expected result(s) and outcomes:

Objectives:

- To support and promote environmental improvements by funding community groups undertaking action, outreach and/or capacity building activities that address the following Government of Canada and EC priorities: climate change, nature, water quality and air quality;
- To lever monetary and voluntary in-kind support for environmental activities which have measurable environmental benefits; and
- To provide Canadians with the tools they need to act on their knowledge and values as individuals and members of communities in support of sustainable development.

Expected results and outcomes:

- The successful completion of community-based projects that support action, capacity building and outreach on priority environmental issues at the local and regional levels;
- Measurable results that are supportive of the Government of Canada's climate change objectives, as detailed in the Climate Change Plan for Canada and the One-Tonne Challenge; and
- Measurable results that are supportive of Environment Canada's Clean Environment and Nature business lines.

7) Achieved results or progress made:

EcoAction priorities are aligned with the Clean Environment and Nature business lines. The program remains the only national Environment Canada program dedicated to supporting air and water quality projects at the community level. It also enhances and complements the One-Tonne Challenge initiative by supporting community level projects with the objective of reducing personal greenhouse gas emissions. EcoAction also complements existing Environment Canada programs focused on species at risk issues, habitat conservation and invasive species eradication in both rural and urban areas. Program funding leads to the effective leveraging of \$3.00 of sponsor contributions for every \$1.00 of program funds and supports part-time and permanent employment growth. It also supports energy use reduction strategies that save consumers and businesses money, reduces the need for costly cleanup of harmful and hazardous substances and preserves Canada's natural resources. In 2004-2005, EcoAction funded 190

community-based projects.						
<b>Contributions by Business Line</b>	8) Actual Spending 2002-03	9) Actual Spending 2003-04	10) Planned Spending 2004-05	11) Total Authorities 2004-05	12) Actual Spending 2004-05	13) Variance(s) between 10 and 12
Clean Environment	2.4	2.6	2.5	3.5	3.4	0.9
Nature	3.1	2.8	2.5	1.8	1.8	(0.7)
<b>16) Total Transfer Payment Program (TPP)</b>	<b>5.5</b>	<b>5.4</b>	<b>5.0</b>	<b>5.3</b>	<b>5.2</b>	<b>0.2</b>
17) Comments on Variances: not applicable						
18) Significant Evaluation Findings and URL to last evaluation: The follow-up evaluation found that the EcoAction Program has addressed all of the concerns and recommendations identified in the original review report. The Program has also either satisfied or is in the process of addressing the suggestions made in the report. <a href="http://www.tbs-sct.gc.ca/rma/database/1det_e.asp?id=10429">http://www.tbs-sct.gc.ca/rma/database/1det_e.asp?id=10429</a> .						

1) Name of Transfer Payment Program: Contributions for Environmental clean-up of the Sydney Tar Ponds and coke oven sites in the Muggah Creek watershed		
2) Start Date: April 1, 1999	3) End Date: March 31, 2005	4) Total Spending: \$31.6M
5) Description of Transfer Payment Program: For the remediation of historical contamination; the fostering of a healthy community by finding workable solutions engendered primarily within the Cape Breton community through the Joint Action Group (JAG) process; the enhancement of ecosystems as may be determined appropriate for land and water use; and subject to municipal, provincial, national and international laws and agreements, the optimized use of local labour, services, products, expertise, and compliant technologies in the process.		
6) Objective(s), expected result(s) and outcomes: Protection from domestic sources of pollution: <ul style="list-style-type: none"> <li>- Successful completion of activities under the 1999 Cost Share Agreement (CSA). The 1999 Cost Share Projects allowed the safeguarding of the health, safety and the environment. The continued funding of the project allows the large scale remediation of the site and ultimately reduces the risk from toxics and other substances of concern;</li> <li>- Ensure proper close out of the 1999 CSA projects; and</li> <li>- Fulfill Environmental Assessment (EA) obligations and provide regulatory and technical advice.</li> </ul>		
7) Achieved results or progress made: Environment Canada completed an independent audit on the 1999 Cost Share Agreements to ensure that funds have been used in an appropriate and cost-effective manner. On May 12, 2004, the federal and provincial governments announced \$400 million in funding to remediate the site. The project will continue to be led by the province of Nova Scotia while federal leadership changed from Environment Canada to PWGSC. Environment Canada fulfilled Environmental Assessment obligations with the completion of precursor documents. Environment Canada fulfilled the requirements of the Memorandum of Understanding (MOU) with the Union of Nova Scotia Indians regarding education and communication on the full scale remediation project. Environment Canada ensured continued site activities such as site security patrols, ambient air monitoring, removal of Domtar Tank material and ensured smooth and appropriate delivery of these programs as well as ensured financial accountability. Environment Canada ensured completion of the concept design for several projects (Coke Oven Brook Realignment, Cooling Pond decommissioning, Victoria Park water main realignment and Cofferdam design).		

<b>Contributions by Business Line</b>	8) Actual Spending 2002-03	9) Actual Spending 2003-04	10) Planned Spending 2004-05	11) Total Authorities 2004-05	12) Actual Spending 2004-05	13) Variance(s) between 10 and 12
Clean Environment	11.1	4.1	7.2	6.1	5.6	(1.6)
<b>16) Total Transfer Payment Program (TPP)</b>	<b>11.1</b>	<b>4.1</b>	<b>7.2</b>	<b>6.1</b>	<b>5.6</b>	<b>(1.6)</b>
17) Comments on Variances: There was a variance between planned and actual spending as the original estimates were provided in 1999 when the project was mainly in an investigative and study phase. Hence changes occurred as more information became available and ultimately the cost estimates became more accurate. Furthermore changes were made to programs based on the investigations and studies which ultimately resulted in variances between the planned and actual spending.						
18) Significant Evaluation Findings and URL to last evaluation: not applicable						

1) Name of Transfer Payment Program: Habitat Stewardship Contribution Program						
2) Start Date: August 20, 2000		3) End Date: March 31, 2008		4) Total Spending: \$46.1M		
5) Description of Transfer Payment Program: <ul style="list-style-type: none"> <li>- Contribute to the recovery of endangered, threatened, and other species of concern, and to prevent other species from becoming a conservation concern, by engaging Canadians in conservation actions to benefit wildlife; and</li> <li>- Enable non-government organizations, landowners, the private sector, Aboriginal organizations, educational institutions, community groups, and other levels of government to plan, manage and complete projects that will achieve the program goal.</li> </ul>						
6) Objective(s), expected result(s) and outcomes: Objectives: <ul style="list-style-type: none"> <li>- To support habitat projects that benefit species at risk;</li> <li>- To enable Canadians to become actively and concretely involved in stewardship projects for species at risk that will result in tangible, measurable environmental benefits; and</li> <li>- To improve the scientific, sociological, and economic understanding of the role stewardship has as a conservation tool.</li> </ul> Expected results and outcomes: <ol style="list-style-type: none"> <li>1. Securing or protecting important habitat to protect species at risk and support their recovery;</li> <li>2. Mitigating threats to species at risk caused by human activities; and</li> <li>3. Supporting the implementation of other priority activities in recovery strategies or action plans, where these are in place or under development.</li> </ol>						
7) Achieved results or progress made: The Habitat Stewardship Program (HSP) funded 179 projects and leveraged additional funds contributed by 142 partnering organizations. HSP activities benefited 250 species listed under the <i>Species at Risk Act (SARA)</i> . No data is available yet on the number of hectares of land protected or improved in 2004-2005.						
<b>Contributions by Business Line</b>	8) Actual Spending 2002-03	9) Actual Spending 2003-04	10) Planned Spending 2004-05	11) Total Authorities 2004-05	12) Actual Spending 2004-05	13) Variance(s) between 10 and 12
Nature	--	--	10.0	10.2	10.2	0.2
<b>16) Total Transfer Payment Program (TPP)</b>	<b>--</b>	<b>--</b>	<b>10.0</b>	<b>10.2</b>	<b>10.2</b>	<b>0.2</b>
17) Comments on Variances: not applicable						

18) Significant Evaluation Findings and URL to last evaluation:  
 An independent evaluation was carried out just before the funding year 2004-2005. It concluded that the program's mandate, goals, objectives and delivery method are relevant for addressing Canada's species at risk objectives, and demonstrating appropriate management and accountability mechanisms over the federal funds provided. Given the proclamation of SARA, the evaluation suggested refining program priorities to focus on species at risk. These recommendations were addressed in the 2004-2005 period. (Note: no URL page for the evaluation results)

1) Name of Transfer Payment Program: Opportunities Envelope Program

2) Start Date: February 2, 2004      3) End Date: March 31, 2008      4) Total Spending: --

5) Description of Transfer Payment Program: To fund projects/programs that generate incremental emission reductions to those being pursued by existing federal programs and initiatives (the early action targeted measures, large industrial emitter's initiative, the offset system etc.).

6) Objective(s), expected result(s) and outcomes:

- Objectives:
- Enable Canadian provinces and territories to plan, manage and complete projects/programs aimed at early greenhouse gas reductions;
  - Encourage Canadian provinces and territories to become actively and concretely involved in climate change projects/programs that will result in measurable and incremental greenhouse gas reductions; and
  - Lever non-federal government, voluntary in-kind and financial support for greenhouse gas reductions projects/programs.

- Expected result and outcome:
- A significant portion of the expected emission reductions should be realized in support of Canada's Kyoto target for the first commitment period.

7) Achieved results or progress made:

<b>Contributions by Business Line</b>	8) Actual Spending 2002-03	9) Actual Spending 2003-04	10) Planned Spending 2004-05	11) Total Authorities 2004-05	12) Actual Spending 2004-05	13) Variance(s) between 10 and 12
Clean Environment	--	--	9.6	--	--	(9.6)
<b>16) Total Transfer Payment Program (TPP)</b>	--	--	<b>9.6</b>	--	--	<b>(9.6)</b>

17) Comments on Variances: Funding has been reprofiled to 2005-2006 and 2006-2007 to address revised requirements.

18) Significant Evaluation Findings and URL to last evaluation: not applicable.

**Table 12: Conditional Grants (Foundations)**

1) Name of Foundation: Canadian Foundation for Climate and Atmospheric Sciences (CFCAS)		
2) Start Date: February 2000	3) End Date: 2010	4) EC Spending: \$110M
5) Purpose of Funding: To invest strategically in excellent university-based research to: provide relevant science to policy makers; generate better knowledge of climate change and its impacts on the natural environment; provide results to help Canada respond to its international environmental commitments; and ensure a supply of skilled human resources to meet future environmental challenges.		
6) Objective(s), expected result(s) and outcomes:		
Objectives	Expected Results	Outcomes
<p>Enhance Canada’s scientific capacity by funding the generation and dissemination of knowledge in areas of national importance and policy relevance, through focused support for excellent university-based research in climate and atmospheric sciences. Major objectives are to:</p> <ul style="list-style-type: none"> <li>- Channel and strengthen Canada’s scientific capacity to address climate change and air quality issues.</li> <li>- Provide the scientific basis for a better understanding of climate change, the climate system, (including processes and predictions), extreme weather, air quality, and marine environmental prediction.</li> <li>- Provide the scientific basis for policies addressing the impacts of extreme weather, climate change and air quality as well as their implications for human health and the natural environment, including northern Canada.</li> <li>- Foster collaborative and interdisciplinary approaches to research on meteorology, atmospheric science, air quality, climate and climate change.</li> <li>- Encourage the participation and support of others, including the private sector, in climate and atmospheric sciences.</li> </ul>	<ul style="list-style-type: none"> <li>- Improved weather predictions and policies, environmental security and risk management strategies.</li> <li>- Enhanced economic stability through generation and application of new knowledge on climatic conditions conducive to smog, disease vectors, exotic pest and plant species, avalanches, forest fires and other threats.</li> <li>- Better prediction and understanding of severe weather events (drought, winter storms, floods).</li> <li>- Generation of skilled scientists to meet societal and industry needs, and fill positions vacated by retirements.</li> <li>- More efficient and effective use of facilities and technologies for monitoring regional climates (including earth observation systems).</li> <li>- Better data on climate system processes influencing greenhouse gas sources and sinks.</li> <li>- Improved knowledge of oceans and atmospheric processes, for better marine environmental predictions and a better understanding of the role of oceans in climate.</li> <li>- Enhanced prestige and profile of Canadian researchers; greater</li> </ul>	<p>To increase Canada's intellectual resources in climate and atmospheric sciences through training and retention of researchers, help generate and disseminate relevant new knowledge, increase the transfer of scientific findings to stakeholders, and raise Canada's scientific profile internationally. Benefits include better information to support policy development, improved operational forecasting, better adaptation to climate changes and more effective management of climate-related risks.</p>

	involvement of Canadians in international scientific activities.					
<p>7) Achieved results or progress made (within overall departmental results achieved):</p> <p>As of March 31, 2005, the Foundation had invested over \$70 M in university-based research related to climate, extreme weather, air quality, and marine environmental prediction in 13 major collaborative networks and 107 projects. Over half of CFCAS's commitments have been in the climate sector. Several of the networks are linked to international research programs; all involve multiple partners. Complementary (leveraged) support for networks has doubled the resources available to them. The Foundation has also hosted or co-hosted a number of workshops and symposia on topics such as extreme weather and Arctic climate, and provides partial support to two international project offices in Canada and to the National Secretariat for International Polar Year (2007).</p> <p>In August 2003, the Prime Minister charged CFCAS with the preparation of a <i>Report to Canadians on the Science of Climate Change</i>. The report will focus on the science of climate change - what we know and don't know; and the capacity in Canada to provide Canadians with science-based advice for decision-making for adaptation and mitigation, both now and in the future. Recommendations are expected to focus on science needs for the future (including monitoring), and on organization of science (national and international).</p> <p>CFCAS funding supports research networks and projects in areas such as climate system science, greenhouse gases, extreme weather, air quality, and ocean-atmosphere conditions. Results of the research are relevant to policy and operations in areas such as climate change, weather and environmental prediction, public security, human health, and natural resource management. A few of the many accomplishments in 2004/05 were as follows:</p> <ul style="list-style-type: none"> <li>- enhancement of the Meteorological Service of Canada coupled global climate model through improved representation of important biogeochemical cycles;</li> <li>- determining that medium age (35-60 years) forests have the strongest ability to absorb and retain carbon. This is helping Natural Resources Canada to develop policies on forest management and is providing data for carbon accounting to meet Canada's Kyoto commitments;</li> <li>- new knowledge on the behaviour of different particles in the air which has enabled refinements in regional air quality models, resulting in improved predictions of urban air quality;</li> <li>- new techniques in ocean modelling that will improve the prediction of extreme events on the Scotian Shelf – an area of important offshore industrial activity;</li> <li>- completion of a five-year record of spring concentrations of ozone and other trace gases in the Arctic stratosphere.</li> </ul>						
	8) Actual Spending 2002-2003	9) Actual Spending 2003-2004	10) Planned Spending 2004-2005	11) Total Authorities 2004-2005	12) Actual Spending 2004-2005	13) Variance between 10) and 12)
14) Conditional Grant(s)	--	\$50M	--	--	--	--
15) Comments on Variances: not applicable						
16) Significant Evaluation Findings and URL to last evaluation: not applicable						
17) URL to Foundation site: <a href="http://www.cfcas.org/index_e.html">http://www.cfcas.org/index_e.html</a>						
18) URL to Foundation's Annual Report: <a href="http://www.cfcas.org/sitemap_e.html">http://www.cfcas.org/sitemap_e.html</a>						

1) Name of Foundation: Sustainable Development Technology Canada (SDTC)						
2) Start Date: 2001		3) End Date: 2012		4) EC Spending : \$275M		
5) Purpose of Funding: To stimulate the development and demonstration of Canadian technologies aimed at climate change, air quality, clean water and clean soil.						
6) Objective(s), expected result(s) and outcomes: To fund the development and demonstration of Canadian technologies addressing climate change, clean air, clean water and clean soil issues.						
Objectives		Expected Results		Outcomes		
<p>To fund the accelerated development and demonstration of collaborative projects which address the issues of climate change and air quality.</p> <p>With the \$200 million from Budget 2004, SDTC's mandate was broadened to include the development and demonstration of new technologies for clean water and soil.</p>		<p>Upon diffusion of successful projects, major reductions in greenhouse gas emissions will result to facilitate reaching Canada's Kyoto objectives. Other Environment Canada priorities related to Clean Air will be met with new innovative technologies.</p>		<p>As of 31 March 2005, SDTC has provided \$89M (27%) in technology development and demonstration funding for 46 climate change and clean air projects, while the private sector contributed \$176M (55%), and \$57M (18%) from other government sources, for a total project value of \$322M. SDTC has also maintained a 80/20 ratio in its project funding such that 80% of funding supports climate change technologies and 20% goes to clean air technologies, while recognizing there are co-benefits between both types. Future project funding will include the expanded mandate for clean water and clean soil technologies.</p>		
7) Achieved results or progress made (within overall departmental results achieved): SDTC requires that technology developers form partnership consortia so that applicants consist of companies, university researchers and other interested organizations. These consortia provide a broad base to develop not only the technology in question, but also help ensure subsequent deployment or market update once demonstrations are completed. Project consortia have received funding for the demonstration and development of climate change and clean air technologies, including: hydrogen fuel cells; hydrogen storage & recovery devices; bio-fuels; hybrid electric vehicles; climate change gas capture; solar heating systems; tidal power turbines; CO <sub>2</sub> recycling; building insulation; long-life batteries; lighting system controls; advanced wind turbines; ethanol membranes; oil-sand separators; anaerobic digesters of solid wastes; fuel-cell powered forklifts; marine diesel injection systems; carbon sequestration systems; power grid controls; closed loop systems for buildings and pulp mills; wastewater sludge treatment; advanced waste incineration; mercury emissions reductions; and smelter waste recycling. According to the SDTC 2004 Annual Report, its 46 funded projects, as of 31 March 2005, has the potential for 12 megatons of C02 reduction by 2010.						
	8) Actual Spending 2002-2003	9) Actual Spending 2003-2004	10) Planned Spending 2004-2005	11) Total Authorities 2004-2005	12) Actual Spending 2004-2005	13) Variance between 10) and 12)
14) Conditional Grant(s)		\$125M	\$100M	\$100M	\$100M	--
15) Comments on Variances: not applicable						
16) Significant Evaluation Findings and URL to last evaluation: not applicable						

17) URL to Foundation site: <http://www.sdte.ca/en/>

18) URL to Foundation's Annual Report: [http://www.sdte.ca/en/news/annual\\_reports.htm](http://www.sdte.ca/en/news/annual_reports.htm)

1) Name of Foundation: Federation of Canadian Municipalities' (FCM) Green Municipal Funds (GMFs) consisting of the Green Municipal Enabling Fund (GMEF) and the Green Municipal Investment Fund (GMIF)

2) Start Date: Budget 2000

3) End Date: In perpetuity

4) EC Spending: \$275M

5) Purpose of Funding: The intent of the GMFs is to encourage investment in environmental municipal infrastructure. Specifically, the priorities of the funds are to have a positive impact on the health and the quality of life of Canadians by reducing greenhouse gas (GHG) emissions, improving local air, water and soil quality and promoting renewable energy by supporting environmental studies and projects within the municipal sector.

The GMFs are equally co funded by NRCan and Environment Canada (EC) who have provided endowments to the Federation of Canadian Municipalities (FCM) which manages the funds at arms' length creating a strong partnership between the FCM and the Government of Canada. The FCM Board of Directors, formally designated as the decision making body for the funds, is advised by a 15 member council with five federal appointees. The Council plays a key role, supported by the FCM secretariat and the GMF Peer Review Committee.

Created in Budget 2000 with an endowment of \$125M, the Green Municipal Funds, consisting of the GMEF and the GMIF, were doubled in Budget 2002 with an additional \$125M. The \$50M GMEF has provided grants to support feasibility studies to increase municipal expertise and knowledge of leading edge environmental technologies and practices. The \$200M GMIF has provided loans and loan guarantees to leverage municipal investment in innovative environmental infrastructure projects.

Budget 2005 announced \$300M of additional funding to the GMF in fiscal year 2004-2005 for a total of \$550 million overall. The amount will be captured in 2005-06. With Budget 2005, the GMEF and GMIF have been merged into one fund known as the Green Municipal Fund (GMF), combining the \$200M from the GMIF with the new \$300M into a revolving fund. This fund supports grants, loans and loan guarantees and is consistent with the purpose and intent of the original agreements. \$150 million dollars of this fund is to be used exclusively to provide loans for the clean-up and redevelopment of brownfields.

The amount of GMF financing available to municipalities is directly related to the environmental benefits and/or innovation of the projects undertaken, with grant/loan combinations of up to 80% of eligible costs available for projects with exceptional environmental benefits.

For more information on the GMF, including GMF Annual Report 2004-05 and an overview of GMF projects, consult the FCM's website at <http://www.fcm.ca/english/main.html>.

6) Objective(s), expected result(s) and outcomes:

Encouraging local environmental action in key sectors including:

- energy;
- water;
- waste;
- sustainable transportation;
- brownfields
- integrated community projects.

Performance results reported here are those reported by the Federation of Canadian Municipalities (FCM) in material distributed to the responsible departments (Natural Resources Canada, Environment Canada) in their 2004-2005 annual report. Additional results are reported on the renegotiation of the GMF funding agreement following an additional endowment to the Fund announced in Budget 2005.

- Since 2000, the Green Municipal Funds (GMF) have approved and funded 407 projects and studies for a total disbursement of \$228M. This funding has leveraged more than \$1B of other government and private sector funding for a total investment in green municipal infrastructure of \$1.39B.



- Capacity building has been a focus of the GMF with 286 feasibility studies funded through the Green Municipal Enabling Fund (GMEF) for a total investment (federal and leveraged funds) of over \$74M.
- 62 green infrastructure projects have also been funded through a mix of small grants and low interest loans from the Green Municipal Investment Fund (GMIF). Over \$1.3B of total investment has been made here.
- FCM estimates the environmental impacts from these investments include: over 750 kilotonnes of greenhouse gas reduction and that the greatest air quality benefits arise from GMF investments in energy projects.
- In 2004-2005 the FCM reports a steadily increasing demand for grants and loans from the GMF. Approved GMIF projects jumped from 18 projects in 2003-04 to 22 projects in 2004-05. Similarly, approved GMEF studies in 2004-05 increased to 88 projects this year compared to 53 in 2003-2004.
- A knowledge transfer strategy was also developed for the GMF in 2004 - 2005 using the FCM's Knowledge Network website (<http://kn.fcm.ca>). Through this web site a database of studies and projects, including case studies of field tests and feasibility studies approved under the GMEF are now available. These case studies will be used in a series of Sustainable Communities Orientation Workshops, delivered in partnership by the GMF and FCM's Partners for Climate Protection (PCP) program.

The responsible departments also renegotiated the GMF funding agreement following the announcement of an additional \$300 million endowment to the GMF in Budget 2005. Key highlights of the new funding agreement that will affect results in subsequent years include:

- Consolidation of the two previous GMIF and GMEF agreements into one agreement, the Green Municipal Fund, comprising a revolving fund of \$500 million;
- Reorientation of the results of the GMF toward environmental benefit rather than the previous focus on innovation;
- Creation of a scale of financial offerings that vary with increasing environmental benefit, thereby creating an incentive for deeper environmental improvements;
- Inclusion of provisions that allow feasibility studies and field tests to be funded through grants from the interest on the \$500 million revolving fund;
- Inclusion of a separate capacity building component to be funded from the interest on the \$500 million revolving fund.
- \$150 million to be dedicated to providing loans for brownfield remediation and redevelopment.
- These changes are expected to further increase the environmental benefits from GMF investments in sustainable municipal infrastructure.

NOTE: Due to the \$500 million endowment to the GMF in Budget 2005, the FCM has found it necessary to revise the 2005 Statement of Plans and Priorities. It is expected that the revised document will be available in early autumn 2005.

7) Achieved results or progress made (within overall departmental results achieved):

	8) Actual Spending 2002-2003	9) Actual Spending 2003-2004	10) Planned Spending 2004-2005	11) Total Authorities 2004-2005	12) Actual Spending 2004-2005	13) Variance between 10) and 12)
14) Conditional Grant(s)	--	--	--	--	--	--

15) Comments on Variances: not applicable

16) Significant Evaluation Findings and URL to last evaluation: FCM commissioned an independent review of the Funds. The review concluded that all significant clauses examined were found to be generally compliant and that most non-compliance issues had been or were in the process of being addressed by the FCM. The operational review also found that the necessary administrative processes and practices were generally in place for the management of the Funds.

17) URL to Foundation site: <a href="http://www.fcm.ca/english/main.html">http://www.fcm.ca/english/main.html</a>
18) URL to Foundation's Annual Report: <a href="http://www.fcm.ca/english/publications/ar2005.pdf">http://www.fcm.ca/english/publications/ar2005.pdf</a>

1) Name of Foundation: Clayoquot Biosphere Trust

2) Start Date: 2000	3) End Date: Ongoing	4) EC Spending: \$12M
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5) Purpose of Funding: To create an endowment fund for the Clayoquot Biosphere Trust (CBT) – the cornerstone of the Clayoquot Sound UNESCO Biosphere Reserve. The CBT will use the income from the endowment fund to support local research, education and training in the Biosphere Reserve region.

6) Objective(s), expected result(s) and outcomes:

Objectives	Expected Results	Outcomes
<p>Establish and implement technical committees in marine/aquatic, terrestrial, education and community development to provide support and recommendations for approval of community-based initiatives.</p> <p>Improve outreach to communities to facilitate better understanding and participation in the work of the Clayoquot Biosphere Trust.</p> <p>Maintain current funding initiatives and explore other funding sources to maximize community benefit through educational scholarships, project funding, and collaborative partnerships.</p> <p>Pursue targeted initiatives and partnerships to provide significant community benefit and provide opportunity to develop collaborative ventures.</p>	<p>Local communities and First Nations are engaged in continuing dialogue on developing local solutions towards conservation, sustainable development, and healthy communities.</p> <p>Meetings are organized and held with each First Nation and regional communities to create greater sense of involvement with the Clayoquot Biosphere Trust.</p> <p>Additional funds are pursued for use in scholarships to promote post-secondary education opportunities for local students.</p> <p>Partnerships and alliances are continued with the local communities and First Nations that lead to enhanced collaboration among stakeholders and solutions to local environmental and sustainable development challenges.</p>	<p>Estimated Fund Value as of December 31, 2004 is \$13,547,942. Based on the current market value of the Fund the CBT Board is following a “conservative business plan” that limits administrative and program costs while aggressively focusing on fundraising. The primary objective of this business plan is to grow the Fund while allowing for ongoing funding of local Programs and Projects to begin to meet the Vision and Mission of the CBT. CBT Board meetings were held in Tofino, Ucluelet and each of the six First Nation communities to provide interested community members with the opportunity to dialogue on CBT priorities and provide input on future funding allocations.</p> <p>Volunteer based community technical committees are established in the areas of marine/aquatic, terrestrial, education, culture and community development. These committees will provide support and make recommendations to the Board of Directors for the approval of community based research, education, training, capacity building and building healthy communities. Another major function of the committees will be to build relationships in the communities through the network of people involved and</p>

						their individual networks of influence.
<p>7) Achieved results or progress made (within overall departmental results achieved):</p> <p>The allocation of funds for community based research, education, training, capacity building and cultural projects resulted in six funded projects in partnership with the Wickaninnish Community School, the Central Westcoast Forest Society, the Pacific Rim Arts, the Tofino Long Beach Chamber of Commerce, the Pacific Hospice Society, and Ecotrust. In addition funds were provided to the Ucluelet First Nation to assist with the carving of a totem pole raised at the head of the Nuu-chah-nulth trail in Pacific Rim National Park, an eelgrass maintenance and recovery program, Ucluelet Harbour educational material and a large predator study.</p> <p>University scholarships were awarded with the assistance of genus capital management. Unfortunately there were no applications from the Nuu-chah-nulth Central region. Consultations through the CBT education Committee are underway to determine how the scholarship program can be promoted in the communities to ensure that First nation students apply.</p>						
	8) Actual Spending 2002-2003	9) Actual Spending 2003-2004	10) Planned Spending 2004-2005	11) Total Authorities 2004-2005	12) Actual Spending 2004-2005	13) Variance between 10) and 12)
14) Conditional Grant(s)	--	--	--	--	--	--
15) Comments on Variances: not applicable						
<p>16) Significant Evaluation Findings and URL to last evaluation:</p> <p>In conjunction with the UNESCO Man and the Biosphere Program and the Canadian Biosphere Reserve Association a CBT Program Review has been initiated to measure the success of the first five years of CBT project funding and set the stage for the next five years to 2010.</p>						
17) URL to Foundation site: <a href="http://www.clayoquotbiosphere.org/">http://www.clayoquotbiosphere.org/</a>						
18) URL to Foundation's Annual Report: <a href="http://www.clayoquotbiosphere.org/">http://www.clayoquotbiosphere.org/</a>						

**Table 13: Responses to Parliamentary Committees, Audits and Evaluations**

<b>Response to Parliamentary Committees</b>
Summary of questions raised/recommendations and progress in meeting commitments. Add a link to the department's response. (If no recommendations were received, this should also be noted.)
<b>Response to the Auditor General</b>
<b>2004 Report of the Commissioner of the Environment and Sustainable Development (CESD) – Chapter 1 – International Environmental Agreements</b>
<p><b>Summary:</b> The objectives were to determine how the federal government is accountable for the results of its International Environmental Agreements. For Environment Canada, the audit looked at the Montreal Protocol, Canada-U.S. Agreement on Air Quality and Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention). The audit is critical of Environment Canada relative to setting objectives and measuring results at Ramsar sites. Equally, the chapter noted that Environment Canada had defined environmental objectives and measure environment results for both the Montreal Protocol and the Canada-U.S. Agreement. However, the audit states that Environment Canada cannot report on progress with regard to targeted reductions of NO<sub>x</sub> and VOC because lack of comparability of data.</p>
<p><b>Recommendation:</b> 1.60 Environment Canada should clarify its emissions reduction objectives and expected results, and clearly explain why its estimated emissions and projections differ from established targets.</p>
<p><b>Departmental response:</b> Environment Canada accepts the recommendation.</p> <p>Environment Canada's emission reduction objectives for the Ozone Annex are to implement the measures to reduce emissions of nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC) that are outlined for Canada in the international agreement. Decreases in levels of ozone in the ambient air in eastern Canada are expected to result from the implementation of the Canadian measures in combination with the implementation of the emission reduction measures agreed to by the United States in the Ozone Annex.</p> <p>Because emissions information from industry and other sources of emissions has become more accurate and complete, Canada has been able to revise its estimates of NO<sub>x</sub> and VOC emissions reductions expected in 2007 and 2010 as measures outlined in the Ozone Annex are implemented. Although the revision of the estimates in 2004 was a requirement in the Ozone Annex, Canada will review and update its estimates for the emissions reductions likely to result from the actions in the Ozone Annex and report these revised projections regularly in the biennial Canada-U.S. reports on progress to implement the Air Quality Agreement.</p>
<p><b>Recommendation:</b> 1.118 Environment Canada should ensure that expected conservation results are specified for each Ramsar site and that conservation results and performance are periodically monitored and reported.</p>
<p><b>Departmental response:</b> Environment Canada accepts the recommendation.</p> <p>Within its resource capacity, Environment Canada will update all the management plans for Ramsar sites designated on its lands in accordance with the Ramsar convention's management planning guidelines. The Department will encourage the managers of Ramsar sites that are not on land owned by the Department to prepare management plans following the Ramsar convention's management planning guidelines. These are to be completed no later than Ramsar's 10th Convention of the Parties (2008).</p> <p>Within its resource capacity, Environment Canada will evaluate and report the conservation results and performance for all Canadian Ramsar sites on its lands, every three years as part of Canada's National Report to the Ramsar Convention of the Parties. Environment Canada will encourage managers of Ramsar sites that are not on land owned by the Department to evaluate and report the conservation</p>

results and performance of those sites every three years as part of Canada's National Report to the Ramsar Convention of the Parties.

**Recommendation:** 1.130 When assigned responsibility for international environmental agreements, the lead federal departments or agencies should clearly specify and document the environmental results they expect to achieve; how they will measure and report results achieved; and how they will oversee and review results to improve performance.

**Government's response:** The Government accepts the recommendation (response co-ordinated by Environment Canada on behalf of the Government of Canada).

The Government of Canada will continue to work to improve reporting provisions under international environmental agreements. The lead federal department or agency with responsibility for each key international environmental agreement will report on results and expected results; and if not contained in these reports, will provide additional specifications on how results are measured and reported; what results are achieved; and how it will oversee and review results to improve performance.

For more information on Chapter 1, visit: <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20041001ce.html>

### **2004 Report of the Commissioner of the Environment and Sustainable Development (CESD) - Chapter 3 – Sustainable Development Strategies: Using the Tax System and Managing Office Solid Waste**

**Summary:** The audit focused on determining whether the federal government was using the tax system to achieve environmental goals and whether progress was being made on solid waste management. Environment Canada was assessed on solid waste. The audit noted that the department had not put in place an action plan for solid waste management and that diversion rates fall short of goals.

**Recommendation:** 3.99 The designated lead department or departments should work with other departments and agencies to develop implementation guidance on waste management. The guidance should be available in time to assist departments and agencies in preparing the next round of sustainable development strategies due in December 2006. It should consider the following:

- using environmental management systems, where available;
- identifying roles and responsibilities;
- providing appropriate infrastructure;
- establishing criteria for recycling in the absence of municipal programs, such as composting;
- developing education and awareness programs;
- providing regular performance feedback to building occupants;
- contracting practices for waste and recyclable hauling;
- providing common measurement indicators and cost-effective methods to measure performance across government; and
- providing a common reporting template to facilitate consolidated reporting.

**Government of Canada's response:** Work is underway with the Treasury Board Secretariat and key Sustainable Federal House in Order (SFHIO) departments to develop a performance management framework for sustainable operations. (The SFHIO is the governance structure integrating the SDGO and Federal House in Order initiatives.) That framework will identify the following themes: built environment, green procurement, land use management, transportation, water conservation and wastewater management, and solid waste management. Once the theme of solid waste management is fully developed, the accountability, performance, and measurement requirements of this operational aspect will be defined in time to provide guidance for the next round of sustainable development strategies due in 2006.

Environmental management systems (EMSs) provide departments and agencies with a tool to systematically address all aspects of their operations from an environmental perspective. An EMS also allows departments and agencies to use a risk management approach to managing their operations, dealing with those aspects which they determine have a more significant negative impact upon the environment.

The government will continue to strengthen these mechanisms.

**Recommendation:** 3.100 Once implementation guidance has been developed, deputy heads should ensure that all departments and agencies adopt the guidance and work toward the new government-wide office solid waste commitments and goals within the wider context of greening government operations.

**Government of Canada's response:** Existing mechanisms are in place outlining the roles of deputy heads. Using a risk management approach, the government will continue to work in a co-ordinated and strategic manner to ensure that its operations are managed effectively from an environmental perspective.

**Recommendation:** 3.101 The designated lead department or departments should review progress and prepare a consolidated regular report on these commitments and goals.

**Government of Canada's response:** The application of the SFHIO Performance Management Framework will ensure that progress is reviewed and reported. In the interim, work is under way to produce the next version of the government's aggregate report, Greening the Federal House.

For more information on Chapter 3, visit: <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20041003ce.html>

#### **2004 Report of the Commissioner of the Environment and Sustainable Development (CESD) – Chapter 4 – Assessing the Environmental Impact of Policies, Plans, and Programs**

**Summary:** It was found that implementation of the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals has been uneven across government and no central agency or department has been tasked with monitoring compliance. The chapter is neutral to positive for Environment Canada, assessing the department as having made "some" to "satisfactory" progress on areas of internal accountability, tracking of and guidance for Strategic Environmental Assessments. A "Report Card" in the audit places Environment Canada in the upper average of the 12 departments assessed, but not among the top ones. There are no recommendations made to Environment Canada. The Canadian Environmental Assessment Agency coordinated the government response to chapter recommendations.

**Recommendation:** 4.47 Deputy heads, of all departments and agencies included in this audit, should ensure that their organization is fully implementing the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals. They should ensure that their organization has a management system in place for the proper application of the directive. This system should include the following steps:

- Identify and describe proposals that require approval by the departments' or agencies' minister or the Cabinet.
- Establish an organizational accountability structure.
- Develop and implement tracking systems to track all proposals subject to the directive, preliminary scans, and detailed assessments that are conducted.
- Provide internal guidance and training to managers and staff who are involved in the preparation of policy, program, and plan proposals.
- Establish quality control, consultation, communication, follow-up, and evaluation procedures.

Deputy heads of all departments and agencies not included in this audit should take into account this recommendation when considering how their organization applies the directive.

**Government's response:** Strategic environmental assessment is one of a number of tools, including sustainable development strategies, laws (such as the *Canadian Environmental Assessment Act*), and policy instruments (including international environmental agreements), that require federal officials to consider the environmental implications of their recommendations to decision makers.

As part of their ongoing commitments, deputy heads are required to ensure that the Cabinet directive is implemented within their organizations, and that appropriate management systems consistent with the Commissioner's recommendations are put in place by December 2005. In establishing such systems deputy heads must consider organizational requirements, efficiencies to be gained through interdepartmental co-operation, and value for money.

Timeline for completion of action(s):

- December 2005: Management Systems

For more information on Chapter 4, visit: <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20041004ce.html>

#### **February 2005 – Report of the Auditor General – Chapter 4 – Accountability of Foundations**

**Summary:** Accounting for transfers to foundations and accountability are long-standing issues, first raised by the Auditor General in 1997. The chapter examines the extent to which the government, central agencies, and sponsoring departments have acted to improve the accountability of government-sponsored foundations to Parliament in three areas: reporting to Parliament and the public, ministerial oversight, and provision for external audit and evaluation.

**Recommendation:** 4.29 Sponsoring ministers should table in Parliament the corporate plans or summaries and the annual reports of foundations in a timely manner. In consultation with the foundations, the sponsoring departments should encourage them to include meaningful information on results in their plans and reports.

**Government's response:** We agree with the Auditor General's conclusion that improvements have been made in reporting to Parliament and the public.

In Budget Plan 2003, the government committed to undertaking a number of measures to improve the provision of information to Parliament on the plans and results of foundations. All statutory reporting requirements to Parliament are being met. For many years now, ministers have tabled the annual reports of foundations in Parliament, representing 80 percent of all transfers to foundations. To the extent there are other significant foundations whose reports are not tabled in Parliament, the Treasury Board Secretariat will encourage departments to do so.

In addition, departments are required to report on the significant plans and results of foundations in their reports on plans and priorities and departmental performance reports. They are also required to situate these within the overall plans and results of the department. This horizontal reporting requirement exceeds the expectations of the Auditor General. The Treasury Board Secretariat has issued guidelines on these reporting requirements.

The government believes a considerable amount of information on plans and results is available through these reports tabled in Parliament and the Web sites of both departments and the foundations. Opportunities therefore exist for the engagement of ministers and the foundations. As an example, many foundations have appeared before parliamentary committees.

Nevertheless, the government acknowledges that further improvement in the quality and comprehensiveness of reporting on foundation plans and results can be made, and it undertakes to do so.

**Recommendation:** 4.36 Sponsoring departments engaged in public policy areas that involve foundations should, in consultation with foundations, develop frameworks for reporting that link to the way the

foundations measure and report results.

**Government's response:** The horizontal integration of public policy is a key priority of the government. As acknowledged by the Auditor General, considerable effort and progress has been made in developing results-based management and accountability frameworks. Following the commitment made in Budget Plan 2003, some departments now have the ability to undertake evaluations that can assess the horizontal integration of their programs with those of the foundations. Further efforts will be made to undertake these evaluations and to ensure effective integrated reporting on results to Parliament.

**Recommendation:** 4.46 In new or amended funding agreements, sponsoring departments should seek to ensure that evaluations commissioned by foundations meet recognized evaluation standards.

**Government's response:**

The government agrees that foundations should use recognized evaluations standards. However, it is very important to note that the Auditor General did not examine the evaluations or related documents commissioned by foundations and, as such, is not suggesting that such standards are not being followed. It is also important to note that departments are already obliged to follow the Treasury Board Evaluation Policy in the conduct of their evaluations.

For more information on Chapter 4, visit: <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/20050204ce.html>

Internal Audits or Evaluations
<b>Internal Audits</b>
Audit of the Occupational Safety and Health Program at EPS Research Centres
Information Management Audit (Follow-up)
Information Technology Security Audit (Follow-up)
Audit of Acquisition Card Transactions
Financial Management Audit NCR (Follow-up)
Financial Management Audit – Atlantic Region (Follow-up)
Commercial Services Cost Recovery and User Charging Audit (Follow-up)
Audit of Compensation (Follow-up)
Local Purchase Order Authority Case Study
Audit of the Occupational Health & Safety (OHS) Program (Follow-up)
Audit of Accounts Payable: Taxis
MSC Audit of WEP Products Costing – Pricing Practices
<b>Evaluations</b>
MSC-DSO Evaluation of Financial Flexibilities
Regulatory Process Compliance Review (Follow-up)
Review of Environment Canada's Environmental Management System (EMS) (Follow-up)

For further information on the above-mentioned internal audits and evaluations, visit: [http://www.tbs-sct.gc.ca/rma/database/newdeptview\\_e.asp?id=38](http://www.tbs-sct.gc.ca/rma/database/newdeptview_e.asp?id=38)



## Table 14: Service Improvement Initiatives

The Treasury Board Secretariat has asked departments to report on four key elements of their service delivery performance:

1. Programs and services covered by a service improvement plan
2. Development of baseline client satisfaction levels and progress toward achieving satisfaction targets
3. Service standards for all key public services: setting of standards and performance against those standards
4. Main achievements in improving service from a citizen-centred perspective

1. Programs and services covered by a service improvement plan.

Three areas were identified as part of Environment Canada's service improvement plan:

- a) Operations of the Hazardous Wastes Regulations;
  - b) Weather Warnings; and
  - c) Precipitation Reporting.
2. Development of baseline client satisfaction levels and progress toward achieving satisfaction targets.

A client-satisfaction survey (2002) was conducted concerning the operation of Export and Import of Hazardous Wastes Regulations (EIHWR) to explore issues related to the quality of service provided by Environment Canada to its clients with respect to processing of notices and manifest and compliance promotion for those regulations. The findings of the 2002 client-satisfaction survey point to a clientele that is largely satisfied with this delivered service with an overall quality of delivered services of 75%. New revised regulations have been pre-published in Canada Gazette Part I and it is anticipated that the final regulations be published in Canada Gazette Part II and promulgated in 2005. This may negatively impact client satisfaction under the Service Improvement Initiative since the regulated community may show a higher level of dissatisfaction during this time period, which is more of a function of having to deal with new regulations rather than with actual service delivery.

For Weather Warnings two surveys done contained comparable data points regarding the importance of weather warnings: a 1990 survey (Market Facts of Canada Ltd. 1990) and the 2002 national survey (Decima 2002). In both 1990 and 2002, the national rating for importance of weather warning information was 82, on a 100-point scale (0 being the lowest possible score and 100 the highest possible score). At a regional level, the data suggest minor reductions in importance may have occurred in the Atlantic region and BC, but these differences are not large enough to conclude that a change took place. There were four comparable data points for the analysis of public satisfaction with weather warning information: national studies conducted in 1986 (The Coopers & Lybrand Consulting Group 1986), 1990 (Market Facts of Canada Ltd. 1990), 1996 (Comquest Research 1996) and 2002 (Decima Inc. 2002). There was very little change in satisfaction ratings between 1986 (74) and 2002 (75) (the rating in 1990 and 1996 was

72). Regionally, there may have been a rise in satisfaction ratings in BC between 1990 and 2002 (increasing from 67 to 79).

For Precipitation Forecasting there were two comparable data points regarding the importance of precipitation forecasting information: surveys conducted in 1996 (Comquest Research 1996) and 2002 (Decima Inc. 2002). There has been little change in the relative significance regarding amount of precipitation (27 and 24), type of precipitation (20 in both surveys) and start/end times (19 and 18), thereby suggesting there has been little change in the relative importance of most types of precipitation forecast information. There were four comparable data points for the analysis of public satisfaction with precipitation forecast information: national studies conducted in 1983 (Crop Inc. 1983), 1996 (Comquest Research 1996), 1997 (Goldfarb Consultants 1997) and 2002 (Decima Inc. 2002). The data showed a clear upward trend from 1983 to 1997 (scores rose from 43 to 73), followed by a noticeable decline in 2002 (dropping to 66). This trend is apparent in all regions of the country to more or less the same degree. In preparing its report in 2003, Decima Inc. recommended that the department adopt a consistent approach in all its future surveys that address service quality, in order to ensure that statistically valid trend data will be obtained.

3. Service standards for all key public services: setting of standards and performance against those standards.
  - a) Due to the nature of regulatory services the setting of standards has not been conducted for the Operations of the Hazardous Wastes Regulations
  - b) & c) The Weather Warnings and Precipitation Reporting initiatives will seek further targeted improvements to its products and services given that Canadians have indicated in recent surveys that they want more lead time for severe weather events. The department continues to collaborate with its partners, particularly the media, for delivering high-impact weather warnings to Canadians.
4. Main achievements in improving service from a citizen-centred perspective
  - a) Key areas included: improve awareness of services provided, improve the competence of the staff, increase contact and accessibility, simplify transboundary movement process and increase use of electronic means for communication. The department is currently completing a thorough review of the procedures involved in the implementation of the Export and Import of Hazardous Wastes Regulations, in order to identify areas for improved efficiencies and the streamline the processes where possible without compromising the legal responsibilities of TMB as the regulator. In addition, the department is in the process of finalizing a new information management system which is harmonized with the departmental system. Once implemented this system should improve the ability to search and retrieve documents quickly and more efficiently than in the past.
  - b) & c) The department continues to use innovative technology to deliver warnings, on its own or in collaboration with others. In addition, the department has initiated new

programs to increase awareness of high-impact weather and understanding of related warnings, particularly the Warning Preparedness Meteorologist (WPM) program. The WPM program is central to MSC Transition, as is building an outreach capacity to help ensure Canadians (citizens and businesses) understand how high-impact weather can affect them and know how to respond.

Note: One of the concerns of the department with respect to the SII is that the level of satisfaction of Canadians with departmental products and services is already quite high (for example, the 2002 national survey indicates 86 percent of Canadians are satisfied with winter storm warnings). It could be quite difficult to improve service without significant scientific and technical advances in improving the accuracy of forecasts and warnings. Some of the core questions in the Common Measurements Tool (CMT) are not applicable to the products and services of the department. For example, while the department can and does measure satisfaction with services delivered via the media, questions regarding “timeliness” (the amount of time to receive a service) or “waiting time” (the waiting time at a service location) are not applicable. Additionally, service delivery is primarily done via a third party (the media) over which the department has limited control. Furthermore, because not all media outlets receive their weather information from the department, the Service can not be certain that it is measuring satisfaction with its information or that of a third party. Finally, some of the CMT questions regarding “performance” are also not applicable to the products and services of the department; for example, asking Canadians if they were treated fairly or asking their opinion on the competence of staff would not yield worthwhile information given there is very limited interaction with departmental staff when obtaining information on precipitation forecasts and weather warnings.

## Table 15: Horizontal Initiatives

The Treasury Board Secretariat has created a database of horizontal initiatives ([http://www.tbs-sct.gc.ca/rma/eppi-ibdrp/hrdb-rhbd/profil\\_e.asp](http://www.tbs-sct.gc.ca/rma/eppi-ibdrp/hrdb-rhbd/profil_e.asp)) where information can be found on the significant horizontal initiatives led by the federal government. Horizontal Initiatives have recently been defined as initiatives that:

- Have been allocated federal funds that exceed \$100 million for the entire initiative; or
- Are essential to the achievement of government priorities; or
- Have a high public profile.

More information on the horizontal initiatives that Environment Canada plays a significant role in can be found in the Treasury Board Secretariat's horizontal results database.

Environment Canada leads the horizontal initiatives listed below.

- An Accelerated Action Plan for Federal Contaminated Sites
- Climate Change
- Great Lakes Basin 2020
- Implementation of the *Species at Risk Act (SARA)*

Environment Canada contributes to the horizontal initiatives listed below.

- Canadian Biotechnology Strategy
- Canadian Rural Partnership
- Team Canada Inc.
- Voluntary Sector Initiative
- Youth Employment Strategy

## Table 16: Travel Policies

Environment Canada follows and uses TBS travel policy parameters for all government business travel.

## **SECTION IV**

### **OTHER ITEMS OF INTEREST**

## Environment Canada's 2004-2006 Sustainable Development Strategy

Environment Canada tabled its third Sustainable Development Strategy for the period 2004-2006 in the House of Commons in February 2004. This is the first progress report for this Strategy.

Under the Auditor General Act, federal departments and selected agencies were first required to prepare Sustainable Development Strategies in 1997. Under the Act, there is also a requirement for departments to update their Strategies at least every three years. The Treasury Board Secretariat provides guidance for annual reporting in order to apprise parliamentarians and Canadians of progress made against commitments contained in the Sustainable Development Strategies.

Environment Canada's Sustainable Development Strategy 2004-2006 builds upon the strengths of our second Strategy by continuing to advance four themes:

- Information for Decision Making;
- Innovative Instruments;
- Partnerships for Sustainable Development; and
- Managing for Sustainable Development.

The updated Strategy focuses on building a future shaped by a strong knowledge base that puts human and natural capital on an equal footing with economic capital, informs public debate and supports integrated decision making. The Strategy calls upon the strategic use of market forces to ensure that good economic policy becomes good environmental and social policy. It emphasizes partnerships and governance models that enable horizontal decision making at the government-wide, community and corporate levels. As well, Sustainable Development Strategy 2004-2006 calls for leadership by example in our departmental operations. Overall, the Strategy attempts to more clearly articulate outcomes that will both better enable a successful transition toward sustainable development and will enable Canadians to better judge where progress is being made.

The commitments made in the Strategy are integrated into the department's business lines to ensure that they remain a core element of the department's planning, managing and performance reporting practices. Planned activities and key commitments that contribute to the Strategy's commitments are identified in the detailed planning information for the business lines provided as supplementary information to this departmental performance report.

Sustainable Development Strategy 2004-2006 also supports the Competitiveness and Environmental Sustainability Framework (CESF). The CESF provides a comprehensive and integrated approach to achieving the highest level of environmental quality as a means to strengthen Canada's long-term competitiveness, and ensure the health and well-being of its citizens. The themes and commitments in Sustainable Development Strategy 2004-2006 help to reinforce the five pillars of the CESF: decision-making; information; science and technology; performance promotion and enforcement; and, education and engagement.

While this is the first performance report for this three year Strategy, there have been a number of accomplishments, a few of which are highlighted below. More detailed performance information is available at [http://www.ec.gc.ca/sd-dd\\_consult/DPR2004Table\\_e.html](http://www.ec.gc.ca/sd-dd_consult/DPR2004Table_e.html). The Sustainable Development Strategy 2004-2006 document may be found at: [http://www.ec.gc.ca/sd-dd\\_consult/SDS2004/index\\_e.cfm](http://www.ec.gc.ca/sd-dd_consult/SDS2004/index_e.cfm).

## PERFORMANCE HIGHLIGHTS

### Information for Decision-Making

- Environment Canada improved the accessibility of high impact weather warnings both for Canadians and for the media. These improvements ensure the accurate and timely broadcast of warnings on the Environment Canada weather website and by the department's partners. Service to the media has also been improved through the introduction of a more robust media website and through the establishment of a media services National Service Office.
- Environment Canada made improvements to the Canadian Regional Climate Model, which is now more integrated and comprehensive and provides better regional scale climate outputs to inform scenario and policy discussions. The improved model will be used in the 4<sup>th</sup> assessment on climate change by the Intergovernmental Panel on Climate Change.
- Environment Canada developed the Canadian Water Quality Data Referencing Network (CWQDRN) that will provide enhanced information access by obtaining and providing web-based information on water quality monitoring activities within the provincial, territorial and federal governments. A national interactive web-based portal displaying all national (federal/provincial/territorial) water quality monitoring capacities was completed ([http://infolane.ec.gc.ca/geonet/Home-WS4D59A109-1\\_En.htm](http://infolane.ec.gc.ca/geonet/Home-WS4D59A109-1_En.htm)) (Intranet site).

### Innovative Instruments

- Environment Canada actively worked with a number of other federal government departments and external organizations in promoting a market-based instruments agenda. A number of these measures were an element of the Federal Budget 2005 and will help move Canada towards achieving its emissions reduction target under the Kyoto Protocol.
- In 2005, the Canada-U.S. joint report, "*Canada-United States Emissions Cap and Trading Feasibility Study*", was completed under the Canada-U.S. Border Air Quality Strategy and publicly released on Environment Canada's website ([http://www.ec.gc.ca/cleanair-airpur/caol/canus/IPM\\_TECHNICAL/trading\\_report/trading\\_report\\_e.cfm](http://www.ec.gc.ca/cleanair-airpur/caol/canus/IPM_TECHNICAL/trading_report/trading_report_e.cfm)). The study's findings will serve as a foundation for developing and evaluating new strategies to improve air quality and address transboundary air pollution of concern to residents on both sides of the border.

### Partnerships for Sustainable Development

- Environment Canada undertook a series of urban pilot projects that resulted in a sharing of lessons learned and best practices in collaborating with local governments to better understand their needs when integrating environmental considerations into decision making.
- Environment Canada worked with its federal partners to launch a national social marketing campaign to engage Canadians in the One-Tonne Challenge (<http://www.climatechange.gc.ca/onetonne/english/index.asp>).
- Environment Canada chaired the Canadian Council of Ministers of the Environment Electronics Task Group, which resulted in a set of principles for Extended Producer Responsibility for end-of-life electronics waste, and in an agreement on a list of products to be covered. Environment Canada has also partnered with Ontario and Alberta in their development of regulations for electronic product stewardship.

### Managing for Sustainable Development

- Environment Canada and Public Works and Government Services Canada began the initial stages of developing Environmental Management Systems (EMS) for leased facilities. The implementation of EMSs at leased facilities will highlight to employees their environmental roles and responsibilities, thereby reinforcing the department's commitment to environmental management.
- Environment Canada has prepared a Greenhouse Gas Emissions Reduction Plan for its operations and is currently on track for meeting its share of the Federal House in Order Target of reducing greenhouse gas emissions by 31% from 1990 to 2010. To date, the Federal Government has achieved an overall reduction of 24%.

## Selected Reports Released in 2004-2005

Science and Technology: The Foundation for Policy, Regulation and Service	<a href="http://www.ec.gc.ca/scitech/default.asp?lang=En&amp;n=6938B0AE-1">http://www.ec.gc.ca/scitech/default.asp?lang=En&amp;n=6938B0AE-1</a>
Smart Partners: Innovations in Environment Canada-University Research Relationships	<a href="http://www.cesn-rcse.ec.gc.ca/eng/docs/sp01_index.html">http://www.cesn-rcse.ec.gc.ca/eng/docs/sp01_index.html</a>

## Selected Web Sites and Electronic Resources

Name	URL
Environment Canada Home Page (The Green Lane)	<a href="http://www.ec.gc.ca/envhome.html">http://www.ec.gc.ca/envhome.html</a>
Atlantic Canada Severe Summer Weather Awareness	<a href="http://www.atl.ec.gc.ca/weather/severe/summer_e.html">http://www.atl.ec.gc.ca/weather/severe/summer_e.html</a>
Atmospheric and Climate Science Directorate	<a href="http://www.msc-smc.ec.gc.ca/acsd/publications">http://www.msc-smc.ec.gc.ca/acsd/publications</a>
Canadian Biodiversity Strategy	<a href="http://www.cbin.ec.gc.ca/issues/strategy.cfm?lang=e">http://www.cbin.ec.gc.ca/issues/strategy.cfm?lang=e</a>
Canadian Community Monitoring Network (CCMN)	<a href="http://www.ccmn.ca/english">http://www.ccmn.ca/english</a>
Canadian Environment Week	<a href="http://www.ec.gc.ca/e-week/">http://www.ec.gc.ca/e-week/</a>
CEPA Environmental Registry	<a href="http://www.ec.gc.ca/CEPARegistry">http://www.ec.gc.ca/CEPARegistry</a>
Clayoquot Biosphere Trust (CBT)	<a href="http://www.clayoquotbiosphere.org/">http://www.clayoquotbiosphere.org/</a>
Clean Air Day (CAD)	<a href="http://www.ec.gc.ca/cleanair/index_e.cfm">http://www.ec.gc.ca/cleanair/index_e.cfm</a>
Climate Change and Canadians: Achieving our Target Together	<a href="http://www.climatechange.gc.ca/english/ccplan.asp">http://www.climatechange.gc.ca/english/ccplan.asp</a>
Committee on the Status of Endangered Wildlife in Canada (COSEWIC)	<a href="http://www.cosewic.gc.ca/eng/sct5/index_e.cfm">http://www.cosewic.gc.ca/eng/sct5/index_e.cfm</a>
Commuter Challenge 2004	<a href="http://www.commuterchallenge.ca/english/">http://www.commuterchallenge.ca/english/</a>
Consultations on the CEPA New Substances Notification Regulations and New Substances Program	<a href="http://www.ec.gc.ca/CEPARegistry/documents/part/nsnr-nsp_con/toc.cfm">http://www.ec.gc.ca/CEPARegistry/documents/part/nsnr-nsp_con/toc.cfm</a>
CWS Migratory Birds Regulatory Report Series	<a href="http://www.cws-scf.ec.gc.ca/birds/status/index_e.cfm">http://www.cws-scf.ec.gc.ca/birds/status/index_e.cfm</a>
Eco-Action	<a href="http://www.ec.gc.ca/ecoaction/index_e.html">http://www.ec.gc.ca/ecoaction/index_e.html</a>
Ecological Monitoring and Assessment Network	<a href="http://www.eman-rese.ca/eman/naturewatch.html">http://www.eman-rese.ca/eman/naturewatch.html</a>
Ecosystems	<a href="http://www.ec.gc.ca/ecos_e.html">http://www.ec.gc.ca/ecos_e.html</a>
Environment Canada On-line – 2004 Report	<a href="http://www.ec.gc.ca/egov-cgouv/egov-report.html">http://www.ec.gc.ca/egov-cgouv/egov-report.html</a>
Environment Canada: Clean Air	<a href="http://www.ec.gc.ca/air">http://www.ec.gc.ca/air</a>
Environment Canada: Clean Water	<a href="http://www.ec.gc.ca/water_e.html">http://www.ec.gc.ca/water_e.html</a>
Environment Canada's Management Framework	<a href="http://www.ec.gc.ca/introec/dept_org.htm#mf">http://www.ec.gc.ca/introec/dept_org.htm#mf</a>
Environment Canada's National and Regional Web Sites	<a href="http://www.ec.gc.ca/regeng.html">http://www.ec.gc.ca/regeng.html</a>
Environment Canada's Reports on Plans and Priorities	<a href="http://www.ec.gc.ca/rpp/index_e.htm">http://www.ec.gc.ca/rpp/index_e.htm</a>
Environment Canada's Science and Technology	<a href="http://www.ec.gc.ca/scitech/">http://www.ec.gc.ca/scitech/</a>
Environmental Acts and Regulations	<a href="http://www.ec.gc.ca/EnviroRegs/ENG/Default.cfm">http://www.ec.gc.ca/EnviroRegs/ENG/Default.cfm</a>
Experts Workshop on Water Quality Monitoring: The Current State of the Science and Practice	<a href="http://www.ccme.ca/assets/pdf/monitoring_workshop_current_state_eng.pdf">http://www.ccme.ca/assets/pdf/monitoring_workshop_current_state_eng.pdf</a>
Federal House in Order (FHIO)	<a href="http://www.fhio.gc.ca">http://www.fhio.gc.ca</a>
Federation of Canadian Municipalities (FCM)	<a href="http://www.fcm.ca/english/main.html">http://www.fcm.ca/english/main.html</a>
Greening Government	<a href="http://www.greeninggovernment.gc.ca">http://www.greeninggovernment.gc.ca</a>
Implementation Progress Report 2004	<a href="http://www.ec.gc.ca/sd-dd_consult/SDS2004/index_e.cfm">http://www.ec.gc.ca/sd-dd_consult/SDS2004/index_e.cfm</a>
Meteorological Service of Canada	<a href="http://www.msc-smc.ec.gc.ca/contents_e.html">http://www.msc-smc.ec.gc.ca/contents_e.html</a>



National Pollutant Release Inventory (NPRI)	<a href="http://www.ec.gc.ca/pdb/npri/npri_home_e.cfm">http://www.ec.gc.ca/pdb/npri/npri_home_e.cfm</a>
Nature Watch	<a href="http://www.naturewatch.ca">http://www.naturewatch.ca</a>
One Tonne Challenge	<a href="http://www.climatechange.gc.ca/onetonne/english/">http://www.climatechange.gc.ca/onetonne/english/</a>
Pollution	<a href="http://www.ec.gc.ca/pollution_e.html">http://www.ec.gc.ca/pollution_e.html</a>
Regulatory Impact Analysis Statement	<a href="http://www.ec.gc.ca/seadisposal/regs/min_reg_g2_e.html">http://www.ec.gc.ca/seadisposal/regs/min_reg_g2_e.html</a>
Science Assessment and Integration Branch	<a href="http://www.msc-smc.ec.gc.ca/saib/index_e.html">http://www.msc-smc.ec.gc.ca/saib/index_e.html</a>
Species at Risk	<a href="http://www.speciesatrisk.gc.ca/default_e.cfm">http://www.speciesatrisk.gc.ca/default_e.cfm</a>
State of the Environment (SOE) Infobase	<a href="http://www.ec.gc.ca/soer-ree/English/default.cfm">http://www.ec.gc.ca/soer-ree/English/default.cfm</a>
Stewardship Canada	<a href="http://www.stewardshipcanada.ca">http://www.stewardshipcanada.ca</a>
Sustainable Development	<a href="http://www.ec.gc.ca/susdev_e.html">http://www.ec.gc.ca/susdev_e.html</a>
Sustainable Development Technology Canada (SDTC)	<a href="http://www.sdtc.ca/en/index.htm">http://www.sdtc.ca/en/index.htm</a>
Sustaining the Environment and Resources for Canadians	<a href="http://www.environmentandresources.gc.ca">http://www.environmentandresources.gc.ca</a>
The Green Lane – Global Climate Change	<a href="http://www.ec.gc.ca/climate/home-e.html">http://www.ec.gc.ca/climate/home-e.html</a>
Waste management	<a href="http://www.ec.gc.ca/wastes_e.html">http://www.ec.gc.ca/wastes_e.html</a>
Water legislation	<a href="http://www.ec.gc.ca/water/en/policy/legreg/e_legis.htm">http://www.ec.gc.ca/water/en/policy/legreg/e_legis.htm</a>
<i>Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRITA)</i>	<a href="http://www.cws-scf.ec.gc.ca/publications/wappa/index_e.cfm">http://www.cws-scf.ec.gc.ca/publications/wappa/index_e.cfm</a>