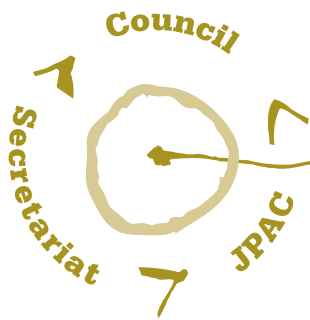




Annual Report 1999







Mission

The CEC facilitates cooperation and public participation to foster conservation, protection and enhancement of the North American environment for the benefit of present and future generations, in the context of increasing economic, trade and social links among Canada, Mexico and the United States.



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Message from the Council



David Anderson
Canada
David Anderson
Minister of the Environment

Early in the 1990s, the international community produced Agenda 21 and the World Trade Organization, each promising to exert major influence in shaping public policy for decades to come. Meanwhile, in North America, the North American Free Trade Agreement (NAFTA) became the first international trade pact to envision the need for an international forum where synergies and tensions arising from the interaction of trade and environment could be addressed. In recognition of the binding together of the NAFTA partners through trade, among other forces, and in view of the transboundary nature of regional environmental issues, the North American Commission for Environmental Cooperation (CEC) was created with the task of fostering cooperative environmental action among the three countries.



Mexico

Julia Carabias

*Secretary of Environment,
Natural Resources and Fisheries*



United States

Carol M. Browner

*Environmental Protection
Agency Administrator*

By the end of the decade, the CEC, as a young organization with an unprecedented role, was coming into its own as an important contributor to the advancement of the North American environmental agenda. By working together through the organization, the three nations continued to make progress in 1999 on a number of issues that none could have achieved individually. Among the highlights was the launch by the CEC's Sound Management of Chemicals program of a North American Regional Action Plan to reduce releases into the environment of dioxins and furans and hexachlorobenzene. That year the CEC also published its Analytical Framework for Assessing the Environmental Effects of NAFTA and announced plans to convene a symposium exploring the linkages

between trade and environment. Also, the Secretariat released an independent study of transboundary migratory bird habitat on the upper reach of the San Pedro River, which helped launch a major effort to protect the watershed.

We are pleased to present the following annual report elaborating on the CEC's achievements for 1999.

Report from the Joint Public Advisory Committee

“We urge JPAC to continue efforts to increase public participation wherever possible. There is expertise out there that can assist the CEC in ways not yet imagined.”
(A participant at the 1999 Council Session)

The Joint Public Advisory Committee (JPAC) had an extremely active and productive year. Four regular sessions were held, the first in Mexico city, followed by Anchorage, Alaska; Banff, Alberta—in conjunction with the Regular Session of Council; and finally in Montreal. At each meeting, a plenary session with the public was held on the CEC’s three-year Program Plan, enabling JPAC to better interact and work with the public and identify substantive issues that could then be brought forward to Council. Twelve advice to Council were produced.

At Council’s request for a public consultation, in addition to its regular sessions, JPAC issued a call for comments and organized a public workshop on proposed amendments to the Guidelines for Citizen Submissions on Enforcement Matters under Articles 14 and 15 of the North American Agreement on Environmental Cooperation (NAAEC). Also responding to a Council request, JPAC worked with the Secretariat

to produce text for a Framework for Public Participation in CEC Activities, which was approved by Council for implementation.

JPAC had considerable access to Council during the Regular Session and throughout the year with their Alternate Representatives. The JPAC chairman for 1999 or a replacement attended all meetings of the Alternate Representatives, enabling JPAC and the public to bring forward views on many different matters for lively discussion and interaction. Members of JPAC’s various working groups also attended, contributing directly to key meetings dedicated to the CEC Program Plan in such areas as sound management of chemicals, the input of indigenous peoples, transportation corridors, enforcement cooperation, sustainable tourism and the North American Fund for Environmental Cooperation (NAFEC).

Our 1998 decision to develop our own work plan around the CEC’s Program Plan was thus put into action and produced very successful results. In accordance with the recommendations of the Independent Review Committee and the desire of Council, JPAC is better integrated into the day-to-day activities of the CEC.

JPAC has also established a more coordinated relationship with the National Advisory Committees and the US Governmental Advisory Committee. We attend each other’s meetings and exchange information. This has led to cooperation on ensuring that issues such as transparency and public input, transboundary environmental impact assessments, genetically modified organisms in agriculture, green marketing and transportation corridors continue to be profiled as important for the CEC to address.

Here are some highlights from our meetings in 1999:

- The gathering of public comment and the workshop on proposed amendments to the Guidelines for Citizen Submissions on Enforcement Matters under Articles 14 and 15 was very successful, eliciting substantive and detailed comments. Representatives from each country and the National Advisory Committees were selected to attend from among the groups or individuals having submitted views during the public review period. This provided JPAC with the information it needed to develop forthright advice to Council to maintain the integrity of the process, including public access. This is a fine example of what we can achieve when we work together.
- In Mexico City, JPAC focused its attention on producing its advice to Council on proposed amendments to Guidelines for Citizen Submissions on Enforcement Matters under Articles 14 and 15 and on the Environmental Management Systems and Compliance Report. JPAC also met with representatives of NAFEC to discuss the production and marketing of green goods and services.
- In Anchorage, Alaska, we met with the representatives of First Nations and Inuit organizations and members of the Sound Management of Chemicals (SMOC) working group. It was a dynamic session with many compelling and impassioned arguments in support of involving indigenous peoples in the SMOC program specifically, and generally in CEC activities. Encouraged by these results, the task force being established to develop the North American Regional Action Plan (NARAP) on environmental

monitoring and assessment will include a representative for indigenous peoples and comment from Canadian First Nation groups.

- In Banff, JPAC had detailed and direct involvement with Council. Drawing from the results of past plenary sessions, JPAC was able to provide specific views on matters such as the North American Pollutant Release and Transfer Register, strategic directions for biodiversity, sound management of chemicals, environmental management systems and emerging trends and NAFTA environmental effects. The 2000–2002 program targets all these issues. JPAC was also able to lobby successfully for publication of a record in the minutes of the Council's reasoning in amending the Guidelines for Articles 14 and 15.
- In Montreal, the meeting focused on a review and discussion of the proposed CEC Program Plan for 2000–2002 by the Secretariat and the Final Analytical Framework for Assessing the Environmental Effects of NAFTA. JPAC, working with the public, provided concrete suggestions for priority issues for investigation.
- Additionally, in 1999 we prepared an overview for Council, showing to what level recommendations provided by the public in 1998 were integrated in the 1999–2001 Program Plan. This very useful tool for gauging the effectiveness of public input will be continued.

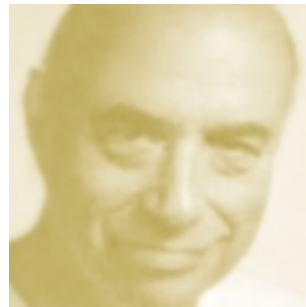
Three new Mexican JPAC members were appointed this year, as well as one new Canadian and one United States member, each of whom contributed in a spirited, constructive fashion to the mission and work of JPAC.

We are very much looking forward under our Mexican Chair, Ms. Regina Barba, to 2000, which promises continued challenges. We expect to focus on conservation of biodiversity, environmental management systems, emerging trends and air quality/trade and transportation corridors.

JPAC remains committed to improving the quality of public participation and feedback throughout the year and during the Council Session. We will continue to look for ways to improve transparency and accountability. Council has asked us to provide ideas and guidance on methods for evaluating the performance and impacts of the CEC's projects.

Detailed records of all plenary and regular sessions, reports and advice to Council are available to the public on the CEC web site. I encourage members of the public to review them. I believe the CEC and, in particular, JPAC, is a model for multi-state transparency.

I would like to thank the Council, the Secretariat and my fellow JPAC members for their support during my year as JPAC Chair. I also thank the public for their interest, commitment and support for our work with these complex issues. JPAC looks to the public to continue providing innovative ideas and approaches.



A handwritten signature in black ink that reads "J. Plaut".

Jonathan Plaut
JPAC Chair for 1999

JPAC

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Message from the Executive Director of the CEC Secretariat



A handwritten signature in black ink that reads "Janine Ferretti". The signature is fluid and cursive.

Janine Ferretti

Interim Executive Director

Progress in most areas of public policy now relies on international cooperation as it never has before. Nowhere is this clearer than in the field of the environment.

But the willingness to cooperate in a climate that is otherwise increasingly competitive cannot be taken for granted. It takes a somewhat transcendent view, an ability to recognize where and how the interests of peoples of different countries are intertwined.

And we are learning that there is a real need for a forum where countries can work together in pursuit of those common interests, in our case the crucial work of protecting the environment that underpins the well being of everyone who lives on this continent.

On behalf of all of us at the CEC, I am very pleased to present to you, through the pages of this annual report, the story of the progress we were able to achieve together in 1999.

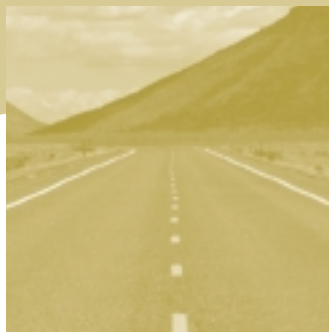


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Cooperative Achievements



1999 Program Summary



Environment, Economy and Trade

The goal of the Environment, Economy and Trade program is to encourage mutual compatibility of trade, environmental and economic policies and instruments within North America and between North America and other trade alliances or regions.

- Emerging Trends in North America
- NAFTA Environmental Effects
- Sustainable Use of Primary Natural Resources: Agriculture
- Facilitating Conservation of Biodiversity as it relates to Trade in Wildlife Species
- Sustainable Tourism in Natural Areas

Conservation of Biodiversity

The goal of this program is to promote and conserve ecosystem health and integrity, and foster and encourage the conservation, protection and sustainable use of biodiversity and its components.

- Strategic Directions for the Conservation of Biodiversity
- Cooperation on the Protection of Marine and Coastal Ecosystems
- Mapping Marine and Estuarine Ecosystems of North America
- North American Marine Protected Areas Network
- North American Biodiversity Conservation Mechanisms
- North American Biodiversity Information Network



Pollutants and Health

The goal of the program on Pollutants and Health is to facilitate cooperative initiatives to reduce pollution risks and minimize pollution impacts.

- Facilitating Trilateral Coordination in Air Quality Management
- Developing Technical and Strategic Tools for Improved Air Quality in North America
- Environmental Cooperation in the NAFTA Transportation Corridors
- Regional Cooperation Toward Improved Understanding and Eventual Implementation of the Clean Development Mechanism and Joint Implementation
- Sound Management of Chemicals
- North American Pollutant Release and Transfer Register
- Shared Approaches to Byproduct Synergy
- Capacity Building for Pollution Prevention



Law and Policy

The goal of the Law and Policy program is to facilitate the development of law, policy and economic instruments; to aid the development of alternative approaches to achieving compliance, including effective enforcement; and to promote greater public participation and transparency in decision-making.

- North American Regional Enforcement Forum
- Enforcement and Compliance Capacity Building
- Indicators of Effective Environmental Enforcement

Cooperative Achievements

Environment, Trade and Economy

Under our mandate from the North American Agreement on Environmental Cooperation, the work in this area serves to advance the understanding of the relationship between the environment, the economy and trade, and to encourage cooperation to support environmental protection in the context of liberalized trade. These objectives are encompassed in two program initiatives.

Understanding Linkages between Environment, Economy and Trade

An important contribution of the CEC has been the development of a methodology for analyzing the effects of NAFTA on the environment. The resulting *Final Analytic Framework for Assessing the Environmental Effects of NAFTA* can be used as a model by others as they consider approaches to examining the environmental linkages to other trade agreements in the WTO or FTAA context. On 11–12 October 2000, in Washington, DC, the CEC is convening a symposium on *Understanding the Links between Trade and Environment* in Washington, DC. Over 50 proposals for research papers to be presented at the symposium were received in response to the call for papers issued by the CEC. A review committee headed by symposium chairperson, Pierre Marc Johnson,

selected 14 proposals for papers that will provide analysis across a range of sectors and reflect a variety of methodological approaches. The results of the symposium will help improve the development and application of methodology, and suggest promising future areas of study.

Green Goods and Services

Another main area of concentration is developing opportunities for “win-win” linkages between the areas of environmental protection and commerce. In 1999, the CEC undertook a market study to evaluate the potential market demand for shade-grown coffee. The analysis shows that consumers in Canada and the United States are willing to pay a price premium for coffee grown under a forest canopy, which ensures

important habitats for birds and other kinds of wildlife. It suggests that Mexico—the world’s largest producer of organic coffee and among the largest producers of the expanding, billion-dollar shade-grown coffee market worldwide—is well positioned to strengthen its already impressive market share and profit from the clear links between shade-coffee and environmental protection. In addition to looking at market demand, the CEC has been working with the

Smithsonian Migratory Bird Center to develop with farmers and others a common understanding of the environmental and other related criteria for defining “shade coffee.” In March this year, coffee-growers, distributors, roasters and retailers met to identify ways to increase the market share of shade coffee. They identified labeling as an important area for the CEC to examine.

Conservation of Biodiversity

The CEC is helping the three nations cooperate in their efforts to conserve biodiversity and to provide seamless border protection and habitat maintenance for transboundary species. The work of the CEC has centered around four important areas of action:

Wildlife Conservation

The CEC’s North American Bird Conservation Initiative (NABCI) is continuing its work building partnerships for the conservation of birds and other species of concern in North America. One result has been the establishment of a coalition of over 250 government agencies and nongovernmental organizations, all united by a common goal and set of objectives for the conservation of birds. NABCI provides a crucial continental framework for North American cooperation and at the same time for local, “on the ground” efforts. After one year of operation:

- A North American Action Plan and a set of Guiding Principles and have been developed.

- A map has been completed of Bird Conservation Regions of North America—based on the CEC-identified nested levels of ecoregions. The Bird Conservation Regions, which have similar natural characteristics and human land uses, enable efficient conservation planning, implementation and evaluation. Moreover, these ecologically based conservation units facilitate partnerships among groups of stakeholders who share landscapes but differ in their conservation and socioeconomic values.

- The Trilateral Committee on Wildlife and Ecosystems and the wildlife agencies of the three countries have embraced the CEC’s North American Bird Conservation Initiative (NABCI) as an umbrella organization for bird conservation.

- Coordinated national strategies and action plans from Canada, Mexico and the US are moving forward and financial mechanisms are being developed.
- A second meeting of North American bird conservationists is being planned for the end of this year.

The *North American Important Bird Areas Directory of 150 Key Conservation Sites* was produced by the CEC in partnership with key conservation groups. The *Directory* is an information tool for government agencies and conservation groups that aids in the protection of key habitats for all birds species of the region.

As well, the CEC has worked with the wildlife experts of the three countries to develop a portfolio North American Species of Common Concern. This list of species—now adopted by the Trilateral Committee of Wildlife and Ecosystems—is the first step for the three countries in their collaboration on protecting threatened and endangered species. These initiatives will lay the groundwork for a more focused and strategic approach for the CEC in the area of biodiversity conservation.

Ecoregional Initiatives:

Global Programme of Action—Gulf of Maine and the Bight of the Californias

Over the past three years, nearly a thousand stakeholders from various sectors of two shared, trans-boundary watersheds—the Bight of the Californias and the Gulf of Maine—have partnered with the CEC in developing coordinated actions to implement the UN Global Program of Action for the Protection of the Marine Environment from Land-based Activities (GPA). The binational groups in both regions have achieved significant progress. They have reached a broad-based, multi-sectoral consensus on priority land-based activities that are contributing to the deterioration of marine ecosystems, compiled a set of response strategies, and initiated specific implementation projects. In addition, they are galvanizing action across jurisdictional authorities, affected sectors and organizations. All of this has been accomplished largely through the voluntary efforts of all members and the coordination, support, and seed funding provided from the CEC.

Improving Information on North American Biodiversity

The CEC has focused on helping to develop information and making it more accessible to assist decision-makers, wildlife managers and conservation organizations in their biodiversity conservation efforts. The North American Biodiversity Information Network (NABIN) constitutes a major breakthrough in establishing a network of collectors and users of biodiversity data in North America. Working with more than 50 of North America's most important centers of biodiversity information, the CEC has helped make 75 data sets and 45 million data points accessible via the Internet. NABIN is considered by many institutions as a successful model for bringing together biodiversity information. These organizations include the Global Biodiversity Information Facility, which was initiated by the OECD and is recommending NABIN as the model of choice for a worldwide biodiversity science network. Other biodiversity information products that the CEC has produced in partnership with other conservation organizations and agencies include ecoregional maps for North America at different levels of aggregation, and a gap analysis of conservation needs in North America.

Development of a Strategic Approach to Conservation

The CEC is establishing a strategic approach to its work on biodiversity. The first phase in doing so has been to work with interested institutions and organizations, including the indigenous peoples and JPAC, to identify priority issues, ecoregions and species of common concern. The Baseline Report on Biodiversity in North America includes recommendations for future action by the CEC. The report takes stock of the situation regarding biodiversity at all levels—genetic diversity, species diversity, and habitat diversity—and in all biomes: marine, freshwater and terrestrial. It assesses potential opportunities for the CEC to catalyze action, forge new partnerships, and help to stem biodiversity loss.

The CEC is also in the process of helping to develop a North American Action Plan for Marine Protected Areas. By joining forces with marine conservationists of North America, including the North American Marine section of the World Commission on Protected Areas (WCPA of IUCN), this team effort is creating a network of Marine Protected Areas throughout North America to enhance the conservation of marine biodiversity in critical marine habitats. Linked electronically via the web, the network of Marine Protected Areas is developing crosscutting conservation initiatives involving Marine Protected Area sites with shared ecological links across Canada, Mexico and the United States.

Pollutants and Health

The protection of ecosystem and human health is a critical component of environmental stewardship. The CEC in this program area focuses on promoting cooperation for reducing or eliminating specific pollutants, enhancing compatibility and comparability of information, supporting improved knowledge of pathways and fate of pollutants of common concern, and promoting pollution prevention.

Sound Management of Chemicals

The Sound Management of Chemicals (SMOC) program has made important progress in recommending limits to specific pollutants as a key objective in its work. SMOC has demonstrated success in identifying chemicals of common concern and developing coordinated actions to eliminate or reduce them.

North America has shown leadership in reducing and phasing out persistent organic pollutants. North American Regional Action Plans (NARAPs) have been developed for chlordane, DDT, mercury, and PCBs. Chlordane is no longer used or produced in North America. In 1999, Mexico phased out its use entirely, and the last remaining chlordane production facility in North America voluntarily agreed to cease producing the chemical. As well, Mexico has surpassed its target of an 80-percent reduction in DDT use by 2001 and its complete phase-out by 2006. This year, Mexico is no longer using DDT in controlling malaria, its only remaining use there. The CEC is committed to assisting Mexico in its efforts to finding alternatives to DDT for controlling malaria, including improving mechanisms for public participation in malaria control. The experience gained by Mexico is being shared with Central American countries, which will further reduce DDT presence in the North American environment.

As well, phase II of the NARAP on mercury has been completed and includes cooperative actions to reduce mercury emissions from a range of sources, including power plants and chlor-alkaline facilities, among others. It has been submitted for Council's approval. The SMOC Working Group is reviewing the NARAP on PCBs to decide whether revisions are necessary for additional progress to be made in addressing PCBs in North America. Lindane and lead are two substances being evaluated by the Substance Selection Task Force in accordance with the Council-approved "Process for Identifying Candidate Substances for Regional Action under the Sound Management of Chemicals Initiative." The Task Force has released for public comment its decision recommending the development of a NARAP on lindane. It is still evaluating lead in accordance with the process.

Pollutant Release and Transfer Register

Each of the Parties has developed, or is developing, a pollutant release and transfer register (PRTR) reporting on specified chemicals released and transferred into the environment by certain industrial facilities. Canada has its National Pollutant Release Inventory (NPRI), the United States, the Toxics Release Inventory (TRI), and Mexico is developing the *Registro de Emisiones y Transferencia de Contaminantes (RETC)*. The Commission takes the data reported by industrial facilities to these national inventories and produces a North American pollutant releases and transfers report. The Commission's aggregate report is entitled *Taking Stock* and is produced annually. The fourth *Taking Stock*, for 1997 data, was released in May (2000). Like its national counterparts, *Taking Stock* promotes transparency and provides valuable information for public use as information and in the development of plans and strategies to protect health and the environment. Unique because of its comparative analysis, *Taking Stock* is an important tool that helps the three countries to measure trends and progress in achieving pollution prevention.

Air Quality

The CEC has helped establish a foundation for North American cooperation on air pollution. Domestic efforts to improve air quality can be more successful if the three countries share a coordinated approach to tackling both long-range transport of air pollution and the increasing pressures of transportation associated with a dramatic increase in trade in goods among the NAFTA countries. The CEC has worked on several fronts to help three countries increase cooperation on a North American level.

One area has been in improving a shared understanding of the nature of long-range transport of air pollution. Reports developed by the CEC, such as *Continental Pollutant Pathways*, and the *Long-range Transport of Ground-level Ozone and its Precursors*, have been followed by work on tracking the atmospheric transport of dioxin. The results of this study will be released in late summer, 2000. Similar work for mercury will be undertaken later this year.

Another focus has been to develop opportunities to enhance collaboration between air quality officials in the three countries. In March this year in North Carolina, the CEC held the first North American air quality meeting. It was a general introduction to the air quality management systems of the three countries and over 200 air officials attended it from the three countries. Next year's meeting will be held in Canada. An overview of each country's air pollution management system has been completed and will be published by the CEC later this fall. As well, in cooperation with STAPPA/ALAPCO, the CEC is helping to establish the North American component of an international air quality web site that is designed to assist professionals in air pollution management by making air-quality-related information more readily available.

The CEC is currently assessing some of the potential air quality and other environmental issues related to the expansion of North American trade and transportation corridors. The CEC is facilitating a network of interested stakeholders to examine potential corridor scenarios and to promote and highlight “best practices” in the region.

Pollution Prevention

The NAAEC Parties are pursuing pollution prevention in varying degrees. The Commission has promoted cooperation in pollution prevention, assisting first with the small and medium-size enterprises in Mexico, as it is widely recognized that those enterprises in general have a more difficult time making progress in pollution prevention. The *Taking Stock* report on 1997 data indicates that companies reporting smaller volumes of emissions and releases (less than 100,00 kg per year) are not keeping up with improvements being made by the larger facilities and, in fact, are essentially going in the opposite direction, with both emissions and transfers increasing. A challenge for many small and medium-size enterprises is access to resources to incorporate pollution prevention strategies and technologies. To demonstrate whether alternative financial mechanisms could provide small and medium-size enterprises with greater access to techniques for pollution prevention, the CEC established a pilot fund in 1996. Working with the *Confederación de Camaras Industriales* (Concamin) through its *Fundación Mexicana para la Innovación y Transferencia de Tecnología en la Pequeña y Mediana Empresa* (Funtec) the CEC helped set up the *Fondo para Proyectos de Prevención de la Contaminación* (Fiprev) to demonstrate the feasibility

of a revolving fund to help Mexican small and medium-size enterprises make investments in pollution prevention. The CEC contributed US\$350,000 to this effort and Funtec US\$480,000. Since it became operational in 1998, Fiprev has made 11 low-interest loans to small companies in the tannery, smelting and food processing sectors. The environmental benefits realized through these investments in pollution prevention to date include:

- reducing the amount of water contaminated with approximately 34 tons of chemicals each month by 1,800 cubic meters
- substituting natural gas for diesel fuel and oil,
- providing energy conservation gains of 10 cubic meters of natural gas each month, and
- reducing the amount of organic effluent discharged into sewers monthly by 210 cubic meters.

There are 34 more loan requests pending from small and medium-size enterprises. At this point, the feasibility of such a mechanism has been demonstrated. The goal, now, is to extend and expand the operation of Fiprev by inviting other institutions to provide support so that it can help make a difference on a more significant scale with small and medium-size enterprises.

Law and Policy

The CEC has fostered cooperation between the parties on strengthening enforcement of their various environmental laws and policies. With the active support of the parties, the Commission has assisted with a number of cooperative enforcement.

North American Wildlife Enforcement Working Group

The focus of this effort has been to help coordinate efforts to improve the capacity of enforcement agencies related to wildlife forensics. Over the past year, the CEC's North American Wildlife Enforcement Group (NAWEG) has assisted in the formation of a network of wildlife forensic experts—resulting in initial agreement to standardize procedures for DNA databases on wildlife species. NAWEG has also developed information to assist enforcement officers, including a *Directory of North American Forensic Laboratories*, as well as two information bulletins on forensic investigative techniques applied to wildlife crime and the use of DNA analysis in wildlife forensics.

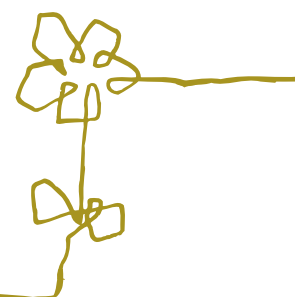
The Enforcement Working Group

Following a Call for Public Comments and a JPAC advice to Council, the Enforcement Working Group has worked hard over the past year to produce a guidance document. The result, entitled *Improving Environmental Performance and Compliance: 10 Elements of Effective Environmental Management Systems*, builds on the 1998 report to Council on environmental management systems. It represents the first time the North American federal governments have jointly expressed their views on how voluntary environmental management systems designed for internal management purposes can also serve two broader

public policy goals: 1) compliance assurance and ii) improved environmental performance in regulated and nonregulated areas. The document is intended to help users of environmental management systems make responsible decisions and take actions to achieve better environmental performance—maintaining compliance with environmental laws and moving beyond compliance.

Use of the guidance document does not alter or diminish the rights and responsibilities of organizations under the domestic laws of their respective countries. It reaffirms CEC Council Resolution 97-05 recognizing that government must retain the primary role in establishing environmental standards and verifying and enforcing compliance with laws and regulations.

The guidance document is proof that the three countries are working cooperatively to help organizations improve their ability to achieve and maintain compliance, improve their environmental performance, and move “beyond compliance.”



Other Initiatives of the CEC

Article 13

Article 13 of the NAAEC prescribes that “The Secretariat may prepare a report for the Council on any matter within the scope of the annual program.” The Commission has carried out the provisions set forth by Article 13 in certain work initiatives.

San Pedro River

In Banff last year, the CEC Council released *A Ribbon of Life: An Agenda for Preserving Transboundary Migratory Bird Habitat on the Upper San Pedro River*. The initiative included an experts’ report and recommendations for action by a very capable group of local and regional stakeholders. The Secretariat is pleased to report that since that time, many of the recommendations have been, or are being implemented, including very concrete and far-reaching steps to protect the watershed. On the US side of the basin, a number of public/private initiatives have been launched to coordinate and guide conservation initiatives, including the San Pedro Partnership, a public/private coalition dedicated to preserving this key migratory bird corridor. In Mexico, efforts are underway to bring critical stretches of the basin within Mexico’s protected area regime, and a trust fund is being established to ensure that resources are available to promote conservation efforts in the future.

While much is left to do, there is no doubt that the chances of saving the San Pedro River and its migratory bird corridor are much better today than they were a few years ago.

Transboundary Environmental Impact Assessment

The three NAFTA countries continue to work toward notification, consultation and assessment for projects that may adversely affect the environment of a neighboring territory. Recently, the US and Mexican border states declared their intention to provide transboundary notification for such activities once the federal government acts on projects within federal jurisdiction. The Parties are continuing to discuss how to implement TEIA across North America in the near future.

Registry of Submissions on Enforcement Matters 1999

ID. Number	Submitters	Status
SEM-97-002	Comité pro Limpieza del Río Magdalena	Awaiting additional information under Article 21(1)(b) from Party
SEM-97-003	Centre québécois du droit (CODE) de l'environnement	Awaiting instruction from the Council to prepare factual record
SEM-97-006	The Friends of the Oldman River	Awaiting instruction from the Council to prepare factual record
SEM-98-001	Instituto de Derecho Ambiental (Guadalajara)	Reviewing revised submission
SEM-98-002	Hector Gregorio Ortiz Martínez	Process terminated under Art. 14(1)
SEM-98-003	Department of the Planet Earth, et al.	Reviewing response from the Party
SEM-98-004	Sierra Club of British Columbia, et al.	Reviewing response from the Party
SEM-98-005	Academia Sonorense de Derechos Humanos, et al.	Reviewing response from the Party
SEM-98-006	Grupo Ecológico "Manglar," A.C.	Reviewing response from the Party
SEM-98-007	Environmental Health Coalition, et al.	Reviewing response from the Party
SEM-99-001	Methanex Corporation	Reviewing under Article 14 ⁽¹⁾
SEM-99-002	Alliance for the Wild Rockies, et al.	Reviewing under Article 14 ⁽¹⁾

Submission ID: SEM-97-002/Río Magdalena

Submitter(s): Comité Pro Limpieza del Río Magdalena
Party: United Mexican States
Date received: 15 March 1997

Summary of the matter addressed in the submission:

The Submitters allege that wastewater originating in the municipalities of Imuris, Magdalena de Kino, and Santa Ana, located in the Mexican state of Sonora, is being discharged into the Magdalena River without prior treatment. According to the Submitters, the above contravenes Mexican environmental legislation governing the disposal of wastewater.

1999 Events:

1. On 13 September 1999 the Secretariat made a request for additional information under Article 21(1)(b) to the Party.

Submission ID: SEM-97-003/Quebec Hog Farms

Submitter(s): Centre québécois du droit de l'environnement (CODE), et al.
Party: Canada
Date received: 9 April 1997

Summary of the matter addressed in the submission:

The Submitters allege a failure to enforce several environmental standards related to agricultural pollution originating from animal production on the territory of the Province of Quebec.

1999 Events:

1. On 29 October 1999 the Secretariat informed the Council that it considered the submission warranted preparation of a factual record.

Submission ID: SEM-97-006/Oldman River

Submitter(s): The Friends of the Oldman River

Party: Canada

Date received: 4 October 1997

Summary of the matter addressed in the submission:

The Submitter alleges that Canada is failing to apply, comply with and enforce the habitat protection sections of the Fisheries Act and the Canadian Environmental Assessment Act.

1999 Events:

1. On 19 July 1999 the Secretariat informed the Council that it considered the submission warranted preparation of a factual record.

Submission ID: SEM-98-001/Guadalajara

Submitter(s): Instituto de Derecho Ambiental, A.C., in conjunction
with the citizens affected by the explosions of 22 April 1992

Party: United Mexican States

Date received: 9 January 1998

Summary of the matter addressed in the submission:

The Submitters allege that Mexican Federal Attorney General and the Federal Judiciary did not duly enforce the General Law on Ecological Balance and Environmental Protection (LGEEPA) in relation to the explosions in the Reforma area of the city of Guadalajara, state of Jalisco.

1999 Events:

1. On 13 September 1999 the Secretariat determined that the submission does not meet the criteria of Article 14(1).
2. On 15 October 1999 the Submitters filed a revised submission.

Submission ID: SEM-98-002/Ortiz Martínez

Submitter(s): Hector Gregorio Ortiz Martínez

Party: United Mexican States

Date received: 14 October 1997

Summary of the matter addressed in the submission:

The submission alleged “improper administrative processing, omission and persistent failure to effectively enforce” environmental law in connection to a citizen complaint filed by the Submitter.

1999 Events:

1. On 18 March 1999 the Secretariat again determined that the revised submission filed after initial dismissal fails to meet the criteria of Article 14(1) and terminated the process for this submission.

Submission ID: SEM-98-003/Great Lakes

Submitter(s): Department of the Planet Earth, et al.

Party: United States of America

Date received: 27 May 1998

Summary of the matter addressed in the submission:

The Submitters assert that the US Environmental Protection Agency’s regulations drafted and programs adopted to control airborne emissions of dioxins and furans, mercury and other persistent toxic substances from solid waste and medical waste incinerators violate and fail to enforce both: 1) US domestic laws, and; 2) the ratified US-Canadian treaties designed to protect the Great Lakes that are partly referenced in the US Clean Air Act.

1999 Events:

1. On 5 January 1999 the Submitters filed a revised submission after initial dismissal.
2. On 8 September 1999 the Secretariat determined that the revised submission met the criteria under Article 14(1) and requested a response from the Party under Article 14(2).
3. The United States provided a response on 3 December 1999.

Submission ID: SEM-98-004/BC Mining

Submitter(s): Sierra Club of British Columbia, et al.

Party: Canada

Date received: 29 June 1998

Summary of the matter addressed in the submission:

The submission alleges a systemic failure of Canada to enforce section 36(3) of the Fisheries Act to protect fish and fish habitat from the destructive environmental impacts of the mining industry in British Columbia.

1999 Events:

1. On 25 June 1999 the Secretariat requested a response from the Party under Article 14(2).
2. Canada provided a response on 9 September 1999.

Submission ID: SEM-98-005/Cytrar

Submitter(s): Academia Sonorense de Derechos Humanos, A.C., et al.

Party: United Mexican States

Date received: 11 August 1998

Summary of the matter addressed in the submission:

The Submitters allege that Mexico has failed to effectively enforce environmental law by having authorized the operation of a hazardous waste landfill (Cytrar) less than six kilometers away from Hermosillo, Sonora.

1999 Events:

1. On 9 April 1999 the Secretariat determined that the submission met the criteria under Article 14(1) and requested a response from the Party under Article 14(2).
2. Mexico provided a response on 12 July 1999.

Submission ID: SEM-98-006/Aquanova

Submitter(s): Grupo Ecológico Manglar, A.C.

Party: United Mexican States

Date received: 20 October 1998

Summary of the matter addressed in the submission:

The submission alleges that Mexico is failing to effectively enforce its environmental laws with respect to the establishment and operation of Granjas Aquanova S.A. de C.V., a shrimp farm in Isla del Conde, San Blas, Nayarit, Mexico.

1999 Events:

1. On 17 March 1999 the Secretariat determined that the submission met the criteria under Article 14(1) and requested a response from the Party under Article 14(2).
2. Mexico provided a response on 15 June 1999.

Submission ID: SEM-98-007/Metales y Derivados

Submitter(s): Environmental Health Coalition, et al.

Party: United Mexican States

Date received: 23 October 1998

Summary of the matter addressed in the submission:

The Submitters allege that Mexico has failed to effectively enforce its environmental law in connection with an abandoned lead smelter in Tijuana, Baja California, Mexico, that poses serious threats to the health of the neighboring community and to the environment.

1999 Events:

1. On 5 March 1999 the Secretariat determined that the submission met the criteria under Article 14(1) and requested a response from the Party under Article 14(2).
2. Mexico provided a response on 14 June 1999.

Submission ID: SEM-99-001/Methanex

Submitter(s): Methanex Corporation

Party: United States

Date received: 18 October 1999

Summary of the matter addressed in the submission:

The Submitters allege that the United States of America has failed to enforce California's environmental laws and regulations related to water resource protection and to the regulation of underground storage tanks (USTs).

1999 Events:

1. On 20 October 1999 the Secretariat acknowledged receipt of the submission.

Submission ID: SEM-99-002/Migratory Birds

Submitter(s): Alliance for the Wild Rockies, et al.

Party: United States

Date received: 19 November 1999

Summary of the matter addressed in the submission:

The Submitters allege that the United States is failing to effectively enforce the Migratory Bird Treaty Act (MBTA), which prohibits the killing of migratory birds without a permit.

1999 Events:

1. On 22 November 1999 the Secretariat acknowledged receipt of the submission.

Linking North American Communities

The North American Fund for Environmental Cooperation (NAFEC), which has made grants totaling US\$4.8 million, was created in October 1995 by the three North American environment ministers to support community-based environmental projects across North America.

In 1999, NAFEC made 27 grants totaling US\$994,000 to nongovernmental organizations. The grantees were chosen by the NAFEC Selection Committee, which has two representatives from each country.

Grants made in 1999 fall primarily into four categories: (1) Environment, Economy and Trade; (2) Conservation of Biodiversity; (3) Pollutants and Health; and (4) Law and Policy. Many of the projects involve collaboration among nongovernmental organizations in two or three countries.

1999, NAFEC continued its efforts to facilitate networking among NGOs in North America and share the lessons learned through NAFEC-supported projects.

Part of this effort involved arranging a cluster meeting on Sustainable Production in Oaxtepec, Morelos, Mexico, in March 1999. The main goal of this meeting was to bring together organizations working at different levels (e.g., financing, production, marketing, consumer education) to share information, and to voice concerns and identify ways in which they can work together to address them. Another important goal was to explore ways in which government policy in Canada, Mexico and the United States might facilitate production and trade of green goods and services.

Many of the participants in this meeting have maintained contact and have begun to collaborate in a variety of ways. They note that resources can be used much more efficiently when organizations can share information and build on the work of others.

By the end of 1999, eighty-six NAFEC-supported projects were completed and 41 grants remained active. Many projects that received initial funding from NAFEC were able to find other sources to continue their work; they keep in touch with NAFEC

staff regarding their progress and provide information to other communities interested in undertaking similar efforts. This growing network of community-based initiatives that spans the continent is one of the most exciting products of the NAFEC process.

Grants awarded in 1999 (all figures in US dollars)

Environment, economy and trade

International Accreditation of CERTIMEX (Mexico), *Certimex*, Oaxaca, Oaxaca, Mexico (\$42,000)

- **Promoting Shade Coffee within the Limited-use Buffer Zone of EI Triunfo Biosphere Reserve** (Mexico-US) *Conservation International*, Washington, DC, USA (\$35,000) <<http://www.conservation.org>>
- **Coffee with a Cause: For the Development of Fair Trade in North America** (Canada-Mexico-US), *Equiterre*, Montreal, Quebec, Canada (\$38,000) <<http://www.cam.org/~equiter/>>
- **Environmental Conservation and Integrated Development through Ecotourism in the Pueblos Mancomunados** (Mexico), *Proyectos Productivos Sierra Norte de Oaxaca A.C.*, Oaxaca, Oaxaca, Mexico (\$50,000)
- **Creating the "Green Link" for Sustainably Produced Indigenous Goods and Services** (Mexico-US), *Instituto CUNA de Baja California, A.C.*, Ensenada, Baja California, Mexico (\$50,000) <<http://ecologia.cicese.mx/~cunabc/>>
- **Market Promotion in the Green Building Materials and Services Sector** (Canada-US), *Société de développement communautaire de Montréal (SODECM)*, Montreal, Quebec, Canada (\$25,000) <<http://www.web.net/urbain/esodecm.html>>
- **Eco-efficient Community Initiatives (EECI) - Phase II** (Canada), *Pembina Institute*, Drayton Valley, Alberta, Canada (\$35,000) <<http://www.pembina.org>>

Conservation of biodiversity

Knowledge and Sustainable Use of Biodiversity in Oaxaca (Mexico), *Estudios Rurales y Asesoría Campesina, A.C.*, Oaxaca, Oaxaca, Mexico (\$50,000) <<http://antequera.com/personales/era.html>>

- **Ecosystem-based Planning for the Queen Charlotte Islands - Haida Gwaii** (Canada), *Gowgaia Institute Society*, Queen Charlotte, British Columbia, Canada (\$36,000) <<http://www.spruceroots.org/Gowgaia.html>>
- **Development of a Protocol Framework for Meaningful Consultation with Canada's Aboriginal People on Forest Management** (Canada), *National Aboriginal Forestry Association*, Ottawa, Ontario, Canada (\$50,000) <<http://www.sae.ca/nafa>>
- **Towards Transboundary Management for the Flathead River Drainage** (Canada-US), *East Kootenay Environmental Society*, Kimberley, British Columbia, Canada (\$55,000) <<http://www.ekes.org>>
- **Community Development and Public Awareness in the Laguna Madre of Tamaulipas** (Mexico-US), *Pronatura Noreste*, Monterrey, Nuevo Leon, Mexico (\$40,000) <<http://www.pronatura.org.mx>>
- **Conserving Bird Habitats in Western Mexico** (Mexico-US), *Manomet Observatory for Conservation Sciences*, Manomet, MA, USA (\$34,000) <<http://www.manomet.org>>
- **Integrating Bird Studies with Restoration Activities in the Mono Basin** (US), *Mono Lake Committee*, Lee Vining, CA, USA (\$19,000) <<http://www.monolake.org>>
- **Sustaining the Upper San Pedro River in Mexico** (Mexico-US), *The Nature Conservancy - Northern Mexico Office*, Tucson, AZ, USA (\$65,000) <<http://www.tnc.org/>> <<http://cideson.mx/imades.html>>
- **Community-based Salt Marsh Restoration in the Canadian Gulf of Maine** (Canada-US), *Ecology Action Centre*, Halifax, Nova Scotia, Canada (\$55,000) <<http://www.chebucto.ns.ca/Environment/EAC/EAC-Home.html>>
- **US Gulf of Maine Protected Areas Initiative** (Canada-US), *Conservation Law Foundation, Inc.*, Boston, MA & Rockland, ME, USA (\$48,000) <<http://www.clf.org>>

• **From Orcas to Oystercatchers: A Community-based Campaign to Protect Transboundary Marine Resources** (Canada-US), *People for Puget Sound*, Seattle, WA, USA (\$48,000) <<http://www.pugetsound.org>>.

Pollutants and health

Cascadia AirNET Transboundary High School Air Quality Education Program (Canada-US), *RE Sources for Sustainable Communities*, Bellingham, WA, USA (\$40,000) <<http://www.re-sources.org>> • **Increasing Information and Awareness in relation to Mercury Disposal Sites** (Canada), *Société pour vaincre la pollution*, Montreal, Quebec, Canada (\$20,000) • **A Virtual Forum for the Pollutant Release and Transfer Registry** (Canada-Mexico-US), *Programa La Neta, S.C.*, Mexico, D.F., Mexico (\$46,500) <<http://www.laneta.apc.org>> • **Community Management of the Right to Environmental Information in Baja California** (Canada-Mexico-US), *Proyecto Fronterizo de Educación Ambiental*, Playas de Tijuana, Baja California, Mexico (\$25,000).

Law and policy

Increasing Public Participation at the Community Level in Mexico (Mexico-US), *Environmental Law Alliance Worldwide*, Eugene, OR, USA in collaboration with *Instituto de Derecho Ambiental (IDEA)*, Guadalajara, Jalisco, Mexico (\$38,000) <<http://www.elaw.org/>> • **Norms for Natural Resource Management** (Mexico), *Grupo de Estudios Ambientales, A.C.*, Mexico, D.F., Mexico (\$30,000) <<http://www.laneta.apc.org/gea>>.

Small grants made earlier in 1999

Promoting Biological Diversity Through Sustainable Certification (Mexico-US), *Institute for Agriculture and Trade Policy (IATP)*, Minneapolis, MN, USA (\$6,500) <<http://www.iatp.org>> • **A People's Hearing on Hog Production and Processing in Prairie Canada and the US** (Canada-US), *Sierra Club - Prairie Chapter*, Edmonton, Alberta, Canada (\$6,545) <<http://www.sierraclub.ca/prairie/index.html>> • **Meeting the Habitat Requirements of Cavity-dependent Wildlife** (Canada), *Mixedwood Forest Research & Advisory Committee (MFRAC)*, Swan River, Manitoba, Canada (\$6,500) <<http://www.docker.com/~kattenburgd/nafec.htm>>.

2

Country Reports



Canada

Country Report on
Implementation of the
Commitments Derived
from the NAAEC

*The following report
was submitted to the
CEC Secretariat by
Environment Canada
in accordance
with NAAEC.*

Article 2 – General Commitments

Article 2(1)(a) State of the Environment Reports

In 1999, Environment Canada (EC) published four updated bulletins in Canada's *National Environmental Indicator Series: Urban Air Quality; Stratospheric Ozone Depletion; Acid Rain; and Sustaining Canada's Forests: Timber Harvesting*. Work continued on a new national indicators bulletin on the environmental sustainability of Canada's agricultural soils. The *National Environmental Indicator Series* is available in hard copy and in electronic form on the State of Canada's Environment Infobase web site <<http://www3.ec.gc.ca/soer-ree/English/National/IndWelc.cfm>>.

New regional environmental indicators have been posted on Environment Canada's Pacific and Yukon Region Environmental Indicators web site <http://www.ecoinfo.org/env_ind/>.

Also in 1999, the Canadian Forest Service of Natural Resources Canada published *Forest Health in Canada: An Overview*. This state of the environment (SOE) report carries the new symbol for SOE reports, indicating that they meet the federal SOE guidelines. In addition, in 1999 Environment Canada's Ontario Region and the U.S. Environmental Protection Agency released *The State of the Great Lakes 1999* <<http://www.on.ec.gc.ca/glimr/data/state-of-the-lakes/99/>>.

Finally, in 1999 Saskatchewan Environment and Resource Management published an SOE report on the Boreal Shield ecozone region of Saskatchewan.

The State of Canada's Environment Infobase. The State of Canada's Environment Infobase web site on the Green Lane <<http://www3.ec.gc.ca/soer-ree/english/default.cfm>> has been redesigned to provide access to a broad range of environmental and ecological information and reports. SOE-related information can now be accessed nationally or regionally or by regional ecological unit, Environment Canada

administrative region, and political jurisdictional unit. Principal categories are: *National Environmental Indicator Series*; state of the environment reports; ecosystem status and trends; early warning advisories, which in the future will include information on emerging trends in Canada's ecosystems, and advisories on the most current results of ecosystem monitoring and research; and tools, including the National Ecological Framework. The Infobase Web site also provides electronic links to other Environment Canada sites such as the Ecological Monitoring and Assessment Network and to Pacific and Yukon Region products and programs, as well as other federal, particularly five natural resource, SOE-related products, and provincial, territorial, and some international agency products related to SOE reporting.

Sustainability Community Indicators. Environment Canada has created an interactive software package aimed at helping communities develop indicators so that they can better assess and monitor their progress toward sustainable development and facilitating the exchange of indicator-related information.

National Water Quality Index. A national water quality index has been developed under the auspices of the Canadian Council of Ministers of the Environment (CCME). The index will standardize and simplify reporting on water quality trends across Canada. It was tested in several provincial jurisdictions during 1999.

In the province of Alberta in 1999, 13 major resource projects were subjected to the environmental assessment process. The same year, environmental impact assessments were completed for five projects. Two of those five projects were the subjects of public hearings in 1999.

In addition, Alberta completed several important initiatives related to environmental impacts. The strategy contained in Alberta's *Commitment to Sustainable Resource and Environmental Management* provides a shared vision for a sustainable future and a clear direction for how Alberta's natural resources and the environment are to be managed and protected. It also sets out the means to ensure effective decision making and an up-to-date regulatory regime. The strategy establishes integrated resource management (IRM) as the means for minimizing environmental impacts and conflicts while maximizing long-term benefits for Albertans.

The province also acted on its commitment to sustainable environmental management by releasing *Regional Sustainable Development Strategy for Northeast Alberta*. This regional strategy gives industry, local communities and environmentalists a framework for balancing resource development and environmental protection in northeast Alberta. It responds to the need to manage the cumulative effects of more than \$12 billion in existing or proposed projects in the region. Alberta plans to implement regional strategies in other areas of the province as well.

Manitoba's final state of the environment report was published in 1997. Future reports will be issued under a new name—Sustainable Development Reports—under Manitoba's Sustainable Development Act. The "sustainability indicators" presently being prepared are based on extensive public consultation. They will be finalized by 2001 and then used as the basis for publication of the first Sustainable Development Report.

In 1999, Quebec produced several state of the environment reports that dealt with the water quality of the St. Lawrence and other rivers, particularly those in the Gaspé, Côte Nord and southern Quebec regions. Broad public consultations on water management held throughout Quebec produced general portraits of water for each of Quebec's 17 regions. More specific water-focused reports dealt with pesticide contamination of water in regions where corn and soy are grown and with the impact of intensive agriculture on a small hydrographic basin. The third annual report on the implementation of the Convention on Biological Diversity proposed a series of indicators for monitoring Quebec's biodiversity, and several other reports evaluated the situations of certain plant species in danger of being designated threatened or vulnerable.

On the industrial front in 1999, Quebec produced environmental compliance reports for the mining sector covering the years 1994–1997 and a 25-year overview of industrial wastewater treatment for the other industrial sectors. In conjunction with the federal government, Quebec also produced three reports: *Assessment of the Virtual Elimination of Bioaccumulative Toxic Substances*; *SLV 2000 Report on Toxic Effluent Reduction in 38 Pulp and Paper Mills, 1993–1996*; and *Report of the Multipartite Committee on Contaminated Sites of Concern for the St. Lawrence Beluga*.

Article 2(1)(b) Environmental Emergency Preparedness

Y2K Preparedness. During 1999, Canada's environmental emergency preparedness activities focused on preparation for the Y2K transition period. The

National Contingency Planning Group (NCPG) at the Department of National Defence received support for risk assessment and contingency planning activities in three key sectors: hazardous materials, water purification and sewage treatment. The hazardous materials sector covered chemicals, mining and metallurgy, pulp and paper, as well as small and medium-size enterprises dealing with hazardous wastes. The risk assessments were based on the results of bimonthly surveys that were distributed with the help of various industry associations to all their member companies and with the help of the Federation of Canadian Municipalities and the Canadian Water and Wastewater Association to municipalities across Canada. The surveys addressed Y2K readiness (internal risks) and Y2K contingency planning (external risks).

Also during 1999, Environment Canada finalized and published the National Environmental Emergencies Contingency Plan, which details the scope and framework within which federal and provincial agencies and industry operate to ensure an appropriate response to any environmental hazard or emergency. The plan also deals with natural hazards (such as floods, earthquakes, and extreme weather events) that may trigger environmental emergencies. For such emergencies, Environment Canada is identified as either the lead or a support agency. Finally, the plan describes the emergency reporting network and provides procedural guidelines for environmental emergencies staff. The national plan was prepared in consultation with the other federal and provincial government departments that play a key role in responding to environmental emergencies.

As part of preparations for Y2K, the national plan and the Business Continuity Plan were tested by means of a series of Y2K mock scenarios in Validex government-wide exercises. Communications capabilities were tested by means of a government-wide telecommunications exercise.

Environment Canada provided support for the Canadian Y2K preparedness effort during the transition period, December 30-January 3. During that time, the National Environmental Emergencies Center (NEEC) was staffed on a 24-hour basis, and staff with specific expertise were on standby and available for callback.

CEPA Implementation. Part 8 of the new Canadian Environmental Protection Act (CEPA) allows Environment Canada to address the prevention of, preparedness for, response to and recovery from environmental emergencies. It introduces the concept of a “Safety Net” to address gaps in or between federal and provincial legislation. Section 199 provides authority to require environmental emergency (E2) plans for substances declared toxic.

The “Draft Implementation Guidelines on Requirements for Environmental Emergency Plans” for substances declared toxic under CEPA (Section 199, Part 8) were drafted for public consultation in December 1999. These draft guidelines were distributed to the CEPA National Advisory Committee (NAC) members for comment. After a presentation on the guidelines, the December meeting of NAC addressed the issues of E2 planning, virtual elimination planning and the pollution prevention planning provisions of the new CEPA. Revised guidelines (“Implementation Guidelines for Part 8, Section 199—Authorities for Requiring Environmental Emergency Plans”) were later distributed for public review and comment.

Business Plan for the Environmental Emergencies Program. The objective of the Environmental Emergencies Program Mandate Renewal project is to set a strategic direction for the program and build capacity for the next five years to address gaps and vulnerabilities in the existing capacity to deliver the program effectively.

After a national workshop in January 1999, management established working groups to develop discussion papers on key program areas. The national workshop report and working group discussion papers were used to prepare the mandate renewal document (Business Plan) for discussion with key stakeholders. Further consultations are envisaged and will be pursued through the summer and fall of 2000.

Dissolution of Major Industrial Accidents Council of Canada. In June 1999, the Major Industrial Accidents Council of Canada (MIACC) released its 1998 prevention, preparedness and response (PPR) status report, *Prevention, Preparedness and Response Actions to Reduce the Impact of Accidents Involving Hazardous Substances*. The document was to serve as a basis for measuring the progress that would result from the Safer Communities Initiative.

At its 18 October 1999 annual meeting, the membership of MIACC, on the recommendation of its board of directors, voted to dissolve MIACC for financial reasons. With the dissolution of MIACC, Canada lost a key forum for the discussion of emergencies PPR issues with industry and other stakeholders such as provincial environmental and emergencies measures organizations. Also lost were the technical committees representing various interests and areas of expertise that by consensus developed and

maintained a range of emergencies PPR tools. It is anticipated that the proposed Business Plan will address the gaps created by the demise of the MIACC.

Quebec. In 1999, the environment minister of Quebec participated in the revision of the Quebec's disaster plan (*Plan d'intervention gouvernemental en cas de sinistre*). This revision was undertaken after the ice storm of January 1998.

Article 2(1)(c) Environmental Education

In 1999, Canadian environmental educators began a letter-writing campaign to the minister of the environment asking that Canada develop a national strategy on environmental education in accordance with the 1996 Work Programme initiated by UNESCO and tabled at the Commission for Sustainable Development. This campaign led to a decision to embark on a nationwide consultation with environmental educators through the Internet and through community town hall meetings which are planned for the year 2000.

Also in 1999, the Council of Ministers of Education (Canada) received a report from the provinces and territories on education and sustainable development and its current links to curriculum. This is a first step in ensuring that sustainability principles are integrated into curriculum planning and classroom activities in the formal education system.

In the area of climate change, the government of Canada introduced its Climate Change Action Fund (CCAF) in the 1998 federal budget and allocated \$30 million to a Public Education and Outreach (PEO)

program to inform and motivate behavioral change among Canadians in communities, schools, businesses and industries. The PEO program includes an information component to build awareness and understanding of climate change and a funding component to support projects that emphasize early action. The information component includes publications and information kits, a climate change web site <<http://www.climatechange.gc.ca>>, newspaper supplements, and print and radio advertising. As a result of these activities, Canadians have received information to help them gain a better understanding of climate change, including what it means for Canada and how individuals can reduce their greenhouse gas (GHG) emissions.

By 31 December 1999, the PEO funding program had committed more than \$12 million to 88 national and local projects for public education and outreach on climate change. All projects are implemented in partnership with provincial and territorial governments and organizations, including businesses, industries and environmental groups. As of 31 December 1999, contributions by project partners totaled \$24.8 million. Projects share information in order to encourage early actions to reduce GHG emissions.

In Alberta, Alberta Environment staff delivered educational programs to over 1,600 educators in communities and at teachers conventions. Alberta Environment's Junior Forest Warden clubs participated in a record-breaking tree planting event (planting 34,083 white spruce in a single day). To promote climate change education and action,

Alberta Environment introduced an innovative program, "the CO₂ Diet," to federal and provincial staff in selected departments.

In support of the [federal] government's efforts to preserve biodiversity, Alberta has developed an educational poster depicting grasslands. It includes readings and activities to foster stewardship of the natural prairie landscape and the species under threat. The *Bull Trout Teachers Guide* was also developed during 1999 as part of Alberta Environment's threatened species education program.

In 1999, the environment minister of Quebec and several partners launched a project, *Les Aventures du patrimoine*, designed to use the Internet for environmental education.

Article 2(1)(d) Scientific Research and Technology Development

In 1999, Canada, through the Environmental Technology Centre (ETC), undertook a variety of initiatives:

- The federal-provincial National Air Pollution Surveillance (NAPS) Network for monitoring the criteria pollutants sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃) and suspended particulate matter was sustained, and air toxics monitoring was continued for fine particulate matter, O₃, metals, volatile organic compounds, polycyclic aromatic hydrocarbons (PAHs), dioxins and furans (PCDD/F) and acid aerosols.

- Releases from Canadian landfills were determined for PCDD/Fs, PAHs, volatile organic compounds (VOCs), mercury, NO_x, sulfur compounds and nonmethane organic compounds.

- A guidance document for the analysis of metals and other substances was completed for the revised Metal Mining Liquid Effluent Regulations (MMLER). This document allows a performance-based approach for laboratories providing compliance monitoring data under the regulation.

- Investigators completed studies on the level of quantification (LOQ) for hexachlorobenzene (HCB) and PCDD/F in soil, ash and stack emissions. Meanwhile, a study was launched at the Trail Road Landfill gas incinerator in Ottawa-Carleton to determine the LOQ of polychlorinated biphenyls (PCBs). In addition, researchers developed a method to determine the presence of HCB in ferrous and ferric chloride solutions. Furthermore, a guidance document was developed for the sampling of substances that may contain PCBs, such as paint, fluorescent light ballasts, building debris and automotive shredded residue.

- The ETC is providing technical support to CanAmera Foods, a MAP (Microwave-Assisted Process) licensee, the world's largest canola oil manufacturer, and Canada's leading oilseed processing company (BC Research Inc. also became a MAP™ licensee in 1999). This effort seeks to demonstrate the potential use

of MAP™ as a low-GHG-emitting, “clean” industrial process. The project also is directed toward providing a substitute for the solvent hexane in canola oil production; it is a GHG contributor.

- Emissions from a variety of mobile sources and alternative fuels were measured to support collaborative technology evaluation, development and demonstration projects aimed at reducing emissions of greenhouse gases. The projects included: optimization of two hybrid diesel-electric urban bus configurations; development of fuel consumption curves for multiengine Coast Guard vessels based on field testing (to provide the crew with information on the most efficient modes of operation); investigation of possible engine efficiencies under cold temperature operation (indicating possible fuel consumption improvements of 10 percent); exhaust emissions and fuel consumption studies of a diesel engine converted to operate on dimethyl ether; measurement of exhaust emissions from on- and off-road diesel-powered vehicles using an emulsion of 20 percent water and 80 percent diesel fuel; and assessment of alcohol-and-gasoline blended fuels (from 10 to 30 percent alcohol) as a means of reducing vehicle exhaust emissions.

- A collaborative project was extended into its third year of research in order to determine the concentration, composition and sources of airborne carbonaceous particles in Canada. The project is developing the tools and knowledge needed to evaluate the fuel and transportation standards or codes that may be needed to meet future particulate matter air quality objectives in Canada. The ETC is conducting the exhaust emissions measurements using transportation sources and coordinating development of the analytical method needed for chemical characterization of particulate matter emitted from transportation sources and in ambient air.

- The state-of-the-art Scanning Laser Environmental Airborne Fluorosensor (SLEAF) prototype was installed in a DC-3 aircraft, and researchers tested the unit. They have begun to tune the software system for data handling and display.

- Fluorometers are often used to measure oil concentrations in the field. The results, however, are critically dependent on calibration methods. An improved procedure was developed and tested for calibrating these instruments to ensure greater accuracy

- Research continued on the development of an airborne laser-acoustic sensor to measure the thickness of an oil slick remotely. The prototype sensor was modified to include a new photo-refractive crystal detector, which was mounted in a new support structure and tested in an aircraft.

- The first phase of evaluating innovative processes possibly applicable to the Sydney Tar Ponds, using bench-scale testing on samples from the site, was completed. Several technologies were investigated to determine their effectiveness at targeting and removing selected contaminants from the samples.
- The ETC conducted a search of the available validated techniques for measuring speciated mercury from stationary sources. None of the procedures has been finalized to date, although a technique developed by Ontario Hydro Technologies appears to be the most promising method. With input from Ontario Hydro Technologies, the ETC began to prepare a reference method (RM) that incorporates the Environment Canada method for measuring metallic mercury and another method for measuring oxidized mercury.
- Two aquatic toxicity test reference methods were finalized and published—a RM for the Environmental Effects Monitoring (EEM) mining requirement and a sediment toxicity RM for the CEPA ocean disposal regulations.

The government of Alberta expended approximately \$1.5 million in 1999 on research to address the information needs related to sustainable ecosystems and air, water, and land reclamation and remediation. Alberta also provided \$2.1 million for research conducted in 1999 by the Sustainable Forest Management Network and the Foothills Model Forest. In partnership with the government of Canada under the Western Economic Partnership Agreement, Alberta began three-year research projects on groundwater resources and cumulative effects.

Quebec undertook 16 research projects dealing with technological development in 1999. These research projects respond to five principal types of activities: cleanup of gas emission and industrial effluents, cleanup of agricultural waste, cleanup of contaminated sites, industrial waste management, natural resource management and municipal waste management.

Environnement Québec applied the CEC's Ecological Regionalization Methodology to the whole of North America. This exercise resulted in the definition of 13 territorial units, or environmental zones, which will facilitate the implementation of concerted efforts to protect the environment.

Article 2(1)(e) Environmental Impacts

The Canadian Environmental Assessment Agency (CEAA) is responsible for administering the federal environmental assessment process. During FY 1999[/2000], CEAA managed four panel reviews, which were still active at the end of the fiscal year. During the same time period, federal departments and agencies reported 5,640 screenings and 35 comprehensive studies (of which 10 were completed and 12 were begun) in accordance with their environmental assessment obligations under the Canadian Environmental Assessment Act.

In southern Quebec, 88 projects were in various stages of the environmental impact assessment process. Forty-nine of these were land-based and revolved, for example, around highway development, waste disposal, herbicide spraying, power lines and transformer stations. Ten projects were of industrial in nature and involved assessments of, for example, a cogeneration plant, a coke calcining plant and an

industrial waste treatment center. Twenty-nine were in the aquatic environment, pertaining to, notably, shore stabilization, hydroelectric complexes and dredging programs. In northern Quebec, 31 projects (such as roads, caribou harvesting and solid waste management facilities) underwent environmental assessments in accordance with the James Bay and Northern Quebec Agreement signed with the aboriginal communities.

Finally, in 1999 the Quebec Environmental Quality Act was amended so that the minister of the environment can sign an agreement for the joint assessment of any project that is to be constructed in part outside Quebec. Passage of a specific act enabled the joint environmental assessment of the proposed Churchill River hydroelectric development project, which involves Quebec, Newfoundland and the federal government.

***Article 2(1)(f) Promotion of the Use
of Economic Instruments
for the Efficient Achievement
of Environmental Goals***

Federal and provincial officials continued to participate in PERT (Pilot Emission Reduction Trading project) meetings in 1999. PERT's submission of its 1999 trading-system-design option paper to the Ontario ministry of environment was a notable milestone for the pilot. The paper discussed several approaches to

an emission reduction credit trading system, each involving varying levels of government involvement and market influence on a trading system.

In 1999, the government of Alberta continued to actively promote recycling programs. The relatively new program to recycle used oil, filters and containers has exceeded expectations with return rates of 67 percent, 75 percent and 31 percent, respectively. The beverage container recycling program diverted approximately 80 percent of beverage containers from landfills in 1999. The government signed a memorandum of understanding with the dairy industry in 1999 to develop a recycling program for milk jugs targeted to a return rate of 75 percent. This program is funded by the dairy industry.

Manitoba completed an interdepartmental review of administrative monetary penalties (AMPs) as a tool to complement existing provincial enforcement legislation. It is considering the development of legislation to implement AMPs. Product stewardship programs, involving the imposition of product levies, continue to operate successfully in these sectors: used oil, filters and containers; used tires; and multi-material recycling (for example, paper, glass, plastic, aluminum and steel cans).

In 1999, Canada's National Climate Change Process included exploration of economic instruments related to the abatement of climate change. A Tradable Permits Working Group investigated the potential role of greenhouse gas (GHG) permitting in which permit trading would be allowed to address climate

change. The potential for such emissions reduction credit trading was also explored by the Credit for Early Action Issue Table. The findings of both these groups are online at <<http://www.nccp.ca>>.

Even though Environnement Québec does not yet have enabling authority, it has already successfully employed economic instruments to reach environmental objectives. A notable example is the 1999 environment tax charged on new car and truck tires. It will help gradually empty permanent used tire storage sites.

Article 2(3) Prohibiting the Export of Pesticides and Toxic Substances

Canada's Prohibition of Certain Toxic Substances Regulations forbid the manufacture, use, processing, sale, offer for sale or import of some substances. In addition, the Canadian Environmental Protection Act prohibits the export of a substance that is banned in Canada.

Canada voluntarily implements the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. It provides for the exchange of information on the domestic measures being taken to prohibit or severely restrict the use of a substance. Notification is also provided to the importing country—that is, when Canada exports a substance that has been severely restricted domestically.

Article 3 – Levels of Protection

Species-at-Risk Legislation

Throughout 1999, the federal government continued to engage in consultations with Canadians to develop a new approach to protecting species at risk. At information sessions and meetings held across the country by Environment Canada, interested parties provided input that was taken into consideration during development of the national strategy to protect species at risk. In December 1999, the federal government released *Canada's Plan for Protecting Species at Risk: An Update*, which discusses the progress made so far and outlines the major elements of the federal government's approach. This approach consists of a three-part strategy that will, first, build on partnerships with the provinces and territories through the Accord for the Protection of Species at Risk; second, promote incentives, stewardship and voluntary measures as the primary way to protect species; and, third, include federal species-at-risk legislation, which the federal government will introduce in Parliament in 2000.

The New Canadian Environmental Protection Act

On 14 September 1999, the new Canadian Environmental Protection Act—an “act respecting pollution prevention, and the protection of the environment and human health, in order to contribute to sustainable development”—received Royal Assent. The Canadian Environmental Protection Act, 1999 (CEPA 1999), repeals and replaces the Canadian Environmental Protection Act, 1988. The new act focuses on the prevention of pollution and provides for more effective and timely management of toxic substances, the virtual elimination of the worst

toxics, expanded control of a broader range of pollutants, expanded public participation and effective use of new enforcement tools and powers. It was proclaimed into law on 31 March 2000.

Additions to the List of Toxic Substances

On 13 November 1999, 18 substances were proposed for addition to the list of toxic substances (Schedule 1) in CEPA 1999. The order adding these substances to Schedule 1 was published in the *Canada Gazette* on 29 March 2000 and came into force on 31 March 2000. The substances were:

- (4-chlorophenyl)cyclopropylmethanone, o-[(4-nitrophenyl)methyl]oxime, which has the molecular formula $C_{17}H_{15}ClN_2O_5$;
- inorganic arsenic compounds;
- benzidine;
- bis(2-ethylhexyl)phthalate;
- inorganic cadmium compounds;
- chlorinated wastewater effluents;
- hexavalent chromium compounds;
- creosote-impregnated waste materials from creosote-contaminated sites;
- 3,3'-dichlorobenzidine;
- 1,2-dichloroethane;
- dichloromethane;
- effluents from pulp mills using bleaching;
- hexachlorobenzene;
- inorganic fluorides;
- refractory ceramic fibers;
- oxidic, sulphidic and soluble inorganic nickel compounds;
- polycyclic aromatic hydrocarbons; and
- tetrachloroethylene.

Regulations Finalized in 1999

The following regulations were finalized in 1999:

- Federal Halocarbon Regulations for Federal Facilities. These regulations close a regulatory gap so that federal regulations dealing with releases and management of ozone-depleting substances (ODS) and their halocarbon alternatives are in line and consistent with current provincial regulatory requirements applicable to the private sector.
- Gasoline and Gasoline Blend Dispensing Flow Rate Regulations. These rules reduce emissions of benzene and other volatile organic compounds into the environment during the refueling of on-road vehicles.
- Tributyltetradecylphosphonium Chloride (TTPC) Regulations. These rules prohibit the use, processing, offer for sale, sale and importation into Canada of TTPC, a toxic substance, and impose conditions on its manufacture.
- Export Control List Notification Regulations. These regulations set forth the new reporting obligations being imposed on exporters for substances listed on Schedule 3 of CEPA 1999 (Export Control List). They replace the Toxic Substances Export Notification Regulations.

- Persistence and Bioaccumulation Regulations. These rules prescribe the scientific criteria for persistence, bioaccumulation and other relevant properties or characteristics of substances to be used to administer sections 73-77 (Priority Substances and Other Substances) of the act. These regulations are required under section 67(1) of the act.

Manitoba Regulations

In late 1999, the Manitoba Departments of Environment, Natural Resources, and Petroleum and Energy were amalgamated into a new Department of Conservation. The change will allow a more integrated and effective approach to environmental protection. Manitoba amended its Ozone Depleting Substances Act in 1999 to allow the regulation of specified harmful “replacement products” (that is, products used to replace ozone-depleting substances), such as hydrofluorocarbons (HFCs), which are likely to contribute greatly to the problem of global warming. A new act introduced in the Manitoba legislature in 1999—the Water Resources Conservation and Protection Act—dealt with the bulk transfer of water between water basins. Legislation also was introduced in 1999 to prohibit “penned-hunting” of all species, including native, introduced and exotic wildlife species.

Quebec Regulations

In 1999, within the context of its industrial waste reduction program (*Programme de réduction des rejets industriels*), the Quebec government continued negotiations with the province’s forestry industry association (*Association des industries forestières du*

Québec) on the implementation of anti-pollution measures in the pulp and paper industry. It also initiated discussions with the Quebec mining association (*Association minière du Québec*) to implement similar measures in the mining sector. Moreover, it developed guidelines aimed at controlling polluting emissions in the sawmill, agrifood and fish farming industries. Finally, the government continued to revise its mining industry guidelines (*Directive sur l’industrie minière*), which seek to better control and reduce this industry’s impacts on the environment.

Article 4 – Publication

The Government of Canada publishes all of its environmental laws, regulations, procedures and administrative rulings. The following regulatory initiatives were published in 1999:

Canada Gazette, Part I:

- Federal Halocarbon Regulations for Federal Facilities (29 September 1998)
- Ozone Depleting Substances Regulations, 1998 (29 September 1998)
- Tributyltetradecylphosphonium Chloride (TTPC) Regulations (15 May 1999)
- Gasoline and Gasoline Blend Dispensing Flow Rate Regulations (5 June 1999)
- The Six Miscellaneous Amendments Regulations (6 November 1999)—intended to harmonize the wording in 24 regulations under CEPA 1988 with the terminology and scheme of CEPA 1999.

Two ministerial orders proposing the addition of the following toxic substances to Schedule 3 of CEPA 1999, were published in the *Canada Gazette*, Part I, on 25 December 1999: (4-chlorophenyl)cyclopropylmethanone, o-[(4-nitrophenyl)methyl]oxime, which has the molecular formula $C_{17}H_{15}ClN_2O_3$, to Part I of Schedule 3; and tributyltetradecylphosphonium chloride to Part 3 of Schedule 3.

Canada Gazette, Part II:

- Ozone Depleting Substances Regulations, 1998 (6 January 1999)
- Federal Halocarbon Regulations for Federal Facilities (7 July 1999)
- Gasoline and Gasoline Blend Dispensing Flow Rate Regulations (16 February 2000)
- Tributyltetradecylphosphonium Chloride (TTPC) Regulations (15 March 2000)

The *Canada Gazette* remains the official parliamentary journal of the federal government. However, the Environmental Registry, required under Section 12 of the Canadian Environmental Protection Act, 1999, is a key instrument in facilitating access to documents related to the CEPA. The Environmental Registry is not intended to replace the *Canada Gazette* but to complement it. The Registry provides online up-to-date versions of current CEPA 1999 instruments and enables the public to monitor the progress of instruments, including regulations and orders, from their proposal to final publication in Part II of the *Canada Gazette*.

Article 5 – Government Enforcement Action

What's New?

Canadian Environmental Protection Act. The 1999 Canadian Environmental Protection Act gives Environment Canada's enforcement staff additional powers and the department new tools to respond to violations. The new CEPA also gives the EC a new enforcement tool called Environmental Protection Alternative Measures. This tool, which takes the form of negotiated agreements between offenders and the Crown, is intended to ensure that offenders return to compliance yet avoid lengthy prosecutions. Such agreements are used only when the offense fits established criteria.

Also under CEPA 1999, the EC's designated pollution inspectors and investigators gain significant new authorities by receiving peace officer status. New authorities include the right to enter premises; open containers and examine contents; take samples; conduct tests and measurements, and obtain access to information (including data stored on computers). They also are able to exercise generic peace officer powers such as serving summonses and subpoenas; securing inspection warrants; using force under pre-determined conditions; obtaining tele-warrants and general warrants; stopping and detaining conveyances; and making arrests without warrant.

Another new enforcement tool granted under CEPA to enforcement officers is the Environmental Protection Compliance Order. These orders are similar to those found elsewhere in Canadian law for stopping or preventing violations, or requiring actions to be taken.

The new CEPA permits the use of ticketing in situations where, for example, a warning is believed to be inadequate but a court prosecution is not warranted. Work has begun on implementing this authority through the Contraventions Act.

Finally, the new CEPA allows any individual residing in Canada who is at least 18 years of age to apply to the minister of the environment for an investigation of alleged offenses related to the CEPA. If the minister fails to take action within a reasonable time, or the response is unreasonable, the applicant, acting as a friend of the environment, may take direct action in the civil courts against the alleged offender. The act prohibits individuals from obtaining damages in this kind of suit. Actions such as these are called Environmental Protection Actions.

National Enforcement Program: Action Plan. During 1999, work was completed on most of the 15 projects included in the National Enforcement Program's Action Plan. Among them was a "Business Case" which assessed the gap between the existing National Enforcement Program and a strengthened one. In addition, in the FY 2000/2001 federal budget the government has allocated \$40 million in new funds to federal environmental law enforcement over the next five years—the first time a federal budget has made specific provision for enforcement funding. These funds will allow the enforcement community to hire additional enforcement personnel for inspections, intelligence gathering and investigation of suspected violations. The allocation of the new funds

is clearly in recognition of the important function compliance verification and enforcement play in achieving improved environmental quality.

Fisheries Act. In cooperation with the Department of Fisheries and Oceans, Environment Canada is finalizing a new Compliance and Enforcement Policy for the habitat protection and pollution prevention provisions of the Fisheries Act.

NEMISIS. Enforcement managers are using the National Enforcement Management Information System and Intelligence System (NEMISIS) as a tool for effectively recording data related to [violation] occurrences, inspections and investigation activities and actions. They also are using NEMISIS to track and report on these same enforcement activities. In 1999, the system was further developed to include ongoing new requirements and links to information in existence prior to the creation of NEMISIS.

Compliance and Enforcement

As with most compliance and enforcement programs, the goal is compliance, and in 1999 Environment Canada, Environnement Québec, Manitoba Environment and Alberta Environment continued to promote compliance by means of passing pertinent legislation, providing information on the Web, holding meetings with the regulated community, distributing bulletins and other publications for specific audiences, and publishing the names of those found guilty by the courts.

The monitoring of compliance, both federally and provincially, is aided by the permits, licenses and other authorizations that are required for many activities, such as the transboundary movement of hazardous wastes, ocean dumping, international trade in endangered species, hunting and trapping, and those activities that pose a risk of releasing contaminants into the environment. For example, in FY 1998/1999 Environment Canada processed 8,594 notices for the proposed international shipment of hazardous wastes and 42,594 manifests associated with actual shipments. Approximately 99 percent of these were between the United States and Canada.

Enforcement of environmental and wildlife legislation for all parties is conducted within the context of the overall Canadian legal framework, which includes the Canadian Charter of Rights and Freedoms, the Canadian Criminal Code, the Privacy Act, the Access to Information Act, the Mutual Legal Assistance Act, and the Canada Evidence Act. Most federal and provincial environmental and wildlife legislation provides for the authority to search, seize and detain under the rules established by legislation. In Quebec, the Civil Code and Penal Code are in effect as well. Alberta Environment is responsible for the environmental protection and resource management of Alberta's air, land, water, fish, wildlife, forestry, provincial parks, and natural heritage resources. Its *Compliance Assurance Principles* describe how the department will, and in many cases already does, use education, prevention and enforcement to ensure

that regulated parties comply with the legislation it administers. The *Principles* build on existing compliance assurance programs and develop a harmonized departmental approach to Alberta Environment's compliance assurance business. Alberta Environment is working on fully implementing the *Principles*.

As part of the *Principles*, Alberta Environment is developing a computerized tracking system that will collect and summarize enforcement and compliance assessment data (inspections, reviews and audits) from the entire department. It intends to publish these data annually in a compliance assessment and enforcement activities report; the first of which is expected in the latter half of FY 2000/2001.

Licenses, Permits and Authorizations. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), signed by more than 130 countries, helps to control the international trade in endangered and protected species (see table, which summarizes the CITES permits issued in Canada during 1998).

Environment Canada also is responsible for enforcing the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA). Currently, WAPPRIITA and its regulations require that for Canada all CITES-listed wild

animals and plants and their parts and derivatives be exported or imported under the authority of CITES permits issued by Canada, another country or both, depending on the conservation status of the species involved. New regulations have recently provided for the following:

- **Removal notice.** Gives an enforcement officer the authority to require removal of the item from Canada when that is preferable to seizure and forfeiture. The advantage is that the specimens are removed quickly without the need for, or costs associated with, a court proceeding. The violator assumes responsibility for the costs.

CITES Permits Issued in Canada, 1998

Jurisdiction	Import	Export	Temporary Export/Import	Scientific
Canada	193	8,438	239	36
Alberta ^a		NA		
British Columbia		2,084		
Manitoba		1,630		
New Brunswick		1,547		
Newfoundland		130 ^c		
NWT		95		
Nova Scotia		63		
Ontario		5,697		
PEI		3		
Quebec		1,999		
Saskatchewan ^b		480 ^c		
Yukon		242		
Total	193	22,408	239	36
Appendix I species included on permit	193	NA	NA	NA

Source: Canadian Wildlife Service.
 Note: NA = not available.
^a Alberta does not issue CITES export permits.
^b Saskatchewan ceased issuing CITES export permits for black bear in 1997.
^c Estimated from last year's report.

- *Extended forfeiture time (from 70 to 90 days).*
Gives the importer, exporter or enforcement officer sufficient time to obtain the information necessary to complete a review or investigation of the case.
- *Personal and household effects exemptions.* The parties to CITES have recognized that requiring permits for the personal and household goods of individual travelers may not be justifiable or necessary as a means of meeting conservation objectives. Consequently, the convention and subsequent resolutions of the parties provide that countries may allow exemptions from or modifications of CITES permit requirements for personal and household effects. Currently, WAPPRIITA and the regulations require exporters and importers to obtain permits from Canada, another country or both, depending on the level of regulation of the species under CITES, prior to shipment into or out of Canada. To change this situation, the regulation sets out permit exemptions.

Training

Environment Canada, Manitoba Environment, Environnement Québec and Alberta Environment all have training courses for their enforcement staffs. The courses are specifically designed to accommodate variables such as changing priorities and new or updated

legislation and regulations. Environment Canada has expended significant effort to ensure that new, and even experienced, enforcement staff members are fully trained in how to use the additional powers granted by the new CEPA. The training includes a six-week training course in conjunction with the Royal Canadian Mounted Police Training Academy.

So that Environment Canada enforcement officers employ their new authorities in a professional manner that ensures their safety and that of the public, they receive training in many areas, including: applied peace officer sciences; enforcement officer safety and defensive tactics; and driver training and vehicle safety.

During FY 1999/2000, some 200 attendees received training in the following courses.

- General Enforcement Training (GET) for CEPA Enforcement Officers (six weeks);
- WAPPRIITA Course for Environment Canada Enforcement Officers;
- WAPPRIITA Course for Customs Officers (Ontario);
- Negotiations Skills Training Course for CEPA Enforcement Officers;
- Annual Firearms Training for Wildlife Officers;
- Forensic Interviewing Course (one week); and
- Safe Boat Handling Course (two weeks).

The National Training Plan is posted on the Environment Canada web site <<http://www.ec.gc.ca/enforce/homepage/train/english/sched.doc>>. Courses advertised on the training schedule are available to other government agencies responsible for enforcing environmental legislation.

During FY 1999/2000, Manitoba Environment provided training for approximately 75 environment officers.

Inspections

On-site inspections as well as administrative verifications (off-site inspections such as the verification of the information required of those being regulated) are used to confirm compliance with regulations. Enforcement officers may open an investigation when a noncompliant situation is discovered. Each year, the Enforcement Branch of Environment Canada and its five regional offices prepare an inspection plan that targets specific priority regulations. They formulate such a plan using criteria that include: the number and types of targeted populations or activities; the profiles, compliance histories, operational complexities and capacities of the target companies; the environmental significance and geographic scale of their operations; and the nature of the applicable regulatory provisions.

Likewise, Alberta Environment and Environnement Québec prepare plans for their respective jurisdictions. Manitoba Environment follows a systematic

inspection program for the industrial, municipal, agricultural and natural resources sectors. It also considers and responds to tips, complaints and referrals from the public or other agencies.

Among the inspections that took place over the course of FY 1999/2000, approximately 2,200 were conducted by EC's wildlife inspection staff under WAPPRIITA, which implements Canada's commitment to CITES. Over the same period, EC's pollution inspection staff conducted 2,675 inspections under CEPA and 2,924 under the Fisheries Act.

Record Keeping and Reporting

All parties maintain records of key enforcement activities, including inspections, investigations, warnings issued and prosecutions. Using computerized databases, Alberta Environment and Environnement Québec track enforcement activities, including incident reviews, inspections and investigations. Manitoba Environment maintains records of similar enforcement activities through alternate record-keeping systems.

During FY 1999/2000, Manitoba Environment recorded 17,689 inspections and 3,117 complaints in the area of environmental and public health enforcement. Environnement Québec recorded 9,535 inspections and 1,894 notices of infraction issued. Environment Canada uses its computerized enforcement database, NEMISIS, for these purposes.

By law, Environment Canada must report to Parliament annually on the implementation of CEPA and WAPPRIITA. EC also contributes statistical information to the annual report on the Fisheries Act sent by the Department of Fisheries and Oceans to Parliament. The latest report, for FY 1997/1998, is available online <http://www.dfo-mpo.gc.ca/habitat/annrep97/english/index_e.htm>.

Finally, among other things, CEPA Environmental Registry <<http://www.ec.gc.ca/CEPARRegistry/default.cfm>> established under the new CEPA, provides the following materials:

- CEPA enforcement and compliance policy;
- interpretation notices;
- CEPA annual reports;
- CEC annual reports on enforcement (when they deal with CEPA issues);
- historical court decisions on guilty parties;
- press releases and media advisories;
- complete wording of CEPA and its regulations;
- brief “plain language” summaries of CEPA regulations;
- enforcement activities reports and enforcement statistics;

- CEPA compliance reports, as they are prepared from time to time;
- international conventions/accords that Canada has signed and are implemented in Canada through CEPA and its regulations (that is, the Basel Convention on the trans-boundary movement of hazardous wastes); and
- proposed new CEPA regulations and amendments of existing CEPA regulations.

1999 Enforcement Information/Statistics

Enforcement information, reports and statistics for Environment Canada can be found on its web site <<http://www.ec.gc.ca/enforce/homepage/english/index.htm>>. Enforcement information also is available on government web sites for Manitoba <<http://www.gov.mb.ca/environ/prgareas/enforce.html>>, Alberta <<http://www.gov.ab.ca/env/forests/fmd/contr/contr99.html>> and Quebec <<http://www.menv.gouv.qc.ca/>>.

The following tables and text summarize the information available on provincial enforcement:

Quebec – Statistics on Convictions, 1999

Regulation pertaining to:	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
<i>Sector: Municipal</i>													
Wastewater disposal systems for isolated dwellings (reg. 8)	1												1
Solid waste (reg. 3.2)	2	3	1	4	4	4	1	2	4	3	4	1	33
Drinking water (reg. 4.1)	2				1	2	1						6
<i>Sector: Industrial</i>													
Pits and quarries (reg. 2)								1			1		2
Quality of the atmosphere (reg. 20)		1	1		4	2	2	3	2	3	5	1	24
Hazardous waste (reg. 3.01)		1		1		2		2			1		7
<i>Sector: Agricultural</i>													
Prevention of water pollution in livestock operations (reg. 18)	1			1		1			1		1	2	7
<i>Sector: Other</i>													
Other convictions		1					2	1			1		5
Environmental Quality Act													
Activities not covered under regulations, guidelines or policies.	14	23	24	12	19	27	11	11	15	14	10	13	193
Total	18	31	26	18	28	38	17	20	22	20	23	17	278
Fines (in thousands of \$)	46	60.45	51.2	25.2	90.1	144.9	38.5	24.95	60.2	30.5	27.2	25.8	625

Quebec – Statistics on Regulatory Enforcement, 1999

Region	Inspections	Notices of Infraction	Requests for Investigations
01 (Bas-Saint-Laurent)	690	74	8
02 (Saguenay-Lac-Saint-Jean)	834	320	18
03 (Capitale-Nationale)	919	139	11
04 (Mauricie)	425	30	3
05 (Estrie)	727	36	4
06 (Montréal)	720	129	30
07 (Outaouais)	325	117	3
08 (Abitibi-Témiscamingue)	221	46	1
09 (Côte-Nord)	221	59	4
11 (Gaspésie-Îles-de-la-Madeleine)	167	64	8
12 (Chaudière-Appalaches)	575	157	14
13 (Laval)	343	58	5
14 (Lanaudière)	526	112	26
15 (Laurentides)	970	255	25
16 (Montérégie)	1,642	224	29
17 (Centre-du-Québec)	230	74	1
Total	9,535	1,894	190

Manitoba—Manitoba Environment Program Operating Statistics, FY1998/1999

Program Activity (mandated)	Number of Inspections	Complaints Responded To
<i>Public Health Act</i>		
Food service establishments	3,974	429
Temporary/seasonal food service	632	23
Retail food stores	571	118
Mobile food units	94	5
Food processors	467	40
Uninspected meat processors	67	4
Public water supply	353	60
Swimming facilities	801	23
Industrial and construction camps	27	9
Recreational camps	59	3
Public accommodation	110	16
Care facilities	436	10
Total	7,591	740
<i>Environment Act</i>		
Waste disposal grounds	660	52
Livestock production operations	804	143
Municipal wastewater facilities	386	17
Scrap processors and auto wrecking	45	3
Agricultural operations	21	3
Mining operations	30	4
Forestry operations	35	–
Manufacturing and industrial plants	211	14
Recreational developments	12	–
Incinerators	30	2
Water development/other EA licenses	220	13
Total	2,454	251
<i>Dangerous Goods Handling and Transportation Act</i>		
Petroleum storage facilities	695	14
Pesticide storage and container facilities	149	22
PCB storage facilities	4	1
Anhydrous ammonia	103	2
Hazardous waste sites	302	42
Dangerous goods handling and transportation	141	6
Contaminated sites	452	15
Total	1,846	102
<i>Request/Response-oriented Programs</i>		
Subdivision, land splits, planning schemes and development plans	1,276	43
Litter	1,195	603
Campgrounds	3	1
Dwellings and buildings	1,215	833
Private water supplies	378	68
Unsanitary conditions	269	158
Communicable disease investigations	119	103
Private sewage disposal	867	171
Other (crop residue, ozone, WRAP, NSHPA)	496	44
Total	5,818	2,024
Grand total	17,689	3,117

Note: The scope of Manitoba Environment's responsibilities includes, but is not limited to, environmental matters. These statistics cover the *full* range of enforcement activities for which Manitoba Environment is responsible. WRAP = Waste Reduction and Prevention Act; NSHPA = Non-Smokers Health Protection Act.

Manitoba—Enforcement Statistics, FY 1998/1999

Legislation	Charges		Formal Warnings Issued	Director/EO/MOH Orders Issued	Fines Imposed
	Laid	Convictions			
Dangerous Goods Handling and Transportation Act	90	90	33	9	\$26,777
Environment Act	59	51	244	27	51,081
Non-Smokers Health Protection Act	1	1	1	–	74
Contaminated Sites Remediation Act	–	–	–	5	–
Ozone Depleting Substances Act	2	–	–	–	Pending
Public Health Act	11	10	64	7	2,741
Municipal bylaws	2	1	34	–	120
Total	165	153	376	48	\$80,793

Manitoba—Natural Resources Enforcement Statistics, FY 1998/1999

Approximately 139 natural resource officers located throughout the province are responsible for enforcing wildlife protection and other legislation. They are assisted in their jobs by the province's "Turn-in-Poachers" toll-free hotline, which since it was launched in 1985 has received 10,417 calls, resulting in 1,678 charges and 323 warnings. During FY 1998/1999, Manitoba officials pursued 278 prosecutions, resulting in 209 convictions. An additional 85 warnings were issued, for a total of 363 offenses.

Alberta—Summary of Enforcement Actions under the (Alberta) Environmental Protection and Enhancement Act, 1 January 1999 to 31 December 1999

Action	Number
Administrative penalties (ADMIN)	33
Enforcement orders (EO)	8
Enforcement orders for waste (EOW)	1
Environmental protection orders (EPO)	7
Emergency environmental protection orders (EEP)	2
Tickets (TIC)	7
Warning letters (WRN)	82
Prosecutions (charges concluded, PRS)	12
<i>Fines/penalties assessed:</i>	
Administrative penalties	\$156,000
Tickets	805
Prosecutions	257,000
Total	\$413,805

Legislation	Charges Laid	Charges Con-cluded	Convic-tions	Pending (charges not con-cluded)	Prosecution Penalties	Jail Days	Suspen-sions	Appeals	Court Orders	Warn-ings	Admin Penalties (number)	Admin Penalties (amount)	Orders \$
EPEA and Regs Subtotal	52	20	15	33	\$56,265.00	0	0	5	0	92	28	\$156,500	14
EPEA	32	20	14	14	56,150.00	0	0	5	0	75	27	154,000	14
Pesticides Sales, Handling,....	19	0	0	19	0.00	0	0	0	0	5	0	0.00	0
Pesticide (ministerial regulation)	0	0	0	0	0.00	0	0	0	0	2	0	0.00	0
Waste Control	0	0	0	0	0.00	0	0	0	0	10	1	2,500	0
Substance Release	1	0	1	0	115.00	0	0	0	0	0	0	0.00	0
Fisheries Act and Regs Subtotal	2,579	1,506	1,264	-	\$216,327.00	8	65	-	0	0	NA	NA	0
Fisheries (Alberta) Act	512	226	176	-	18,715.00	1	6	-	0	-	NA	NA	0
General Fisheries (Alberta) Regulation	112	25	22	-	3,706.00	0	1	-	0	-	NA	NA	0
Fisheries Act (federal)	32	27	15	-	4,570.00	1	0	-	0	-	NA	NA	0
Alberta Fishery Regulation	1,923	1,228	1,051	-	189,336.00	6	58	-	0	-	NA	NA	0
Wildlife Act and Regs Subtotal	1,638	981	762	-	\$220,128.50	69	222	-	0	0	NA	NA	0
Wildlife Act	1,391	883	687	-	208,573.50	67	206	-	0	-	NA	NA	0
Wildlife Act Regulations	236	95	73	-	11,255.00	1	15	-	0	-	NA	NA	0
Migratory Bird Convention Act (federal)	7	1	1	-	100.00	1	1	-	0	-	NA	NA	0
Migratory Birds Regulation	1	1	1	-	200.00	0	0	-	0	-	NA	NA	0
Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (federal)	3	1	0	-	0.00	0	0	-	0	-	NA	NA	0
Forestry Acts and Regs Subtotal	152	72	47	-	\$3,323.00	0	0	-	0	34	17	\$19,054.34	0
Forests Act	125	60	37	-	2,457.00	0	0	-	0	9	4	10,817.84	0
Forest and Prairie Protection Act	9	6	4	-	350.00	0	0	-	0	-	NA	NA	0
Timber Management Regulation	0	0	0	0	0.00	0	0	-	0	25	13	8,236.50	0
Forest Land Use													
Zone Regulation	15	6	6	-	516.00	0	0	-	0	-	NA	NA	0
Forest Recreation Regulation	3	0	0	-	0.00	0	0	-	0	-	NA	NA	0
Provincial Parks Act and Regs Subtotal	823	364	311	-	\$13,513.00	0	5	-	0	-	NA	NA	221
Provincial Parks Act	822	364	311	-	13,513.00	0	5	-	0	-	NA	NA	221
Wilderness Areas, Ecological Reserves and Natural Areas Act	1	0	0	-	0.00	0	0	-	0	-	NA	NA	0
Public Lands Act Subtotal	0	0	0	0	0	0	0	-	0	64	36	\$58,623.05	0
Public Lands Act	0	0	0	0	0.00	0	0	-	0	64	36	58,623.05	0
Water Management Subtotal	0	0	0	0	\$0.00	0	0	-	0	-	0	\$0.00	0
Water Act	0	0	0	0	0.00	0	0	-	0	-	0	0.00	0
Other Acts and Regs Subtotal	2,154	1,546	1,319	-	\$181,015.00	6	53	-	0	-	NA	NA	0
Controlled Drugs and Substance Act	1	0	0	-	0.00	0	0	-	0	-	NA	NA	0
Criminal Code	45	27	9	-	2,166.00	0	1	-	0	-	NA	NA	0
Boating Restrictions Regulations	2	2	2	-	200.00	0	0	-	0	-	NA	NA	0
Gaming and Liquor Act	731	541	467	-	59,198.00	1	14	-	0	-	NA	NA	0
Gaming and Liquor Regulation	271	238	208	-	24,035.00	0	13	-	0	-	NA	NA	0
Highway Traffic Act	190	152	131	-	12,032.00	4	1	-	0	-	NA	NA	0
Liquor Control Act	4	0	0	-	0.00	0	0	-	0	-	NA	NA	0
Motor Vehicle													
Administration Act	335	208	167	-	59,549.00	1	7	-	0	-	NA	NA	0
Off-Highway Vehicle Act	432	299	272	-	18,785.00	0	15	-	0	-	NA	NA	0
Off-Highway Vehicle Regulation	37	28	24	-	701.00	0	0	-	0	-	NA	NA	0
Petty Trespass Act	3	1	1	-	150.00	0	0	-	0	-	NA	NA	0
Provincial Offenses													
Procedures Act	60	17	9	-	867.00	0	1	-	0	-	NA	NA	0
Small Vessel Regs	42	32	29	-	3,332.00	0	1	-	0	-	NA	NA	0
Storage, Display, Trans. & Handling of Firearms by Individuals Reg.	1	1	0	-	0.00	0	0	-	0	-	NA	NA	0
Total	7,398	4,489	3,718	33	\$690,571.50	83	345	5	0	190	81	\$234,177.39	14

Article 6 – Private Access to Remedies

Persons with a recognized legal interest have access to remedies before administrative tribunals and the courts. Interested persons, in addition to being able to initiate private prosecutions, may also put forth, to a competent authority, a request to investigate alleged violations of environmental laws and regulations. For example, the Canadian Environmental Protection Act, 1999, which came into force on 31 March 2000, continues the practice of its predecessor statute, the Canadian Environmental Protection Act, 1988, in providing statutory authority for a person to apply to the minister of the environment for an investigation of any alleged offense under that act. Moreover, persons with a recognized legal interest in a particular matter have access to administrative, quasi-judicial and judicial proceedings for the enforcement of Canada's environmental laws and regulations. To that end, CEPA 1999, introduced the concept of "environmental protection actions," which allow any person to seek a court order prohibiting a continued violation of the statute and/or to mitigate harm caused by a violation of the statute. CEPA 1999, like its predecessor, also provides the statutory authority to request a review of administrative decisions or proposed regulations.

Article 7 – Procedural Guarantees

In Canada, administrative, quasi-judicial and judicial proceedings are available for the enforcement of environmental laws and regulations. Both the Canadian Charter of Rights and Freedoms and the courts have ensured that persons are given an opportunity, consistent with the rules of procedural fairness and natural justice, to make representations to support or defend their respective positions and to present information or evidence. Decisions are provided in writing, are made available without undue delay and are based on information or evidence on which the parties were offered the opportunity to be heard. In accordance with its laws, Canada provides parties to such proceedings, as appropriate, the right to seek review and, where warranted, correction of final decisions by impartial and independent tribunals. One example of fair, open and equitable proceedings at the administrative level is the Board of Review process available under CEPA 1999. It has been expanded in scope beyond that found in its predecessor.

Mexico

Country Report on
Implementation of the
Commitments Derived
from the NAAEC

*The following report
was submitted to the
CEC Secretariat by the
Secretariat of Environment,
Natural Resources and
Fisheries (Semarnap) in
accordance with NAAEC.*

Article 2 – General Commitments

2.1(b) Environmental Emergency Preparedness Measures

During the period covered by the report, 44 emergencies were recorded throughout the country, of which 42 were responded to. The consolidation of the National Emergency Response System for Natural Resources (*Sistema Nacional para la Atención a Contingencias en los Recursos Naturales*) during this period was essential to the increasingly efficient and timely coordination of response to this type of event.

Within this system, state scientific/technical committees were formed in each case for response to these events. The most affected states were Sinaloa, with 9 events, and Nayarit, with 5.

Of the total emergencies reported in the country, 61 percent affected the marine ecosystem; 34 percent affected other aquatic ecosystems, and five percent

affected terrestrial ecosystems. Anthropogenic phenomena caused 21 percent of the emergencies addressed while 19 percent were of natural origin. For the remaining 60 percent, the causes are still being investigated.

The most common types of emergencies involving natural phenomena were isolated marine mammal mortality along the beaches of Baja California, Sinaloa, Nayarit and Sonora, as well as the mass mortality of 220 sea lions (*Zalophus californianus*) in Sonora. In the latter case, thanks to research conducted by the Multidisciplinary Emergency Response Committee, an epizootic viral pneumonia associated with a bacterial infection was detected for the first time in Mexico and in sea lions.

There were various anthropogenic cause of emergencies, most notably spills of hydrocarbons and toxic substances. In the cases where those responsible for the emergencies were identified, the relevant administrative procedures were instituted. The most affected taxonomic groups were fish (40 percent) and marine mammals (37 percent).

A sample digester was donated to the toxicology laboratory at UNAM's Faculty of Veterinary Medicine and Animal Science within the coordination and cooperation scheme established between the environmental authority and various research centers; this was made possible by funding from the Natural Resources Trust Fund (*Fideicomiso para la Protección de los Recursos Naturales*) established with the Banco Nacional de México. The result was to reinforce the analysis capacity necessary to determine the causes of emergencies affecting wildlife. Likewise, the mechanisms supporting the Northwest Biological Research Center were defined with a view to implementing a program to monitor the freshwater, marine and coastal environments of the Northern Gulf of California region for the presence of biotoxins.

In the last year, five environmental emergencies occurred in the Mexico City Metropolitan Area. A total of 1,118 inspection visits were carried out on these occasions, of which 1,107 found full compliance with the companies' commitments and 11 found instances of reasonable doubt. In the latter cases, the companies were subjected to an in-depth review process, whereby the irregularities were confirmed, and the corresponding sanctions were applied.

In this period, 494 environmental emergencies caused by the management of hazardous chemicals were reported for the whole country. Response to 456 of these events involved ordering action to repair the damage, with monitoring of subsequent compliance. In the remaining 38 cases, no monitoring was ordered since there was no environmental damage.

The 494 reported emergencies break down as follows: 397 spills, 35 leaks, 13 fires, 9 explosions and 2 miscellaneous. The circumstances in which the events occurred involved the transportation of substances in 386 cases, while 65 occurred at industrial storage sites and 5 at other types of sites, such as landfills and sewer systems.

Further to the emergency response operations, 1,004 follow-up actions were ordered. These may be classified as follows: 268 environmental site rehabilitations, 371 safety measures, 51 accident investigations, 264 environmental damage assessments, 21 risk studies, 27 accident prevention programs and 2 cases of fines imposed.

During the period covered by the report, compliance with the measures ordered was noted in 180 cases, while the remaining 314 were in process of implementation under strict supervision.

Capacity building continued for the Environmental Emergency Response Resource Center (*Centro de Orientación para la Atención de Emergencias Ambientales*), which provides specialized guidance and consulting services for environmental emergency response with the management of chemicals.

For the prevention, detection and control of forest fires, the Ministry of the Environment, Natural Resources and Fisheries (*Secretaría de Medio Ambiente, Recursos Naturales y Pesca—Semarnap*) implemented

the National Forest Fire Prevention Program (*Programa Nacional de Protección contra Incendios Forestales*), including strategies such as:

- Reinforcing physical prevention measures and increased publicity.
- Organizing forest fire prevention and control by critical region and zone, with assignment of specific resources.
- Defining and applying a prioritization scheme for forest fire response based on the following criteria: biodiversity, protected area status and risk of large-scale fires.
- Improving institutional coordination with state and municipal governments.
- Participation of the National Forest Council, a multi-sector civil society organization, in the development, design and implementation of the program.
- Heightened supervision to ensure that forestry services meet the obligation to prevent and combat forest fires.
- Reorganization of forestry services by region to increase fire response capability.
- Surveillance and enforcement of sanctions against persons who cause forest fires.
- Incorporation of new weather prediction and remote sensing systems.
- Heightened international cooperation.

Based on this program, the following substantive actions on forest fire prevention were carried out, among others.

Prevention

There were 76 public launch ceremonies for the forest fire prevention campaign, with the participation of the three levels of government, forestry operators, community organizations and the general public; publicity was provided by distribution of 9,404,784 copies of pamphlets and 335,074 radio and television spots; 1,164 training courses were given; fire prevention outreach was done in 4,281 communities; 2,839 voluntary groups were formed; controlled burning was effected over 87,908 hectares to eliminate combustible material and 12,773 kilometers of fire breaks were built.

Detection

There were 268 forest fire control and reporting centers in operation and 122 fire towers; 52,421 ground trips and 10,750 reconnaissance flights were conducted with the use of 59 Semarnap and Ministry of National Defense (*Secretaría de la Defensa Nacional—Sedena*) airplanes. In addition, a red alert system was in effect for satellite-based forecasting and detection of forest fires, with the cooperation of the Universidad de Colima, the National Commission for Knowledge and Use of Biodiversity (*Comisión Nacional para el Conocimiento y Uso de la Biodiversidad*) and Natural Resources Canada.

Protection and Control

Up to 12 August 1999, 7,918 forest fires affecting an area of 228,773 ha were combated, for an average affected area per fire of 28.8 ha. These figures represented increases of nine percent, 20.8 percent and 12.8 percent, respectively, over the annual averages for 1992–1997. Of the total affected area, 82.45 percent (188,632 ha) corresponded to pasture, shrubs and scrubland and 17.55 percent (40,140 ha) to forested areas.

Participating in these actions were 1,221 forest fire prevention brigades reporting to Semarnap and other bodies. A total of 310,848 person/days were devoted to this work, involving members of Semarnap, Sedena, state governments, volunteers and others, and 49 helicopters were deployed in support of firefighting activities.

Operational capacity has been improved thanks to the support of countries like Canada, the United States and Spain, primarily in the form of technical exchange programs and specialized training.

Rehabilitation of Fire-affected Areas

The fires of 1998 affected approximately 850,000 ha of forested land, including 85 sites with an approximate total area of 188,000 ha classified as high-risk due to land use changes and loss of biodiversity. To aid their recovery, these were declared environmental rehabilitation zones and a rehabilitation program was devised for each.

The activities carried out in the declared areas were: reforestation of 6,442 ha with planting of 11.5 million trees; soil and water conservation works on 290 ha;

induced natural regeneration on 3,304 ha; establishment of fire breaks on 690 km and fencing on 1,742 ha. As well, 21,256 of the 82,450 ha affected by small-scale fires were reforested. These actions entailed the planting of 46.3 million trees on approximately 28,000 ha in anticipation of the recovery of the disturbed areas.

To date, 85 rehabilitation programs have been implemented for an equal number of sites. Protection and maintenance actions for plantings done in 1998 in the affected areas were coordinated with the owners of 1,706 lots in 28 states, and 2,736 ha were reforested with a total of 4,229,137 trees.

Response to Weather Emergencies

The period was characterized by various extreme weather phenomena: intense drought affecting the northern states primarily, and heavy rainfall recorded in the central and southeastern parts of the country. Among the states affected by the drought were Aguascalientes, Campeche, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Jalisco, Michoacán, Morelos, México, Nuevo León, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sinaloa, Sonora and Zacatecas. Steps were taken to repair irrigation infrastructure damaged by heavy rainfall in the states of Chiapas, Guanajuato, Hidalgo, México, Morelos, Puebla and Sinaloa.

In order to prevent the adverse consequences of extreme weather events, a weather alert system was officially delivered to the municipal government of Acapulco, Guerrero and evacuation drills were held for residents living on high-risk sites. The system was also delivered to the municipal governments of Tijuana (Baja California) and Tapachula (Chiapas).

Weather emergency response assistance was provided for the prevention of waterborne gastrointestinal diseases, with placement of 440 water pumps at 305 localities in 31 municipalities of Chiapas, benefiting 513,921 residents, and 141 pumps at 130 localities in 24 municipalities of the state of México, benefiting 322,116 residents.

2.1(c) Education in Environmental Matters, including Environmental Law

Environmental education and training play a fundamental role in the transition to sustainable development. Environmental education, in both its formal and informal manifestations, is an instrument for inducing a transformation in the collective consciousness. It helps to involve the population more effectively in environmental conservation and sustainable natural resource management.

The primary actions taken in the field of education and training during the period of this report are discussed below.

In coordination with the Instituto Tecnológico de Estudios Superiores de Monterrey, a national alternative technologies competition was held with a view to recognizing junior college-level students who carry out projects on environmental conservation and improvement technologies.

In 1999, an ecological merit competition was held, with awards conferred for the academic, business and civic sectors. As well, a national curriculum contest was held, with categories for school-based and informal educational materials. This was organized jointly

with the Fundación SNTE para la Cultura del Maestro Mexicano, an institute of the National Teachers' Union (*Sindicato Nacional de Trabajadores de la Educación*).

Communication among environmental educators is being encouraged, with support for regional and state conferences and training workshops. Among these activities was a networking meeting for environmental educators in the central region of Mexico; the Third National Conference of Environmental Educators' Networks, and the Sixth Southeast Regional Conference of Environmental Educators. These forums represented opportunities to design programs, assess progress and establish directions for future environmental education work. Likewise, [representatives from] Semarnap participated in the First Conference of Environmental Educators of Puebla and at the meeting of the Western network. Two environmental educator training courses were held in Cuernavaca, Morelos to design a curriculum proposal for the Escuela Nacional de Educación Ambiental Popular, with the participation of representatives of nongovernmental organizations, the Biological Research Center of the Universidad del Estado de Morelos, UNAM's Regional Multidisciplinary Research Center and a research group from McGill University (Montreal, Québec, Canada).

A symposium on environmental education for sustainable consumption was held with the Federal Office of Consumer Protection (*Procuraduría Federal del Consumidor*). Its purpose was to exchange information on sustainable consumption education projects being carried out by various institutions, as well as to develop coordinated projects and activities. Semarnap also participated with a country report at

the Workshop on Education and Learning for Sustainable Consumption organized by the Organization for Economic Cooperation and Development.

Various environmental education documents and audiovisuals were produced, including two volumes for young people published in collaboration with the Mexican Society for Popular Science and Technology (*Sociedad Mexicana para la Divulgación de la Ciencia y la Técnica*).

This year saw the launch of a radio series on consumption and environment titled “¿Y eso qué tiene que ver?” (What’s that got to do with it?), produced in coordination with Radio UNAM. Forty-five television spots on various aspects of consumption, with a special emphasis on water, were broadcast over the Edusat System at 21,000 educational institutions under the Ministry of Education (*Secretaría de Educación Pública*—SEP).

Two issues of the international journal *Tópicos en Educación Ambiental* were published in collaboration with the University Environment Program and the Institute of Ecology of UNAM. The journal has an editorial committee made up of specialists of 24 countries, and reports important progress and debate in this field.

In environmental education, there are attempts to incorporate the environmental and sustainable development dimension into primary school textbooks, to provide professional development opportunities for teachers and to produce teacher’s guides. The following are the principal activities:

- The SEP was supported in producing a sixth-grade natural science textbook and, in conjunction with the Basic Education and Teacher Training Branch (*Subsecretaría de Educación Básica y Normal*), a secondary school teacher’s guide to environmental education was produced for use in the ninth-grade environmental education course.
- With the government of the Federal District and the Mexican Institute of Renewable Natural Resources (*Instituto Mexicano de Recursos Naturales Renovables*), a guide to thematic environmental education excursions in Mexico City was published. This is a valuable aid to schools in the Federal District, enabling them to take advantage of existing environmental education facilities.
- Semarnap participated in the First Environmental Education Conference, organized by the SEP and the Environment Department of Coahuila. A discussion of educational experiences was held, and work was begun on establishing the state’s environmental educators’ network.

- In conjunction with the SEP, the Universidad Autónoma de Aguascalientes and the government of the State of Aguascalientes, a national environmental education forum was held. Support for this project was received from UNESCO, UNEP, UNDP, the World Conservation Union (IUCN), UNICEF and the Frederick Ebert Foundation.
- The First Children's Environmental Conference was held in coordination with UNICEF, UNDP, UNEP and the Environment Department of the Federal District. It was attended by more than 200 children aged 7 to 11 from different educational institutions in the Federal District, representatives of street kids groups and children with disabilities. They expressed their concerns about environmental degradation and the need to implement environmental education inclusive of all citizens.
- The GLOBE program was instituted at El Papalote Children's Museum. It is a permanent activity center where children attending the museum can make measurements, send data and engage in environmental activities to test their understanding and knowledge of the earth.
- Meetings were held in connection with a continuing education program for rural communities organized by Asesoría Técnica a Comunidades Oaxaqueñas, A.C. Thirty instructors from six communities were trained in methodologies for productive activities applicable to the region.
- As part of the GLOBE program, Semarnap participated in an international training seminar held at the Rosenstiel School of Marine and Atmospheric Science, University of Miami, Florida, and the third and fourth teacher training workshops were given.
- With a view to promoting interdisciplinary discussion on environmental priorities in the transition to sustainable development, the Second National Meeting of Post-secondary Environmental Education Curriculum Coordinators was held; 15 coordinators attended from an equal number of institutions.
- Under the auspices of UNEP's Environmental Training Network for Latin America and the Caribbean, Semarnap participated in the first meeting of government-designated experts to develop a regional environmental education and training project for 2000–2001. Semarnap also attended the seminar titled "Learning to Understand Environmental Complexity" held at UNAM's Multi-disciplinary Research Center, and the environmental education conference held in conjunction with the Second International Convention on Environment and Development in Havana, Cuba.
- To further environmental training at educational institutions, a course titled "Legal Framework for Environmental Education" was organized in coordination with the Office of the Federal Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente*—Profepa). A diploma program

in environmental law was organized in coordination with the Universidad Cuauhtémoc and the Universidad Autónoma de Aguascalientes.

- A diploma program in adult education techniques was developed in coordination with the Universidad Bonaterra and the National Adult Education Institute in Aguascalientes. An environmental education specialization and a clean production workshop were developed with the Universidad Autónoma de Coahuila.
- Semarnap participated in the Thirteenth National Meeting of Rectors of the National Association of Post-Secondary Institutions (*Asociación Nacional de Universidades e Instituciones de Educación Superior—ANUIES*) of the Council of Public Universities and Related Institutions (*Consejo de Universidades Públicas e Instituciones Afines*). There, a draft action plan for sustainable development in post-secondary institutions was presented. The purpose of this plan is to elicit the development of proposals by universities aiming to strengthen sustainable development work.
- Semarnap participated in the First International Student Environmental Forum, with the Cuban Center for Environmental Information and Education; the Fourth International Conference on Natural Resource Management and the Fourth Ibero-American Environmental Education Symposium, in Osorno, Chile, sponsored by the National Environment Commission

of Chile, the Center for Agrarian and Environmental Studies, the Universidad Católica de Temuco, the Agencia de Cooperación Española and the IUCN; a course and conference on environmental education at the invitation of the National Environment Commission and the Universidad de San Carlos, Chile, the Universidad del Valle de Guatemala and the Centro Universitario del Petén; the International Primary School Education Conference, organized by the Universidad de Costa Rica; the Third Environmental Education Days, organized by the government of Navarra and the Ministry of the Environment of Spain; and the First Meeting of Universities on Progress and Expectations in Environmental Studies in Buenos Aires, Argentina, at the invitation of the Argentine Ministry of Natural Resources and Sustainable Development and the Organización de Estados Iberoamericanos; a meeting to implement an Ibero-American environmental management program for sustainable development at the Universidad Politécnica de Madrid, and an international environmental education seminar held by the British Council at King's College, London.

- By interinstitutional agreement between Semarnap, the Ministry of Agriculture, Animal Husbandry and Rural Development (*Secretaría de Agricultura, Ganadería y Desarrollo Rural*), the Ministry of Social Development (*Secretaría de Desarrollo Social—Sedesol*) and the Ministry of Communications and Transportation (*Secretaría de Comunicaciones y Transportes—SCT*), a sustainable agriculture and transition

program was implemented. Its goal is to decrease the incidence of forest fires and gradually phase out the use of fire as an agriculture practice, as well as to improve the conditions of production and standard of living of rural producers.

- There is ongoing participation in various committees organized by the National Labour Standards and Certification Council (*Consejo de Normalización y Certificación de Competencia Laboral*) for development of labour standards for the forestry, fisheries and agricultural sectors, incorporating principles of sustainable development.

2.1(d) Furtherance of Scientific Research and Technology Development in respect of Environmental Matters

In 1996, Profepa instituted a research program on environmental enforcement and compliance to promote research in this area. It is administered under a cooperation agreement with the National Council on Science and Technology (*Consejo Nacional de Ciencia y Tecnología—Conacyt*).

The mission of this ongoing research program is to promote, develop and publicize research in support of environmental enforcement and compliance. Between June and December 1998, preliminary technical reports were filed on the ten research projects funded as a result of the first call for projects in 1997. In August 1999, four of these projects concluded. In addition, the results of the evaluation process for the second call for projects were published. Five

new projects were funded, specifically in the areas of environmental law and natural resources, on the one hand, and environmental law and human health, on the other. These projects are now underway.

The following actions were taken to promote environmental education research at the post-secondary level:

- Assistance with curriculum analysis and improvement for the Master's Program in Environmental Education offered by the Universidad Pedagógica Nacional-Mexicali. Similarly, the Master's programs of the Universidad de Guadalajara and the Universidad Pedagógica Nacional-Azcapotzalco were analyzed and, in coordination with UNAM's Centro de Estudios sobre la Universidad (CESU), a study was undertaken on advances in environmental education research in Mexico.
- With ANUIES, UNAM and the Universidad Veracruzana, the First National Conference on Environmental Education Research was held.
- The diploma program on regional development in southeastern Mexico was coordinated with the Universidad de Quintana Roo, the Universidad Autónoma de Yucatán and the Universidad Juárez Autónoma de Tabasco.

The academic coordinators of the diploma program titled "Higher Education and the Challenges of Sustainable Development" met to evaluate the

program's results and identify avenues for joint exploration between the post-secondary institutions and Semarnap.

2.1(e) Environmental Impact Assessment

In September 1999, the draft Mexican official standards on optical fiber installation and construction of natural gas distribution lines were published. Information is now being gathered to consolidate various technical concepts and provisions in anticipation of the publication of a standard on maintenance dredging of port facilities.

Various meetings were held for purposes of project monitoring and technical and legal clarifications relating to the environmental impact assessment process. The meetings were held with *Petróleos Mexicanos* (Pemex), the Federal Electricity Commission (*Comisión Federal de Electricidad—CFE*), the National Water Commission (*Comisión Nacional del Agua—CNA*), the Ministry of Trade and Industrial Development (*Secretaría de Comercio y Fomento Industrial—Secofi*), SCT, the Ministry of Tourism (*Secretaría de Turismo*), the National Tourism Development Fund (*Fondo Nacional de Fomento al Turismo*), Sedesol, the Liquid Petroleum Gas Distributors' Association (*Cámara de Distribuidores de Gas LP*), the National Chemical Industry Association (*Asociación Nacional de la Industria Química*), the Energy Regulatory Commission (*Comisión Reguladora de Energía*) and the National Fisheries Industry Association (*Cámara Nacional de la Industria Pesquera*), among the most representative.

The executive summaries of the projects submitted to the environmental impact assessment procedure from 1997 to July 1999 were published on the website of the National Institute of Ecology (*Instituto Nacional de Ecología—INE*).

To reduce the backlog of environmental impact assessment procedures, the following organizational, legal and technical actions were taken:

- Agreements with the Semarnap areas intervening in this process to expedite their reporting procedures.
- Administrative review and improvement of decision forms.
- Formation of five regional assessment groups.
- Professional training and development for technical personnel.

As a result of these measures, the backlog was cut by 21 percent during the first half of 1999. In that year, a total of 575 project files were submitted to the environmental impact assessment procedure, and 154 of these were closed.

2.1(f) Promotion of Economic Instruments for the Efficient Achievement of Environmental Goals

Biodiversity

In the period covered by this report, a total of 1,194 new wildlife conservation, management and sustainable use units (UMA) were formed. During the year, the national system of these units comprised 2,679 UMA which were involved in both intensive and extensive management over an area of 12.3 million ha, surpassing the original goals for enhancing the productive diversification of rural areas. In particular, the UMAs under intensive management made use of more than 700 wildlife species. Both UMA types install

and operate greenhouses, zoos and botanical gardens as well as employing other conservation and management techniques for species and their habitats.

Considerable progress was achieved on projects to regenerate the natural populations of certain priority species. Based on an agreement to create a National Advisory Committee on Priority Species Regeneration (Official Gazette of the Federation (*Diario Oficial de la Federación*) of 23 June 1999), technical subcommittees will be formed to coordinate and carry out the work for each species.

The priority species in question are:

- crocodiles (three species)
- sea turtles (seven species)
- West Indian manatee (*Trichechus manatus*)
- gray whale (*Eschrichtius robustus*)
- pronghorn (*Antilocapra americana*)
- black bear (*Ursus americanus*)
- bighorn sheep (*Ovis canadensis*)
- Mexican wolf (*Canis lupus baileyi*)
- palms (various species)
- cycads (various species)
- golden eagle (*Aquila chrysaetos*)
- psittacids (parrots and parakeets)

The committees' mandates are to ascertain the demographic status of the priority species in the region; define management scenarios for the priority species or groups, and come to agreement with the relevant stakeholders on the possible sustainable uses of the resource and their promotion (e.g., extraction, direct or indirect, consumption).

The agreements will include regulation of activities carried out within the species' habitat that may have an impact on them, such as ecotourism, wildlife observation, camping and photography, as well as publicity for projects concerning the recovery and conservation of the priority species.

To consolidate the implementation of the UMA, the residents establish and finance their own participatory monitoring, prevention, rehabilitation and sustainable use schemes for the resources. In this way, the resource becomes a sustainable generator of direct benefits for the residents, producers and users, instead of becoming depleted through the unsustainable production of environmental goods and services. There is also a positive impact on the habitats and ecosystems of the wildlife species in question.

Forestry

The Semarnap strategy for the forestry sector consists of several components. The first centers around actions on native forests, largely located on agrarian *ejidos* and communities. To promote their conservation and use, a forestry development plan directed at the civic sector, Prodefor, was established. For the second component, the current administration implemented a forestry plantation development program for both pulp and timber, called Prodeplan. This is the first time in Mexico that such plantations have been established within a framework involving strict environmental controls and equitable social arrangements. These programs are coordinated with related conservation and rehabilitation programs—particularly Pronare, the national reforestation program.

The purpose of Prodefor is to facilitate access to the technical knowledge necessary for communities to achieve efficient structuring of their forestry production lines, as well as to contribute to forest conservation and regeneration initiatives. It is not an assistance or compensation program. It is inclusive of all forest-dwelling small producers, incorporating vast, highly disadvantaged areas of the country into the productive process. Its objectives are to make technical improvements to the management and conservation of forest resources; to promote modernization of the extraction and transformation of forest products; to increase productivity and competitiveness; to improve the socioeconomic status of rural forested areas, and to increase the participation of the forestry sector in the local and national economies.

With the subsidies authorized in 1998, 1.4 million ha were incorporated into sustainable timbering operations and 305,000 more into non-timber operations. As a result, production is expected to increase by 350,000 cubic meters of raw logs and 250 tons of non-timber products.

For 1999, the Federation authorized a budget of P\$130.1 million for this item. The rules of operation, determined by a consensus of the cooperative producers' organizations, were published in the Official Gazette of the Federation on 28 June 1999, subject to the authorization of the Treasury Board (*Secretaría de Hacienda y Crédito Público*—SHCP). For that fiscal year, the possibility existed that Semarnap would assign resources directly to regions of special interest. These regions were determined based on their potential for a more diversified use of biological organisms and their susceptibility to degradation by natural causes and human activities. In this way, the program will achieve national coverage, thus strengthening and abetting the efforts of the Ministry in specific areas.

Soil is a vital resource in agricultural productivity and ecosystem health, and its degradation has a major impact on production; however, this problem is complicated by the many factors involved. To counteract this problem, during the period covered by this report, various prevention and control measures were taken, focusing on the structural causes. The incorporation of technological alternatives into agricultural and forestry practices was promoted, leading to improved soil fertility and more sustainable use.

Within the Interministerial Program for Sustainable Agriculture, the following actions were taken:

Arid and Semi-Arid Zones

Crop substitution on 2,000 ha by promoting the sustainable use of non-timber species of ecological, economic and/or social importance (candelilla, lechuguilla (*Agave* sp.), manioc, mesquite, oregano, linaloe and jojoba, among others); pastureland improvement with extensive livestock grazing and establishment of forage crops and shrubs; conversion of marginally productive areas by inducing changes in productive systems so as to improve agricultural subsistence production and raise rural incomes.

Temperate Zones

Agroforestry on 5,000 ha involving polycultures, green manures, planting of winter vetch, fodder trees and shrubs, soil renewal and management in coffee plantations and orchards, and other practices.

Tropical Zones

In the context of the extreme environmental emergency caused by forest fires affecting the southeastern part of the country in 1998, a strong emphasis was placed on sustainable agricultural practices in affected areas. Major coordination efforts between and within sectors were deployed to promote crop substitution

and raise agricultural and forestry productivity. The goal is to diminish processes that jeopardize natural resources and the quality of life of rural populations.

In the third quarter of that year, funds were obtained from Pronare, the regional sustainable development programs (Proders) and state offices in Campeche, Chiapas, Oaxaca, Veracruz and Yucatán to establish green manure seed cultivation on 548 ha, yielding 395.75 tons of seed and making possible an extension of the program to 18,000 ha during 1999. Two workshops were held in the state of Oaxaca, one to exchange experiences with green manures in tropical areas, and the other for extension and training in the use of these fertilizers.

Sedentarization of slash-and-burn agricultural practices (*milpa*) was achieved on 13,548 ha of degraded area using green manures to restore the vegetation cover.

Intensified livestock production was practised on 10,000 ha through mixed forestry/grazing management regimes, pasture improvement, shade tree and hedgerow planting and drainage control.

Enhancement of fallowed areas on 20,000 ha with species of commercial and firewood value.

Under the “Environmental Projects” component of the ongoing Land Management Program (*Programa de Manejo de Tierras—PMT*), producers in marginal areas were encouraged to apply sustainable practices on their land. A total of 2,352 projects were developed on 17,594 ha, 64 percent more than in the previous period, with support from the rural assistance program known as Procampo, Alianza para

el Campo, the Temporary Employment Program (*Programa de Empleo Temporal*), the Fideicomiso de Riesgos Compartidos (Firco) or federal agricultural subsidy program, Conacyt and Pronare. In addition, 44 training courses in PMT development were given to 1,360 technicians.

To provide a reliable technical basis for the development of integrated use, improvement, and sustainability programs for natural resources, eight soil maps at a scale of 1:1 million were updated and printed. These maps illustrate the status of soil conditions and make for better planning and action for the protection, conservation, rehabilitation and sustainable use of soils.

Fisheries

The Fishing Fleet Modernization Program (*Programa de Modernización de la Flota Pesquera*) reviewed credit applications for the modernization of 148 boats. A total of 134 boats were refurbished while 14 were replaced. A total of P\$67 million was allocated.

The current status of the fisheries sector and the modernization program was presented at a meeting with *Asociación de Banqueros de México, A.C.*, the Mexican bankers’ association. Potential strategies were devised to further the promotion of activities in support of fisheries development and to maintain financial assistance programs.

The financial support provided by the development funds reached approximately P\$ 1,096.4 million, endowing the organizations with a degree of durable financial health, in keeping with the technical, economic and social development status of the industry.

In terms of private sector support, Ocean Garden, Inc. provided financial support to the producers by paying preseason advances for production or surplus of US\$49.1 million, fresh funds surpassing those of the previous year by 9.8 percent.

Water

During this period, as a result of the CNA's regularization programs, 156,843 concessions were registered in the Public Registry of Water Rights (*Registro Público de Derechos de Agua*—Repda), surpassing the goal of 63,977 titles by 245 percent.

During this period, a GIS was developed to display the concession information in Repda by national, regional, state or municipal zone on a georeferenced digital map.

P\$4,829.5 million was collected in the period from September 1998 to August 1999, representing 111.9 percent of the target (4,314.2 million) for the period.

2.2 Implementation of Council Recommendations Developed under Article 10(5)(b)

The infrastructure available for hazardous waste management increased by 38 percent over the previous period, with the number of authorized companies rising from 356 to 572. Of the 151 new companies, 18 percent were authorized for recycling, 49 percent for collection and transportation (including biological/infectious waste), 11 percent for hazardous waste storage, 11 percent for treatment, nine percent for incineration and two percent for companies involved in miscellaneous types of hazardous waste treatment.

As a result of these actions, 27 percent of the total estimated hazardous waste generation figure is now under sound management, versus a figure of 12 percent at the beginning of the administration's term.

Five zones in the country's northern states and one in the central states were identified as likely candidates for construction of integrated industrial waste management systems or centers. Technical feasibility work was performed for these sites.

The number of companies registered as waste generators in 16 states (Campeche, Colima, Chiapas, Durango, Guanajuato, Guerrero, Hidalgo, Michoacán, Morelos, Nayarit, Oaxaca, Puebla, San Luis Potosí, Sinaloa, Sonora and Tlaxcala) rose by 50 percent.

A meeting was held in San Luis Potosí regarding the public disclosure of information on biological/infectious waste generation and the locations of management infrastructure for this waste, as well as publicity for the proposed amendments to NOM-087-ECOL-1995; representatives from the states of Tamaulipas, Nuevo León, Coahuila, Zacatecas, Aguascalientes, Veracruz, Querétaro, Guanajuato and Jalisco attended. In addition, three technical seminars were held on biological/infectious waste, in coordination with the Ministry of Health (*Secretaría de Salud*) and the service companies. To enlighten public opinion around the management of this type of waste, the country's main print media were invited to participate in a seminar on the topic.

Regulatory improvement actions showed progress, with a review of the requirements regarding management procedures for hazardous waste and high-risk activities, which will be incorporated into the Federal Registry of Business Procedures (*Registro Federal*

de Trámites Empresariales). The relevant procedure manuals and public service manuals were completed. Meanwhile, new manifest and report forms were designed and are now subject to the approval of Secofi's Economic Deregulation Unit (*Unidad de Desregulación Económica*) before being published in the Official Gazette of the Federation.

A performance evaluation of biological/infectious waste management companies is now underway. Up to June 1999, 86 authorizations were granted for management of this waste, and eight incineration companies are being evaluated for renewal of their authorizations.

Five technical coordination groups (NTC) were formed as part of the Mexican Environmental Waste Management System (*Red Mexicana de Manejo Ambiental de Residuos*) in Sonora, Coahuila, Querétaro, San Luis Potosí and México, plus one municipal NTC in Salamanca, Guanajuato. The formation of additional NTCs was initiated in Chihuahua, Nuevo León, Zacatecas, Puebla, Tabasco and Tamaulipas.

The preliminaries were undertaken for the development of an integrated waste minimization and management program as a model for the implementation of the state programs in Guanajuato, Sonora, Coahuila, Querétaro and San Luis Potosí. The programs are formulated in each state by the NTCs, and various interested stakeholders participate.

In August 1999, an initial forum was held on harmonization and implementation of various manuals and guides on hazardous waste prevention and minimization. There exists a national inventory of pollution prevention and waste management manuals and guides, as well as a preliminary version of a handbook on good management practices for biological/infectious waste.

Two regional meetings were held in Monterrey and Guadalajara with representatives of the maquiladora industry to discuss the procedure for the return of hazardous waste to its country of origin.

The revision of NOM-052-ECOL-1993 continued. This standard establishes the characteristics and a listing of hazardous wastes, as well as toxicity ranges in which they are considered hazardous to the environment. Also, draft standard NOM-133-ECOL-1998 governing the management of PCBs was approved in subcommittee, and will now be presented to the National Advisory Committee on Environmental Protection Standards (*Comité Consultivo Nacional de Normalización para la Protección Ambiental*).

Progress continued on the publication of draft standard NOM-124-ECOL-1996 governing service stations. In addition, the regulatory impact statements (a document specifying the purpose and reasoning behind a standard) for the draft standards on PCBs and biological/hazardous waste were finalized.

March 1999 saw the publication of the standard PROY-NOM-041-ECOL-1999, establishing the maximum contaminant limits on gas emissions from the exhaust systems of motor vehicles using gasoline as fuel, and draft standard PROY-NOM-042-ECOL-1999, establishing the maximum contaminant limits for in-plant emissions of unburned hydrocarbons, carbon monoxide, nitrogen oxides and suspended particles from the exhaust systems of new motor vehicles with gross vehicle weight not exceeding 3,856 kg, as well as evaporative hydrocarbons from fuel systems using gasoline, LPG, natural gas or diesel.

2.3 Prohibition on Pesticide and Toxic Substance Exports

Mexico, as a party to the Montreal Protocol on Substances that deplete the Ozone Layer, was the first country to officially present a national program for the elimination of ozone-depleting substances, whereby it committed to establishing accelerated reduction goals up to the year 2000—different from those established for developing countries.

The country has outstanding achievements in the reduction of CFC consumption: from 14,500 tons in 1989 to 2,500 in 1999, or more than 80 percent of national consumption eliminated. This achievement

is primarily due to the attainment of the goals of the national program and the verification of compliance with draft standard NOM-EM-125-ECOL-1998 (whose extension was published in the Official Gazette of the Federation on 23 March 1999). This standard establishes environmental protection specifications and a ban on CFCs in the manufacture and importation of home freezers and refrigerator-freezers, water coolers, potable water coolers/heaters with or without refrigerated compartment, commercial refrigerators and room air conditioners.

Also during 1999, Profepa participated with various sectors of society in developing a new draft standard contemplating a much broader restriction on the import and use of controlled substances.

The following table shows the decreasing national consumption trend from 1989, when the Montreal Protocol was adopted, to 1999.

Of the 12,000 tons eliminated, 8,700 corresponded to the Mexican government’s commitment to support domestic industry. In addition, conversion of facilities for new aerosol and domestic refrigeration production reached 100 percent, while for commercial refrigeration, the figure was 90 percent.

Decreases in Consumption (tons/years)

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
14,538	19,420	14,156	9,722	10,402	10,278	4,876	4,927	4,242	3,565	2,500

Source: INE, Semarnap

Article 3 – Levels of Protection

Revisions of various legal provisions continued in 1999, in particular, Article 4 of the Constitution, published in the Official Gazette of the Federation on 28 June 1999. The revision enshrines the right to a sound environment in the Constitution. It provides the basis of a comprehensive legal framework for the effective stewardship of the environment and natural resources.

On 29 September 1999, the revised Fisheries Law regulation was published in the Official Gazette of the Federation. The new wording gives the authorities more power to verify the legal origin of fish products. Furthermore, the regulatory framework for this activity is reinforced by incorporating guidelines to guarantee the punctuality and transparency of the authority's actions vis-à-vis citizens. In this spirit, it incorporates criteria for rational fisheries use; it defines the requirements for the granting of concessions, permits and authorizations and the time periods in which the authority must process an application; and it specifically regulates the granting of aquaculture concessions, permits and authorizations. One notable change is to eliminate the discretionality of the fisheries authority's decisions on applications for concessions, permits and authorizations under the Fisheries Law (*Ley de Pesca*).

Analysis and revision of the regulations to the General Law on Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*—LGEEPA) continued in the areas of air, environmental impact, environmental auditing, hazardous materials and waste, high-risk activities and protected natural areas.

In May 1999, Semarnap and the Congress of the Union devised a strategy for joint action on a wildlife protection law (a thematic index for the legislative initiative was approved).

Progress was made on the development of draft LGEEPA regulations in the areas of environmental impact assessment, protected natural areas, high-risk activities and hazardous materials and waste.

Further to the LGEEPA reforms of December 1996, state congresses were advised on the updating and adaptation of their environmental legal frameworks. In particular, the draft environmental laws for Oaxaca, Puebla, Jalisco, Aguascalientes and the Federal District were revised, as were the air quality regulations of Tabasco and the environmental protection regulation for the municipality of Monterrey, Nuevo León. The San Luis Potosí, Morelos and Yucatán laws were revised and published on 15, 22 and 23 December 1999, respectively.

Article 4 – Publication

Particular emphasis was laid on the joint responsibility of civil society to participate in the management of environmental affairs. Forums for participation were created, bringing together federal government entities and offices, local governments, academic and research institutions and private and civic sector organizations. These participatory bodies were enriched by the official participation of representatives of the state legislatures.

With a view to furthering, expanding and consolidating opportunities for civic participation, the sustainable development advisory councils, formerly coordinated solely by Semarnap, changed to a joint civil-society coordinated structure (with the appointment of an advisor as Technical Secretary of the National Advisory Council on Sustainable Development (*Consejo Consultivo Nacional para el Desarrollo Sustentable*)) and the Technical Secretary of all the councils was included in the Strengthening Civil Society program of UNDP-Semarnap.

The evaluation of the collective and individual performance of the members of the sustainable development advisory councils was completed, and on this basis, 50 percent of the representatives from the civic, private, academic and non-governmental sectors were unseated. Public calls for candidates were issued in each region, and each sector elected its own representatives. In this way, the councils' autonomy was enhanced, making it possible to decentralize their operations.

The five sustainable development advisory councils included, as ongoing items on their agenda, topics such as environmental education and pollution prevention and control. Moreover, they take part in the implementation of the sectoral and special programs of Semarnap.

The following are some of the activities and topics discussed at the advisory councils:

- The national conference on citizen participation in environmental policy, and the launch of the publication *Una experiencia en curso: la participación social en la Semarnap* (An Ongoing Experiment: Civic Participation in Semarnap) on 4 June 1999.
- Rural and forest fires (workshops, seminars, work meetings and proposals).
- Pronare, rehabilitation and reforestation.
- Sustainable agriculture and crop substitution.
- Aquaculture and fisheries planning (workshops, seminars, working meetings and proposals).
- National consultation on a national climate action program.
- Central American meeting of the national sustainable development councils to discuss the experience of Mexico, held at the invitation of the Earth Council in order to discuss the Mexican experience with civic participation and establish the regional position for the Seventh Session of the United Nations Commission on Sustainable Development (CSD 7). The technical secretaries of the sustainable development councils of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and the Dominican Republic attended.

- Discussion began on sustainable development for the Isthmus of Tehuantepec and biosafety.
- Workshop on environmental land-use planning and linkages.
- Technical Commission on Environmental Education.
- In May 1999, the Border Environment Cooperation Commission (BECC) was evaluated, with outstanding results including more detailed definition of the operations of the BECC Advisory Council:
 - a) functions of its members;
 - b) term of advisors;
 - c) election procedures and public information;
 - d) required qualifications of Commission members.
- The mechanisms for the assessment of border environmental projects were clarified, highlighting the importance of local citizen participation in follow-up to approved projects through the formation of civic committees.

The Congress of the Union and local congresses are a conduit used by organizations and citizens to achieve various societal goals. Coordination between Semarnap and the legislative branch has ensured

that certain environmental issues are addressed. The Semarnap's Legislative Branch Liaison Unit (*Unidad de Enlace con el Poder Legislativo—UEPL*) streamlines the Ministry's access to legislators, increasing the number of actions vis-à-vis these officials in a manner that is organized and coordinated with the different areas. From January to July 1999, some 204 such actions took place.

In the context of the meetings of the regional sustainable development advisory councils, four meetings have been held with federal environmental legislators; in particular, they have been informed of the work to produce a wildlife protection bill.

Semarnap and UNDP are implementing the project titled "Strengthening Civil Society: Public Policies and Sustainable Development in Mexico." The project comprises sustainable development activities in 37 regions of the country, within a framework of cooperation with civil society organizations, advisory groups, academic institutions and government agencies at the municipal, state and federal levels. A diverse range of societal stakeholders with disparate needs, interests and points of view have thus mobilized. As well, public officials at the three levels of government have been sensitized to the need for solutions to environmental problems.

These public forums are being used as the settings for a range of regional diagnostic and planning work, training events, publicity and liaison activities between government and various stakeholders.

Article 5 – Government Enforcement Action

The Industrial Inspection Program focuses on comprehensive inspection visits, i.e., inspections with more complete coverage of the operations of the industrial and service establishments under federal jurisdiction. Implementation of this program commenced in 1998.

A set of environmental compliance indicators has been devised as a fundamental tool for ascertaining level of compliance by establishments under federal jurisdiction with their environmental obligations in areas such as hazardous waste.

During 1999, 8,671 inspection visits were conducted on establishments under federal jurisdiction, 66 of which resulted in total closing, 79 in partial closing, 6,812 finding minor violations and 1,714 finding full compliance.

The table below shows the number of inspections performed in 1998 and 1999, as well as the measures ordered by the authority as a result of the inspection visits.

As a result of the signing of various international trade agreements, the flow of products between Mexico and the rest of the world has increased. This is

Inspection Visits to Industrial Establishments

Year	Number of inspections	Total closing	Partial closing	Minor violations	Full compliance
1998	9,590	45	107	7,357	2,081
1999	8,671	66	79	6,812	1,714
Total	18,261	111	186	14,169	3,795

Source: Profepa, Office of the Deputy Attorney for Industrial Inspection (Subprocuraduría de Verificación Industrial)

Type of Action

Percentage of Visits

	1998	1999
Temporary total closing	0.47	0.76
Temporary partial closings	1.12	0.91
Minor infractions	76.71	78.56
Total compliance	21.70	19.77

Source: Profepa, Office of the Deputy Attorney for Industrial Inspection

reflected in the international trade in wildlife species, the control of which has necessitated the implementation of an official inspection program for ports, airports and borders. The program was implemented by means of an executive order establishing the classification and codification of goods whose import and export are subject to regulation by Semarnap.

The authority in charge of enforcing compliance with the relevant legal provisions has made optimal use of the human, financial and material resources it has available for phytosanitary and forestry inspection as well as the enforcement of CITES flora and fauna regulations, by locating 60 checkpoints at the international border crossings, ports and airports listed in the Customs Law (*Ley Aduanera*) that have the largest commercial traffic.

The 90 inspectors assigned to this enforcement task perform inspections of international tourist baggage and CITES authorizations and certificates for wildlife specimens, as well as sanitary inspections of forest products and subproducts. The table below summarizes the results.

The Clean Industry Strategy implemented by the Mexican government is framed within the environmental regulatory criteria of the standards that promote the use of clean or environmental control technologies. Under this program, the institutional infrastructure was created for the development and application of mandatory standards, licenses and permits, the application of environmental auditing and self-regulation agreements.

The first Clean Industry Certificates were granted in 1997. Their main objectives are: a) to protect the environment and promote the development of a corporate environmental culture; b) to distinguish companies that have, through environmental auditing and by following through on their action plans, voluntarily accepted the responsibility to protect their employees, their neighbors and the environment; and c) to inculcate in consumers the habit of purchasing products made by companies that demonstrate an acceptable record of environmental stewardship.

Number of Inspections	1996	1997	1998	1999	Total
International tourists	10,503	52,920	34,905	108,284	206,612
Forest products and subproducts	12,629	62,182	47,694	82,084	204,589
CITES authorizations and certificates	4,977	4,005	2,532	5,624	17,138
Administrative procedures at ports, airports and borders	0	0	1,163	3,678	4,841

Source: Office of Deputy Attorney for Natural Resources (Subprocuraduría de Recursos Naturales), Profepa

Thanks to the National Environmental Auditing Program, a novel voluntary compliance instrument in the area of environment affairs, some 294 environmental audits were undertaken. Sixty-six of these involved renewal of a Clean Industry Certificate while 176 were completed in various industries. Of particular importance in the quasi-governmental sector were the audits of Pemex and Aeropuertos y Servicios Auxiliares (ASA) facilities.

Since the program's inception in 1992, a total of 1,345 environmental audits have been undertaken, 1,208 of them completed and 137 still in progress. It is noteworthy that all the large quasi-governmental corporations, including Pemex, ASA, CFE and Ferrocarriles Nacionales de México, are participating in the program.

The completed audits have given rise to the signing of numerous action plans aiming to correct the deficiencies detected. These plans commit the corresponding companies to make environmental protection investments worth a total of P\$1,914.5 million, for a cumulative investment of P\$10,286.9 million since the program's inception.

The existing directory of environmental auditors was improved by implementing an approval and certification system for experts and auditors—the persons directly responsible for planning and carrying out environmental audits. The purpose of this initiative is to guarantee the quality of environmental audits, The

certification committee is composed of representatives of the associations of civil engineers, environmental engineers, mechanical/electrical engineers, chemical engineers, biologists and geologists, as well as UNAM, the Instituto Politécnico Nacional, the Universidad Autónoma Metropolitana, the Centro de Estudios del Sector Privado para el Desarrollo Sustentable and the Mexican Academy of Environmental Auditing. So far, some 140 professionals from a range of disciplines have been certified as environmental auditors.

An ongoing environmental auditor training program has the goal of providing training and professional development for the persons who perform and supervise environmental audits, as well as to disseminate and teach environmental auditing techniques. As a result, Mexico now has a corps of highly qualified specialists capable of resolving the typical problems encountered in this field; they apply various analysis tools which, it should be noted, help to minimize risks and adverse effects on people and the environment. As part of this program, thirteen courses on environmental auditing have been given to 777 professionals at the three levels of government as well as private organizations and companies.

Article 6 – Private Access to Remedies

In the modern day, societies base their development on various modes of civic participation in political and administrative processes. To instill a culture that is conducive to environmental conservation, it is important to include actions that involve the population in the defense of the environment. Civic participation in decision making and environmental policy implementation and assessment is essential in legitimizing such decisions and policies in the public mind, rendering their implementation more straightforward. With the enactment of the LGEEPA, new opportunities opened up for civic participation in environmental policymaking, the application of policy instruments and in information and monitoring activities.

Citizen petitions in particular are an important means for society and the authorities to take note of the most significant environmental problems and to devise preventive and corrective strategies and actions. By filing a citizen petition, an individual can inform the environmental authorities of facts, acts or omissions that cause or may cause ecological imbalance, environmental damage or damage to natural resources, or that violate provisions of environmental law. The purpose is to ensure that the necessary investigations are carried out, steps are taken to avert damage, and the damaged ecosystems are rehabilitated insofar as possible. It has been observed that in addition to their increasing participation in addressing environmental problems, petitioners have begun to take a greater interest in the actions of the authorities and their results.

During the period covered by this report, Profepa received 5,227 petitions from around the country, a 15 percent increase over the previous period. Of this total, 4,359 (83.4 percent) were addressed, while 868 (16.6 percent) were still being processed, for an increase of nearly 17 percent in response to citizen petitions.

It is important to note that response to petitions and complaints constitutes a core component of Profepa's inspection and enforcement programs and activities in regard to industrial and service establishments as well as to the users of the country's natural resources.

The petitions received may be classified by affected resource as follows: alleged damage to wildlife – 1,060 (20.2 percent); forest resources – 986 (18.8 percent), air pollution – 976 (18.7 percent); flora – 943 (18 percent); soil contamination – 644 (12.3 percent); water pollution – 296 (5.7 percent); fisheries – 100 (2 percent); alleged violations of provisions governing the use of the Federal Coastal Zone – 87 (1.7 percent); violations of land-use plans or environmental impact restrictions – 51 (1 percent); noise pollution – 46 (0.9 percent); environmental impact – 28 (0.5 percent); complaints about the actions of public servants – 10 (0.2 percent).

Article 7 – Procedural Guarantees

Domestic legislation offers the procedural guarantees required by Article 7 of the NAAEC. Although there were no legislative amendments in 1999 that influenced those guarantees, the 1996 LGEEPA reforms made it possible for persons who file appeals for review (*recurso de revisión*) to appear before the competent tribunals for the review of decisions of the administrative authority that initially heard the appeal.

It is currently possible for all natural and legal persons to intervene in legal actions even where they are not directly affected by an act of authority, as long as they have a general interest with regard to the act.

The administrative and legal channels available to persons in the area of environment include citizen petitions, administrative remedies, actions in nullity (*juicio de nulidad*) and direct and indirect amparo actions (*juicio de amparo*), a summary proceeding which serves to guarantee constitutional rights.

United States

Country Report on
Implementation of the
Commitments Derived
from the NAAEC

*The following report
was submitted to the
CEC Secretariat by
the US Environmental
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Article 2 – General Commitments

Article 2(1)(a) State of the Environment Reports

Turning to the Sea: America's Ocean Future. At the 1998 National Ocean Conference in Monterey, California, President Bill Clinton directed his cabinet to report back with recommendations for a comprehensive ocean policy to guide US federal efforts in the 21st century. In a report entitled *Turning to the Sea: American's Ocean Future* and presented 2 September 1999 to Vice President Al Gore, the cabinet recommended nearly 150 actions in 25 key areas to protect, restore and explore America's ocean resources. In response, the vice president announced the appointment of a new high-level Oceans Report Task Force that would oversee implementation of the cabinet's recommendations. Specifically, it would prioritize the recommendations, appoint lead agencies for implementation of key recommendations and meet quarterly to review progress. The task force will be co-chaired by the head of the Council on

Environmental Quality and the deputy national security advisor and will include high-level representatives of federal agencies with responsibility for ocean affairs.

Transboundary Waters. The US-Canada International Joint Commission (IJC) assists the United States and Canada with monitoring and reporting on the state of transboundary waters. This IJC state of the environment work is carried out under auspices of the IJC Secretariat with the assistance of many experts from the federal, provincial and state governments along the extensive border. In August 1999, the United States released its response to the IJC's 9th Biennial Report Recommendations on Great Lakes Water Quality, which is available online <<http://www.epa.gov/glnpo/glwqa/ijc9th/index.html>>.

Biological Resources. In 1999, the Department of Interior's (DOI) US Geological Survey published *The Status and Trends of the Nation's Biological Resources*, which details the first large-scale assessment of the health, status and trends of the nation's plains, animals and ecosystems. Produced with contributions from nearly 200 experts from the federal government

and from the academic and nongovernmental communities, the report synthesizes current information with a historical perspective of ecosystems across the country to measure and explain how the nation's resources are changing.

Acid Rain. In November 1999, the US Environmental Protection Agency (EPA) released its *Progress Report on the EPA Acid Rain Program* <<http://www.epa.gov/airmarkets/arp>>. The overall goal of the Acid Rain Program is to achieve significant environmental and public health benefits through reductions in emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x), the primary causes of acid rain. To achieve this goal at the lowest cost to society, the program employs both traditional and innovative market-based approaches for controlling air pollution. In addition, the program encourages energy efficiency and pollution prevention.

Article 2(1)(b) Environmental Emergency Preparedness

Toxics Release Inventory (TRI). In April 1999, EPA published the *1997 TRI Public Data Release*. The aggregate on-site and off-site releases for the more than 640 chemicals and chemical categories equaled 0.96 billion kilograms (kg). Of this total, 51.7 percent of the releases went to air, and 17.9 percent was released at off-site locations. Reporting facilities managed 8.5 billion kg in production-related waste on-site and transferred 1.5 billion kg off-site for further waste management. Production-related waste therefore totaled 10 billion kg.

Overall, the 1997 TRI data revealed ongoing reductions in the releases of chemicals reported to TRI. Between 1995 and 1997, on- and off-site releases declined by

1.5 percent or 17.6 million kg. Releases on-site declined 8.2 percent (85.2 million kg). Air releases, which were greater than the total on-site and off-site releases, declined by 15.7 percent (112.3 million kg). However, on-site releases to water and land and off-site transfers for disposal partly offset the air reductions. Water releases increased by 24.2 percent (19.3 million kg), and on-site land disposal increased by 9.9 percent (14.2 million kg). Off-site transfers for disposal significantly increased between 1995 and 1997, with most of the increase occurring between 1996 and 1997. The increase—47.7 percent (67.6 million kg)—stemmed in part from a change in the waste management of zinc compounds. Facilities that had formerly sent their zinc compounds off-site for recycling changed to off-site transfers for disposal after the recycling facility increased its fees.

Seven new industrial sectors began submitting their TRI reports to EPA for the 1998 reporting year; with data scheduled for publication in the spring of 2000. The new sectors are: metal mining; coal mining; electricity-generating facilities that burn coal, oil or both; RCRA (Resource Conservation and Recovery Act) Subtitle C hazardous waste and treatment facilities; solvent recovery services; chemical and allied products wholesale distributors; and petroleum bulk plants and terminals. With the availability of these new data, members of the public will learn more about the sources of toxic chemicals in their communities. The addition of these new industry sectors increases the comparability between the TRI and the Canadian National Pollutant Release Inventory (NPRI), which already collects Pollution Release and Transfer Registry (PRTR) data from most these sectors. Indeed, increasing comparability is one of the primary objectives of the CEC's PRTR work.

In addition to expanding reporting to encompass new facility sectors, EPA also expanded public access to information on chemicals. In 1999, EPA published a final rule that lowered the reporting threshold for chemicals that are persistent, bioaccumulative and toxic. The action lowered the threshold for certain chemicals already on the TRI list of chemicals and added nine chemicals to the TRI list at lowered reporting thresholds. These reports, due to EPA in July 2001, will be published with their data in the spring of 2002.

Hazardous Chemicals. In 1999, EPA initiated the Accidental Release Information Program (ARIP), which collects information on accidental releases of hazardous chemicals at fixed facilities. The ARIP questionnaire consists of 23 questions about the facility, the circumstances and causes of the incident, the accidental release prevention practices and technologies in place prior to, and added or changed as a result of, the event. The questionnaire focuses on several areas of accident prevention, including hazard assessments, training, emergency response, public notification procedures, mitigation techniques and prevention equipment and controls. The purpose of ARIP is to collect questionnaire information from facilities that have had significant releases of hazardous substances, developing a national accidental release database. Investigators will then analyze the collected information and disseminate the results to persons involved in chemical accident prevention activities. ARIP also helps to focus industry's attention on the causes of accidental releases and how to prevent them.

Supporting Minor Crops and Public Health Pesticides. The Food Quality Protection Act (FQPA) called on EPA to develop a new approach to managing minor crop and public health pesticides. In response, during 1998 EPA's Office of Pollution

Prevention (OPP) appointed a full-time minor use crop coordinator and an OPP public health coordinator, supported by a Minor Use Team and a Public Health Steering Committee. The teams share common members and coordinate activities with the US Department of Agriculture (USDA) and the Department of Health and Human Services (HHS). The primary goals of the Minor Use Team and Public Health Steering Committee are to:

- provide growers and public health program administrators with an opportunity to discuss their needs and concerns with EPA before the agency finalizes regulatory actions;
- work with USDA, industry, growers, public health agencies and other stakeholders to promote the registration and use of reduced-risk pesticides for minor uses; and
- encourage development and submission of "real world" pesticide use, usage and residue data by growers, public health agencies, USDA and other stakeholders for use in refined risk assessments.

Focusing on Public Health Pesticides. During 1998 and 1999, EPA continued its efforts to coordinate with USDA and HHS on the regulation of pesticides with public health uses, such as mosquito and cockroach control. For pesticides that have both food and public health uses, FQPA requires that the agency consider exposure from the public health use when conducting an aggregate exposure assessment. FQPA defines public health pesticides as any minor-use pesticide product utilized predominantly in public health programs for vector control or other recognized public health protection purposes. Public health pesticides are

afforded the same considerations as other minor-use pesticides, such as priority review and the waiving of some of the fees associated with registration. As with pesticide registrations in general, EPA is seeking low-risk alternatives to traditional public health pesticides.

Weather Forecasting. In June 1999, the final Advanced Weather Interactive Processing System (AWIPS) baseline system to be installed was made operational in June 1999. The installation of AWIPS, an interactive weather computer and communications system intended to provide better weather and flood-related services to the country, completes a decade-long effort to revamp weather services, and it has significantly improved weather forecasting.

Marine Spills. In 1999, the National Oceanic and Atmospheric Administration (NOAA) responded to calls for scientific assistance for more than 120 incidents, including spills of toxics into the nation's coastal waters (60 percent oil-related, 28 percent chemical-related and 12 percent other) and the crash of John F. Kennedy Jr.'s private plane.

Wildfire Hazards. Using its greater understanding of how fire shapes and maintains healthy ecosystems and prevents natural disasters of uncontrollable wildfires, the Department of Interior treated 335,020 hectares with controlled burns as part of its land management mission—an increase of more than 100 percent since 1993.

Risk Assessments. To improve America's national preparedness for natural hazards, DOI's US Geological Survey (USGS) developed 16 risk assessments, exceeding the target goal. These assessments included fault

structure and earthquake potential in the Puget Sound, bridge scour processes and updated assessments of national landslide susceptibility.

Article 2(1)(c) Environmental Education

Chemical Awareness. In 1999, EPA published the pamphlet *Chemicals in Your Community*, which summarizes the chemical information citizens can obtain under the Emergency Planning and Community Right-to-know Act (EPCRA) and the Clean Air Act's (CAA) chemical accident prevention provisions. The pamphlet informs readers where to find this and other helpful information and indicates how they can use the various sources of information to compose a snapshot of the chemicals stored and released in their community. The document is available online <http://www.epa.gov/swercepp/p_gen.htm>.

Marine Education. In March 1999, NOAA participated in the annual National Science Teachers Association (NSTA) annual convention and exhibit in Boston, where it provided approximately 15,000 science teachers with scientific and environmental information about the oceans, climate change and the atmosphere. NOAA also participated in the NSTA exhibit and provided speakers for program presentations.

Weather Exhibits. In October, NOAA provided the 2,000 science museum administrators, exhibit designers and science writers attending the annual convention of the Association of Science-Technology Centers in Tampa, Florida, with weather information. This exhibit was designed to encourage science museums to incorporate weather information and technology into their floor displays.

Hurricane Awareness. NOAA hurricane experts conducted hurricane awareness tours in Central America, in the Caribbean, and on the East and Gulf Coasts of the United States to promote outreach, public education and teamwork for the 1999 hurricane season. Tours in Nicaragua, Honduras, the Dominican Republic, Puerto Rico and Cuba played an important role in the exchange of information on the international capabilities, procedures and technologies used to forecast hurricanes.

Article 2(1)(d) Scientific Research and Technology Development

New Partnerships with the Office of Science Coordination and Policy (OSCP). During 1999, EPA's Office of Pollution Prevention and Toxics (OPPT) collaborated with its Office of Science Coordination and Policy (OSCP), a new organization within the Office of Prevention, Pesticides, and Toxic Substances (OPPTS). Established in January 1999, the new office is seeking to coordinate the development and implementation of cross-cutting science policies and programs that underpin EPA's toxic chemical and pesticide programs. In doing so, OSCP is helping OPPT to identify and incorporate the latest scientific and technological information into its risk assessment and regulatory decisions.

Using Additional 10-Fold Safety Factor. In May 1999, EPA's Office of Pesticide Programs (OPP) submitted to the FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) Scientific Advisory Panel (SAP) for review its draft policy and operational practices for making decisions on the 10-fold safety factor required by the Food Quality Protection Act to protect infants and children. The policy was released in July 1999 for public review and comment based

on the process established in conjunction with the Tolerance Reassessment Advisory Committee. FQPA requires that each pesticide tolerance be protective of infants and children, and that EPA use an appropriate safety factor during risk assessment to account for their special sensitivities.

Endocrine Disruptor Screening Program (EDSP). Since receiving the statutory authority, EPA has moved quickly to set up a screening program that can be used to gather data on the endocrine-disrupting potential of pesticides and other chemicals. On 28 December 1998, EPA published in the *Federal Register* a proposal for an Endocrine Disruptor Screening Program (EDSP), which it is beginning to implement.

Marine Sanctuaries. In 1999, NOAA, in partnership with the National Geographic Society, launched a first-of-its-kind exploration of the nation's 12 marine sanctuaries. The Sustainable Seas Expeditions (SSE) utilize sophisticated new submersible technology to explore the ocean and learn how best to protect it. SSE will travel to ocean depths between 30 and 600 meters. The goals of this project include undersea exploration, scientific research and public education and outreach.

Water Resource Monitoring. DOI's US Geological Survey monitored the status of and the trends in quantity and quality of water resources through more than 45,000 monitoring stations. In addition, USGS developed new decision support systems designed to help natural resource managers make hard choices on the basis of hard science, yielding predictions based on quantitative data about natural resources or the environment and specific options for land and resource management.

Watershed Hydrology. EPA's Center for Exposure Assessment Modeling introduced the Hydrological Simulation Program—FORTRAN (HSPF), a comprehensive package for simulation of watershed hydrology and water quality for both conventional and toxic organic pollutants. HSPF is the only comprehensive model of watershed hydrology and water quality that allows the integrated simulation of land and soil contaminant runoff processes with instream hydraulic and sediment-chemical interactions. The result of this simulation is a time history of the runoff flow rate, sediment load and nutrient and pesticide concentrations, along with a time history of water quantity and quality at any point in a watershed. HSPF simulates three sediment types (sand, silt and clay) in addition to a single organic chemical and transformation products of that chemical.

Modeling Air Pollutants. Through NOAA's Atmospheric Sciences Modeling Division, the EPA released in 1999 a document entitled *Science Algorithms of the EPA Models-3 Community Multiscale Air Quality (CMAQ) Modeling System*, along with the second version of the modeling system software. Models-3/CMAQ is a computer-based system that can simultaneously simulate the transport, physical transformation and chemical reactions of multiple pollutants across large geographic regions. The modeling system is useful to states and other government agencies for making regulatory decisions on air quality and to research scientists for performing atmospheric research. The document is available online at <<http://www.epa.gov/asmdnerl/models3/CMAQ/index.html>>.

Article 2(1)(e) Environmental Impacts

Coastal Management. In 1999, Minnesota became the 33d of 35 eligible states and territories to join the national Coastal Zone Management program. This federal-state partnership strives to create better planning for resource protection and economic development along the nation's coasts.

With the addition of three new National Estuarine Research Reserves (NERRs)—Guana-Tolomato-Matanzas, Florida; Grand Bay, Mississippi; and Kachemak Bay, Alaska—the number of sites in this federal-state partnership rises to 25 and the amount of land set aside for protection, research, monitoring and education doubles—to more than 400,000 hectares.

Pesticide Spray Drift. EPA's Office of Pesticide Programs made significant progress during the last two years toward gaining a more comprehensive understanding of the science of pesticide spray drift and improving its ability to predict spray drift and the associated potential risks under a wide array of agricultural applications and weather conditions. OPP completed its assessment of the results of spray drift studies submitted by the registrants' Spray Drift Task Force and cooperated with EPA's Office of Research and Development and the task force to develop predictive modeling for its risk assessment and management responsibilities for pesticides. These new data will enable OPP to better understand the risks from spray drift and to make more informed decisions on how applicators can control spray drift.

Preventing Pesticides in the Environment through Container and Containment Standards and Support of Collection Programs. EPA's Office of Pesticide Programs continued to develop final regulations for pesticide container standards and containment areas. Although the regulations do not specifically address disposal of unwanted pesticides, OPP continues to support the states' efforts. They have taken the initiative in collecting and disposing of unwanted pesticides to prevent these products from winding up in ditches, streams and groundwater. These efforts, known as the Clean Sweep Programs, play an important role in preventing pollution. They are supported, as funding allows, by EPA regional offices through grants and technical assistance.

Reducing Risks to Children and Workers from Organophosphate Pesticides. EPA's Office of Pesticide Programs required changes in the uses of two organophosphate pesticides—methyl parathion and azinphos methyl—to reduce the risks posed to children and workers. EPA is banning the use of methyl parathion on many fruit and vegetable crops and is requiring changes to use patterns for azinphos methyl to reduce risks from food. The agency is increasing worker protection by, for example, eliminating certain application methods and requiring longer intervals after application before workers can enter treated areas.

Endangered Species. Under the Endangered Species Act, NOAA has completed status reviews and has placed 26 West Coast salmon populations on the endangered list. Eight additional populations are also being considered for inclusion on the list. In addition, NOAA has devoted extensive resources to Endangered Species Act Section 7 consultations to keep pace with the multitude of federal activities that

may affect listed salmon populations. Almost 500 consultations were completed in FY 1999, and the number is expected to double in FY 2001.

NOAA has continued to develop and implement recovery plans and take-reduction plans for protected species. For example, NOAA published a take-reduction plan for marine mammals in the mid-Atlantic Ocean. A take-reduction plan for the Gulf of Maine harbor porpoise was published early in FY 1999. In the eastern North Pacific, NOAA monitored the delisted gray whale population to ensure its continued recovery.

In FY 1999, the Fish and Wildlife Service (FWS) listed 46 species under the Endangered Species Act. FWS delisted the American peregrine falcon (recovered) and a cactus and published proposed rules to delist the bald eagle, Aleutian Canada goose and four other species. It also published three final critical habitat designations and finalized 14 recovery plans for 69 species.

Elsewhere, FWS refined the Habitat Conservation Plan (HCP) process and made this information available to the public through an HCP handbook. HCPs allow private landowners to develop land that supports listed species, provided they undertake conservation measures. HCPs covering 200 listed species and 520,000 hectares were completed through FY 1999. NOAA continues to engage state, local and private entities in the ever-expanding arena of salmon conservation planning and the development of HCPs. Five HCPs have been approved. In addition, a new policy initiative, the 5-Point Plan, issued in March 1999, focuses on the expanded use and integration of five conservation tools, some of which are already components of the HCP program. They are: monitoring, adaptive management, measurable biological goals, permit duration and public participation.

Agencies also continued to provide landowners with incentives to protect species. In 1999, \$5 million was appropriated for the new Endangered Species Act Landowner Incentive Program. Twenty-two projects (out of 145 proposals received from the regions) were initiated with these funds, allowing private landowners to take voluntary conservation measures on their property.

The Final Safe Harbor Policy was published in June 1999. Safe Harbor agreements assure landowners who implement conservation measures for listed species that their actions will not result in additional restrictions. By FY 1999, 42 Safe Harbor agreements were in place, encompassing more than 400,000 hectares nationwide. Unlisted species are addressed by the Candidate Conservation Agreements with Assurances Policy, which was approved in June 1999. It provides incentives for nonfederal property owners to conserve candidate species, thus potentially making listing unnecessary. To date, FWS has implemented 70 such agreements to protect 78 candidate species.

River Restoration. The Department of the Interior continued its work to restore rivers to a more natural state. Department secretary Bruce Babbitt helped to breach the 160-year-old Edwards Dam on the Kennebec River in Maine and the Raines Dam in North Carolina. Agreements also were reached to remove eventually the 38-meter-high Condit Dam in Washington and five more dams on the Sacramento River in California.

Article 2(1)(f) Economic Instruments

Benefits and Costs of the Clean Air Act. In 1999, the EPA published *Benefits and Costs of the Clean Air Act: Final Report to Congress on Benefits and Costs of the Clean Air Act, 1990 to 2010*. According to the report, the economic value of the public health and environmental benefits that Americans enjoy from the Clean Air Act Amendments of 1990 exceeds their costs by a margin of four to one. The report projects that the Clean Air Act Amendments and their associated programs will prevent thousands of premature deaths related to air pollution and millions of asthma attacks and have a wide range of additional human health and ecological effects.

Using a sophisticated array of computer models and the latest emissions and cost data, the study projects that in the year 2010 the amendments of 1990 will prevent 23,000 premature deaths and avert over 1.7 million incidences of asthma attacks and aggravation of chronic asthma. In addition, in 2010 they will prevent 67,000 incidences of chronic and acute bronchitis, 91,000 occurrences of shortness of breath, 4.1 million lost work-days and 31 million days in which Americans would have had to restrict activity because of air pollution-related illness. In addition, it finds that 22,000 respiratory-related hospital admissions would be averted, as well as 42,000 cardiovascular (heart and blood) hospital admissions and 4,800 emergency room visits for asthma.

The report, the most comprehensive and extensive assessment of the 1990 Clean Air Act Amendments ever conducted, was the subject of extensive peer review. Independent panels of distinguished economists, scientists and public health experts provided

in-depth assessment and advice throughout the study's design, implementation and documentation. For those health and ecological benefits that can be quantified and converted to dollar values, EPA's best estimate is that in 2010 the benefits of Clean Air Act programs will total about \$110 billion. This estimate represents the cost saving in increased illness and premature death avoided by adoption of the clean air standards and the provisions required by the amendments. The detailed cost analysis conducted for this study indicates that the costs of achieving these health and ecological benefits are likely to be only about \$27 billion, a fraction of the economic value of the benefits.

Park Fees. For decades, protected natural areas gave up the revenues collected at entrance gates and paid for other services, depending on Congress to meet their funding needs. Since 1996, however, and the introduction of the Recreational Fee Demonstration Program by Congress, demonstration sites in the nation's parks, refuges and forests have kept 100 percent of the fees they collect. As of 1999, the 100 National Park Service demonstration projects, 87 Fish and Wildlife Service projects, and 100 Bureau of Land Management projects were collecting \$149.0 million in revenues. The new entrance fees at the demonstration sites may be substantially higher, but visitors have not been deterred. Public acceptance of the fee program is high, because visitors see exactly how that money is spent.

Article 3 – Levels of Protection

In 1999, the United States proposed and finalized several rules designed to increase environmental protection. The same year the president issued executive orders addressing specific environmental concerns,

and the United States engaged in international negotiations for similar purposes. The rest of this section summarizes information on these and other actions taken by the United States to maintain and increase national levels of environmental protection.

Clean Air. In December 1999, EPA put the final touches to, and President Clinton announced, new tailpipe emission standards and new clean gasoline regulations for all passenger vehicles, including sport utility vehicles (SUVs) and pickup trucks. For the first time, SUVs and pickup trucks will have to meet the same stringent emissions standards as other passenger vehicles. Moreover, passenger vehicles and gasoline will be treated as a single system working to achieve cleaner air. These new standards will begin to take effect in 2004.

In May 1999, EPA issued final regulations for 14 industries that are expected to reduce air toxic emissions by nearly 36,300 metric tons annually. Air toxics are compounds known or suspected of causing cancer and other serious human health effects such as respiratory illness, nervous system impairment and reproductive and growth problems. Besides toxics, the rules will reduce levels of respiratory pollutants; ground-level ozone (or smog) emissions will decrease by almost 63,500 metric tons a year and particulates (dust, dirt, soot, smoke) by 5,450 metric tons annually. In addition, oil production facilities and natural gas production, transmission and storage facilities must cut levels of the potent global warming gas methane by 7,250 metric tons a year. These rules are a part of a series of air toxics regulations EPA has developed and issued under the authority of the Clean Air Act Amendments of 1990. They are expected to lower toxic emissions from large existing and new facilities in the following industries: steel pickling; polyether polyol production; oil and natural gas

production; natural gas transmission and storage; pesticide active ingredient production; mineral wool production; portland cement manufacture; wool fiberglass manufacture; ferroalloy production; primary lead smelters; and the production of acetal resins, acrylic and modacrylic fiber, hydrogen fluoride, and polycarbonate. The rules for 29 other industries that have already been issued have resulted in reductions in air toxics of at least 500,000 metric tons a year.

In September 1999, EPA finalized stringent nationwide emission standards for hazardous waste combustors (HWCs): incinerators, cement kilns, and lightweight aggregate kilns burning hazardous waste. The rule will result in lower releases of many hazardous pollutants. Specifically, dioxin and furan emissions at HWC facilities may be reduced by 70 percent and metals emissions may be reduced by up to 86 percent. These standards, combined with previous measures to control air toxics from sources such as medical incinerators and municipal combustors, should reduce total emissions of dioxin by 95 percent, emissions of mercury by 80 percent and emissions of lead and cadmium by 83 percent. EPA issued this rule under the joint authority of the Clean Air Act and the Resource Conservation and Recovery Act.

As mentioned above, EPA issued in 1999 the results of a study demonstrating that the economic benefits to public health and the environment from the 1990 Clean Air Act Amendments exceeded their costs by a margin of four to one and will prevent 23,000 premature deaths and avert over 1.7 million incidences of asthma attacks and aggravation of chronic asthma. The study report, entitled *Benefits and Costs of the Clean Air Act: Final Report to Congress on Benefits and Costs of the Clean Air Act, 1990 to 2010*, was issued under Section 812 of the Clean Air Act Amendments, which requires EPA to periodically assess the effect of

the Clean Air Act on the public health, economy and environment of the country. The report can be accessed online <<http://www.epa.gov/oar/sect812>>.

Also in 1999, EPA issued a new Air Quality Index to provide the public with critical information on the health precautions to take on days when air pollution levels threaten its health. The new index provides a uniform format nationwide and, for the first time, includes new health messages for sensitive groups, such as children with asthma. It is intended to be used by local weather forecasters throughout the country.

Clean Water. On 17 August 1999, President Clinton signed the Water Resources Development Act, which authorized the allocation of \$6.3 billion to the US Army Corps of Engineers for flood control, navigation, shore protection and environmental restoration projects. The act authorizes \$200 million over five years beginning in 2001 for the Challenge 21 program. Challenge 21, a pilot program for nonstructural flood control and riverine restoration, was part of the president's Clean Water Action Plan and budget initiative. A three-page summary of the act, prepared by the House Transportation and Infrastructure Committee, and the conference report are available online <<http://www.house.gov/transportation/index.html>>.

The Department of Agriculture and the Department of the Interior released in 1999 to Congress, tribes, states and interested stakeholders a draft Unified Federal Policy for Ensuring a Watershed Approach to Federal Land and Resource Management. The proposed policy, a key action of the president's Clean Water Action Plan, had two primary goals: to use a watershed approach to prevent and reduce water pollution resulting from federal land and resource management activities and to accomplish that goal in a unified and cost-effective manner.

In September 1999, EPA proposed significantly reducing direct discharges of the most toxic chemicals into the Great Lakes in an effort to protect public health and help restore the Great Lakes. The chemicals, referred to as bioaccumulative chemicals of concern (BCCs), include mercury, polychlorinated biphenyls (PCBs), dioxin, chlordane, dichlordiphenyltrichlor (DDT) and mirex. Specifically, EPA proposed to phase out the discharges of BCCs into the “mixing zones”—that is, the areas of the Lakes where discharges of toxic chemicals are allowed to mix with receiving waters and dilute. The proposal prohibits new discharges of BCCs into mixing zones in the Great Lakes Basin and would phase out the use of existing mixing zones for BCCs in the Great Lakes Basin over 10 years. It is anticipated that the proposal would reduce mercury from direct water discharges, such as outfall pipes, into the Great Lakes by up to 90 percent.

Also in 1999, EPA published final guidelines for certifying operators who manage drinking water systems. The Safe Drinking Water Act Amendments of 1996 require EPA, in cooperation with the states, to publish guidelines that specify minimum standards that operators of community water systems (those that serve at least 25 people year-round) and nontransient, noncommunity water systems (those that serve at least 25 people for six months of the year such as schools, churches and factories) must meet to be certified and recertified to operate those water systems. The final guidelines provide states with the minimum standards for the development, implementation and enforcement of operator certification programs for these community and nontransient, noncommunity public water systems.

Response Activities. In 1999, EPA awarded over \$32 million in grants to help more than 70 communities across the nation clean up and redevelop brownfields (abandoned, contaminated properties, often found in distressed areas) and return them to centers of prosperity. Through the Brownfields Cleanup Revolving Loan Fund, 45 grants totaling \$30.6 million were awarded to help 65 communities across the nation leverage funding to clean up and redevelop abandoned industrial properties. With these grants, communities will be able to set up revolving loan funds that provide low-interest loans to businesses and others so that they can turn brownfields back to productive use. In the area of training, \$1.9 million in Job Training Grants was awarded to 10 communities to train nearly 600 residents in environmental cleanup techniques. Such training will allow them to find well-paying jobs and will further the cleanup of brownfields across the nation.

Pesticides. On 4 November 1999, EPA issued a final policy statement on establishing a category for persistent, bioaccumulative and toxic (PBT) new chemical substances (64 FR 60194). The policy statement established the parameters for what is to be considered a PBT chemical under the Toxic Substances Control Act (TSCA) and was particularly significant because it was the first formal statement of national policy on the new chemical persistent organic pollutants (POPs). The policy statement provides guidance criteria for persistence, bioaccumulation and toxicity for new chemicals and advises the industry about EPA’s regulatory approach to chemicals meeting the criteria. PBT chemicals are priority pollutants because they do not break down quickly and remain in the environment for long periods. They bioaccumulate, or build up, in the food chain and are known to cause a variety of health hazards at low doses, including reproductive disorders and cancer.

International Trade and the Environment. On 16 November 1999, President Clinton signed Executive Order 13141 on Environmental Review of Trade Agreements aimed at reinforcing the US commitment to a “policy of careful assessment and consideration of the environmental impacts of trade agreements.” The executive order states that “trade agreements should contribute to the broader goal of sustainable development” and calls for environmental reviews of the following types of agreements: comprehensive multilateral trade rounds; bilateral or multilateral free trade agreements; and major new trade liberalization agreements in natural resource sectors.

Stratospheric Ozone Protection. In 1999, the United States and India finalized a Memorandum of Understanding to engage in cooperative efforts to address greenhouse gas emissions. The agreement is expected to result in joint projects between the United States and India pursuant to the clean development mechanism of the Kyoto Protocol. This mechanism allows a developing nation to accept financing from a developed nation in order to implement projects that will result in reduced emissions. The financing state is then able to claim part of the emission reductions.

Enforcement. FY 1999 was a record-setting year for EPA enforcement actions and penalties, including \$3.6 billion for environmental cleanup, pollution control equipment and improved monitoring, an 80 percent increase over 1998; \$166.7 million in civil penalties, 60 percent higher than in 1998; and 3,935 civil judicial and administrative actions, the highest in the last three years. During FY 1999, EPA settled the largest Clean Air Act case in history against seven diesel engine manufacturers whose products, the government alleged, produced millions of tons of excess emissions of nitrogen oxide, a contributor to smog. Under the settlement, the companies will

spend over \$800 million on producing cleaner engines and pay an \$83 million penalty. Also during FY 1999, the agency settled the largest civil complaint under the Resource Conservation Recovery Act. The settlement with the FMC Corporation included an \$11.8 million civil penalty and an estimated \$170 million earmarked for closing hazardous waste-containing ponds and significantly reducing toxic gas emissions.

In addition to its formal enforcement activities, EPA continued to expand its use of incentives to achieve industry compliance with environmental laws, while promoting the public’s right to know. The agency reported that in FY 1999 approximately 260 companies disclosed potential violations at over 989 facilities under EPA’s self-disclosure policy. A total of 106 companies corrected violations at 624 facilities in FY 1999, a significant increase over the 63 companies that corrected violations at 390 facilities in FY 1998. The agency also negotiated a voluntary audit compliance program with the pork-producing industry in FY 1999, which may result in self-audits in thousands of facilities over the next several years. Another 76 businesses disclosed violations under EPA’s small business self-disclosure policy, a seven-fold increase from the previous year.

Each year the EPA issues a report providing specific and summary information on EPA achievements in enforcement and compliance assurance in the areas of policy development and implementation by headquarters and regional offices. The reports, including the 1999 report, *Enforcement and Compliance Assurance Accomplishments Report for Fiscal Year 1999*, can be obtained from the National Center for Environmental Publications and Information by phoning (800) 490-9198 or online <<http://www.epa.gov/oeca/>>.

Forests. On 13 October 1999, President Clinton launched an effort to preserve millions of pristine hectares within America's national forests. The president directed the US Forest Service to develop, and propose for public comment, regulations to provide appropriate long-term protection for most or all of the currently inventoried "roadless" forest areas and to determine whether such protection is warranted for any smaller roadless forest areas not yet inventoried. A new rule proposed by the US Forest Service would prohibit road building in more than 16.2 million hectares of roadless area, from the Appalachian Mountains to the Rockies to the Sierra Nevada.

Environmental Technology. In July 1999, EPA and Department of Defense (DOD) signed an agreement to collaborate on a program to test new, commercial-ready environmental technologies. EPA and DOD will join forces to verify technologies through EPA's Environmental Technology Verification Program (ETV) and the DOD's Environmental Security Technology Certification Program. This agreement will enable companies that make better, faster, cheaper technologies to penetrate markets of interest to both EPA and DOD. It also will provide a formal mechanism through which EPA and DOD can collaborate on technology evaluation, verification, reporting and technology transfer activities. And it will save time and expense for both agencies, while supplying the public with information on new technologies.

Environmental Information. In 1999, the Environmental Protection Agency reported that its reinvention efforts had dramatically increased public access to environmental information and had saved businesses and communities more than \$2.4 billion a year, while ensuring the highest protection of public health and the environment. EPA's reinvention successes are outlined in an annual report that highlights the

environmental and economic benefits resulting from the agency's partnership programs. According to the 1999 data, businesses and communities had saved \$1.6 billion in 1998 by eliminating 6.9 million metric tons of solid waste, preventing 79 million metric tons of air pollution, saving nearly 22.7 million liters of clean water, and conserving enough energy to light 56 million households for a year. In addition to the cost savings from these programs, another \$807 million was saved by cutting unnecessary environmental paperwork. By streamlining regulatory processes and abolishing outdated provisions, the time businesses and communities spent on paperwork was reduced by 26.9 million hours a year. Copies of the annual reinvention reports, including *Reinventing Environmental Protection: 1998 Annual Report*, can be obtained from the National Center for Publications and Information by phoning (800) 490-9198 and online <<http://www.epa.gov/opei/rpubsinfo/index.htm>>.

Invasive Species. On 3 February 1999, President Clinton signed an executive order directing federal agencies to use their programs to prevent the introduction of invasive species, control populations of invasive species, and provide for restoration of native species and habitat conditions in ecosystems that have been invaded. The order also establishes an Invasive Species Council whose members include the secretaries of state, Treasury, defense, interior, agriculture, commerce, and transportation and the administrator of the Environmental Protection Agency. The Invasive Species Council was designed to provide national leadership in dealing with invasive species, to oversee the implementation of this order, and, through the development of an inter-agency management plan, to ensure that federal agency activities on invasive species are coordinated, complementary, cost-efficient and effective.

Article 4 – Publications

The *Federal Register* is the official daily publication for rules, proposed rules and notices of federal agencies and organizations, and executive orders and other presidential documents. Federal agencies also publish their regulations and legal notices in the *Federal Register*, which is issued by the Government Printing Office. EPA's Federal Register Site <<http://www.epa.gov/fedrgstr/>> provides the full text of selected *Federal Register* documents that deal with environment-related issues and notices issued since 1 October 1994.

The National Service Center for Environmental Publications (NSCEP) maintains and distributes EPA publications in hard copy, CD-ROM and other multimedia formats. Its current publication inventory includes over 7,000 titles. NSCEP also develops and distributes the annual *EPA National Publications Catalog*. It may be obtained by phoning (800) 490-9198 or online <<http://www.epa.gov/ncepihom/index/htm>>.

Government agencies, including EPA, also issue publications on a variety of topics. For example, EPA's Office of Air and Radiation publishes an annual report on air quality trends, which provides information on EPA's most recent evaluation of outdoor air quality in the United States. The 1999 report, *Latest Findings on National Air Quality: 1999 Status and Trends Report* is available online <<http://www.epa.gov/airtrends/>>. Another example of an EPA publication is the "Oil Spill Program Update" newsletter published quarterly by the Office of Emergency and Remedial Response <<http://www.epa.gov/oilspill>>.

Article 5 – Government Enforcement Action

What's New?

In 1999, the Environmental Protection Agency continued to strengthen the enforcement and compliance assurance program by expanding, in consultation with the states and EPA's stakeholders, innovative approaches to compliance and enforcement. New tools that provide compliance assistance and compliance incentives complement a strong program of compliance monitoring and civil and criminal enforcement. A strong enforcement component serves as the foundation for the national compliance program, motivating regulated entities to seek assistance and use incentive policies and providing fairness in the marketplace by ensuring that noncomplying facilities do not gain an unfair competitive advantage.

Enforcement actions concluded in 1999 will reduce pollutants by over 3.1 billion kg—2.6 billion kg of nitrogen oxide, 260 million kg of contaminated soil, 91 million kg of iron and 59 million kg of PCB waste. In addition, polluters were required to spend a record \$3.4 billion to correct violations and to take steps to protect the environment. EPA also achieved a record \$236.8 million in environmentally beneficial projects. And it assessed a record \$166.7 million in civil penalties, including the largest Clean Air Act settlement in history against seven diesel engine manufacturers who used illegal devices to disable their emission control systems. This case alone will result in reductions in nitrogen oxide of 68 million metric tons over the next quarter-century. Finally, in 1999 EPA took 3,935 civil judicial and administrative enforcement actions, the highest number of civil

actions taken over the last three years. Also, the record 208 years of jail time imposed on criminal defendants in 1999 will serve as an extremely important deterrent to others.

The five new Internet-based compliance assistance centers opened in 1999 are focusing on the chemical industry, local government, transportation, paints and coatings and federal facilities. Thus a total of 10 sector-based centers are now helping users to understand which federal regulations apply to their operations, to share pollution prevention tips and techniques, to access relevant compliance tools and to learn about new regulatory developments.

EPA completed its first *Annual Performance Report* in 1999 as part of the US Government Performance and Results Act (GPRA), a management reform initiative that holds federal agencies accountable for achieving program results and using resources wisely. Also, the continued implementation of the National Performance Measures Strategy (NPMS) now includes measures for compliance rates for selected regulated populations, pollutant reductions resulting from enforcement actions, behavioral changes stemming from compliance assistance and average time for significant violators to return to compliance.

The US Fish and Wildlife Service is responsible for enforcing US and international laws, regulations and treaties that protect wildlife resources. In 1999, its inspectors stationed at major US ports and border crossings monitored some \$1.05 billion in wildlife imports and exports for compliance with US and international wildlife protection laws and treaties. The service's 1999 enforcement for the first full year

of the new global protections for sturgeon brought the high-volume, high-value caviar industry under the agency's scrutiny for the first time.

Article 5(1)(b) Monitoring Compliance, Inspections and Investigations

In 1999, EPA, or the states through delegated programs, conducted 21,847 inspections. The most inspections (34 percent) were conducted under the Safe Drinking Water Act, followed by the Clean Water Act (20 percent) and the Resource Conservation and Recovery Act/Underground Storage Tank programs (17 percent). Overall, the number of facilities inspected (that is, coverage) varied considerably across the different programs. For example, 46 percent of facilities under the Clean Air Act program were inspected. Under the Clean Water Act (CWA) program, 73 percent of major wastewater treatment facilities and 36 percent of facilities with pretreatment programs were inspected. Under the Resource Conservation and Recovery Act program, 63 percent of treatment, storage and disposal facilities and 22 percent of large-quantity generator facilities were inspected.

As part of the phased-in implementation of its measures of program results, EPA is reporting for the first time data on *significant noncompliance* duration and recidivism. The definition of significant noncompliance (SNC) varies with environmental statutes, as does the degree to which SNC is addressed by program areas. Information on civil investigations and citizens' complaints also is being reported for the first time. Civil investigations provide a more in-depth examination of a facility's operations and processes than a regular inspection. The greatest number of

intensive compliance investigations (74 percent) occurred in the CAA program, followed by the CWA (14 percent) and RCRA (3 percent) programs.

In 1999, EPA's Northeast Region (Region 2) implemented an innovative Citizen Complaint Tracking System. Without such a system, the information yielded by citizen complaints might never come to the attention of EPA, particularly if the activity being complained about cannot be linked to a specific facility (for example, midnight dumping) or originates at a facility that has never bothered to notify the agency of its activities and is therefore not subject to regular inspections and oversight. Through centralized tracking of the electronically available one-page form, Region 2 can verify that the appropriate follow-up to the complaint was carried out. The system also provides a mechanism that allows a random review of a sample of the complaints for consistent handling, adequate response and customer satisfaction. Several other EPA regions have developed similar tracking systems.

In 1999, special agents of the Fish and Wildlife Service broke up a Connecticut-based caviar smuggling ring, setting the stage for the nation's first successful federal felony prosecution upholding new global protections for sturgeon. A second landmark smuggling case, which documented six years' worth of illegal trade in protected corals and shells, secured the nation's first felony convictions for coral trafficking. Other key interdictions involved sea turtle eggs, traditional Asian medicinals made from endangered animals and shipments of mitten crabs, an injurious species that disrupts aquatic ecosystems.

Article 5(1)(c) Voluntary Compliance

EPA continues to promote the regulated community's compliance with environmental requirements through its compliance assistance programs. EPA's collective compliance assistance efforts (on-site visits, compliance assistance hotlines, workshops/ training and presentations at meetings, distribution of compliance assistance tools such as compliance checklists and guides) in 1999 reached 333,118 regulated entities.¹ EPA operates nine Compliance Assistance Centers, designed to help small businesses and small governmental entities understand and comply with their regulatory obligations. The centers focus on specific industry sectors and provide applicable regulatory and technical information in a convenient and user-friendly manner. In 1999, the centers were visited over 750 times a day by businesses, compliance assistance providers, other government representatives and the general public, for a total of 260,000 user sessions. Many respondents to eight voluntary Internet surveys indicated they took one or more positive actions (for example, changing the handling of waste, obtaining a permit, changing a production process, contacting a regulatory agency, reducing air emissions, conserving water) as a result of that use.

In 1999, the Fish and Wildlife Service emphasized partnerships with industry to promote voluntary compliance with wildlife protection laws. The agency teamed with state counterparts and EPA to conduct inspections for open oil pits that serve as death traps for migratory birds. Work in Arkansas, Oklahoma, Texas, New Mexico and the Rocky Mountain states alerted oil producers to problems at their sites and, in most cases, secured the remedial action needed without legal action. FWS special agents conducted

¹ Regulated entities were counted on the basis of each type of compliance assistance they received.

outreach to promote bird-friendly electric power distribution and teamed with industry groups to produce a video that shows utilities how to prevent the electrocution of eagles and other birds. Grizzly bear avoidance classes for hunting guides and outfitters in the West reduced the illegal take of this threatened species and helped sportsmen avoid potentially deadly confrontations with these animals.

Article 5(1)(f) Promotion of Environmental Audits

EPA developed the Audit Policy (Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations, December 1995) to encourage businesses to take a vigorous self-policing approach to compliance, including discovering and correcting violations that might otherwise go undetected. In 1999, EPA obtained self-disclosures under the Audit Policy from 260 companies reporting violations in approximately 1,000 of their facilities. Seven hundred of these disclosures resulted from targeted self-audit initiatives. Use of corporate-wide auditing agreements is expanding. EPA has negotiated such agreements with companies to audit and correct violations of the Clean Air Act, New Source Review (SR) Standards at 40 facilities, emergency notification and spill prevention at 17 telecommunications companies, CAA federal fuel standards at a major airline and Toxic Substances Control Act violations at two major chemical companies.

A 1999 audit settlement agreement between EPA and American Airlines (AMR Corporation) resolved violations discovered through a corporate audit of the company's facilities at 152 airports. Based on the audit, American Airlines reported numerous violations of diesel fuel regulations from 1993 to 1998.

Under the terms of the settlement, EPA cut total penalties by more than 90 percent for violations that the airline voluntarily disclosed and promptly corrected. This agreement is expected to eliminate nearly 635 metric tons of air pollutants annually.

Articles 5(1)(j) and 5(3) Judicial, Quasi-Judicial or Administrative Proceedings to Seek Appropriate Sanctions or Remedies

In a case against Royal Caribbean Cruise Lines, the company pleaded guilty to illegally dumping oil and hazardous chemicals into the ocean. In some instances, Royal Caribbean was discharging chemicals from their onboard dry cleaning and photo processing facilities into coastal waters, including Alaskan. Royal Caribbean will pay an \$18 million fine in addition to the \$9 million fine it paid in FY 1998. As part of the plea agreement, Royal Caribbean will operate for five years under a prescribed and closely monitored environmental compliance plan.

EPA has been investigating whether equipment upgrades at coal-fired power plants increased their capacity and emissions, thereby requiring additional permits and controls. The companies maintain that these actions were routine maintenance that does not rise to the level of *modifications* for which permits and controls are required. As a result of these investigations, EPA, with the Department of Justice, has filed enforcement actions against eight power companies, involving 32 different facilities located in 10 different states. One of these companies is the Tennessee Valley Authority, a federally owned utility.

The Atlantic Richfield Company (ARCO) will spend \$260 million—including a \$1.8 million penalty—to clean up and restore natural resource damages caused by mine waste contamination in the Clark Fork River Basin. As part of the two settlements reached with the state of Montana and the Confederated Salish and Kootenai tribes of the Flathead Nation, ARCO will pay \$80 million for the cleanup of the Silver Bow Creek and \$20 million to restore wetlands, bull trout habitat and other natural resources.

In 1999, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) enforcement program secured potentially responsible party (PRP) commitments of over \$780 million, including settlements for more than \$550 million in future response work and settlements for over \$230 million in past costs. Since Superfund's inception in 1980, the total value of private party commitments (future and past) has reached approximately \$16.2 billion (\$13.5 billion in response settlements and \$2.7 billion in cost recovery settlements).

An innovative agreement among EPA, the city of Manchester, New Hampshire, and the New Hampshire Department of Environmental Services will address the city's long-standing combined sewer overflow problem, which results in the discharge of millions of liters of sewage and storm water into the Merrimack River each year and frequent violations of water quality standards for bacteria. The agreement, which includes a ten-year, \$52.4 million plan to remove the majority of sewer overflows into the river, also includes environmental and public health projects, such as storm water management, erosion control, restoration of urban ponds, environmental education, wetlands protection and a \$500,000 program to reduce childhood asthma and lead poisoning.

A joint Fish and Wildlife Service-EPA investigation in Georgia of a chemical company for mercury contamination of coastal waters and take of endangered wood storks resulted in prison terms totaling more than 212 years—the longest collective sentence ever assessed in the history of US environmental law enforcement. In the Midwest, the service completed a major investigation of a US shell exporter for illegal mussel trade, bringing the fines and restitution payments assessed for mussel trafficking over the last two years to more than \$1.4 million.

FWS efforts to protect migratory birds from electrocution hazards secured guilty pleas from a Colorado utility that admitted violating two wildlife protection laws as well as an important court ruling. That legal opinion upheld the criminal liability of companies whose business activities harm federally protected migratory birds, reinforcing US protections for this shared North American resource. Another court challenge that questioned the legality of the service's wolf reintroduction program was turned back when the Supreme Court refused to hear an appeal of a lower-court decision that upheld such species recovery efforts under the Endangered Species Act.

Additional Information

US ENVIRONMENTAL PROTECTION AGENCY

Enforcement accomplishments:

<<http://www.epa.gov/ocea/99accomp.pdf>>

Measures for program results:

<<http://www.epa.gov/ocea/perfmeas/npmsfinal.html>>

Sector Facility Indexing Project:

<<http://www.epa.gov/ocea.sfi>>

Toxic Release Inventory (TRI):

<<http://www.epa.gov/tri>>

Compliance assistance:

<<http://www.epa.gov/clearinghouse>>

State programs:

<<http://epa.gov/ocea/fedfac/cfa/statesmap.html>>

<<http://es.epa.gov/cooperative/stateandlocal>>

FISH AND WILDLIFE SERVICE

<<http://www.fws.gov>>

Article 6 – Private Access to Remedies

Standing. In October 1999, the US Supreme Court heard oral arguments in the citizen suit case *Friends of the Earth v. Laidlaw Environmental Services, Inc.* (149 F. 3d 303 [1998]). The Court was reviewing the Fourth Circuit's decision holding that the defendant in this Clean Water Act citizen suit had the power, as a matter of constitutional law, to moot a plaintiff's claims for civil penalties by complying with the act after the filing of the complaint, even though the plaintiff had standing to seek penalties and injunctive relief at the time it filed the suit. The defendant also had argued that plaintiffs did not have standing, because payment of civil penalties to the US Treasury did not redress the alleged injury suffered by plaintiffs, and therefore plaintiffs did not meet the standing requirements of Article III of the US Constitution. On 12 January 2000, the Supreme Court reversed the Fourth Circuit's ruling on both issues (*Friends of the Earth v. Laidlaw Environmental Services, Inc.*, 528 US 167 [2000]). The effect of the Supreme Court's decision is significant, because it served to preserve a citizen's legal right to enforce the CWA and a wide range of other federal environmental laws. The Supreme Court decision is available online <http://supct.law.cornell.edu/supct/html/98_822.ZO.html>.

3

1999
Financial Reports



1999 Audited Financial Statements

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Auditors' Report

To the Council of the Commission for Environmental Cooperation

We have audited the balance sheet of the Commission for Environmental Cooperation as at December 31, 1999 and the statements of revenue and expenditures, capital and cash flows for the year then ended. These financial statements are the responsibility of the Commission's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards in Canada. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Commission as at December 31, 1999 and the results of its operations and the its cash flows for the year then ended in accordance with generally accepted accounting principles in Canada.

Chartered Accountants

March 22, 2000
Montreal, Québec

Balance Sheet

<i>As at December 31, 1999 (in Canadian dollars)</i>	1999	1998
	\$	\$
Assets		
Current assets		
Cash and term deposits	2,792,939	2,568,774
Goods and services tax (Note 3)	1,275,932	1,960,018
Other assets	186,713	180,808
	4,255,584	4,709,600
Capital assets (Note 4)	268,719	389,190
	4,524,303	5,098,790
Liabilities		
Current liabilities		
Accounts payable and accrued liabilities	427,722	740,305
Leasehold inducements	1,170,079	1,344,351
Deferred contributions (Note 5)	2,272,106	2,889,000
	3,869,907	4,973,656
Capital		
Invested in capital assets	268,719	389,190
Restricted for North American Fund for Environmental Cooperation	1,012,778	1,272,517
Unrestricted	(627,101)	(1,536,573)
	654,396	125,134
	4,524,303	5,098,790

Commitments (Note 7)

Approved by the Council

David Anderson

Canada

Julia Gordon

Mexico

Carol M. Pison

United States

Statement of Revenue and Expenditures

<i>Year ended December 31, 1999 (in Canadian dollars)</i>	1999	1998
	\$	\$
Revenue		
Contribution – Canada	4,445,000	4,500,000
Contribution – Mexico	4,445,000	4,136,000
Contribution – United States	4,445,000	4,500,000
Internally generated funds	1,224,536	1,147,543
Other revenue	128,124	194,038
	14,687,660	14,477,581
Expenditures		
Expenses related to work program – Schedule	2,490,380	2,330,207
Expenses related to specific obligations – Schedule	438,909	624,654
Expenses related to the Council meetings – Schedule	233,263	321,810
Expenses related to the Public consultation – Schedule	54,786	110,463
Expenses related to the JPAC – Schedule	234,509	173,010
Expenses related to the Directorate operations	156,928	159,756
Expenses related to North American Fund for Environmental Cooperation	236,771	206,770
Expenses related to contingency fund	13,761	180,953
CEC Resource Center	173,332	178,195
Publishing and website	430,781	548,685
Public outreach	283,227	379,758
Salaries and fringe benefits		
Program related	3,959,890	3,799,630
Departmental operations	614,588	659,760
Relocation and orientation expenses	92,559	188,451
Training expenses	31,107	29,967
Office expenses	290,671	246,213
Telecommunications	86,248	132,350
Systems support	90,628	83,668
Rent, utilities and office maintenance	410,814	431,485
Administrative fees	178,289	204,567
Loss (gain) on foreign exchange	149,473	(22,179)
	10,650,914	10,968,173
Excess of revenue over expenditures (balance carried forward)	4,036,746	3,509,408
Contribution adjustment	-	(483,522)
Contributions transferred to the following year budget (notes 2(a) and 5)	(2,272,106),	(2,889,000)
Contributions from prior year	2,889,000	1,780,337
Expenditures related to prior year commitments – Schedule	(2,204,762)	(1,607,000)
Contributions refundable	-	374,511
Excess of revenue over expenditures before the following items	2,448,878	684,734
Amortization of capital assets	(194,877)	(239,742)
Loss on disposal of capital assets	-	(60,875)
Grants disbursed	(1,724,739)	(1,390,097)
Excess (deficiency) of expenditures over revenue	529,262	(1,005,980)

Statement of Capital

Year ended December 31, 1999 (in Canadian dollars)

	Invested in capital assets	Restricted for North American Fund for Environmental Cooperation	Unrestricted	Total 1999	Total 1998
	\$	\$	\$	\$	\$
Balance, beginning of year	389,190	1,272,517	(1,536,573)	125,134	1,131,114
Excess (deficiency) of revenue over expenditures	(194,877)	(1,724,739)	2,448,878	529,262	(1,005,980)
Transfer	-	1,465,000	(1,465,000)	-	-
Investment in capital assets	74,406	-	(74,406)	-	-
Balance, end of year	268,719	1,012,778	(627,101)	654,396	125,134

Statement of Cash Flows

Year ended December 31, 1999 (in Canadian dollars)

	1999	1998
	\$	\$
Operating activities		
Excess of expenditures over revenue	529,262	(1,005,980)
Items not affecting cash and cash equivalents		
Amortization of capital assets	194,877	239,742
Loss on disposal of capital assets	-	60,875
Contributions transferred to the following year budget	2,272,106	2,889,000
Contributions from prior year	(2,889,000)	(1,780,337)
	107,245	403,300
Changes in non-cash operating working capital items (Note 6)	365,598	(731,812)
	472,843	(328,512)
Financing activities		
Change in leasehold inducements	(174,272)	(99,595)
Investing activities		
Acquisition of capital assets	(74,406)	(128,796)
Disposal of capital assets	-	8,650
	(74,406)	(120,146)
Net cash inflow (outflow)	224,165	(548,253)
Cash and cash equivalents, beginning of year	2,568,774	3,117,027
Cash and cash equivalents, end of year	2,792,939	2,568,774

Notes to the Financial Statements

Year ended December 31, 1999 (in Canadian dollars)

1. Nature of activities

The Commission for Environmental Cooperation is an international organization that was created by the North American Agreement on Environmental Cooperation for the purpose of meeting NAFTA's environmental provisions. The Commission became operational in July 1994.

2. Significant accounting policies

The financial statements are presented in accordance with generally accepted accounting principles in Canada including the following significant accounting policies.

(a) Contributions

The Government of Canada, the Government of the United Mexican States and the Government of the United States of America (the Parties) contribute to the Commission's annual budget by mutual agreement.

Funds contributed remain available for six months following the end of the financial year to discharge related obligations incurred during the year.

Any surplus funds in excess of 5% of the budget are credited to the Parties by an adjustment of the assessments for the subsequent financial year.

(b) Capital assets

Capital assets are recorded at cost and are being amortized on a straight-line basis at the following annual rates:

Computer equipment	20%
Computer equipment and software – projects	30%
Computer software	30%
Furniture and fixtures	20%
Telephone system	30%
Equipment	30%
Leasehold improvements	12%

(c) Foreign currencies

Transactions conducted in foreign currencies are translated using the temporal method. Exchange gains and losses are included in the results for the period.

(d) Leasehold inducements

Leasehold inducements relate to the rental of office space by the commission. These inducements, which are amortized over the term of the lease, are offset against rent expenses.

3. Goods and Services Tax

These receivables relate to QST, GST and HST receivable. Given the international status of the Commission, special agreements must be signed between the Federal and Québec governments and the Commission before the goods and services taxes paid on purchases are reimbursed. An agreement with federal government was signed in June 1997 and published in the Canadian Gazette on September 23, 1997, establishing the right to reimbursement of GST and HST taxes from September 1997 onward. Furthermore, under a remission order published in the Canadian Gazette of August 18, 1999, the Commission is entitled to receive a remission of tax for the period from September 1994 to September 1997. No agreement has yet been signed between the commission and the Québec government regarding QST. Management is of the opinion that this amount will be recovered.

Notes to the Financial Statements

Year ended December 31, 1999 (in Canadian dollars)

4. Capital assets

	1999		1998	
	Cost	Accumulated Amortization	Net Book Value	Net Book Value
	\$	\$	\$	\$
Computer equipment	274,692	140,188	134,504	161,222
Computer equipment and software – projects	127,602	118,711	8,891	42,125
Computer software	134,867	90,158	44,709	28,751
Furniture and fixtures	367,030	355,315	11,715	70,282
Telephone system	120,088	107,307	12,781	21,984
Equipment	140,424	131,294	9,130	14,707
Leasehold improvements	74,749	27,760	46,989	50,119
	1,239,452	970,733	268,719	389,190

5. Deferred contributions

For the 1999 financial year, contributions available to discharge related obligations during 2000 amount to \$2,272,106 (1998 – \$2,889,000). These contributions are presented as deferred contributions in the balance sheet.

6. Changes in non-cash operating working capital items

	1999	1998
	\$	\$
Goods and services tax	684,086	(529,906)
Contributions receivable	–	443,051
Other assets	(5,905)	20,127
Accounts payable and accrued liabilities	(312,583)	(290,573)
Contributions refundable	–	(374,511)
	365,598	(731,812)

7. Commitments

a) The Commission leases premises under an operating lease which expires in November 2004. Total minimum payments required in future years, are as follows:

	\$
2000	417,817
2001	464,413
2002	511,009
2003	557,606
2004	546,733
	2,497,578

The Commission has the option to cancel the lease upon payment of a penalty that ranges from \$719,000 to \$244,000 over the years 2000 to 2003.

b) The Commission has commitments of \$2,272,106 relating to environmental projects as at December 31, 1999.

c) The Commission has commitments for equipment and furniture leases which expire on or before March 2003. Total payments required in future years are as follows:

	\$
2000	117,153
2001	111,696
2002	42,292
2003	4,718
	275,859

Schedule

Expenses related to the work program, specific obligations under North American Agreement, Council meetings, Public consultation, Joint Public Advisory Committee (JPAC) meetings, and prior year commitments

<i>Year ended December 31, 1999 (in Canadian dollars)</i>	1999	1998
	\$	\$
Work program		
Professional fees	1,420,533	1,088,525
Traveling, accommodation and meeting expenses	711,621	854,878
Translation and interpretation	206,723	255,164
Office expenses	151,503	131,640
	2,490,380	2,330,207
Specific obligations under North American Agreement		
Environmental Cooperation		
Professional fees	161,161	344,070
Translation and interpretation	132,807	85,940
Traveling, accommodation and meeting expenses	74,933	154,024
Office expenses	70,008	40,620
	438,909	624,654
Council meetings		
Translation and interpretation	124,548	128,767
Traveling, accommodation and meeting expenses	65,197	139,777
Office expenses	25,591	27,138
Professional fees	17,927	26,128
	233,263	321,810
Public consultation		
Traveling, accommodation and meeting expenses	54,786	96,414
Professional fees	-	9,420
Translation and interpretation	-	4,629
	54,786	110,463
Joint Public Advisory Committee (JPAC) meetings		
Traveling, accommodation and meeting expenses	112,941	105,627
Translation and interpretation	59,105	30,053
Professional fees	37,683	31,137
Office expenses	24,780	6,193
	234,509	173,010
Expenditures related to prior year commitments		
Expenditures related to project commitments		
Professional fees	1,434,543	988,850
Traveling, accommodation and meeting expenses	68,498	99,830
Translation and interpretation	49,449	66,560
Publications and communications	30,015	6,597
Office expenses	-	6,525
	1,582,505	1,168,362
Expenditures not related to project commitments	622,257	438,638
	2,204,762	1,607,000



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Looking Ahead



2000 Annual Program and Budget Overview

Program

This item includes:

- project costs (including costs of publications)
- salaries of staff whose activity relates directly to projects, Council, JPAC and Executive Management;
- NAFEC—including management costs as well as funds for grants of up to C\$100,000 and funds for projects not exceeding C\$10,000;
- specific obligations under the NAAEC;
- a portion of rent (85 percent).
- costs of Council Sessions, JPAC meetings and public meetings;
- telecommunication costs; and
- executive management including costs for the Mexico liaison office

Administration and Support

These items support the Commission as a whole and include Administration and Accounting, Public Outreach, the remaining part of rent (15 percent), external administrative support, relocation expenses for staff, office equipment and supplies, and operating equipment that include the payments for ongoing equipment leases.

Contingency Fund

Set aside for unforeseen costs.

2000 Project Budget Summary

I - Environment, Economy and Trade

Projects	Budget (C\$)
1.1.1 Critical and Emerging Environmental Trends in North America	C\$173,000
1.1.2 Assessing Environment and Trade Relationships	C\$163,000
1.1.3 Financing and the Environment	C\$134,000
1.2.1 Facilitating Trade in Green Goods and Services: Promoting Sustainable Agricultural Production and Trade	C\$192,000
1.2.2 Facilitating Conservation of Biodiversity as it relates to Trade in Wildlife Species	C\$114,000
1.2.3 Sustainable Tourism in Natural Areas	C\$92,000

II - Conservation of Biodiversity

2.1.1 Strategic Directions for the Conservation of Biodiversity	C\$148,000
2.2.1 Cooperation on the Protection of Marine and Coastal Ecosystems	C\$256,000
2.2.3 North American Marine Protected Areas Network	C\$148,000
2.2.4 North American Biodiversity Conservation Mechanisms	C\$405,000
2.3.1 North American Biodiversity Information Network	C\$177,000

III - Pollutants and Health

3.1.1 Facilitating Trilateral Coordination in Air Quality Management	C\$373,000
3.1.2 Developing Technical and Strategic Tools for Improved Air Quality in North America	C\$33,000
3.1.3 Trilateral Air Quality Improvement Initiative: North American Trade and Transportation Corridors	C\$223,000
3.2.1 Sound Management of Chemicals	C\$835,000
3.3.1 North American Pollutant Release and Transfer Register	C\$417,000
3.4.1 Capacity Building for Pollution Prevention	C\$154,000
3.4.2 Children's Health and the Environment in North America	C\$142,000

IV - Law and Policy

4.1.1 Cooperation between Environmental Laboratories	C\$52,000
4.2.1 North American Regional Enforcement Forum	C\$132,000
4.2.2 Enforcement and Compliance Capacity building	C\$192,000
4.2.3 Indicators of Effective Environmental Enforcement	C\$73,000

General

Description		Amount (C\$)
1.	Program	11,122,000
1.1	Projects	4,629,000
1.2	Salaries	3,068,000
1.3	NAFEC	739,000
1.4	Specific obligations	1,120,000
1.5	Rent (Program)	532,000
1.6	Council Regular Session (incl. 66k public session)	295,000
1.7	JPAC operations	281,000
1.8	Telecommunications	148,000
1.9	Executive Management	310,000
1.9.1	Executive Director	118,000
1.9.2	Directors	59,000
1.9.3	Mexico Liaison Office	133,000
2.	Administration and support	2,068,000
2.1	Salaries	871,000
2.2	Public Outreach	459,000
2.3	Operating equipment	118,000
2.4	External administrative support	295,000
2.5	Office supplies	133,000
2.6	Rent	74,000
2.7	Relocation & orientation	118,000
3.	Contingency fund	590,000
3.1	Unforeseen needs	148,000
3.2	Reserve for reimbursement of Québec taxes	89,000
3.3	Reserve for currency fluctuations	353,000
Total		13,780,000

Summary

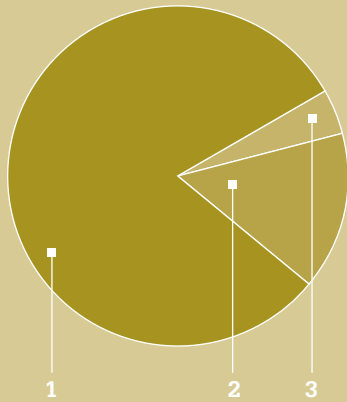
Description		Amount (C\$)
1	Program	11,122,000
2	Administration	2,068,000
3	Contingency	590,000
Total		13,780,000

Revenues

Description		Amount (C\$)
Parties' contributions		13,293,000
Carry over		369,000
Interest		118,000
Total		13,780,000

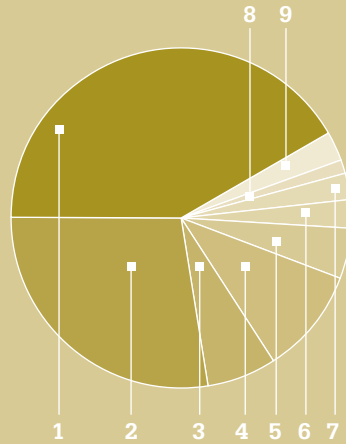
2000 Budget Graphic Overview

Overall CEC Budget for 2000



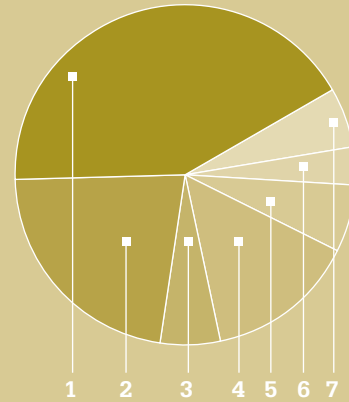
1. Program **80.7%**
2. Administration and Support **15%**
3. Contingency Fund **4.3%**

Program



1. Projects **41.6%**
2. Salaries **27.6%**
3. NAFEC **6.6%**
4. Specific Obligations **10.1%**
5. Rent (Program) **4.8%**
6. Council Sessions (incl. public session) **2.7%**
7. JPAC Operations **2.5%**
8. Telecommunications **1.3%**
9. Executive Management **2.8%**

Administration and Support



1. Salaries **42.1%**
2. Public Outreach **22.2%**
3. Operating Equipment **5.7%**
4. External Administrative Support **14.3%**
5. Office Supplies **6.5%**
6. Rent **3.6%**
7. Relocation and Orientation **5.7%**

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In North America, we share vital natural resources, including air, oceans and rivers, mountains and forests. Together, these natural resources are the basis of a rich network of ecosystems that sustain our livelihoods and well-being. If they are to continue being a source of future life and prosperity, these resources must be protected. Protecting the North American environment is a responsibility shared by Canada, Mexico and the United States.

The Commission for Environmental Cooperation (CEC) is an international organization whose members include Canada, Mexico and the United States. The CEC was created under the North American Agreement on Environmental Cooperation (NAAEC) to address regional environmental concerns, help prevent potential trade and environmental conflicts and promote the effective enforcement of environmental law. The Agreement complements the environmental provisions established in the North American Free Trade Agreement (NAFTA).



To find out more about the CEC's activities, or obtain up-to-date information on the projects described in this Annual Report, including related announcements and publications, please visit the CEC's Internet homepage or contact us using the addresses below.

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