



# PROGRESS IN POLLUTION PREVENTION

1997-1998



Environment  
Canada

Environnement  
Canada

Canada

## **Progress in Pollution Prevention 1997-1998 Annual Report of the Pollution Prevention Coordinating Committee**

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# Minister's Message

**All Canadians, all industries and all levels of government share the responsibility of environmental stewardship. Only by working together on pollution prevention can we ensure that Canada's rich natural heritage is preserved for our children and grandchildren.**

Minimizing or avoiding the creation of pollutants is a more cost-effective method of protecting the environment than treating pollutants, or cleaning them up after they have been created or released into the environment.

*Progress in Pollution Prevention 1997-1998*, our third annual report, profiles federal environmental success stories and initiatives from April 1997 to March 1998. The highlight of the past year was the tabling of a renewed *Canadian Environmental Protection Act*, which enshrines pollution prevention as the cornerstone of national efforts to protect human health and the environment.

The report also chronicles the many benefits that governments, industry and the Canadian public are reaping from our shared commitment to pollution prevention. Whether it's in the dental care sector, the oil and gas industry, agriculture or shipping, most sectors of the economy, large and small, are following the federal government's lead and embracing pollution prevention. Canada also has agreements in place with many foreign governments. Canadian exports of environmental technology produce jobs and economic spin-offs that create jobs in every region of the country. The bottom line is clear: pollution prevention is good for the economy and the environment.

It's a pleasure to recognize the efforts of individual Canadians, companies, industrial and community associations and non-governmental organizations for their environmental responsibility. I challenge all Canadians to develop new partnerships in their communities, and launch new initiatives to further advance pollution prevention. *Progress in Pollution Prevention 1997-1998* will help us learn by example and guide us to new levels of achievement in protecting the world that we live in.



The Honourable  
Christine S. Stewart  
Minister of the Environment

**"MY GOAL IS  
to ensure that our  
environment is the foundation  
of good health and prosperity,  
and a source of national  
pride for all Canadians.  
Reaching that goal has never  
been more challenging  
—or rewarding."**

The Honourable  
Christine S. Stewart  
Minister of the Environment



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# Executive Summary

## **Pollution Prevention — A Federal Strategy for Action is the Government of Canada's framework for advancing pollution prevention.**

Endorsed by the federal ministers in June 1995, the pollution prevention strategy and action plan elaborates on government policy, and sets priorities for action based on five target sectors involving partnerships with other orders of government, the private sector and individual Canadians. By directing efforts to prevent pollution and waste before it is created, the federal strategy works towards the ultimate environmental goal of sustainable development.

This annual report, the third prepared by the federal Pollution Prevention Coordinating Committee, serves to inform Canadians, members of the international community and government officials of initiatives that are representative of the Government of Canada's progress in advancing pollution prevention and achieving the goals of the federal strategy for the fiscal year ending March 31, 1998.

### **Key Accomplishments**

#### *Progress in Pollution Prevention*

1997-1998 shows that the Government of Canada is continuing to incorporate creative and effective pollution prevention solutions into its activities. Initiatives involving and challenging the private sector are gaining momentum and showing excellent results. The 1997-1998 report confirms that the Government of Canada is enabling and producing key environmental results.

#### **Progress within the Federal Government**

Significant progress in incorporating pollution prevention into federal legislation was attained with the March 1998 introduction to Parliament of legislation to amend and strengthen the *Canadian Environmental Protection Act*

(CEPA). The renewed Act, which will have pollution prevention as its guiding principle, includes provisions for pollution prevention planning for toxic substances and within federal operations. In addition, regulations emphasizing pollution prevention were introduced for diesel fuel, benzene in gasoline, and the registration of storage tanks for petroleum products on federal lands. Effective for the 1997 reporting year, the National Pollutant Release Inventory (NPRI) required facilities across Canada to provide qualitative information on their pollution prevention activities for NPRI-listed substances.

In the promotion of sustainable development, it is federal policy that special emphasis be placed on pollution prevention. A key step towards advancing pollution prevention has been the tabling of sustainable development strategies by federal departments and agencies with the House of Commons.

Federal agencies continued to update, develop and implement pollution prevention processes and practices. Transport Canada, Natural Resources Canada and Environment Canada announced Phase 2 of the Federal Smog Management Plan; and Environment Canada purchased "green power" for federal facilities in Alberta and saved \$623,000 in energy consumption through the Federal Buildings Initiative.

#### **Progress with Other Governments**

Partnerships between the federal government and other orders of government are key to achieving harmonized approaches to pollution

**On the Internet view this report at:  
[www.ec.gc.ca/p2progress](http://www.ec.gc.ca/p2progress)**

prevention and implementing prevention at the operational level.

The success of the St. Lawrence Action Plan is due largely to the close working relationship between the federal and Quebec governments. Results achieved during the first 10 years of the plan include a 96% reduction in toxic effluent releases from 50 industrial plants, the protection of 12,000 hectares of wildlife habitat and an increase in the beluga whale population.

Examples of harmonized approaches to pollution prevention include the revised and expanded National Action Plan for Environmental Control of Ozone-Depleting Substances and their Halocarbon Alternatives, and the agreement to develop Canada-wide standards for certain substances as part of the Canada-wide Accord on Environmental Harmonization.

Under *A Strategy to Fulfill the CCME Commitment to Pollution Prevention* (1996), the Canadian Council of Ministers of the Environment continued to recognize leaders in pollution prevention through its Pollution Prevention Awards Program.



## Executive Summary (continued)

### *Progress with the Private Sector*

Partnerships between the federal government, provincial/territorial governments and the private sector are resulting in a broad and diverse spectrum of pollution prevention programs. Industry and businesses participating in these programs are increasingly realizing the environmental and economic benefits of adopting pollution prevention processes and practices.

Together with the Ontario government, Environment Canada through various pollution prevention memoranda of understanding has facilitated industry's shift to pollution prevention planning. Participating industries have avoided or minimized the creation of pollutants and waste through prevention activity, and have used recycling, treatment, reuse and other environmental protection measures to manage waste.

Other accomplishments included a 61% or 21,499-tonne reduction in annual emissions from base-year levels reported by facilities participating in the Accelerated Reduction/Elimination of Toxics (ARET) Program. In Atlantic Canada, the Offshore Petroleum Boards required project proponents to incorporate pollution prevention into their offshore development plans. Under the Fraser River Action Plan, best management practices and prevention plans were implemented in businesses and industry sectors in the Fraser basin.

Efforts to improve the environmental performance of small and medium-sized enterprises (SMEs) resulted in the implementation of pilot projects for pollution prevention planning in Manitoba, and a funding program for new prevention technologies in Quebec. Industry Canada and Environment Canada launched the Canadian Business Environmental Performance Office (BEPO). BEPO, an Internet tool, is an environmental management information resource for SMEs.

### *Progress with the Canadian Public*

The Canadian public is becoming better informed of the benefits of pollution prevention. A significant and broad-reaching prevention tool for the public became available with the launch of the Canadian Pollution Prevention Information Clearinghouse (CPPIC). This Internet tool, an action item in the federal Pollution Prevention Strategy and a component of the renewed CEPA, was developed by Environment Canada. CPPIC, along with other on-line sites, training programs, user guides and community-based initiatives, will continue to increase the capacity of Canadians to implement prevention practices.

### *Progress with the International Community*

Cooperation and partnership at the international level are an essential part of the Government of Canada's efforts to achieve clean air, clean water and a healthy environment worldwide. During 1997-1998, pollution prevention workshops, seminars and projects were carried out with foreign governments and industry sectors by the Canadian International Development Agency, Environment Canada, Industry Canada and others. These activities helped build the pollution prevention capacity of countries such as Brazil, Costa Rica and China to facilitate the shift to environmentally sustainable economic growth. Projects under the Multilateral Fund of the Montreal Protocol continued to provide good examples of the success of innovative international cooperation on technologies and know-how to prevent pollution.

As progress is measured and improvements reported, greater success is achieved by learning from the example and experience of others. By relating progress to the five target sectors of the federal Pollution Prevention Strategy, this report and its predecessors provide a framework for monitoring performance and guiding future decision making for the achievement of a clean environment and healthy economy.

# Strengthening the Pollution Prevention Framework

**Pollution prevention is more cost-effective and better able to reduce risks to human health and the environment than pollution control.**

## Pollution Prevention and Sustainable Development

The state of the environment remains a bedrock concern for Canadians. The rising incidence of respiratory illnesses and diseases such as cancer and the challenges of combatting climate change, habitat degradation and toxic pollutants in our air, water and food are contributing to this concern.

Pollution prevention helps to lessen risks to human health and the environment by preventing pollution or waste before it is created. In addition to protecting the environment, prevention also fosters domestic and international competitiveness. By improving production efficiencies, reducing liability associated with clean up costs and encouraging long-term innovations rather than short-term investment in expensive stop-gap measures, prevention saves money for Canadian industry and business and promotes a competitive economy.

Canadian business benefits from the economic spin-offs created by the export of preventive technologies. And the Canadian public benefits from improved community safety when consideration is given to pollution prevention at the earliest point in the development of government, industry and business plans, policies, products, projects and processes.

Pollution prevention's ability to protect the environment and make the Canadian economy more efficient and competitive reinforces it as a sound approach to achieving sustainable development.

### POLLUTION PREVENTION IS:

*the use of processes, practices, materials, products or energy that avoid or minimize the creation of pollutants and waste, and reduce overall risk to human health or the environment.*

### POLLUTION PREVENTION TECHNIQUES AND PRACTICES FOCUS ON:

- substances of concern
- materials and feedstock substitution
- operating efficiencies
- on-site re-use and recycling
- training
- purchasing techniques
- product design
- process changes
- product reformulation
- equipment modifications
- clean production

*The Government of Canada*

## Making Pollution Prevention Work in Canada

### *The Federal Framework*

*Pollution Prevention— A Federal Strategy for Action* is the Government of Canada's policy framework for advancing pollution prevention. Endorsed by the federal ministers in June 1995, the strategy elaborates on government policy, and sets priorities for action based on five goals involving partnerships with other orders of government, the private sector and individual Canadians.

Goals of the federal Pollution Prevention Strategy include:

- Within the Federal Government: institutionalize pollution prevention across all federal government activities;
- With Other Governments: foster a national pollution prevention effort;
- With the Private Sector: achieve a climate in which pollution prevention becomes a major consideration in industrial activities;
- With All Canadians: provide access to the information and tools necessary to implement pollution prevention practices;

- With the International Community: participate in international pollution prevention initiatives.

The pollution prevention strategy of the Canadian Council of Ministers of the Environment (CCME) establishes a national framework for pollution prevention that parallels the federal strategy. Published in May 1996, *A Strategy to Fulfill the CCME Commitment to Pollution Prevention* sets out a shared vision, mission and goal statement as well as guiding principles for the implementation of pollution prevention by all provinces and territories and the federal government.

The principles of pollution prevention are also key to implementation of the *Toxic Substances Management Policy* (1995) and the *CCME Policy for the Management of Toxic Substances* (1996). Both policies put forward a preventive and precautionary approach for the effective management of toxic substances. The renewed *Canadian Environmental Protection Act* (CEPA), when promulgated by Parliament, will further put prevention into practice by making it a governing principle of the Act and by enabling the wide use of pollution prevention planning.



## Section 1: Strengthening the Pollution Prevention Framework (continued)

### BENEFITS OF POLLUTION PREVENTION:

- minimizes or avoids the creation of pollutants
- prevents the transfer of pollutants from one medium to another
- accelerates the reduction and/or the elimination of pollutants
- minimizes health risks
- promotes the development of source reduction technologies
- uses energy, materials and resources more efficiently
- reduces the need for costly enforcement
- limits future liability with greater certainty
- recognizes that waste is a cost that can be reduced
- avoids costly clean-up in the future
- promotes a more competitive economy

*The Canadian Council of Ministers of the Environment*

### MEMBERS OF THE POLLUTION PREVENTION COORDINATING COMMITTEE

**Environment Canada (Chair)**

**The Canadian International Development Agency**

**The Department of Foreign Affairs and International Trade**

**The Department of National Defence**

**Fisheries and Oceans Canada**

**Industry Canada**

**Public Works and Government Services Canada**

**Transport Canada**

**The Canadian Centre for Pollution Prevention**

### *The Pollution Prevention Coordinating Committee*

The federal Pollution Prevention Coordinating Committee (P2C2), established in 1992, helps promote the concept of pollution prevention and its practice throughout the federal government. In the few years since its inception, several departments have joined the committee, providing broad-based support for extending pollution prevention activity throughout federal government operations.

The P2C2 promotes the adoption of pollution prevention throughout Canada in both the public and private sectors. It encourages and facilitates the exchange of pollution prevention information to all Canadians and to the international community. Through regular communication and their annual meeting, P2C2 members share successes, challenges and solutions for pollution prevention.

*Progress in Pollution Prevention 1997-1998* is the third annual progress report of the P2C2. This report serves to inform Canadians, government officials and members of the international community of pollution prevention achievements and successes across the country. By relating progress to the five target sectors of the federal Pollution Prevention Strategy, the report provides a framework for monitoring performance and guiding future decision making towards the goal of pollution prevention. A broader membership and increased participation of

federal departments in the P2C2 enhanced the scope and comprehensiveness of this year's report.

### *Putting Prevention into Practice*

Prevention is being put into action through the efforts of the P2C2 and the Government of Canada's partnerships with other governments, Canadian citizens and communities, businesses, industries, non-government organizations and international organizations.

Steadily, prevention is being incorporated into federal programs, projects and approaches to doing business, thus strengthening the government's capacity to provide a clean environment and healthy economy for all Canadians.

Successes such as the Fraser River Action Plan, the St. Lawrence Action Plan, the Montreal Protocol, industrial pollution prevention projects and the Canadian Pollution Prevention Information Clearinghouse provide concrete examples of prevention's benefits and incentive for continued progress.

By further building on partnerships with all sectors of society and further promoting the practices, techniques and benefits of prevention, the Government of Canada will continue to put policy into practice and work towards strengthening the federal framework.

Annual meeting of the Pollution Prevention Coordinating Committee in Winnipeg, May 1998.





# Progress within the Federal Government

The Government of Canada is putting the federal environmental house in order by incorporating creative and effective pollution prevention solutions into its decisions, activities and operations.

## Legislation

In March 1998, legislation to strengthen and amend the *Canadian Environmental Protection Act* (CEPA), with pollution prevention as its guiding principle, was introduced to Parliament. Provisions for pollution prevention in the renewed Act include prevention planning for toxic substances and federal facilities.

In January 1998, new *Diesel Fuel Regulations* came into effect. Sulphur in on-road diesel fuel is now set to a maximum of 0.05% (500 parts per million). These regulations will improve air quality by reducing the amount of particulate matter released to the air by 5,000 tonnes per year.

New *Benzene in Gasoline Regulations*, designed to reduce the amount of benzene in gasoline to less than 1% by volume, were announced in November 1997. These regulations, effective July 1, 1999, will reduce the annual amount of benzene, a toxic substance that is carcinogenic, released to the air by 3,000 tonnes.

CEPA Part IV *Regulations Respecting Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on Federal Lands* came into effect in August 1997. These regulations complement the existing CEPA Part IV technical guidelines for storage tank management by requiring annual compliance reporting.

Effective for the 1997 reporting year, new provisions to the National Pollutant Release Inventory (NPRI) required facilities to provide qualitative information on their pollution prevention activities for NPRI-listed substances. A brochure on pollution



Transport Canada continues to promote environmental impact monitoring at airports.

prevention was developed to help NPRI reporting facilities comply with the new reporting requirement.

## Toxic Substances — The Strategic Options Process

Under the Strategic Options Process (SOP), multi-stakeholder recommendations for the prevention and reduction of several toxic substances associated with particulate matter emissions from the Electric Power Generation sector were accepted by the Minister of the Environment. Pollution prevention recommendations included: revising the present thermal power generation emission guidelines for new plants; negotiating agreements with major electric utilities to reduce particulate emissions from existing facilities; investigating the possible role for a scientific advisory group to provide independent advice to government and the utilities; and developing a joint industry-government plan to further assess fine particulate, mercury, oxidic, sulphidic and soluble inorganic nickel compound releases.

## Clean Air

In November 1997, Phase 2 of the Federal Smog Management Plan was announced. The plan brings together federal government initiatives designed to help resolve the smog problem in Canada. Initiatives include strict emission standards for new vehicles; revised codes of practice for vehicle inspection and maintenance programs; and the development of a sustainable transportation policy. Development of the Plan was led by Transport Canada, Natural Resources Canada and Environment Canada.

Transport Canada is developing a national low emission vehicle program. In 1997-1998, the department also promoted environmental impact monitoring at airports.

## Section 2: Progress within the Federal Government (continued)

### THE STRATEGIC OPTIONS PROCESS

The Strategic Options Process is a multi-stakeholder consultation process designed to recommend options to the Ministers of Environment and Health for the management of toxic substances under CEPA. For more information on the management of toxic substances, visit [www.ec.gc.ca/sop](http://www.ec.gc.ca/sop) and [www.ec.gc.ca/cceb1](http://www.ec.gc.ca/cceb1) on the Internet.

### Sustainable Development and Environmental Management Systems

In accordance with the 1995 amendments to the *Auditor General Act*, 28 federal departments and agencies tabled sustainable development strategies by December 10, 1997. Pollution prevention is an integral part of many of these departmental strategies, which include goals and action plans for waste reduction, green procurement, water conservation and energy efficiency.

The Department of National Defence's sustainable development strategy commits to reducing the use of specified high-risk hazardous materials. As part of this commitment, a chemical process replacement procedure developed by the Department was applied to a methylene chloride paint stripping operation at Canadian Forces Base Halifax.

Both Transport Canada and Environment Canada improved their departmental management strategy for ozone-depleting substances (ODS) by updating their inventories to include halons and solvents, in addition to refrigerants. The inventories are included in each department's environmental management system (EMS).

Using 1988 as the baseline year, Environment Canada surpassed the solid waste reduction target (80%) of its sustainable development strategy by achieving an 82% reduction in the amount of waste sent to landfill. This was achieved through measures such as use reduction, on-site reuse and recycling.

Environment Canada's Environmental Technology Centre developed an EMS for its laboratory and research operations. It includes a management strategy and action plan to reduce and eliminate the use of ODS in its laboratory operations and building heating, ventilation and air conditioning systems.

### Waste Reduction/Energy Efficiency

Public Works and Government Services Canada has been working to implement green standards for the management of construction, renovation and demolition waste. A pilot project, undertaken as part of the renovations to the Parliament Buildings in Ottawa, diverted 95% of waste material from landfill. A similar project in Winnipeg achieved 100% waste diversion.

The Federal Buildings Initiative (FBI) enlists private-sector companies to undertake energy-wise renovations in federally owned or leased buildings. Environment Canada participated in four FBI projects, generating an annual savings of \$623,000.

ENMAX, Calgary's electric system, signed an agreement to supply nine Environment Canada buildings in Alberta with 100% wind-generated power for the next 10 years. This agreement is the first institutional purchase of "green power" in Canada.

### THE INTERDEPARTMENTAL NETWORK ON SUSTAINABLE DEVELOPMENT STRATEGIES

The Interdepartmental Network on Sustainable Development Strategies serves as a forum to support the preparation and implementation of sustainable development strategies in federal departments. The Network facilitates coordination among federal departments and supports linkages to other interdepartmental groups, such as the Federal Committee on Environmental Management Systems and the Pollution Prevention Coordinating Committee.

The National Pollutant Release Inventory (NPRI) is a nation-wide publicly accessible database of 176 pollutants that are released to air, water and land in Canada.

For more information, visit the NPRI Website at [www.ec.gc.ca/pdb/npri](http://www.ec.gc.ca/pdb/npri)

## Section 2: Progress within the Federal Government (continued)

### Pilot Projects and Research

The Department of National Defence, in conjunction with the National Research Council Centre for Fluid Power Technology, developed a prototype coatings removal system that uses ultrasonic energy to create a pulsed waterjet. This removal system reduces the amount of air contaminants and waste generated.

#### THE INTERDEPARTMENTAL ADVISORY GROUP ON WATER CONSERVATION AT FEDERAL FACILITIES

The Interdepartmental Advisory Group on Water Conservation at Federal Facilities (WCFF) promotes water use efficiency in federal operations by developing common tools, coordinating activities, providing advice and participating in other interdepartmental groups such as the Federal Committee on Environmental Management Systems. In 1997-1998, the WCFF was asked by the Office of the Auditor General to help develop water efficiency performance measures.

The Canadian Coast Guard and Environment Canada (Ontario Region) are partners in a pollution prevention demonstration site at Base Prescott. Initiatives include reducing the use of environmental contaminants, using water-based paint on channel markers, and introducing solar energy cells on channel markers and other marine equipment.

The Canadian Coast Guard examined the operations of the Coast Guard ship *Simcoe* to identify pollution prevention opportunities. The final report for the study will include recommendations for prevention on board the *Simcoe* and on similar ships.

In 1997-1998, Environment Canada (Atlantic Region) used its environmental emergencies database to identify spill trends and areas where future preventive action is needed. Based on

the analysis, steps were taken to address the problem areas.

### Operations/Facility Management

Environment Canada (Quebec Region) commissioned the development of a glycol concentrator for airports. The concentrator will allow for on-site recycling of this aircraft de-icing fluid.

In conjunction with air carriers, Transport Canada implemented detailed glycol mitigation plans and procedures to ensure the proper environmental management of the chemical.

The Department of Foreign Affairs and International Trade, and Environment Canada (Pacific and Yukon Region) implemented a comprehensive program to green the 1997 Asia Pacific Economic Cooperation conference held in Vancouver. Special emphasis was placed on incorporating pollution prevention into the Economic Leaders Meeting.

### Education and Training

Environmental coordinators used the *Choose to Reduce Tool Kit*, developed by Public Works and Government Services Canada, to launch cost-effective awareness campaigns for waste reduction and green procurement.

Environment Canada (Headquarters and Atlantic Region) held a contingency planning workshop for representatives from federal facilities in Atlantic Canada. Participants learned about spill prevention and preparedness techniques including hazard identification, risk ranking and auditing.

Environment Canada (Ontario Region) developed spill prevention workshops to assist federal facilities in Ontario in creating a systematic, site-specific plan to reduce the use of toxic materials and the impact of spills of these materials on the environment. Two of these workshops were delivered in March 1998.

The Environmental Technology Centre of Environment Canada, in conjunction with Ontario Region, is producing a video on pollution prevention for laboratory and research facilities. Highlights include the environmental and economic advantages of incorporating pollution prevention activities into laboratory operations.

An environmental auditing course, developed and piloted by Environment Canada (Atlantic Region), was delivered to public sector participants in March 1998. Participants were trained in evaluating audits, applying audit techniques and the role of auditing in the operation of environmental management systems.

Environment Canada (Quebec Region) designed and hosted the first of five workshops on emergencies and health. Workshop objectives include discussion of the *Canusqué annexe*, the Quebec Region appendix to the Canada-United States Joint Inland Pollution Contingency Plan.

Environment Canada (Headquarters) produced a guide to federal environmental legislation, guidelines and pollution prevention practices. A course based on the guide was delivered to more than 85% of the Department's facility managers and operational personnel.



# Progress with Other Governments

Across Canada, all orders of government are working in partnership to encourage a national shift to pollution prevention.



In addition to reducing industrial toxic effluent releases, the St. Lawrence Action Plan has resulted in an increase in the beluga whale population.

## CCME POLLUTION PREVENTION STRATEGY

### Vision

An environmentally responsible society that anticipates and prevents pollution.

### Goal

To make pollution prevention the strategy of choice for protecting the environment and improving economic competitiveness.

## Partners in Pollution Prevention National

A report released in January 1998 by the Canadian Council of Ministers of the Environment (CCME) found that, in 1996, Canadians reduced the amount of packaging sent for disposal by 51.2%. This exceeds the CCME's National Packaging Task Force year 2000 reduction target of 50%.

The CCME Pollution Prevention Awards Program gives national recognition to companies and organizations showing accomplishment or leadership in pollution prevention. Each year up to six certificates of recognition are awarded. Winners of the 1997 CCME Pollution Prevention Awards include: the Municipality of Annapolis County (Nova Scotia); Bebbington Industries (Dartmouth, Nova Scotia); Crown Cork & Seal Canada Inc. (Concord, Ontario); and Kuntz Electroplating Inc. (Kitchener, Ontario). Canadian Forces Base Trenton – 8 Wing received honourable mention for its efforts to reduce solvent use and act as a pollution prevention demonstration site. For more details, contact the CCME at (204) 948-2757 or visit the CCME Website at: [www.ccme.ca/ccme](http://www.ccme.ca/ccme)

The National Action Plan for Environmental Control of Ozone-Depleting Substances and their Halocarbon Alternatives was revised and expanded. Published by the CCME in January 1998, the plan provides a national framework for prevention programs for these substances.

## Provincial and Municipal

As a member of the Federation of Canadian Municipalities (FCM) 20% Club, Halifax Regional Municipality (HRM) agreed to reduce greenhouse gas emissions to 20% below 1990 levels. In 1997-1998, HRM, with strategic and technical assistance from Environment Canada (Atlantic Region), completed its benchmark 1990 greenhouse gas emissions estimates and identified major assets and activities of concern.

In October 1997, HRM agreed to implement a pollution prevention plan as part of the effort to clean up the Halifax harbour. Environment Canada (Atlantic Region) helped HRM complete the plan and will assist in its implementation.

As a member of the *Comité mixte municipal-industriel de gestion des risques d'accidents industriels majeurs pour l'est de Montréal* (CMMI), Environment Canada (Quebec Region) helped revise the committee's guide. The committee is developing and implementing an integrated risk management process that includes risk identification, response plans and public information.

## Section 2: Progress with Other Governments (continued)

The Province of British Columbia and the Regional Districts containing Vancouver and Victoria, in partnership with Environment Canada (Pacific and Yukon Region) and Industry Canada, are developing a framework of regulatory and non-regulatory instruments that encourage small businesses to adopt pollution prevention. The printing industry will be the first sector profiled.

### ST. LAWRENCE ACTION PLAN: VISION 2000

The St. Lawrence Action Plan, launched in 1988, is designed to clean up the St. Lawrence ecosystem, improve the health of communities and increase access to the river. Results achieved during the first 10 years of the plan include a 96% reduction in toxic effluent releases from 50 industrial plants, the protection of 12,000 hectares of wildlife habitat and an increase in the beluga whale population.

The plan's success is due largely to the close working relationship between the federal and Quebec governments. Other partners include private companies, universities, environmental groups, research centres and local organizations.

Phase III (1998-2003) of the St. Lawrence Action Plan is now under way. This phase will focus on a prevention-based approach in the areas of biodiversity, agriculture, industry, health and navigation. Community organizations will also play an increasingly active role in the clean up of the St. Lawrence ecosystem. Environment Canada, its

federal partners and the Quebec government will focus their efforts on pollution prevention in the chemicals, metallurgy and metal finishing sectors.

### PATH FORWARD: THE NORTHERN RIVER BASINS STUDY

The Northern River Basins Study (NRBS), jointly sponsored by the governments of Canada, Alberta and the Northwest Territories, was initiated in response to increasing concern that the cumulative effects of development were adversely affecting the aquatic health of the Peace, Slave and Athabasca river systems.

The five-year study, completed in 1996, was designed to address ecological concerns in regard to the growing number of industrial developments in the river basins (i.e. pulp and paper, and oil sand projects) and to increase scientific knowledge of conditions in the major river systems of the north.

In response to one of the study's recommendations, the governments of Canada, Alberta and the Northwest Territories declared pollution prevention as a primary environmental objective and an essential component of sustainable development in the basins. All three governments involved in the NRBS have endorsed the CCME document *A National Commitment to Pollution Prevention* (1993).

Environment Canada, other federal departments, Alberta and the Northwest Territories are working together to address the recommendations from the NRBS through the Northern Rivers Ecosystem Initiative (NREI). Promoting pollution prevention to municipalities within the river basins is one proposed area of activity.

### HARMONIZATION

The Canada-wide Accord on Environmental Harmonization recognizes pollution prevention as the preferred approach to environmental protection. In cooperation with provincial and territorial governments and in consultation with stakeholders, Canada-wide Standards (CWSs) are being developed for ground-level ozone, airborne particulate matter, petroleum hydrocarbons in soil, benzene, mercury, dioxins and furans.

# Progress in the Private Sector

Canadian industry and business are adopting pollution prevention and realizing both environmental and economic benefits.

## Industrial Pollution Prevention

The Accelerated Reduction/Elimination of Toxics (ARET) Program targets the reduction or elimination of 117 toxic substances in the environment. *Update to Environmental Leaders 2*, the program's 1997 progress report, reported that 292 facilities reduced annual emissions by 21,499 tonnes or 61% from base-year levels.

The Pacific and Yukon Region of Environment Canada completed pollution prevention guidelines for the wood preservation, foundry, ready-mixed concrete, exposed aggregate, dairy, brewery and winery industries.

Guidelines for the proper siting, design and management of land treatment cells for the remediation of contaminated soils in Yukon were developed by Environment Canada (Pacific and Yukon Region). These guidelines help to prevent the release of contaminants to surface and ground water by ensuring that soils contaminated by oil and fuel spills at highway construction campsites are managed properly.

Environment Canada (Quebec Region) organized, on a partnership basis, the 20th Symposium on Wastewater Treatment for government and industry environmental professionals. Issues discussed included pollution prevention in the mining and metals sectors.

In collaboration with Headquarters, Environment Canada (Quebec Region) conducted a study to identify the potential for implementation of eco-efficient industrial parks in Quebec. The study concluded that the Bas-Richelieu region had considerable potential.



A wet clean facility in Hamilton, Ontario. Wet cleaning equipment eliminates the use of perchloroethylene, a hazardous solvent.

## Sector-Specific Pollution Prevention Initiatives

### Agriculture

As part of its efforts to reduce the use of chemical fumigants, the Canadian Methyl Bromide Industry/Government Working Group developed an integrated pest management plan for food processing facilities. The plan sets out procedures and guidelines for facility operators and pest control companies interested in incorporating integrated pest management into their operations.

### Automotive

Since 1992, members of the Canadian Motor Vehicle Manufacturers' Association (Chrysler Canada Ltd., Ford Motor Company of Canada Ltd. and General Motors of Canada Ltd.) have been engaged in a pollution prevention project with the Ontario Ministry of Environment and Environment Canada (Ontario Region). Member companies have avoided or minimized the creation of pollutants and waste through prevention activity and have used recycling, treatment, reuse and other environmental protection measures to manage waste. A pollution prevention project established in 1993 with the Automotive Parts Manufacturers Association has resulted in participating industries reducing or eliminating 623 tonnes of environmental contaminants since March 1996.

## AT THE INAUGURAL CANADIAN POLLUTION PREVENTION ROUNDTABLE (CPPR)

in May 1997, more than 80 pollution prevention practitioners and specialists met to identify opportunities for cooperation. The CPPR provides a forum for organizations to coordinate their pollution prevention efforts and benefit from existing resources, tools and expertise. For more information, contact the Canadian Centre for Pollution Prevention at 1-800-667-9790 or <http://c2p2.sarnia.com>





## Section 2: Progress in the Private Sector (continued)

The Northwest Territories Chamber of Commerce and Environment Canada (Prairie and Northern Region) developed pollution prevention fact sheets for automotive repair facilities. Auto repair shop staff use the fact sheets to incorporate pollution prevention practices into their daily operations.

The Hamilton District Autobody Repair Association is working with the Ontario Ministry of Environment and Environment Canada (Ontario Region) on a pollution prevention project that targets volatile organic compounds and other contaminants resulting from auto-body refinishing operations. Workshops delivered to auto-body shop managers and painters introduce pollution prevention, its financial benefits, and the skills required to use mandated products and equipment such as more efficient spray guns.



Through pollution prevention training courses industry and business are incorporating prevention principles into their daily operations.

### Dry Cleaning/Fabricare

A British Columbia Fabricare Association workshop on wet cleaning technology, sponsored by Environment Canada, promoted wet cleaning as an environmentally friendly alternative to dry cleaning with perchloroethylene solvent.

The Atlantic Fabricare Association, in partnership with Environment Canada (Atlantic Region), held seminars to inform fabricare specialists of the benefits and considerations related to wet cleaning technology.

The Canadian Fabricare Association (CFA), in partnership with the Ontario Fabricare Association and Environment Canada (Ontario Region), developed an *Environmental Code of Management Practice for Textile Care Operations in Canada*. The CFA also organized a conference for fabricare specialists on new technologies in non-aqueous cleaning.

### Forestry

Williams Lake Sawmill in British Columbia completed and began implementing recommendations from its pollution prevention plan. Environment Canada (Pacific and Yukon Region) and Riverside Forest Products co-funded the development of the plan.

### Healthcare

A best practices manual is being developed for dental offices to help reduce the discharge of mercury and other toxics to sewer systems. Key partners in this project are the Ontario Dental Association, the Region of Hamilton-Wentworth, the Ontario Ministry of Environment and Environment Canada (Ontario Region).

A joint initiative between the healthcare sector, environmental organizations, Environment Canada (Ontario Region), and the Ontario Ministry of Environment established a website, "Healthcare EnviroNet," to promote pollution prevention and mercury reduction activities in Ontario's healthcare sector.

### Heavy Construction

The Manitoba Heavy Construction Association, the Province of Manitoba and Environment Canada (Prairie and Northern Region) established a two-year industry-led environment program for the heavy construction industry. Training materials, best management practices and an environmental management manual were developed and tested.



A multi-agency team led by Environment Canada is working to reduce the amount of toxic substances released from ship hull maintenance activities in Atlantic Canada.

### Marinas/Ships

As part of its marina operation demonstration site, Environment Canada (Ontario Region) produced a video showing how initiatives, such as upgraded fuel and waste systems, and the use of non-toxic cleaners by boat and marina owners can reduce the environmental impact of boating.

Environment Canada (Atlantic Region) is leading a multi-agency team working to reduce the amount of toxic substances released from ship hull maintenance activities such as paint application and removal. Initiatives include training to promote best practices and new technologies, pollution prevention demonstration projects, and information sharing.

## Section 2: Progress in the Private Sector (continued)

### ADVANCING POLLUTION PREVENTION: PETROLEUM PRODUCTION OFFSHORE ATLANTIC CANADA

In 1997-1998, two petroleum projects were approved for development by the Offshore Petroleum Boards (OPBs): the Terra Nova Oil Field offshore Newfoundland and the Sable Gas Field and Export Pipeline offshore Nova Scotia.

Through the *Canadian Environmental Assessment Act* and other mechanisms, Environment Canada (Atlantic Region) provided pollution prevention advice and recommendations to the OPBs. As independent federal-provincial agencies, the OPBs are responsible for regulating the exploration, development and transportation of petroleum in the offshore area.

From the input received, the OPBs started to require project proponents to incorporate pollution prevention into their offshore development plans. As well, approvals for the Terra Nova Oil Field and the Sable Gas Field were subject to the following prevention-based conditions/recommendations: the Terra Nova Oil Field project will re-evaluate the need to discharge drilling and production wastes into the ocean and adopt the precautionary principle, a tenet of sustainable development; the Terra Nova Oil Field's project proponent should seek third-party certification of its environmental management system; and the Sable Gas Field and Export Pipeline project will operate under a Total Quality Management Plan and virtually eliminate the discharge of oily drill cuttings by December 31, 1999.

#### Metal Finishing

An MOU between several metal finishing industry associations, the Ontario Ministry of Environment and Environment Canada (Ontario Region) to undertake pollution prevention has resulted in participating industries reducing emissions of approximately 1,951 tonnes of targeted substances.

#### Mining

Cominco Ltd., in partnership with the Province of British Columbia and Environment Canada (Pacific and Yukon Region), pilot tested the use of woodwaste combustion ash as a neutralizing reagent for toxic acidic drainage from abandoned mines. Results of the test found the ash to be a suitable, cost-effective substitute for lime, a reagent that incurs heavy carbon dioxide emissions during its manufacture.

#### Oil and Gas

In cooperation with the National Energy Board, Environment Canada and Fisheries and Oceans Canada are developing a National Offshore Chemical Notification Plan for the selection of environmentally

safe chemicals for offshore petroleum exploration and production.

#### Printing and Graphics

Members of the Ontario printing industry are engaged in an MOU with the Ontario Ministry of Environment and Environment Canada (Ontario Region) to implement pollution prevention planning. The project's *Second Progress Report* reported a 400-tonne reduction in environmental contaminants since June 1995.

#### Transportation

Hamilton International Airport, in partnership with Environment Canada (Ontario Region), established a pollution prevention project in January 1998. Project initiatives include replacing solvent-based parts washers, finding a replacement product for petroleum-based hydraulic fluid, and minimizing the release of aircraft de-icing fluid.

#### Tourism

An eco-rating program for the hotel sector was developed by the Hotel Association of Canada in partnership with Terra Choice Environmental Services, Environment

VISIT THE CANADIAN  
BUSINESS ENVIRONMENTAL  
PERFORMANCE OFFICE,  
an environmental information  
resource for small and  
medium-sized Canadian  
businesses, at  
<http://virtualoffice.ic.gc.ca/bepo>

## Section 2: Progress in the Private Sector (continued)

Canada (Headquarters) and other federal departments. Under this program the environmental management of hotel operations is rated. As of February 1998, nine hotels had received eco-ratings.

In St. John's, Newfoundland, Environment Canada (Atlantic Region) staff surveyed hotel operations to identify pollution prevention opportunities and raise awareness regarding water conservation and energy efficiency.

The Nova Scotia Ecotourism Development Foundation, with input from Environment Canada (Atlantic Region), developed a Code of Ethics and a Code of Practice. Both codes identify pollution prevention as the preferred environmental management approach for the Foundation's activities.

### **Pollution Prevention for Small and Medium-sized Enterprises**

In 1997-1998, the Department of Foreign Affairs and International Trade's promotion of Canadian industry abroad focused on small and medium-sized enterprises (SMEs) that offer pollution prevention solutions.

In November 1997, the Canadian Business Environmental Performance Office (BEPO) was launched at the Environment and Energy Conference of Ontario. Developed jointly by Industry Canada and Environment Canada, this virtual office is designed to raise the environmental performance of SMEs by providing on-line links to key resource people and information references.

Cape Breton businesses reduced their energy consumption and waste generation and developed environmentally sound procurement policies with the help and advice of Environment Canada (Atlantic Region).

The Canadian Raw Materials Data Base (CRMD) is designed to provide SMEs with life-cycle inventory data, profiling resource-based commodities for improving products and processes via pollution prevention and design, and the benchmarking of internal improvements. An industry-led voluntary initiative, the CRMD comprises representatives from the glass, steel, plastics, wood and aluminum industries. Environment Canada (Headquarters) chairs the project's steering committee, and the Canadian Standards Association serves as Secretariat. A methodology has been developed and data collection has started.

Environment Canada (Atlantic Region) assisted SMEs in the Miramichi River Watershed in developing and implementing environmental management plans.

Environment Canada (Quebec Region) signed a three-year, \$2 million per year agreement with Canada Economic Development. Funds in the form of reimbursable contributions are provided under the Idea-SME program. This program offers scientific, technical and financial support to SMEs to develop innovative and commercially viable environmental technologies, products, processes and services, particularly in the area of pollution prevention.

### **PROTECTING THE GREAT LAKES**

Environmental protection of the world's largest freshwater ecosystem is the driving force behind Environment Canada's (Ontario Region) involvement in initiatives such as the *Canada-Ontario Agreement (COA) Respecting the Great Lakes Basin Ecosystem*. The COA objective is virtual elimination of persistent, bioaccumulative and toxic substances. Canada and Ontario are also working with the U.S. federal and state governments to virtually eliminate persistent toxic substances targeted under the *Great Lakes Binational Toxics Strategy*.

These and other pollution prevention efforts have resulted in significant reductions or elimination in the use, generation and release of toxic substances to the environment. Together with the Ontario Ministry of Environment, Environment Canada will continue to work in cooperation with federal departments, industry, municipalities and other stakeholders to advance pollution prevention within the Great Lakes region.



## Section 2: Progress in the Private Sector (continued)

Through the Manitoba Pollution Prevention Partnership Program for SMEs, pilot projects were implemented in the metal finishing, and printing and graphics sectors. The program was established by the Manitoba Division of the Alliance of Manufacturers and Exporters Canada and the Manitoba government. Environment Canada (Prairie and Northern Region) participated in this effort.

### *Research and Development*

The Microwave-Assisted Process (MAP™) is a clean process technology that extracts chemicals from various matrices. Developed and patented by Environment Canada, the MAP™ method requires 90% less energy and solvent than other conventional methods and generates less waste. As of March 1998, Environment Canada had negotiated seven licences with private sector companies for the commercialization of various applications of this patented process method.

Environment Canada (Quebec Region) commissioned the development and demonstration of a continuous oil analysis and maintenance system. This system extends the life of lubricants, thereby reducing the amount sent for disposal.

### *Training and Education*

The Manitoba Green Procurement Network, chaired by the Manitoba Environmental Industries Association, promotes green procurement in the province's industrial, commercial and institutional sector through information sharing, training and demonstration projects. Environment Canada (Prairie and Northern Region) helped create the Network.

In partnership with the *Comité sectoriel de main-d'œuvre de l'industrie de l'environnement* and the *Grappe de développement des industries de l'environnement inc.*,

### **SUCCESS STORY:**

#### **THE FRASER RIVER ACTION PLAN**

Environment Canada, in cooperation with Fisheries and Oceans Canada and a wide range of other partners, completed the Fraser River Action Plan (FRAP) in March 1998. Goals of the Action Plan included enhancing the productivity of the Fraser River basin through restoration of its natural habitat, preventing and cleaning up environmental contamination and developing a sustainable development management plan.

Among others, FRAP achievements included the implementation of best management practices and pollution prevention plans in many businesses and industry sectors.

Ongoing challenges within the basin include protecting the water quality from non-point sources of pollution such as agricultural and urban runoff and releases from small and medium-sized industries.

The successes, knowledge and lessons learned from FRAP will be of significant value to the Georgia Basin Ecosystem Initiative, launched in 1998.

Environment Canada (Quebec Region) produced the *Répertoire des ressources québécoises en formation environnementale en entreprise*. This directory is for manufacturing, business and public sector environmental and human resource managers.

# Progress with the Canadian Public

**When communities and individuals are provided access to the information and tools needed to implement prevention activities, they are empowered to demonstrate positive action.**

The Canadian Institute for Environmental Law and Policy published *A Citizen's Guide to Pollution Prevention*. Developed with support from Environment Canada, this step-by-step guide to prevention includes a history of pollution prevention and useful references.



The Canadian Centre for Pollution Prevention established *P2 Dialogue*, an on-line forum dedicated to the sharing of pollution prevention information. Since its inception, subscriptions to the forum have more than doubled, and information is now being shared among 250 subscribers.

## SUSTAINABLE COMMUNITIES

In Atlantic Canada, pollution prevention has been identified as a key strategy to help communities move towards sustainable development. Two examples of community-based initiatives that are putting prevention into practice are ACT! for a Healthy Sydney and the Humber Arm Environment Association Inc.

ACT! for a Healthy Sydney is a community-based organization mandated to improve the quality of life in Sydney, Nova Scotia, through health promotion and positive environmental change. With funding from EcoAction 2000, ACT! conducted 300 household audits to assist homeowners in improving the energy efficiency of their homes, and reducing waste. EcoAction 2000 is an Environment Canada program that provides financial support to help Canadians take action in support of a healthy environment.

With assistance from the Atlantic Coastal Action Plan (ACAP) program, the Humber Arm Environment Association Inc., a community-based organization, launched a comprehensive pollution prevention awareness program. This program used radio spots, newspaper articles, school presentations, curriculum supplements, posters and pamphlets to raise awareness among community members and to promote actions that prevent pollution in the Humber Arm estuary, located on the west coast of Newfoundland. ACAP relies on local involvement to manage the environmental quality of coastal environments. It is part of the federal government's strategy for pollution prevention in the marine ecosystem.

The Canadian Pollution Prevention Information Clearinghouse (CPPIC), an Internet tool, was launched at the Globe '98 International Trade Fair and Conference in Vancouver. An action item in the federal Pollution Prevention Strategy and a component of the renewed *Canadian Environmental Protection Act*, the CPPIC was developed by Environment Canada. Information on the site is a collaborative effort involving, among others, the Canadian Centre for Pollution Prevention (C2P2), the Environmental Choice Program, Envision Compliance and the Business Environmental Performance Office.

Saskatchewan Environment and Resource Management, with input from Environment Canada (Prairie and Northern Region), developed an environmental awareness program entitled *Focus on Forests*. This hands-on guide to pollution prevention is used as a training program by teachers and students.

Seven urban Quebec municipalities achieved a 49% reduction in pesticide use on 25 residential properties and two public parks through the implementation of integrated weed management programs. The project, carried out by the *Association des services en horticulture ornementale du Québec* with funding from Environment Canada's EcoAction 2000 program, helped to promote integrated weed management as an alternative to pesticide use.

The Canadian Labour Congress published *A Workers' Manual on Pollution Prevention*. This manual, developed with the support of Environment Canada's National Office of Pollution Prevention, introduces workers to the core concepts of pollution prevention and provides them with strategies for incorporating pollution prevention into the workplace.

*For pollution prevention information and tools, visit the Canadian Pollution Prevention Information Clearinghouse at: [www.ec.gc.ca/cppic](http://www.ec.gc.ca/cppic)*

A project to convert Montreal's community gardens into ecological gardens set up demonstration sites promoting the reuse and recycling of plant residues and introducing ecological gardening techniques as an alternative to chemical pesticides and fertilizers. A 90% reduction in pesticide use was achieved by the demonstration plots and a total of 1,165.6 kg of organic matter was recovered. Funding for the project was provided by Environment Canada's EcoAction 2000 program.

# Progress with the International Community

**Leadership, participation and cooperation in international initiatives create effective and innovative opportunities to advance pollution prevention.**

## SUSTAINABLE DEVELOPMENT

has become one of the strategic objectives of the Organisation for Economic Co-operation and Development (OECD) and its member countries. To help achieve this objective, the OECD will focus more on horizontal program activity to better integrate economic, environmental and social policies with increased transparency, and will increase stakeholder participation.

Environment Canada, Industry Canada and Natural Resources Canada continue to actively participate in OECD working groups that address environmental policy, chemicals management, and pollution prevention and control.

### North, Central and South America

Environment Canada (Quebec Region) carried out, on a partnership basis, a preliminary analysis of hazards posed by industries, and road and rail transportation along the shared inland boundary of the United States and Quebec. The study was designed to facilitate the development of improved contingency plans.

Environment Canada, Industry Canada and the Globe Foundation organized an international workshop on Clean Production/Clean Technology (CP/CT) Information Systems at Globe '98 in Vancouver. With more than 50 participants, the workshop was an excellent opportunity to disseminate information on CP/CT, improve information systems and transfer, and strengthen mechanisms to profile CP/CT capabilities.

Two seminars on pollution prevention in the oil exploration and gold mining sectors were organized by Environment Canada (Quebec Region) in Costa Rica. The seminars brought together 150 private and public sector representatives from several Latin American countries.

Two workshops were held in São Paulo, Brazil, under the auspices of Watershed Management 2000, a CIDA-funded Environment Canada-Brazil project.

The workshops focused on pollution prevention in the metal-finishing industry and multi-stakeholder negotiation processes for issues related to industrial pollution. Participants included São Paulo government officials, São Paulo Basic Sanitation Company staff and representatives from the Brazilian metal finishing association.

### Asia and Africa

As part of CIDA's China-Canada Higher Education Program, representatives from Environment Canada's Environmental Technology Centre and McGill University provided technical seminars to Chinese researchers in techniques related to microwave-assisted processing and the Microwave-Assisted Process (MAP™).

## THE CANADIAN INTERNATIONAL DEVELOPMENT AGENCY

The Canadian International Development Agency (CIDA) has worked diligently to advance and enable pollution prevention internationally. The projects and programs shown below were implemented in 1997-1998 in conjunction with the private sector and a number of other federal departments.

- Environmental Training in Brazilian Industry
- Canada-Brazil Technology Transfer Project
- Risaralda River Basin Planning (Colombia)
- Costa Rica Productive Sector Modernization Program
- ARPEL Environmental Project — Phase II (Latin America)
- Southern Cone Technology Transfer Project (Latin America)
- OLADE Energy and Environment Project (Latin America)
- Increasing Energy Efficiency in Buildings (China)
- China-Canada Cooperation Project in Cleaner Production
- Canada-China Jiangsu Small and Medium Enterprise Management and Environment Project
- TATA Energy Research Institute (TERI) Canada Energy (India)
- Confederation of Indian Industry — Environmental Management
- Collaborative Environmental Protection in Indonesia
- Vietnam-Canada Environment Project (VCEP)
- Canada-Vietnam Technology Transfer Project
- Egypt Environmental Initiatives Fund (EEIF)



## Section 2: Progress with the International Community (continued)



CIDA Photo: Gerard Dolan

Taking air quality sample on Haiphong street corner, Vietnam-Canada Environment Project.

Environment Canada (Quebec Region) organized a one-week workshop in Morocco on the management of dredged sediments. Participants included government managers, engineering consulting firms and equipment companies.

### International Organizations

Environment Canada helped the Organisation for Economic Co-operation and Development (OECD) improve the environmental performance of its internal operations by developing an EMS action plan and initiating development of the OECD Greening Government Website. Visit the Website at [www.oecd.org/env/gog/index.htm](http://www.oecd.org/env/gog/index.htm)

Industry Canada and Environment Canada (Atlantic Region), in partnership with the United Nations Environment Program (UNEP), prepared a *Guide to Environmental Management of Industrial Estates*. A training package was also developed and formed the basis for a south-east Asia regional training workshop held in Thailand in 1997.

In March 1998, Environment Canada participated in the first meeting of a five-year NATO Pilot Study on Cleaner Processes and Cleaner Products. The primary focus of the study is to share information, tools and methods related to clean processes and technologies.

Transport Canada, in conjunction with the International Civil Aviation Organization, is working to reduce emissions of nitrogen oxides and volatile organic compounds from aircraft.

In December 1997, Environment Canada (Headquarters) hosted the first OECD international workshop on the waste minimization policy of Extended Producer Responsibility (EPR).

Government, industry, international organization and environmental group representatives from 11 OECD member countries attended the event. The outcomes from the workshop will provide input into the development of an EPR guidance manual for governments.

### THE MONTREAL PROTOCOL: AN INTERNATIONAL SUCCESS STORY

In September 1997, representatives from 120 parties to the *Montreal Protocol on Substances that Deplete the Ozone Layer* participated in the Ninth Meeting of the Parties. This marked the 10th anniversary of the signing of the Protocol — an international agreement controlling the production and consumption of ozone-depleting substances. Since its signing 10 years ago, the Protocol has been amended and strengthened.

An independent study of the benefits and costs of the Montreal Protocol, commissioned by Canada, found it had resulted in significant benefits. The Protocol has driven technological innovation; enabled all nations to share its benefits; and offers important lessons regarding international cooperation on global environmental challenges.

Canada hosts the International Secretariat for the Multilateral Fund of the Montreal Protocol (MFMP), and through the fund continues to provide bilateral assistance to a number of developing countries. The MFMP, financed by developed countries, provides financial and technical assistance to developing countries so that they are able to meet their obligations to the Protocol at no net cost to their economies.

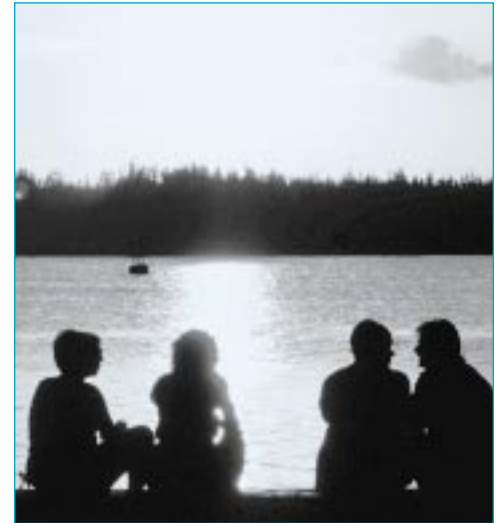
# Moving Forward

The integration of environmental considerations into daily activity is becoming more and more a reality as the application of pollution prevention expands and effective partnerships are created.

Though progress has been made in incorporating pollution prevention into many of the decisions and activities of government, companies, communities and individuals, work remains if the goals of the federal Pollution Prevention Strategy are to be achieved.

The initiatives highlighted in this publication, *Progress in Pollution Prevention 1997-1998*, confirm that the number of sectors applying prevention is increasing and the practices and processes used are diversifying. This broadening of activity across the programs and operations of government, business and industry helps to yield results and benefits that are both effective and efficient. It also confirms the Government of Canada's commitment as stated in *Securing Our Future Together: Preparing Canada for the 21st Century* (Red Book II). That commitment is "to expand the application of the federal Pollution Prevention Strategy across federal legislation, programs and policies."

To further demonstrate the range of pollution prevention initiatives being implemented and new partnerships being developed, all federal departments are encouraged to record their prevention efforts for the 1998-1999 fiscal year for inclusion in the next annual report. Progress will continue to be reported according to the five target sectors of the federal Pollution Prevention Strategy and will focus on the environmental results of the reported activities. The inclusion of pollution prevention as the cornerstone of the renewed *Canadian Environmental Protection Act* will further put prevention into practice by providing authority for pollution prevention planning for toxic substances.



As important as documenting the progress made in pollution prevention, this report also provides Canadians with concrete examples of prevention activities, their environmental results and associated economic advantages. Finally, *Progress in Pollution Prevention 1997-1998* recognizes industrial sectors and individual companies that lead the way in preventing pollution through innovative techniques, technologies, processes and practices that also save money and improve competitiveness at home and abroad.

The Pollution Prevention Coordinating Committee invites all Canadians to confirm their commitment to a healthy environment by adopting a pollution prevention philosophy. By continuing to work together to tackle the goal of preventing pollution at the source, Canadians will foster sustainable development and secure both a healthy environment and a healthy economy.

## THE KYOTO PROTOCOL

In December 1997, representatives from Canada and 160 other countries met in Kyoto, Japan, and agreed to a Protocol that calls for further reductions in greenhouse gas emissions. The Government of Canada has made a commitment to reduce our emissions to 6% below 1990 levels between 2008 and 2012.

# Appendix I

## Pollution Prevention Coordinating Committee Membership List

### ENVIRONMENT CANADA HEADQUARTERS

### ENVIRONMENTAL PROTECTION SERVICE

#### Toxics Pollution Prevention Directorate

James Riordan (Chairperson)  
John de Gonzague (Alternate  
Chairperson)  
Ghislaine Dunberry (Coordinator)  
David Bowie

#### Air Pollution Prevention Directorate

Peggy Farnsworth

#### Environmental Technology Advancement Directorate

Adrian Steenkamer/Mike Bumbaco  
Peter Seto (Burlington Environmental  
Technology Office)

#### National Programs

Lynn Provost/Nicole Casault

#### Regulatory Affairs & Program Integration

Arthur Sheffield

#### Communications

Louise Power

### POLICY & COMMUNICATIONS

Craig Ferguson

### CORPORATE SERVICES

Elyse Routhier

### ENVIRONMENT CANADA REGIONS

#### Atlantic Region

Rodger Albright

#### Quebec Region

Jean Tremblay/Claire Marier

#### Ontario Region

Tom Tseng/Brad Cumming/  
Ron Nobes (Federal Programs)

#### Prairie & Northern Region

David Noseworthy

#### Pacific & Yukon Region

Lisa Walls/Andrew Green

### OTHER GOVERNMENT DEPARTMENTS

#### INDUSTRY CANADA

##### Environmental Affairs Branch

Ron Harper  
Nada Vransy

#### NATIONAL DEFENCE

##### Environmental Protection Directorate

Holmer Berthiaume

#### CANADIAN INTERNATIONAL DEVELOPMENT AGENCY

##### Environment and Natural Resources Division, Policy Branch

Louis-Philippe Mousseau

#### FISHERIES AND OCEANS CANADA

##### Realty Management -- Finance and Administration

Denise Lapratte

#### PUBLIC WORKS AND GOVERN- MENT SERVICES CANADA

##### Environmental Services

Monique Theriault

#### TRANSPORT CANADA

##### Environmental Affairs

Alec Simpson  
Saleem Sattar

#### DEPARTMENT OF FOREIGN AFFAIRS AND INTERNATIONAL TRADE

##### Environmental Services (JEN)

Thomas Gillmore

### NON-GOVERNMENT ORGANIZATIONS

#### CANADIAN CENTRE FOR POLLUTION PREVENTION

Marianne Lines