

Special Report on Enforcement Activities

Report prepared by the North American Working Group on Enforcement and Compliance Cooperation

Commission for Environmental Cooperation

June 2001

The **Commission for Environmental Cooperation** (CEC) was established to build cooperation among the NAFTA partners—Canada, Mexico and the United States—in protecting shared environments, with a particular focus on the opportunities and challenges presented by continent-wide free trade.

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1 Introduction

North Americans are increasingly concerned about the health of their environment. They look to government to set high standards for environmental protection through laws, regulations and policies. But they also expect government to protect the public good by ensuring compliance with those environmental laws and regulations.

This concern for compliance with environmental laws and regulations and their enforcement is reflected in the North American Agreement on Environmental Cooperation (NAAEC), signed by Canada, Mexico and the United States. It requires the Parties to enforce their respective environmental laws and regulations effectively through appropriate government action, in accordance with a suggested framework of actions. These actions range from inspection and investigation of suspected violations to initiation of enforcement proceedings to seeking assurances of voluntary compliance and promoting environmental audits. The Parties are also obligated to report annually on how they carried out their enforcement obligations. These reports are included in the annual report of the Commission for Environmental Cooperation (CEC), the commission created under the NAAEC.

The first annual report of the CEC in 1995 contained a special annex comprising the North American Report on Enforcement. It was prepared by the North American Working Group on Environmental Enforcement and Compliance Cooperation (Enforcement Working Group) composed of senior level environmental enforcement officials appointed by the NAAEC Parties. That initial report provided an overview of the environmental enforcement and compliance policies, programs and strategies adopted by each country. It also outlined the legal and constitutional framework underpinning environmental enforcement and compliance powers, roles and responsibilities. Subsequent annual reports have provided information on approaches and activities in particular areas of environmental law enforcement such as hazardous wastes, air pollution and trade in wildlife. While these reports provide a useful snapshot of enforcement activities, the amount of information that can be provided is constrained by the limitations of the annual report format.

This special report returns to the more descriptive format of the 1995 report. The objective is to contribute to a greater understanding of the complexity of environmental law enforcement in the three countries and to complement the much shorter mandatory contributions made to the Commission's annual report. The Enforcement Working Group hopes to issue reports of this type periodically to focus on selected enforcement topics. The reports will allow each country to go into greater detail on the chosen subjects so that, over time, the public will obtain a more complete picture of the full range of enforcement and compliance promotion activities undertaken in each country, as well as the challenges faced by enforcement agencies in carrying out their mandates.

For this report, the Enforcement Working Group has chosen to focus on three issues: 1) compliance promotion, 2) compliance verification (inspection), and 3) measurement of program results. The main body of the report includes individual sections for Canada, Mexico and the United States, describing how their respective domestic environmental enforcement and compliance promotion programs address these three issues. As was the case with the 1995 report, the focus is on enforcement of laws for pollution control and wildlife protection. The report also contains a section providing information on the CEC initiatives aimed at improving cooperation in environmental enforcement and compliance in North America. These are programs initiated pursuant to the NAAEC and delivered through assistance from the CEC.

The reports were prepared in 2000 and contain information current as of July 2000. They do not reflect any of the changes in administration or legislation that may have occurred since then.

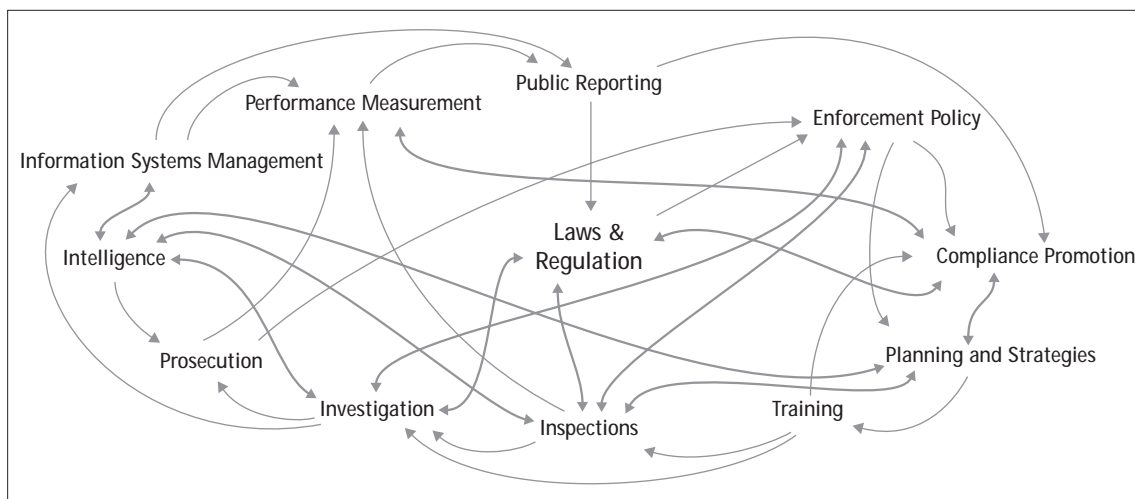
The Canadian, Mexican and United States reports were prepared by the Enforcement Working Group members of their respective countries (see Appendix for a list of Enforcement Working Group members as of June 2000.) All countries agreed to address the selected themes although each has chosen its own approach to the topics. Each country has assumed responsibility for the accuracy of the contents of these reports while the CEC has provided the venue to allow a trinational presentation of the information. Readers are requested to address questions or comments to the enforcement agencies at the web site addresses indicated in each of these reports.

Darlene Pearson,
Head, Law and Policy Program

2 Enforcement/Compliance Interrelationships

The topics for this special report were selected from the broad range of activities that are generally grouped under the notion of “enforcement.” The ultimate goal of an environmental protection regime is to secure compliance with its established rules and regulations. The various efforts and activities directed at achieving compliance form a complex web of inter-related components. Figure 1 illustrates this. The enforcement programs in all three North American countries contain these elements, although the order and emphasis placed on each will vary.

Figure 1: Web of Enforcement/Compliance Activities



Enforcement activities are actually a series of inter-related components that begin with the development and promotion of environmental legislation or regulations. Flowing out of this is verification of compliance and investigation, which can lead to enforcement action against those who fail to comply with the law. There are many additional enforcement elements and activities that are “generic” to most government enforcement programs. They support these basic functions noted above and include training, operational policy development, intelligence gathering and analysis and information management. The following are brief definitions for these various components.

- **Regulation development**—the process of drafting laws and regulations to address specific environmental problems, usually within the framework of departmental or agency environmental policies. Enforcement staff assist program specialists by providing information based upon their field experience. For example, enforcement staff can advise how best to structure and word a regulation to ensure it is enforceable, and provide feedback on any issues regarding its enforceability once enacted.
- **Enforcement policy development**—the process of developing policies and guidelines that will aid enforcement staff to adopt consistent operational practices. Clear, useable policies help inspectors and investigators to perform their jobs effectively and safely.
- **Compliance promotion**—a program of activities undertaken to inform a regulated community of its obligations and responsibilities under the law.
- **Planning and strategies**—The development of operational plans and strategies is integral to the design of an effective program. It includes setting priorities and allocation of appropriate resources to achieve short and long term operational and program objectives at the regional and national levels.

- **Training**—job-related training designed for enforcement staff and external partners (e.g., customs officers) to develop and maintain technical and behavioral skills. This is crucial not only to help them effectively carry out their duties but also to protect their health and safety.
- **Compliance verification (inspections)**—a set of procedures aimed at determining whether a regulatee is in compliance with environmental laws and regulations. Compliance verifications can involve the collection of samples, the physical and visual inspection of goods and processes, the review of documents, game warden patrols, and discussions with individual regulatees and their employees.
- **Investigation**—the collection and analysis of evidence and information relevant to a suspected violation. Investigations can vary widely in terms of length and effort—from one day to several years.
- **Post-investigation/Prosecution**—these are measures to compel compliance with or without court action. They include injunctions, ticketing, prosecution in court, court orders upon conviction, negotiated settlements and various dispute resolution alternatives.
- **Intelligence**—tracking the activities of organizations and individuals to detect their intentions, capabilities and limitations in committing environmental crimes. Intelligence activities also allow enforcement organizations to study trends in illegal activities, and to target resources towards suspected violations.
- **Information systems management**—computer tools and operating procedures that enable the efficient storage, retrieval, analysis and reporting of enforcement information.
- **Performance measurement**—the collection and assessment of information to evaluate the degree to which law enforcement objectives have been met. The results of this analysis can lead to refinement or significant changes in policy and operating practices.
- **Public reporting**—release of statistics and other information on a periodic basis as may be required by domestic laws or international agreements such as NAAEC. Public reporting is a means of achieving accountability within government and for enhancing awareness of pollution and wildlife issues.

3 Country Reports

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1 Introduction

Canadians view rule making as a fundamental role of governments. They accept that rules are necessary to protect the environment and they expect their government to ensure that these rules are followed. In this sense, Canadians consider compliance with legislation to be an issue of basic governance and they view government performance in seeking compliance as a kind of litmus test for the governments' commitment to the environment.

Canadians are concerned about risks to the environment from human activities, and the danger that these risks pose to human health and the sustainability of the environment. Governments in Canada respond to these risks by: providing scientific knowledge and expertise; developing strategies and standards with partners and the public; establishing environmental laws and regulations and promoting and enforcing these rules. Laws and regulations are designed to establish standards of performance which, if met, protect or minimize the risk of harm to the environment and human health. Therefore, compliance with regulations is necessary to achieve the level of environmental conservation and protection anticipated by the legislation. Compliance with regulations and effective enforcement are essential to addressing environmental problems such as toxic substances, air issues, wildlife conservation and endangered species protection.

Canadian industry views streamlined regulations and fair and predictable enforcement as important aspects of "getting government right." A consistent compliance and enforcement regime contributes to a level playing field and a predictable investment climate. Because of its impacts on trade and international agreements, enforcement activities must be equitable, effective and credible in the eyes of international partners and Canadians alike. In past surveys of Canadian business, the desire to be in compliance is the most important motivating factor for environmentally responsible behavior by corporate leaders.

In Canada, governments have put in place a continuum of integrated activities to achieve the results expected from the laws. This continuum follows from the matrix discussed in the introductory section to this report. The process begins with sound environmental regulations. It is followed by effective compliance promotion, by verifying compliance through inspections and other means and, when necessary, by compelling compliance through enforcement actions. Enforcement and compliance promotion are synergistic. In many situations, promoting compliance is not enough to obtain compliance. Likewise, enforcement actions alone cannot solve all compliance problems. Furthermore, an effective and fair enforcement program can serve to motivate support for innovative voluntary approaches to achieve environmental goals.

1.1 Overview of Environmental Law Enforcement

In Canada, federal, provincial, and territorial governments share responsibility for the protection and management of the environment, wildlife and its habitat. Under the Canadian Constitution, each order of government is accountable for broad areas of responsibility, some of which are shared among the governments according to law, tradition and agreements that may be negotiated from time to time. As well, there are many formal and informal agreements resulting in the cooperation that is fundamental to the Canadian approach to managing environmental issues. This is also the case for environmental law enforcement.

As environmental issues become increasingly national, international and global in scope and the potential for smuggling becomes greater and more lucrative, environmental law enforcement agencies in many countries are recognizing the importance of partnerships and collaboration in setting priorities and supporting joint enforcement actions. In Canada, effective enforcement requires collaboration not only with other domestic law enforcement agencies, but also with those of other countries, as well as with international enforcement agencies such as Interpol. The recent initiative within the Canadian Council of Ministers of the Environment to develop an Enforcement Sub-agreement under the Canada-wide Harmonization Accord is another example of a collaborative approach.

Federal environmental responsibilities include, but are not limited to: fisheries; migratory birds; national protected areas such as National Wildlife Areas and National Parks; international and interprovincial trade and commerce in materials such as hazardous wastes, ozone-depleting substances and wildlife; the development, manufacture, importation, transport, distribution, storage and use of toxic substances; and negotiation and implementation of international accords. Key provincial and territorial environmental responsibilities include: management of natural resources (e.g., forests and minerals); conservation of wildlife

within their respective boundaries; emergency response to accidents; and evaluation, authorization and verification of all activities likely to have an impact on the environment, such as emissions and hazardous wastes.

Enforcement of environmental and wildlife legislation for all orders of government (federal, provincial, territorial, municipal) is conducted within the context of the Canadian legal framework, which includes the Charter of Rights and Freedoms, the Criminal Code, the Privacy Act, Access to Information Act, Mutual Legal Assistance in Criminal Matters Act, and the Canada Evidence Act. In Quebec, the Quebec Charter of Human Rights & Freedoms, the Civil Code and Penal Code also apply. Most environmental and wildlife legislation in Canada provides enforcement officers with the right to inspect, search premises, and to seize and detain evidence.

1.1.1 Federal government

At the federal level, Environment Canada (EC) has the lead responsibility for protection of the environment and conservation of wildlife. EC is responsible for the enforcement of approximately 40 pollution and wildlife regulations falling under the legislation noted below. These Acts cover a very wide range and diversity of responsibilities. They run the gamut of monitoring and controlling substances and actions that pollute the environment, and conserving and protecting Canadian wildlife and its habitat. Included is the enforcement of specific regulations related to air, water and toxic substances under the 1999 revisions to the Canadian Environmental Protection Act (CEPA) and effluents under the pollution prevention provisions of the Fisheries Act. EC also maintains a National Pollutant Release Inventory (NPRI) for the purpose of monitoring pollutant sources and quantities released nationally.

Main Federal Environmental Laws in Canada Administered by Environment Canada

Canadian Environmental Protection Act

The Canadian Environmental Protection Act (CEPA) is the cornerstone of federal environmental legislation. It gives the federal government significant powers to protect Canadians and the natural environment from pollution caused by toxic substances, among other things. Revisions to CEPA, approved by Parliament in September 1999, give the government stronger powers and new tools to protect the environment and human health. The new Act, which enshrines pollution prevention as the preferred approach to environmental protection, will be used by the Government of Canada to provide Canadians with cleaner air and cleaner water. CEPA imposes tough new deadlines for action on toxic substances. It also provides greater opportunities for citizen participation in decision-making on environmental issues and improved access to environmental information.

Fisheries Act [Subsection 36(3)]

Under an administrative agreement with the Department of Fisheries and Oceans, Environment Canada has primary responsibility for the pollution prevention provisions of subsection 36(3) of the Fisheries Act. This Act authorizes enforcement officials to take a range of enforcement actions to prevent harm to fish and fish habitat and to regulate the discharge of deleterious substances into water frequented by fish. The Act provides authority for inspections, the issuance of authorizations and the imposition of conditions on works and undertakings that might threaten fish and fish habitat, search, seizure and detention, the issuance of orders requiring the provision of information, modifications or additions to existing works or undertakings and remedial activity. Like CEPA, the Fisheries Act provides for a wide range of penalties, including forfeiture, fines equal to profits, prohibitions, requirements to conduct remedial actions, publication of the facts about offenses, Crown compensation, community service, the posting of compliance bonds and reporting. Section 79.2 provides for discretionary court orders, in addition to any other punishment imposed.

Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act

The purpose of the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA) is to protect Canadian and foreign species of animals and plants that may be at risk of over-exploitation due to poaching or illegal trade, and to safeguard Canadian ecosystems from the introduction of species designated as harmful. It accomplishes these objectives by controlling the international trade and interprovincial transport of wild animals and plants, and their parts and derivatives, and making it an offense to transport illegally obtained wildlife between provinces or between Canada and other countries. The Act is the legislative vehicle by which Canada meets its obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Migratory Birds Convention Act

The Migratory Birds Convention Act of 1994 (MBCA) aims to conserve the diversity of migratory birds in Canada, and to maintain safe population levels while preserving social, cultural and economic opportunities for the benefit of present and future generations. Unlike CEPA and the pollution prevention provisions of the Fisheries Act, the MBCA deals with the conservation of resources. It protects many species of migratory birds that are hunted across Canada. It also protects non-game and insectivorous migratory birds. To meet the requirements of the Convention, there are a number of regulations that protect all migratory birds and, in particular, ducks, geese, and other game birds. These provisions deal with such things as bag limits, possession limits and requirements, baiting, retrieval of birds, hunting methods, hunting season, bird sanctuaries, and the sale of birds. The possession of migratory birds by aviculturists, taxidermists and scientific and educational organizations is also regulated.

Canada Wildlife Act

The Canada Wildlife Act (CWA) is a federal statute that allows the Minister to support conservation, research and interpretation of wildlife. It allows certain areas to be designated as National Wildlife Areas, which are under the administration, management and control of the federal government. EC is responsible for the administration and the enforcement of this Act.

Environment Canada's enforcement program is managed through headquarters and five regions, housed in over 20 offices nationally. Additionally, there are formal and informal partnership arrangements with federal departments and agencies such as the Department of Justice, the Canada Customs and Revenue Agency, the Royal Canadian Mounted Police, Fisheries and Oceans Canada, Agriculture and Agri-food Canada, the Parks Canada Agency and Health Canada. Likewise there is cooperation with other national and international organizations including the Criminal Intelligence Service Canada, Interpol, World Customs Organization, United Nations Environment Program, and the Secretariats for the major international conventions such as the Basel Convention on the Transboundary Movement of Hazardous Wastes, Montreal Protocol on Substances that Deplete the Ozone Layer, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Environment Canada recognizes that government efforts to achieve compliance require a continuum of activities, beginning with clear and relevant legislation and regulations, followed by effective compliance promotion and verification and compelling compliance when necessary. Consistent with this recognition and the need to strengthen the capacity of EC's national enforcement program, it has developed and is implementing a four-part action plan. These actions relate to policy, management, tools and resources. Among the many successful actions taken recently, the more noteworthy include: updating of policies; strengthening the Canadian Environmental Protection Act with respect to enforcement powers and enforcement officer authorities; and adding additional resources to the program.

In February 2000, the federal budget included an infusion of C\$40M for five years into environmental enforcement initiatives. The allocation is C\$22M for national pollution law enforcement over the first three years (with a breakdown of C\$7M, \$7M, and \$8M over the three years) and stabilizing at C\$9M per year thereafter. EC will use these resources to strengthen the delivery of its enforcement program, including implementing the new tools and powers under CEPA.

1.1.2 Provincial and territorial governments

Canada has three territories and ten provinces, of which Alberta, Manitoba and Quebec are signatories to the North American Agreement on Environmental Cooperation (NAAEC). Generally, provinces and territories are responsible for evaluating, authorizing, and verifying industrial activities in relation to the environment, and managing wildlife within their respective boundaries. For instance, they regulate the use of ground and surface water and the generation, transfer and disposal of solid and liquid wastes within their boundaries. However, if those wastes cross provincial or international boundaries, the waste handler must comply with federal legislation pertinent to that activity. Similarly, the provinces pass laws governing the protection of wildlife and wildlife habitat and issue hunting and gathering licences to regulatees within their jurisdictions. However, trappers and hunters must comply with all appropriate federal as well as provincial laws if they wish to transport their catch outside the province in which it was taken.

Aboriginal groups in Canada are assuming greater responsibility for the development and enforcement of environmental protection and wildlife conservation rules, whether as a result of court rulings based on inherent rights, land claims, and treaties, or because of agreements negotiated between the government and aboriginal groups.

The rest of EC's report discusses the three topic areas of compliance promotion, inspections and measuring results. It gives information on federal activities in those areas as well as on activities in the three provinces signatory to NAAEC. The discussion on enforcement is further divided into those activities relating to pollution laws and those relating to wildlife laws.

2 Compliance Promotion

Compliance promotion is about informing the public and the regulated communities of the laws and their responsibilities under them. It is a key means of motivating and thereby indirectly achieving compliance with environmental and wildlife legislation. Whether the regulatees be hunters, travelers, manufacturers, or importers/exporters, all need to know what is allowed and what is not. They have the responsibility to comply with the law. Typically, compliance promotion efforts include:

- Consultation on regulation development and review
- Education and information dissemination
- Workshops and site visits
- Technology development, evaluation and promotion
- Technology transfer

Explaining the law and its implications begins when a law or regulation is under development, and continues through to its official publication and beyond. Depending upon the complexity of the law and the size and nature of the regulated community, significant compliance promotion efforts may be necessary for many years after a regulation comes into force. In other cases, only minimum effort is required when there are few regulatees or the “turnover” in the regulated community is small.

Wildlife and environmental law enforcement officials, in general, do not have the lead role for promoting compliance, although they may assist or make contributions to those responsible for developing and implementing a compliance promotion program or strategy. Generally speaking, those responsible for the development of the regulations are best suited to explain the content and implications of the various provisions of any given regulation. Enforcement officers do not necessarily have, and are not expected to have, the expertise to advise regulatees. Moreover, particularly in the highly technical area of enforcement of pollution laws, the combined role of advisor and enforcer could result in the appearance of, or actual, conflict of interest, or could lead to “officially induced error.” Either of these could potentially jeopardize the success of future investigations.¹

Notwithstanding the above, wildlife law enforcement officers have a long history of playing an important role in supporting compliance promotion efforts. Traditionally, wildlife laws have been targeted at regulated communities consisting of individuals or groups of people involved with hunting and use of wildlife resources. Field patrols are one of the mechanisms by which wildlife officers identify contraventions, take appropriate actions and inform regulatees about their obligations under the law and verify compliance.

Meetings and events of organized sports groups and wildlife conservation associations are another means utilized to inform members about laws, regulations and penalties. The presence and participation of wildlife law enforcement officers at public events and wildlife association meetings not only provides an opportunity to inform the attendees about legal requirements, but also deters noncompliance by virtue of the presence of uniformed officers.

In recent years, the tasks of wildlife law enforcement officers have become increasingly demanding, with growing and complex enforcement requirements associated with illegal importing and exporting of hundreds of different types of plants, animals and their products or derivatives. Moreover, the very large volume of legal international wildlife trade, let alone the personal use exemptions applicable to travelers into Canada, provides a different set of challenges to ongoing attempts to protect wildlife through the regulation of trade in endangered species.

Compliance promotion efforts for environmental pollution laws target industrial sectors or industrial processes for which the regulation was created. The implementation of those laws by a company or business may require physical change to its facilities and equipment and/or the way it operates. To facilitate that change, extensive education is undertaken to ensure that regulatees understand the requirements set by the regulation. In some cases, demonstration projects sponsored or co-sponsored by government and industry are developed in order to encourage best practices by the industrial sector. Promoting compliance by distrib-

¹ Generally, “officially induced error” refers to the situation where a regulatee proves that the advice or instructions given by a government official led to the state of noncompliance and that it was reasonable to rely on this advice.

uting specially designed information packages to industry sectors is also useful, as is the encouragement of the effective implementation of environmental management systems (EMSs). Regulatees must adjust their processes and operations to become and remain compliant or enforcement action will be taken. Once compliance is attained, promotion efforts can be re-focused or re-prioritized.

2.1 Pollution Laws

2.1.1 Federal government

At EC, the planning, development and, in most cases, delivery of compliance promotion programs is led by program specialists associated with the development of a particular regulation or legislation (i.e., a group that focuses on a specific issue such as pulp and paper, fuels, or hazardous wastes). Enforcement officers provide feedback from their knowledge and field experience to support program specialists who are charged with developing and revamping compliance promotion programs. Consultation among program specialists and the regulated community during the development of regulations is one way to ensure the promotion approach and the communication strategy is effective.

Compliance promotion plans for the major federal environmental laws, such as CEPA and the Fisheries Act, are planned by program managers in headquarters, with input from the enforcement groups from all regions.

Considerable effort is put into compliance promotion following promulgation of new regulations to ensure the target audience understands what is required of it. The growing number of regulations, the complex dynamics of the marketplace and the wide range of regulated groups increase the challenge of ensuring effective compliance promotion.

2.1.2 Provincial governments

Alberta

Alberta Environment is responsible for protecting Alberta's environment and for managing and protecting its renewable resources, such as forests, fisheries and wildlife, and water. Additionally, Alberta Environment administers Alberta's public lands, parks, and recreation areas.

The primary means by which "pollution" is regulated in Alberta is the Environmental Protection and Enhancement Act (EPEA), and its regulations. This legislation lays the foundation for regulating a broad range of industrial, municipal, and commercial activities within Alberta. Approvals, Registrations, and Codes of Practice are the principle documents outlining the operational, monitoring, reporting, and reclamation requirements governing many facilities and operations.

Compliance assurance activities are those undertaken to ensure that regulated parties comply with legislation. To describe and achieve these activities, Alberta Environment has developed Compliance Assurance Principles, which provide the Department's overall direction for its compliance assurance business. These activities include promoting compliance through education and prevention initiatives, and where required, compelling compliance through enforcement responses.

Examples of the education and prevention principles that Alberta Environment follows to promote compliance include:

- Ensure that legislative requirements are clear, enforceable and widely known within the regulated community and the public.
- Foster partnerships with other government agencies and the public to promote compliance.
- Encourage regulated sectors to develop and implement self-improvement approaches/methodologies, best available technology, best practices and innovation aimed at assuring compliance (for example, environmental management systems and stewardship programs).
- Encourage the regulated sectors to be proactive in addressing potential noncompliance issues as they arise.

- Maintain and enhance Alberta Environment's visible and perceived presence to demonstrate to the regulated community that the Department is vigilant, aware and committed to assuring that activities and operations comply with regulations.
- Make public, on a regular basis, summaries of all Alberta Environment enforcement responses.
- Raise public and regulated community awareness of Alberta Environment's legislative requirements, why they exist, what is required to comply with them, and how to identify and report incidents of noncompliance.
- Prioritize its compliance education activities to focus on issues and regulated parties where there is:
 - a) a need to increase compliance;
 - b) significant potential impact associated with noncompliance; and
 - c) an ability to influence behavior.
- Acknowledge regulated parties and sectors that have a history of performing better than the minimum requirements to achieve compliance or that have substantially improved their record of compliance.
- Encourage regulated community associations to develop their own initiatives to promote compliance, such as prevention and education programs, codes of conduct, and security funds (for example, "environmental protection" security funds).
- Develop partnerships with governmental and nongovernmental agencies, the academic community, special interest groups and the public to conduct education and prevention activities/initiatives that promote compliance.
- Develop and publicize annually its Compliance Assessment Plan that:
 - a) assesses a broad range of regulated activities/operations;
 - b) over the long term, assesses a sample of each regulated sector on a regular basis;
 - c) targets particular activities/operations based on environmental/resource management priorities as determined by the following:
 - i. the risk to the resource or environment associated with a particular activity/operation;
 - ii. the history of compliance of regulated parties associated with the activity/operation; and
 - iii. information about trends and emerging resource management issues as determined from strategic analysis; and
 - d) sets goals for the number and types of assessments to be conducted annually.

Manitoba

In October 1999, the provincial department of Manitoba Conservation was formed, bringing together the former departments of Environment, Natural Resources and Energy to provide effective management of ecological and human health-related programs in the province.

Manitoba Conservation promotes compliance with environmental legislation in the interest of environmental protection and enhancement of natural resources. Environmental protection through compliance promotion is achieved through numerous stewardship programs that address such issues as waste oil and tire recycling, as well as the management of plastics, pesticide containers and household hazardous waste. Departmental staff provide professional expertise on requirements for compliance with environmental legislation to other provincial departments, local governments, industry, and the general public.

The Pollution Prevention Branch in the Environmental Division of Manitoba Conservation manages the Waste Reduction and Prevention Act and the Ozone-Depleting Substances Act, and takes the lead in promoting the application of practices that avoid the creation of waste and pollutants at source. Manitoba and the Alliance of Manufacturers and Exporters Canada (Manitoba Division) entered into a partnership agreement in 1996 through the signing of a Memorandum of Understanding. Pilot projects have targeted small and medium-size industries on pollution prevention initiatives in sectors such as printing and metal finishing.

Quebec

Quebec promotes a partnership approach to compliance promotion through round tables composed of industry, academia and other interested parties, to define society's goals and to set the standards to be met for certain activities. Laws are published in draft form to give citizens and organizations time to submit commentaries and briefs.

Press releases and information kits are prepared before new laws and regulations come into force. At workshops or meetings of professional groups, representatives from the Ministry of Environment make presentations to publicize and explain the content and scope of laws and regulations to the regulated community. The Ministry's web site is also used as a means of publicizing the requirements of the law.

Le Bureau d'audiences publiques sur l'environnement (BAPE—Office of Public Hearings on the Environment) is a government body whose role is to investigate any issue relating to environmental quality, particularly through the assessment and review of environmental impacts of certain projects. The BAPE public hearings also help to promote regulatory compliance, not only through the discussions held at the hearings but also through the publicity generated from the hearing process itself.

2.2 Wildlife Laws

2.2.1 Federal government

As with the pollution law enforcement program, the accountability for the planning, development and delivery of compliance promotion materials for wildlife legislation rests with the overall wildlife "program" managers, in this case with the Canadian Wildlife Service. Wildlife officers participate in approximately 20 major promotional events annually, including presentations to wildlife conservation and game associations. Uniformed officers, through their daily activities and by virtue of their presence among the public, are a visible deterrent and thereby are continually promoting compliance.

2.2.2 Provincial governments

Alberta

The basis for compliance promotion with Alberta's wildlife and fisheries legislation is drawn from the Compliance Assurance Principles as outlined under the heading of "Pollution Laws," Section 2.1.2 for the Province of Alberta. Examples of how compliance with wildlife and fisheries legislation is promoted through education and prevention initiatives include brochures and publications, educational programs and presentations to special interest groups, and other similar initiatives, as well as the daily presence of the Conservation Officers in the community.

Manitoba

In Manitoba, approximately 135 full-time Natural Resource Officers and up to 100 seasonal officers are responsible for administration, enforcement and delivery of resource-related programs. These programs are delivered in 53 district and 5 regional offices. Programs include: wildlife, fisheries, forestry, parks, Crown lands, wildfires and water.

Wildlife activities are governed by the Manitoba Wildlife Act and 28 regulations pursuant to that Act. This legislation forms the basis to govern hunting, licensing and commercial as well as noncommercial use of wildlife. Compliance promotion is achieved through routine patrols as well as through general investigations. Investigations of a more complex nature are handled by a Special Investigations Unit, consisting of four officers. Joint patrols/investigations are also conducted with other provincial and federal agencies. These agencies include Environment Canada, the Royal Canadian Mounted Police, Canada Customs and Revenue Agency, and the US Fish and Wildlife Service. In more complex cases, "Joint Forces Operations" agreements are entered into.

Compliance checks are conducted on a regular basis and include commercial activities such as those of taxidermists, fur dealers, fur buyers, tanners and individuals involved in ranching of indigenous species of wildlife. Patrols are also conducted to monitor hunters and trappers.

Officers regularly attend public functions such as: game and fish meetings, sporting clubs and other private and public organizations to ensure regulatory requirements for fish, wildlife and forest management are adhered to through a proactive approach of information sharing and updating on current and new legislation. Other public fora such as amphitheater presentations and attendance at public school education events are used.

Quebec

In Quebec, compliance promotion of laws relating to wildlife and its habitat as well as provincial parks is carried out by the *Société de la Faune et des Parcs du Québec* (Quebec Agency for Wildlife and Parks). This new agency, created in December 1999, has responsibility for provincial laws dealing with the conservation and development of wildlife, parks, threatened or vulnerable species, and federal laws on fisheries and the convention on migratory birds.

The provisions of these laws target a specific clientele, namely hunters, trappers, sport and commercial fishers, fur merchants, persons carrying out animal husbandry or aquaculture, members of aboriginal communities, and others. The means of communication designed for this type of clientele include brochures and regulations, information kits, the Agency's web site, an information service, press releases, participation of Agency personnel in workshops, expositions, trade shows, conferences or symposiums, and education programs in schools and vacation camps.

In this regard, any Agency member may be called upon to assist in compliance promotion, although the task more specifically falls upon wildlife protection agents, wildlife biologists and technicians, information agents and personnel who use all opportunities to promote conservation and sustainable use of fauna, its habitat, and parks.

In addition, many legal and regulatory provisions apply to controlled territory such as parks, wildlife reserves or refuges, controlled zones, outfitters with or without exclusive rights, and private land under access agreement for wildlife or traplines. For these types of land-use, compliance promotion is carried out in partnership with the organizations managing this land, who in effect act as relay agents working jointly with provincial organizations who represent them before the Agency.

3 Compliance Verification

Compliance verification determines whether a regulatee complies with legislation. It includes on-site inspections and administrative verification of records. The presence of an enforcement officer on-site to carry out inspections can also create an important deterrent effect throughout the various sectors of the regulated communities. For the five major laws administered by EC, there are over 40 regulations currently in place. These regulations contain approximately 1200 specific regulatory provisions. The “deterrence effect” is therefore exceedingly important because it is virtually impossible to patrol or inspect every regulated activity and every regulatee at every location. The combined and balanced approach of compliance promotion with targeted inspection followed by prosecution when warranted, is necessary to allow the Department to focus its limited resources on priority situations and suspected criminal elements.

Inspections and administrative verification efforts help in other ways. They can provide relevant information that a “regulator” can use to evaluate the effectiveness and relative ease or difficulty of implementing a law or regulation. They can also provide information to determine whether enhancing or adjusting the type of compliance promotion used is needed.

Specific compliance verification responsibilities for environmental protection and wildlife inspectors typically include:

- verifying legal requirements at the individual, sector, and national levels;
- requesting compliance by offenders;
- deterring noncompliance by presence and actions;
- recommending the initiation of investigations;
- providing the statistical and other information needed to target future actions;
- documenting and communicating findings both internally and to the regulatee; and
- implementing inspection priorities and plans under the law.

Field or on-site inspections occur at the location of the regulated activity (e.g., in a wildlife area or at an industrial site). These can involve: checking documentation and shipments of imported or exported wildlife or wastes, sampling effluents and air emissions, inspecting equipment, verifying inventories and the storage of toxic substances (e.g., PCBs), auditing records, interviewing hunters, patrolling hunting areas, and other activities.

Administrative verifications may take place in a government office and generally consist of reviewing specific forms or information provided by regulatees as required by law. The activity may involve checking for completeness, accuracy, and timeliness, cross-checking and verifying references and/or all of these. For wildlife, much administrative verification is done in the field. For instance, checking permit limits against actual catch, or verifying documents required for international shipments.

The breadth of responsibilities requires inspectors to be multi-skilled and highly trained in areas such as: the collection and preservation of samples, approaches to auditing, understanding of the Charter of Rights and Freedoms as well as the laws governing searches and seizure of evidence, dealing with potentially hostile people, the identification of environmental hazards, the planning of field activities, analysis of findings under all pertinent federal regulations, use of information management systems (e.g., NEMISIS²—see section 3.1.1 below), industry-specific knowledge and testifying in court.

3.1 Pollution Laws

3.1.1 Federal government

Federal pollution enforcement officers are responsible for the enforcement of CEPA, and the pollution prevention provisions of the Fisheries Act, including subsection 36(3) and the more than 35 regulations adopted under these two laws. In 1998/99, approximately 2675 inspections were carried out under CEPA, and 2924 under subsection 36(3) of the Fisheries Act.

² National Enforcement Management Information System and Intelligence System.

At present, EC has bilateral agreements on inspections with the provinces of Alberta and Saskatchewan. In Quebec, an information exchange agreement applies only to the pulp and paper sector. Bilateral agreements generally set out which federal or provincial environmental law enforcement agencies carry out selected inspection activities and facilitate the exchange of information and cooperation on investigations where both jurisdictions have a role to play.

From start to finish, including the planning, review of historical compliance and related information, on-site work, and reporting or follow-up, it is not unusual for an inspection of an industrial facility to take two weeks to complete. The results of field inspections are not always immediate. For example, some sample tests and analyses can take several days to complete. In addition to planned inspections, the Department also considers all complaints, tips, reported spills, and referrals to decide on the appropriate action.

Each year, EC draws up a Canada-wide (federal) Inspection Plan that establishes priorities and sets out plans at the national and regional levels. Also, EC prepares an annual report that tracks the inspection plan implementation results. Several factors are considered in setting national and regional enforcement and inspection priorities, including:

- the degree of threat posed to the environment and human health;
- the age of the regulation (newer regulations receive greater attention);
- the effort required to serve as an effective deterrent;
- the size of the regulated community and current levels of compliance (to the extent that they are known);
- applicable legal requirements and international obligations;
- the static or variable nature of the threat;
- the historical level of inspection;
- any knowledge of criminal influence based upon intelligence information; and
- potential economic impact and public expectations.

Regional priorities may vary from region to region due to a variety of factors. For instance, the Pacific and Yukon Region has identified the Fisheries Act as a priority, while the Ontario Region, which has a large industrial base, has greater focus on enforcement of target industrial pollution regulations under CEPA.

If a period of concentrated effort involving inspections (and possibly prosecutions) results in a high level of compliance for a particular regulation, resources can then be shifted to other high priority regulations. For instance, a concerted inspection and enforcement effort in the pulp and paper sector during the mid-1990s contributed to improved compliance rates within that sector (see case study #1 in section 5.1). This allowed the Department to move this issue down on the national priority list but still maintain a focus on problem areas.

Information is essential for an effective enforcement program. It requires an efficient data and information collection and management system. The inspection function itself generates vast amounts of data. This and other related information must be readily accessible to inspection teams.

To address this need, EC has developed the National Enforcement Management Information System and Intelligence System (NEMISIS). It was launched in 1997 to help EC enforcement staff capture, track, manage and report on enforcement activities. The system is capable of producing statistics on inspection, and enforcement activities, and can assist with the production of both operational and public reports. The system has attracted interest within enforcement agencies in Canada. EC has granted rights of use and access to this system under special agreements between EC and some of its provincial counterparts.

In 1998, Environment Canada's enforcement program was the subject of a report by the Parliamentary Standing Committee for the Environment and Sustainable Development. The recommendations of this report, the observations in two reports by the auditor general of Canada, and the need to update powers and authorities under the CEPA review process led to a review of enforcement policies, tools, management and available resources. The review of resources included the assessment of ongoing resource gaps and short-term future needs for the entire enforcement program, including compliance verification. Following the provisions in the budget for 2000, the department was successful in obtaining additional resources from the federal Treasury Board to address some of those gaps. The federal budget for 2000 provided C\$40M over the next five years to further boost the Department's enforcement capacity. In the first

year C\$7M was earmarked to increase capacity in inspections, investigations and intelligence and other priorities. However, an ever-increasing number of environmental regulations and regulatory amendments, and increasing smuggling activity will continue to stretch the resources of the environmental law enforcement program. Current CEPA and Fisheries Act regulatory priorities of the department are import/export of hazardous wastes, trade in ozone-depleting substances, the New Substances Notification review process, and new fuel regulations.

3.1.2 Provincial governments

Alberta

Alberta Environment's Compliance Inspection and Monitoring Program includes inspections, audits, and reviews of compulsory monitoring reports or other submissions required in compliance with an authorization. A broad range of industrial, municipal, and commercial activities are designated under the Environmental Protection and Enhancement Act (EPEA) and its regulations, such that Approvals, Authorizations, and Codes of Practice are used to describe the regulatory obligations of a facility or operation. For activities or operations that do not require an authorization, there are specific sections of EPEA that prohibit certain actions (or the failure to act).

Proactive compliance assessments (inspections, audits, and reviews³) are carried out by department staff to verify that regulated activities and operations are in compliance with Alberta Environment's resource management and environmental legislation. In accordance with Alberta Environment's Compliance Assurance Principles (see section 2.1.2—Alberta), proactive compliance assessment plans are prepared annually, targeting regulated activities that reflect Alberta Environment's environmental and resource priorities.

Regulatory compliance is assessed by inspectors and specialized monitoring personnel through facility inspections, sampling events (inspections), audits and compulsory monitoring reviews. The Compliance Inspection and Monitoring Program helps ensure that facilities meet the requirements of their Approval, Registration, or Code of Practice as issued under the authority of the EPEA.

The Compliance Inspection and Monitoring Program requires that departmental inspectors review and inspect any or all aspects of a facility's approval or registration in order to verify compliance. The inspection may include sampling of soil, groundwater and effluent, and air emissions at their source. The inspection focuses first on identifying and correcting areas of noncompliance; however, significant noncompliance may be the subject of an enforcement action.

Regional co-ordination

Inspections are conducted under the direction of departmental Enforcement and Monitoring managers in each of the Department's six regions. Each region's annual compliance assessment plan (inspections, audits and reviews—see footnote 3) is strategically developed and consistent with all other regions. Additionally, inspection activities will be coordinated for operations or activities that are regulated by more than one piece of Alberta Environment legislation.

Emphasis on prevention/education

Education and prevention activities promote compliance in the regulated sectors by raising awareness regarding legislative requirements and their purpose, how to comply with the requirements, and the consequences of noncompliance. Inspections are designed to identify and correct noncompliance. Whenever possible, inspectors emphasize prevention and education.

³ **Inspection**—a site/field evaluation of a regulated activity to verify that specified requirements are being met.

Audit—a site/field examination conducted to verify that the methods and procedures of data gathering and/or collection meet all quality assurance/quality control criteria of designated methods.

Review—a function that evaluates compulsory monitoring reports, registrations, records and other required submissions for compliance with the requirements of a statute, approval, code of practice or regulation.

No prior notice

The majority of compliance assessments are conducted on an unannounced basis in an effort to evaluate activities or operations under typical conditions, ensuring a higher probability of recording unbiased results and maintaining a high degree of credibility.

Frequency of inspections

In establishing the annual inspection and monitoring program for each region, the following must be taken into account:

- Regional priorities must be set for each of the following activities: industrial facilities, municipal facilities, pesticide activities, solid waste management facilities, and land reclamation activities.
- All facilities covered by an EPEA approval will receive a minimum of one inspection during the term of the approval.
- Facilities required to be inspected as part of agreements with outside agencies will be part of the annual program.

The following are used to establish priorities:

- Potential for adverse effect:
 1. the sensitivity of the receiving environment;
 2. toxicity or hazard class of the pollutants being emitted or discharged;
 3. proximity to residents; and
 4. emission or discharge levels.
- Sensitivity and/or issues arising from:
 1. approval of writers'/engineers' priorities;
 3. amount of time since the last inspection;
 4. compliance history from previous inspections;
 5. record of complaints received regarding the facility
 6. record of contraventions reported by the facility;
 7. monthly reporting information regarding problematic performance;
 8. facilities with high staff turn-over or labor concerns;
 9. results of previous year's inspections; and
 10. emerging issues such as Environmental Appeal Board decisions.

How frequently a facility is inspected therefore depends on its priority as established by evaluating the criteria previously listed. Facilities or operations with a greater potential to cause an adverse effect or with a history of noncompliance can expect to be inspected more frequently than others. Consistently good performance will generally result in less frequent inspections.

Inspection procedures

Inspections are generally conducted as follows:

- Meeting with facility personnel to explain purpose of inspection and discuss inspection plan.
- Inspection; inspectors indicate areas of noncompliance.
- Possible sampling of air, effluent, soil, waste or groundwater.
- Post inspection meeting with facility representative(s) to discuss inspection results, areas of noncompliance and follow-up requirements.

Inspection follow-up

Soon after each inspection, Alberta Environment sends the facility a report outlining the inspection's results. In cases involving significant noncompliance, the report is accompanied by a Letter of Noncompliance. The letter indicates areas of noncompliance and requests a written explanation of how the situation was or will

be corrected. Follow-up inspections ensure the appropriate actions have been taken. Failure to take the requested actions can result in enforcement action.

For the 1999–2000 fiscal year period, Alberta Environment staff conducted 4,698 inspections, 7,197 reviews, and 97 audits of Industrial, Municipal, Pesticide and Conservation and Reclamation activities regulated pursuant to EPEA and its regulations (see following box).

ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT

STATUTES OF ALBERTA, 1992, CHAPTER E-13.3

REGULATIONS

- Activities Designation Regulation
- Administrative Penalty Regulation
- Approvals and Registrations Procedure Regulation
- Beverage Container Recycling Regulation
- Conservation Easement Registration Regulation
- Conservation and Reclamation Regulation
- Environmental Protection and Enhancement (Miscellaneous) Regulation
- Environmental Assessment (Mandatory and Exempted Activities) Regulation
- Environmental Assessment Regulation
- Lubricating Oil Material Recycling and Management Regulation
- Ozone-Depleting Substances Regulation
- Pesticide (Ministerial) Regulation
- Pesticide Sales, Handling, Use and Application Regulation
- Potable Water Regulation
- Release Reporting Regulation
- Substance Release Regulation
- Tire Recycling and Management Regulation
- Waste Control Regulation
- Wastewater and Storm Drainage Regulation
- Wastewater and Storm Drainage (Ministerial) Regulation

Manitoba

Manitoba Conservation undergoes an annual business planning process, which includes the planning of inspection and enforcement activities in both the environment and wildlife sector. Manitoba Conservation incorporates compliance verification in routine inspection and enforcement of environmental and wildlife activities based on the regulatory requirements of various sectors. In some cases, environmental licenses to private or public works require monitoring or auditing functions that are reported directly to the Department for verification. For example, all municipal water plants and large industries must routinely report monitoring results for all waste streams.

Manitoba Conservation is an active participant in the Canadian Council of Ministers of the Environment, whose Secretariat is co-located with the provincial and federal environment agencies in the city of Winnipeg. Manitoba and Canada have jointly led the Canada-wide initiative on the harmonization of inspection and enforcement activities. The intent of the initiative is to develop a framework for future bilateral agreements between the federal government and each of the provinces that would take advantage of efficiencies. A subagreement between federal, provincial and territorial agencies was approved in principle in June 2000 and is expected to be implemented in 2001.

Manitoba and Canada will share in planning inspections and enforcement for regulations for PCB storage and for the Secondary Lead Smelting industry. Annual planning and implementation of inspection and enforcement activities between the two agencies will be carried out.

Quebec

In its legislation, Quebec has prioritized “before the fact” conformity assessment, particularly under its procedures for requesting a certificate of authorization and for environmental impact assessment. Accordingly, a promoter who wishes to build a facility or carry out activities likely to contaminate the environment must, under Article 22 of the Environment Quality Act, request and obtain a certificate of authorization from the Minister before beginning any work. In the request, the promoter must furnish information that would allow the Minister to issue or refuse a certificate authorizing the building of a facility or the carrying out of an activity, or both.

In a parallel fashion, the environmental impact assessment procedure can also be considered a “before-the-fact” conformity assessment. This process is set in motion when a project is deemed to exceed a certain impact threshold. The type of project affected is determined by the *Règlement sur l'examen et l'étude d'impacts sur l'environnement* (“Environmental Impact Assessment and Review Regulation”). An impact assessment must be submitted to the *Bureau d'audiences publiques sur l'environnement* (“Office of Public Hearings on the Environment”) prior to requesting a certificate of authorization. This analysis may be reviewed at a public hearing if the Minister receives a request to this effect from a citizen and the request is judged not to be frivolous.

For certain industries an *attestation d'assainissement* (“de-pollution attestation”) is required. This attestation is in effect an operating permit with a term of five years, which sets out the operating standards for the industry, including emission levels for all media as well as follow-up and self-monitoring requirements.

The environmental impact assessment and review procedure, the request for a certificate of authorization, the de-pollution attestations and the issuance of permits are all types of “before-the-fact” conformity assessment and could be described as “level one” compliance verification. The next level of verification involves inspection of facilities and their operation after the issuance of an authorization in order to insure that the conditions imposed are being respected.

Since its decentralization in the early 1990s, the Ministry has established an inspection procedure for the inspectors allocated to the regional offices. It specifies how to carry out an on-site inspection—from the manner in which the inspector should be attired and the hours during which an inspection is generally carried out, to how to deal with uncooperative owners. This document is a ministerial guide on how to carry out an inspection, rather than on what to inspect.

Other than for the hazardous waste and pulp and paper sectors, regional offices normally draw up their own annual inspection programs in accordance with the Ministry's strategic priorities and, of course, the resources available to each regional office.

With respect to hazardous wastes, there is a common program applicable to all regions known as the “Regional Program for the systematic inspection of hazardous waste sites.” When this program went into effect in 1990, it was intended to cover the inspection of approximately 200 facilities identified as the most potentially polluting in Quebec in terms of hazardous waste. Despite the coming into force of the *Règlement sur les matières dangereuses* (“Regulation on Hazardous Materials”) in 1997, this inspection program is still used by the regional offices while a new inspection program based on the new regulation is being drawn up.

The Canada-Quebec agreement on pulp and paper mills attempts to avoid administrative duplication between the two levels of government stemming from the existence of both federal and Quebec regulations in this sector. The agreement has enabled the creation and use of a computerized system for industrial monitoring and control which permits the management of self-reporting data from pulp and paper mills as well as a system for the electronic transmission of information to the federal government from provincial government offices. Under this agreement, compliance reports are issued that allow verification on a regular basis of the level of conformity of mills in Quebec.

Although the government of Quebec favors an approach based on accountability, coordination of efforts and guidance, inspections by the Minister of the Environment nonetheless are necessary to promote regulatory compliance after a facility and its operation have been authorized.

3.2 Wildlife Laws

In Canada, the enforcement of wildlife legislation is an important component of the conservation and preservation of Canada's wildlife. Moreover, through partnerships and cooperation, Canada works with other countries throughout North America and around the world to contribute to international wildlife protection efforts.

3.2.1 Federal government

Responsibilities of federal wildlife enforcement officers include:

- enforcing the Canada Wildlife Act, the Migratory Birds Convention Act 1994 (MBCA), and the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA);
- assessing legal trade to identify priorities;
- conducting targeted inspections of transboundary shipments and luggage at 276 clearance areas;
- conducting targeted inspections among known regulatees such as taxidermists (approx.600) and aviculturists (approx. 4000);
- conducting and coordinating field patrol inspections in 49 National Wildlife Areas, 97 Migratory Bird Sanctuaries, and the land, marine and freshwater areas used by migratory birds;
- liaising with and engaging partners such as provincial wildlife officers and aboriginal communities;
- seizing items and preparing evidence for prosecutions;
- taking care of live specimens that have been detained or seized;
- storing or disposing of animals, animal parts, nests, eggs, and related commercial products;
- verifying compliance by specialized regulatees such as taxidermists;
- issuing tickets and orders to comply; and
- recommending investigations where appropriate.

Wildlife inspections include many types of activities that can take from 10 minutes to many days to complete. The type and depth of knowledge and skills required of the officer depend on what is being inspected and where the inspection is occurring. Activities can range from inspecting an international shipment of live snakes in an airport warehouse to patrolling a wildlife area to verify hunter compliance, to inspecting an oil spill affecting migratory birds.

Under the EC Memoranda of Understanding with other federal partners such as the Canada Customs and Revenue Agency (CCRA) for monitoring cross-border traffic, EC has provided training to many of CCRA's 4000 customs employees and also provides remote support to CCRA customs staff using a new closed circuit camera system. The system enables some customs inspectors across Canada to video record questionable items for simultaneous viewing and discussion with wildlife inspectors located at a remote office.

The breadth of responsibilities requires wildlife officers to be multi-skilled and highly trained in areas such as: the identification of species listed in WAPPRIITA and other wildlife legislation, the use of firearms, handling and care of live animals and plants, the laws governing searches and seizure of evidence, dealing with potentially hostile regulatees, the planning of field activities and analysis of findings, use of the Department's tracking database NEMISIS, and the use of a variety of vehicles, including ATVs and motor boats.

In general, there are two types of wildlife inspections. The first type is commonly referred to as a field patrol, where the inspector is looking for any type of violation under the three wildlife laws (referred to above) administered by EC in a particular geographic area. The second type is a targeted inspection that occurs when an officer is inspecting a specific activity or specimen such as a container at a port, or verifying the compliance level of a taxidermy shop. An inspector also responds to tips, complaints or intelligence about an illegal offense.

When planning inspection activities, several criteria are used to identify inspection priorities, including the level of wildlife population and level and type of human presence, proximity to populated areas, use of the wildlife resource (e.g., hunting for sustenance versus commercial trapping), knowledge of illegal activities through intelligence, geographic constraints, and aboriginal issues.

It is difficult to provide adequate enforcement coverage and to obtain intelligence on activities in remote areas because Canada is a large and relatively unpopulated country with numerous lakes, rivers and extensive

coastal areas. For this reason, the Department must leverage involvement from partner organizations such as the Canada Customs and Revenue Agency, the RCMP and the Department of Fisheries and Oceans. Most wildlife officers are responsible for both inspection and investigation activities on a routine basis.

To comply with the Migratory Birds Convention Act, regional staff target specific geographic areas based upon an understanding of migratory bird distributions and the timing of hunting seasons. They also focus on areas with a significant human presence because it is in those areas that inspections will have the greatest deterrent effect. At present, there are 97 Migratory Bird Sanctuaries in Canada, ranging in size from 0.8 to 6,278,200 ha., with the most remote site located at Seymour Island, NWT. In addition to these, there are 49 National Wildlife Areas, ranging in size from 0.6 to 262,400 ha.

Current federal wildlife law enforcement priorities at the national level include off- and near-shore spills that result in oiled birds, commercial smuggling, and migratory bird protection. The Regions establish a subset of these priorities so that the Department can obtain the most effective coverage possible with the resources available.

WAPPRIITA is the Canadian legislation implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Under this Act, regional priorities are targeted on selected ports of entry. A key part of border inspection activity is the early warning system carried out by Canada Customs officers trained by and supported by Environment Canada. The focus of inspection activities may vary between commercial and general public inspections. For example, in the Pacific & Yukon Region, the focus of inspection activity is on commercial shipments because of the large volume of container shipments coming from high-risk countries. In Ontario, a hub for international passenger travel, the focus is on inspecting goods carried by individuals.

3.2.2 Provincial governments

Alberta

The administration of fisheries and wildlife legislation (both provincial and federal) in Alberta is carried out by Alberta Environment's Conservation Officers. These officers are appointed under the specific federal legislation, such as the MBCA and WAPPRIITA. In addition, they also administer the Provincial Parks Act for parks and protected areas, and the Water Act (Alberta) for the protection and management of water resources.

Area managers, in consultation with district Conservation Officers, develop the compliance assessment program and associated delivery strategies for individual geographic areas. A significant amount of the work carried out at the field level is forecast for the fiscal year, with specific compliance assessment "targets" identified. These activities are coordinated provincially by the Enforcement Field Services Division in order to guarantee consistency of program delivery. Compliance is further promoted and a high profile maintained within the community by the daily activities and initiatives undertaken by the Conservation Officers in fulfilling this aspect of Alberta Environment's regulatory mandate.

Alberta has a Wildlife Forensics Laboratory with DNA-analysis capability, a Special Investigations Section with full undercover capability focusing on illegal trafficking in fish and wildlife, and a Surveillance Team composed of specially trained Conservation Officers. Compliance assessment "target" activities are summarized as follows:

Fisheries legislation

Recreational Angler Inspections

Recreational anglers include those who angle with a hook and line. Unannounced inspections are conducted at priority fisheries to gauge compliance with the regulations (for example, closed waters, licence requirements, size and possession limits).

Commercial Operator Inspections

Inspections are targeted for commercial fishers, commercial bait fishers, and guides (who guide anglers for profit). Typical legislation provisions checked include gear restrictions for commercial fishers and applicable season restrictions.

Subsistence Fishing Inspections

Subsistence fishers include First Nations domestic fishers, and others who hold subsistence licenses. Inspections are aimed at licence checks, gear restrictions and applicable season restrictions.

Facility Inspections

Fish plants are inspected for conformity with applicable statutes, licence requirements and specified operating conditions.

Wildlife legislation***Recreational Hunter Inspections***

Recreational hunters include those who hunt [as defined in the Wildlife Act (Alberta)] and are subject to provisions of legislation dealing with wildlife management, hunter ethics, protection of property and public safety.

Commercial Operator Inspections

Outfitters, guides and trappers are routinely checked for compliance with various legislative provisions including residency requirements and licence restrictions.

Subsistence Hunter Inspections

Subsistence hunters include those who hunt under the authority of Treaty hunting rights as well as others who hold subsistence hunting licences.

Facilities Inspections

Taxidermy studios, game farms, zoos, fur buyers/dealers, apothecaries, wildlife product buyers, fur farms and pawn shops are required to comply with international, federal and provincial legislation aimed at protecting wildlife.

Water management legislation

Various activities, operations and facilities are regulated through approvals, codes of practice, licences and other provisions of the new Water Act (Alberta) and associated regulations.

The legislation administered by this service area includes the following:

- Fisheries Act and regulations (Alberta)
- Fisheries Act (federal), Alberta Fishery Regulation
- Wildlife Act and regulations (Alberta)
- Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA) (federal)
- Migratory Birds Convention Act and regulations (federal)
- Provincial Parks Act and regulations (Alberta)
- Water Act and regulations (Alberta)
- Wilderness Areas, Ecological Reserves, and Natural Areas Act (Alberta)
- Willmore Wilderness Park Act (Alberta)

Various other provincial and federal statutes, including provisions of the Canada Shipping Act regulating boating safety, Off-Highway Vehicle Act (Alberta), the Criminal Code and others, are enforced in support of natural resource regulatory activities.

Manitoba

In the case of wildlife enforcement activities, the lead for compliance verification respecting the MBCA and WAPPRIITA falls within the mandate of Environment Canada and is considered a secondary duty for provincial enforcement officers.

Inspections are carried out to monitor activities such as: timber sales, wild rice harvesting, Crown Land permits, water rights works, lease/building permit conditions within provincial parks, and work permits for various resource-based activities. Commercial inspections involve tanners, fur dealers, and taxidermists.

Many inspections are carried out incidentally to other field-related activities involving patrols to certain areas. District Office locations throughout the province allows for effective delivery of program support.

Quebec

Enforcement of the laws relating to wildlife and parks mentioned in section 2.2.2 is the responsibility of the vice-president of wildlife protection of the Société de la Faune et des Parcs du Québec (Quebec Agency for Wildlife and Parks): \$31 million dollars and 532 person years have been assigned to carry out this enforcement mandate, primarily wildlife protection agents and managers. They are spread out in ninety permanent or seasonal service offices covering all the territory in Quebec. They carry out patrols, monitoring, inspections and investigation on compliance with these laws and regulations. They file event reports and infraction reports and offenders are prosecuted by the Agency. They also participate in programs for education and prevention with the clientele mentioned in section 2.2.2.

These wildlife agents are also supported in controlled territories by wildlife assistants (342 in 1999) or by staff or volunteer wardens (167 in 1999) working part-time in the management organizations in these designated territories.

4 Measuring Program Results

Measuring program results is becoming a focus of government in Canada and in many other countries. Environmental departments and environmental law enforcement programs within governments are not excluded from this new attention. In Canada, there are a wide variety of police and enforcement groups and agencies operating at the federal, provincial/territorial, or municipal level, all of which are accountable and must report on the results achieved by their organizations. The challenge managers face is to explain and demonstrate the contribution of enforcement to overall environmental protection and public health and safety. For many reasons, the traditional approach to measuring success at the program level for environmental departments is to measure activities and outputs. These activities and outputs include numerous and diverse regulations and complex environmental programs and operations.

All measurement systems should yield results that are understandable by the public. In the case of environmental law enforcement, there are traditional “activities” that may be measured along with the resources used as inputs to the program (for example, the number of inspections carried out and number of staff). Certain “outputs” from enforcement programs are also usually reported. These could be, for example, the number of warning letters issued, the number of convictions obtained or the amount of penalties awarded. The statistical results are typically reported through annual departmental or program-level reports, annual reports for each law as required by legislation, the CEC Annual Reports, or a specific department’s Internet site. More difficult to obtain and therefore less commonly reported, for a variety of reasons, are “outcomes,” or the environmental benefits achieved by the enforcement action (i.e., number of tons of reduction in pollutant emissions).

Designing a measurement system that can demonstrate the long-term improvement to the environment as a direct result of specific enforcement actions is not a simple task. Some elements, however, are more easily measured than others. The accessibility of the information to be collected (i.e., number of staff and dollars invested) and the ease with which a correlation may be drawn between enforcement actions and results (e.g., impact of a police enforcement blitz on New Years’ Eve on the reduction of impaired driving accidents) all are factors to consider. The greater the influence of non-enforcement factors (such as the effect of climate change on the health of a particular species), the more difficult it is to define and attribute the relationship between enforcement activities/actions and changes in the environment (e.g., population increases or decreases of an endangered species). Changes in environmental conditions can take decades to become visible or measurable. By contrast, changes in wildlife populations are sometimes sudden. They may be due to a variety of factors, such as the action or inaction in other jurisdictions, increased urbanization, increased world travel and transportation of non-native diseases and species.

Many enforcement agencies worldwide are struggling with these challenges, while trying to adopt improved measurement systems. The development and application of appropriate methodologies for measuring results for the complex array of laws and regulations remains an ongoing challenge.

The goal of environmental law enforcement is to both motivate and compel people to do the correct thing and thereby achieve higher levels of compliance with the regulations. High levels of compliance contribute to the regulatory objectives of protecting the health of the environment and of the public. Enforcement agencies need to develop the measurement tools and methodologies to link enforcement efforts to environmental improvement, in order to explain better the role enforcement plays in achieving broader environmental and public welfare objectives.

4.1 Federal

At the departmental level, EC is working toward an improved framework for result measurement. The departmental objectives noted below are designed to provide meaningful information to Parliament and the public and will also serve as a guide for the work now underway to improve the measurement of environmental law enforcement:

- Continue to report on activities aimed at improving the state of the environment, a reduction of harm to human health and safety, and economic efficiency.
- Develop performance measures that are directly attributable to departmental actions (such as the number of successful prosecutions and amount of fines levied).
- Periodically adjust performance measures as issues mature and strategies shift (i.e., measures should be appropriate to the level of interest and severity of the issue in the public arena).

- Continue to measure and report outputs (such as the number of Ministerial Orders issued annually) until such time as more appropriate measurements are available (such as population growth of an endangered migratory bird species).
- Develop and use performance measures where EC shares responsibility with other organizations (e.g., behavioral changes by regulatees in response to enforcement actions).
- Integrate the use of performance measures and analysis into program review and development and priority setting.
- Supplement performance measures with case studies that illustrate the results and effectiveness of program activities.
- Survey the public, staff and regulatees on departmental performance, particularly in areas of service delivery.
- Use program evaluations and special studies to help clarify the relationship between departmental actions and outcomes.

Environment Canada's enforcement program has striven to improve communication of program results and actions through improved annual reporting and the creation of an enforcement page on EC's Internet site—*The Green Lane*.

The CEC Enforcement Working Group, of which Canada is a member, has also sponsored a workshop on performance measurement in Pueblo, Mexico, in 1998. The workshop report provides a good overview of the many approaches and challenges in this area.

EC has carried out research to determine the "state of the art" for performance measurement as it is being applied by enforcement agencies in Canada and other countries.

In 1998, a report was commissioned by the enforcement program on approaches to performance measurement within the Canadian enforcement community.⁴ The report describes some existing methods of measuring enforcement performance. The study also identifies several important methodological considerations and challenges related to measuring performance. These are described in more detail in the following box:

MEASUREMENT CHALLENGES

- **Population Definition:** Identifying who is a regulatee and how many regulatees there are under each regulation and Act. For example, every commercial and recreational hunter and fisher is a regulatee. Collectively, they constitute a very large unorganized regulated community as compared to fewer than 160 regulatees subject to the Pulp and Paper Effluent Regulations.
- **Sampling Frames:** Since it is not always possible to inspect all regulatees, what size of group will be sampled, who will that group consist of, and how representative is that group?
- **Sampling Strategies and Statistical Inference:** Inspection results do not always yield statistically valid compliance rates because inspections do not always occur at facilities on a random basis. However, in practice, funding restrictions necessitate the targeting of regulatees known or suspected to be in noncompliance. Thus, inspection results do not always yield statistically valid compliance rates and cannot be used for compliance measurement purposes.
- **Operational Definition of Compliance:** There are significant differences in scope, significance, and reasons for noncompliance, for example, a human error in completing a waste manifest versus the purposeful illegal shipment of hazardous wastes. Each is an offense, but there is a substantial difference between them in the significance and magnitude of the offense and its impact.
- **Level of Measurement:** Can aggregate compliance rates (e.g., over a designated well-defined group) be used to extrapolate over the whole? In some cases this may be appropriate while in others not.
- **Methods of Data Collection:** How can information be collected in a consistent or comparable manner when the regulatory context and regulated communities differ significantly?

⁴ See B. Gauthier, *Experiences in the Measurement of Regulation Compliance*. March 1998. Prepared for Environment Canada by Circum Network, Hull, Québec. Available at <http://www.circum.com/index_e.htm>.

In 1998, a departmental enforcement officer completed a study of the impact of enforcement activities on compliance with the Canadian Environmental Protection Act and the Fisheries Act amongst the anti-sapstain industry, pulp and paper industry, and the heavy-duty wood preservation industry, comprising 154 of the largest industrial facilities in British Columbia. The study found a direct correlation between the region's enforcement program efforts and industry compliance rates. The study demonstrated the effectiveness of the enforcement program at achieving wide-ranging structural changes in business practices and investment strategies amongst those subject to the enforcement program. (See P. Krahn, *Enforcement versus Voluntary Compliance*, March 1998.) See Case Study #1 in section 5.1 below.

EC is also currently in the process of further developing an approach for measuring compliance rates in a statistically valid way for any given regulation. A pilot study now under development will examine the statistical validity and usefulness of compliance rates derived from random sampling of physical sites subject to one federal regulation.

These research efforts and project outputs from the CEC workshops together with the updated departmental approach to performance measurement have contributed to the development of a draft program-wide framework for enforcement. The document, when completed, will serve both as a general communication tool and as a basis for the development of specific measures to facilitate future performance reporting at the activity, output, outcome and program levels.

See the enforcement web site <<http://www.ec.gc.ca/enforce/report/index.htm>> for ongoing information on the EC program.

4.2 Provinces

4.2.1 Alberta

Alberta Environment publishes an annual report detailing compliance assessment (inspections, audits and reviews) and enforcement activity outputs on a fiscal-year basis. In addition, specific measures of performance related to compliance assurance are being developed for publication in the Alberta Government's business plan. These proposed measures include outputs of education activities reflecting their importance as a key element of the Alberta Environment's Compliance Assurance Principles, and outcome measures of compliance for selected regulated activities identified through departmental inspections, audits and reviews.

4.2.2 Quebec

Programs for systematic inspections as well as annual inspection, with a concerted follow-up, will be further restructured in the future due to the modernization that the Quebec public service is undergoing. As a result, the apparatus will demand more reporting by its employees and greater accountability of the citizens. The reports produced by these programs will be an indicator of the level of environmental conformity of the various economic sectors in Quebec.

4.2.3 Manitoba

Enforcement data is a contributing factor to the Manitoba Government's overall commitment to performance measurement. Annual records of inspections, complaints and enforcement actions are maintained and reported annually to the Minister and through the departmental annual report to the public.

The Department is currently developing performance measures to assist in priority setting and resource delegation. With integration of the former departments of Environment, Natural Resources and Energy, performance measures will reflect the activities of all three agencies.

5 Case Studies

5.1 Federal Government

Effective environmental law enforcement involves motivating, assessing and compelling compliance. Enforcement actions also help to deter noncompliance and create a level playing field within the regulated community. Meeting these goals within available resource levels means that priorities must be set. Focused effort in selected areas has resulted in improved compliance rates from which associated environmental benefits can be inferred. The following four case studies (two federal and two provincial) demonstrate the clear and measurable impact that an enforcement program can have in dealing with pollution and wildlife protection issues.

Case study #1: Inspection pays off in British Columbia to reduce pollutants from pulp and paper mills and wood preservation operations

In 1983, Environment Canada began a multi-year program to reduce discharges of chlorinated phenolic compounds and dioxins from BC sawmills and wood preservation companies. The effort focused on three aspects: a) the anti-sapstain industry, b) dioxin and furan releases from pulp and paper processes and c) heavy-duty wood preservation facilities.

The program began with a campaign to combat groundwater pollution from chlorophenols used as anti-sapstain chemicals (chemicals used to protect freshly cut lumber from moulds and fungi that attack spruce, pine and fir) at some 108 BC sawmills. It is estimated that over 250 million cubic meters of acutely lethal effluent was being discharged annually from these facilities into groundwater and as runoff into freshwater and marine environments that supported valuable stocks of salmon and other fish/shellfish.

From 1983 to 1986, voluntary implementation of code of practice recommendations was the only tool used, and mills were permitted to self-inspect. The industry was reluctant to change operating procedures and only negligible improvement was noted. Then from 1986 to 1989, Environment Canada formalized its inspection protocol, using specific checklists and on-site visits from inspectors, combined with compliance promotion seminars. However, legal charges were not laid during this period.

In the spring of 1989, Environment Canada's enforcement staff embarked upon a strategic initiative, targeting five of the worst offenders for investigation and ultimate prosecution. With this development, a significant number of mills improved their operating procedures but argued that specific recommendations were too costly.

In 1991, Environment Canada, the Department of Fisheries and Oceans, and the BC Ministry of Environment, Lands and Parks cooperated to draft a regulation that the province enacted to make certain operating practices mandatory. A comprehensive inspection and sampling program by federal and provincial inspectors resulted in the rapid development and use of new anti-sapstain chemicals of significantly lower toxicity. This program, and the construction of increased covered storage at the mills, among other factors, resulted in an estimated 99 percent decrease in the discharge of acutely toxic effluent by 1993.

A second initiative began in 1988/89 to address the chlorinated dioxins and furans from petroleum-based defoamer products added by pulp mills during the pulp bleaching process. The environmental seriousness of this became clear when representatives of environmental nongovernmental organizations collected samples of sediment and crab from receiving waters off Vancouver Island and found them to be contaminated with these chemicals. Environment Canada and the Department of Fisheries and Oceans also collected numerous samples in areas near sawmills and pulp mills, which confirmed the presence of the same chemicals. The contamination resulted in the closure of 1,200 square km of crab and shellfish harvesting areas.

Consultations with stakeholders and the pulp and paper industry in 1989 led to the creation of the Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations and the Pulp and Paper Mill Defoamer and Wood Chip Regulations under the Canadian Environmental Protection Act (the seriousness of the situation dictated direct regulatory action rather than development of an industry code of practice). Draft regulations were developed which required an immediate ban on the purchase and use of wood products contaminated with chlorophenols and defoamers contaminated with dioxin and furan precursors. An inspection program was developed immediately (1989) and, although the regulations were not finally adopted until 1992, the mills implemented these bans ahead of and in anticipation of the regulations.

The frequency of federal inspections during the pre- and post-regulation phase averaged a minimum of twice per year or more for mills that were considered high risk. The inspections were sometimes coordinated with provincial inspectors or conducted as random, unannounced inspections.

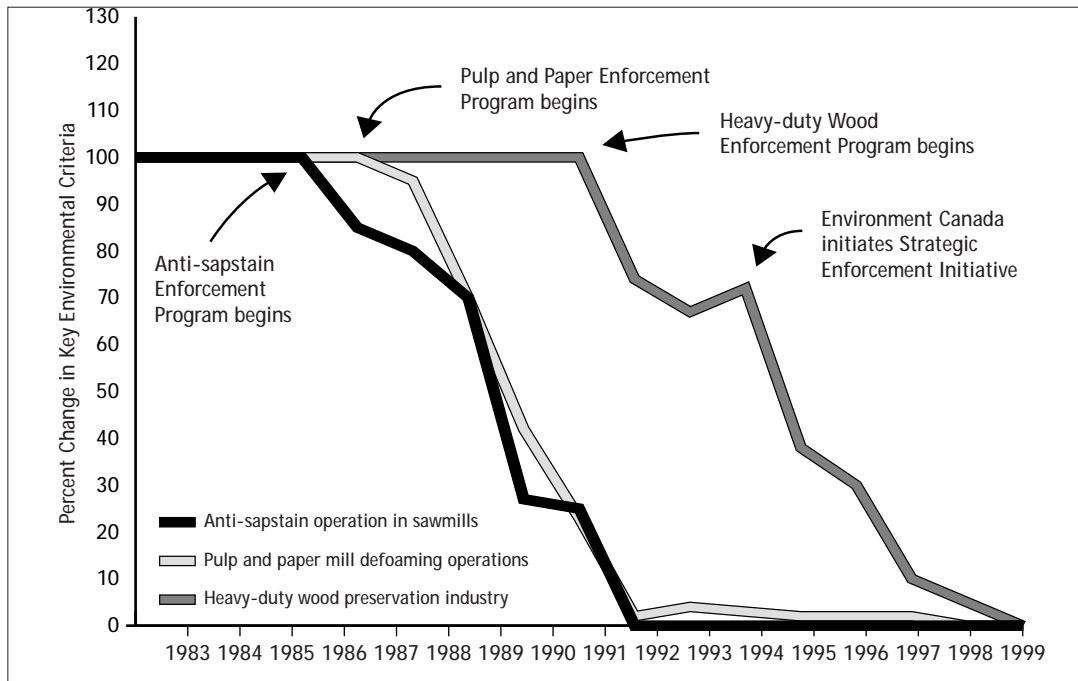
The third initiative was contemporaneous with the other two and was directed against discharges of acutely lethal effluent from heavy-duty wood preservation mills in British Columbia. The approximately 20 mills in this category presented a serious concern because of the acute toxicity of the preservatives involved (oil-borne pentachlorophenol, creosote- and water-based mixtures of copper, chromium, arsenic, ammonia). Concern centered on the contamination of soils and, in particular, stormwater runoff, which was estimated to exceed 600,000 cubic meters per year from six facilities in the greater Vancouver area alone.

In cooperation with stakeholder and industry associations, Environment Canada developed five codes of practice that were not legally binding on the industry. From 1983 to 1991, while Environment Canada resources were directed primarily toward the anti-sapstain and pulp and paper programs, the heavy-duty wood preservation industry operated under this voluntary program to implement the codes of practice. Subsequent investigations in 1991 by Environment Canada confirmed that these mills were still discharging significant quantities of acutely toxic effluent. The mills were so informed, but practices did not change.

Finally, under the federal Fraser River Action Plan, Environment Canada's Inspection and Investigation divisions initiated an intensive investigation program that targeted all six greater Vancouver mills. Discharges of acutely lethal effluent immediately fell off—and continued to do so in essentially three waves of reductions, under the pressure of continuing inspections, as successive mills implemented physical and operational changes—until a level of nearly zero effluent discharges resulted in 1998 (a 94 percent reduction from 1991 levels, see figure 1).

The example illustrates that a well-planned and properly resourced compliance promotion and inspection program can yield measurable results and economic benefits. Regulated communities with point-of-source pollution such as these can be motivated, assessed and compelled to comply when enforcement attention is significant. Achievement of a high level of compliance under Chlorinated Dioxins and Furans Regulations has allowed the department to reduce compliance monitoring and performance measurement of this community and utilize its inspection resources elsewhere.

Figure 1: Normalized Graphs of Responses by Three British Columbia Forest Sector Industries to Environmental Law Enforcement Programs



Source: Peter K. Krahn. *Enforcement vs. Voluntary Compliance: An Examination of the Strategic Enforcement Initiatives Implemented by the Pacific and Yukon Regional Office of Environment Canada, 1983 to 1998*. Regional Program Report 98-02. 9 March 1998.

Case study #2: Targeting wildlife crime: Flikkema Aviaries

International wildlife experts believe that illegal trade in animals and plants subject to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is the second most lucrative black market activity next to the illegal drug trade. Because of the value and international nature of the illegal trade, investigations are often multi-jurisdictional and can take months or years to yield tangible results.

While illegal trade in exotic plants/animals can involve large criminal organizations, it also occurs among those perceived as “legitimate” dealers and with whom the average Canadian might interact. The following case illustrates the considerable resources that must be invested when inspecting, investigating, and prosecuting merchants who falsify import and export documents, and conduct illegal trade in species at risk of extinction (CITES—Appendix I species).

In June 1999, Mike and Johanne Flikkema, owners of Flikkema Aviaries in Fenwick, Ontario, were convicted of importing two macaws and 400 finches without CITES permits during 1997–98, in violation of Canada’s Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA). The conviction was the result of an investigation that had commenced in July 1998.

The international investigation had involved wildlife officers from Canada, the United States, Europe, and Africa and took place over several months. Led by Environment Canada, major players in the investigation were the US Fish and Wildlife Service, Canada Customs and Revenue Agency, the Canadian Food Inspection Agency, US Agriculture, and France’s CITES Management Authority.

Strong connections between the Canadian firm and persons in the US necessitated carefully planned and executed joint investigations. For instance, in October 1999, Canadian wildlife officers executed a search warrant of Flikkema Aviaries at the same time as Johanna Flikkema in New York State was arrested for numerous related alleged felonies under US law. The Canadian search warrant involved 12 EC game officers, one Department of Fisheries and Oceans officer, and a conservation officer from the Ontario Ministry of Natural Resources.

Ultimately, sufficient evidence was obtained to press 162 charges related to possessing illegally imported birds, importing and exporting birds without a permit, and possessing birds for the purpose of illegal export. In total, three people were arrested in Canada. The charges alleged that between December 1997 and October 1999 Flikkema Aviaries exported almost 4,000 Appendix II and III tropical finches valued at \$97,000, imported over 756 Appendix II and III tropical finches, 30 parakeets, and 20 mynas at an estimated value of \$19,000. Most species of birds were from Africa.

On 7 July 2000, two of the Canadians were fined a total of \$75,000 and sentenced to six months in jail. The third was convicted in the United States on 1 June 2000, was fined \$7,500, and served out her six-month sentence in a US jail. This case illustrates the scope and complexity of wildlife law enforcement. It touched on all three of the topics discussed in this report.

Compliance Promotion—Endangered species

The commercial success of Flikkema's Aviary, and its ability to sell illegally obtained species, may rest in part on demand from Canadian consumers who are unfamiliar with or do not understand the significance of CITES. Many Canadians are apt to believe that commercial operators abide by the laws that govern their businesses, and may not exercise a "buyer beware" attitude when dealing with stores selling wildlife. This means that compliance promotion must address not only the regulated community dealing in CITES species and products, but also the general Canadian population that might purchase those species.

Environment Canada undertakes a broad range of compliance promotion activities. A good example of this is the placement of displays of endangered species at Canadian international airports. The development and distribution of brochures for international travelers is another. Increased coordinated effort with other federal departments in the regulated use and content of traditional medicines, many of which claim to contain the body parts of endangered species is also important to ensure effective compliance promotion.

Inspections—Endangered species

The potential number and location of crime scenes for CITES offenses is mindboggling: pet stores, throughout Canada's vast wilderness where hunting and fishing occur and migratory birds nest, and at every border crossing where species are imported and exported. The geographic scope and range of activities for inspection are enormous. Therefore a strategic use of limited resources is essential. Every year EC regional offices target for inspection, particular types of regulated activities and a percentage of the regulated community involved in these activities. Flikkema's Aviary underwent regulatory inspection to confirm compliance with federal wildlife laws in accordance with such a plan. Identification of anomalies justified subsequent inspections and ultimately led to the investigation and prosecution of the firm.

Regulatory inspections played a critical role in confirming non compliance, and were used to obtain sufficient evidence to justify the investigation and prosecution of the offenses.

Performance Measurement Endangered species

With the Flikkema case, Environment Canada successfully prosecuted criminal activities, obtained a landmark fine under Canadian wildlife legislation, sent a warning to others practicing illegal trade, and used the media to bring the issue to the attention of the Canadian public. Most importantly, it helped to protect endangered species. How much investment is reasonable to achieve these results? Could things have been done differently to improve the efficiency and effectiveness of the case?

Canada has invested in the protection of foreign wildlife species because of its international commitment to CITES. There is a correlative expectation that other countries under CITES are regulating the importation and trade in endangered species originating from Canada. It is very difficult for Environment Canada to quantify the effectiveness of this specific conviction or its inspection program in terms of the impact on the affected populations, as well as the degree of the deterrent effect. Similarly, it is equally difficult for Canadians to see the results of foreign wildlife programs in protecting Canadian wildlife.

Not all outcomes are easily quantifiable, and by their very nature and scope require significant time and resources to achieve results. The development and use of performance measurements within wildlife law enforcement is a major challenge to the Department. The Flikkema case demonstrates that effective enforcement can meet the legislative objective of protecting endangered species. To quantify that success is a more challenging issue. EC can employ standard indicators such as number of inspections, investigations, prosecutions, the value of fines, and the length of sentences. However, those numbers do not tell the whole story. The search for more meaningful indicators continues within the departmental framework noted earlier.

5.2 Provincial Government

Case study #1: "Operation Clean Sweep": A proactive inspection strategy for hazardous waste

Mill Creek, a tributary of the North Saskatchewan River, runs through a prime park area in Edmonton, Alberta. The creek receives storm water and spring melt water via the storm-water sewer system that extends throughout southeast Edmonton. Periodically, hazardous wastes leaked or were spilled or illegally disposed of into this part of the storm drainage system and flushed into the creek

"Operation Clean Sweep" was the result of a growing number of complaints from Edmonton residents in recent years about Mill Creek's water quality. In many cases, the complaints arose from the presence of a hydrocarbon "sheen" on the water surface, oily deposits on shore-line vegetation and in eddies, and odors associated with hydrocarbons such as diesel or gasoline. Until this program was implemented, many sources of this pollution had not been successfully identified. Improper disposal of a hazardous waste or hazardous recyclable material is an offense under the Environmental Protection and Enhancement Act and the Waste Control Regulation.

During the period 3–12 May 1999, Alberta Environment investigators and inspectors led an unannounced inspection program of more than 700 businesses in southeast Edmonton in an effort to identify sources of the pollutants entering Mill Creek. Conservation Officers from Alberta Environment, Drainage Department staff from the City of Edmonton, and Edmonton Police Services assisted the investigators and inspectors during the initial door-to-door canvassing in the target area.

At the time of the individual inspections, each business within the target area was given a background document providing information about the pollution of Mill Creek. The objectives of Operation Clean Sweep were also specified in the document, and copies of the legislation regulating hazardous waste and hazardous recyclable materials were attached. Alberta Environment staff took advantage of this opportunity to provide impromptu education about Alberta's environmental legislation, and the seriousness of the actions leading to the pollution of Mill Creek. These discussions also helped establish a "due diligence" benchmark for follow-up inspections in the future.

Operation Clean Sweep determined that 455 businesses within the target area generate regulated hazardous waste or hazardous recyclable materials. Of these, 200 businesses were storing the hazardous waste or hazardous recyclable materials out-of-doors in varying degrees of compliance with the legislation. Most of the noncompliance identified was minor with little potential for environmental impact. All of the noncompliant businesses were directed to take corrective actions to comply with the appropriate legislation. On re-inspection, the companies that did not take the required action became the subjects of formal investigations.

In total, there were 39 investigations for more serious offenses or continued noncompliance on re-inspection. Of these, 26 were concluded satisfactorily, with the companies coming into compliance with the legislation. Ten companies received written warnings, and three files were ultimately submitted for prosecution for offenses of the Environmental Protection and Enhancement Act and the Waste Control Regulation. These were continuing offenses, where the subjects of the individual investigations were shown to be noncompliant after several re-inspections.

For the companies that exhibited only minor infractions of the legislation, it was deemed appropriate to take advantage of this opportunity to achieve the primary goal of compliance through educational means. A number of facilities have been identified for unannounced re-inspection to verify continued compliance with the legislation. The trials for the three prosecutions are pending in the Provincial Court of Alberta.

On initial inspection and re-inspection during the course of Operation Clean Sweep, four businesses were identified as being fully compliant, on their own initiative, with the regulatory standard for the storage of hazardous wastes or hazardous recyclable materials. These companies were formally recognized with letters of commendation from Alberta Environment.

Case study #2: “Operation Pinch off”: Successful investigation of illegal hunting

Background

Manitoba Natural Resource officers initially received information from the general public and the “Turn in Poacher” telephone line regarding illegal hunting activities. Uniformed officers initiated the investigation that soon implicated non-resident hunters. The guide/outfitters were recruiting hunters exclusively from the United States.

The week-long undercover portion of the investigation began 27 September 1999, opening day of the non-resident Migratory Game Bird Hunting season. American undercover officers were able to infiltrate the targeted hunting parties. During the week, officers documented numerous alleged violations, including gross over-limits of migratory birds, crippling and failing to retrieve migratory birds, guiding without a valid license, hunting while guiding, hunting from a power boat, and trading migratory game birds for moose meat. As a result of the investigation, three search warrants were executed in the Lake Manitoba Narrows area. Over 225 ducks, 70 geese, 178 decoys, two hunting blinds, and various supporting documentation were seized.

Results

Ultimately, six American guides and hunters were found guilty of ten federal and provincial wildlife violations, and were fined \$14,553 in Dauphin Provincial Court. Their migratory game bird hunting privileges were suspended for one year.

Two other American guides were found guilty of violating four federal Migratory Birds Regulations, including exceeding daily bag limit, continuing to hunt after daily bag limit had been reached, exceeding possession limit and illegally making a migratory bird the subject of a commercial transaction. The two guides were also found guilty of four Manitoba Wildlife Act charges, including guiding without a license, carrying a firearm while guiding, hunting while guiding and illegal possession of moose meat. The guides were each fined \$5218.50.

Three American hunters pleaded guilty to exceeding daily bag limits and possession limits under the federal Migratory Birds Regulations. They were each fined \$1029.

To conclude this four-year operation, over forty investigators were brought in from various agencies, including Manitoba Natural Resource officers, Environment Canada wildlife enforcement officers, RCMP and Immigration officials.

The success of this investigation resulted from the cooperative involvement of the three enforcement agencies combined with the prudent use of undercover officers. Inter-agency cooperation such as this will continue to assist in protecting Canadian wildlife.

Helpful Web Sites

Overview

- Environment Canada's Enforcement Web site: Canadian Environmental Protection Act, Path to Federal Compliance and Enforcement in the regions:
<http://www.ec.gc.ca/enforce/homepage/english/index.htm>

Compliance Promotion

- Compliance Incentives and Voluntary Programs
 - Environmental Management Systems:
http://www.ec.gc.ca/emsinfo/home_e.htm/
 - Voluntary Action on Toxic Substances:
<http://ec.gc.ca/aret/>
- Compliance Assistance
 - Environmental Performance Measures for Government Operations:
http://www.ec.gc.ca/emsinfo/PMSGO_e.PDF
 - National Pollutant Release Inventory:
<http://www.ec.gc.ca/pdb/npri/>
 - Environment Management Systems:
http://www.ec.gc.ca/emsinfo/perfor_e.htm
- Public Information and Participation
 - Canadian Environmental Protection (CEPA) Registry:
<http://www.ec.gc.ca/CEPARRegistry/>
<http://www.ec.gc.ca/CEPARRegistry/participation/>
 - Compliance and Enforcement Policy for the Canadian Environmental Protection Act, 1999 (CEPA, 1999):
<http://www.ec.gc.ca/CEPARRegistry/enforcement/CandEpolicy.pdf>
 - Legal Compliance Guide:
http://www.ec.gc.ca/eog-oeg/ems/Legal_Compliance_Guide_E/toc.htm
 - Partnership and Public Involvement:
<http://www.ec.gc.ca/enforce/wildpol/english/partn.htm#par>
 - Enforcing Canada's Pollution Laws:
http://www.ec.gc.ca/enforce/homepage/report/pollaws_e.htm

Special Report on Enforcement Activities in Mexico

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1 Introduction

The Office of the Federal Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente*—Profepa) has a mission to prevent those who cause environmental damage from transferring its costs to other producers and consumers. It fulfils this mission through the exercise of its powers and the enforcement of the instruments of environmental policy. While Profepa applies the “polluter-pay” principle contemplated in the environmental law, it also provides ongoing incentives to those who protect the environment and natural resources.

The strategies developed by Profepa to serve as guides to its environmental enforcement activities are designed to expand the coverage of inspection and surveillance actions, particularly in regard to natural resources; to gear such actions toward the fulfillment of explicitly defined environmental objectives, and to promote the creation of outlets for societal participation as a complement to the coercive activities of the authority and to strengthen its accountability to society.

These strategies correspond to three fundamental principles underpinning the legal framework on the environment: strict compliance (principle of legality), improvement of ecosystems (principle of environmental effectiveness) and expanded social consensus on environmental management (principle of legitimacy).

This document is an update of the annual report submitted by Profepa to the CEC. The information in this report, also published in Mexico through various channels, indicates progress on fulfillment of the commitments adopted under the North American Agreement on Environmental Cooperation (NAAEC).

1.1 Environmental Law Enforcement Policy

One of the significant challenges facing Profepa is the need to build a broad societal consensus on its law enforcement actions, notwithstanding the existence of a portion of society or certain significant stakeholders who may have a different opinion on what should be done. The strategies guiding the actions of Profepa are designed to lead to objective improvement in the condition of the environment through strict enforcement of the law with the public’s support for enforcement actions.

In order to raise environmental compliance levels, Profepa has undertaken to expand the coverage of its actions so that coercive action by the government is guided not merely by punitive intent, but rather by the goal of achieving the environmental and natural resource conservation objectives enshrined in the law. For that reason, the agency seeks to induce societal stakeholders to comply with environmental law of their own free will, by promoting public participation in the enforcement process.

In this regard, Profepa’s programs identify the following areas of focus:

- Expanded government accountability to society: the most important step involves the right of access to environmental information in the government’s possession.
- The creation of mechanisms whereby local authorities, citizens and organizations can assist the federal authority in its natural resource monitoring functions. In this regard, sets of joint inspection and surveillance committees have been set up in various states of the Republic. These committees bring together the most important local stakeholders to cooperate with the authorities on fisheries, forestry and wildlife enforcement activities.
- The development of inducements to promote voluntary compliance, such as the voluntary environmental auditing process.

1.2 New Legal Framework for Environmental Matters

In Mexico, a strong domestic environmental policy has been developed, one that identifies as a fundamental strategy the consolidation and integration of environmental law using compliance incentives, the professionalization of law enforcement staff and greater public participation. These factors, along with the signing of various international environmental and trade agreements, have led to the revision of laws, regulations and other legal provisions, and consequently, to a framework more conducive to the achievement of environmental goals.

Of particular importance is the reform of Article 4 of the Political Constitution of the United Mexican States, published in the Official Gazette of the Federation (*Diario Oficial de la Federación*—DOF) on 28 June 1999. This reform enshrines the right to a sound environment in the Constitution and consolidates

the foundations of a comprehensive environmental legal framework for expanded protection of the environment and natural resources.

Among the reforms to various federal environmental provisions, the administrative powers prescribed by the Forestry Law Regulation were strengthened, clarified and complemented through an adjustment of safety measures and sanctions (25 November 1998). The purpose was to deter potential offenders from committing unlawful acts while promoting the sustainable use of forest resources and public participation. Also of note are the reforms to the Fisheries Law Regulation (September 1999) to facilitate the agency's work of verifying the legal origin of fisheries products. The regulatory framework for fisheries was strengthened with the incorporation of guidelines to render Profepa's treatment of private citizens more timely and transparent.

Moreover, because of the reforms to the General Law on Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente—LGEEPA*) of December 1996, Profepa has been actively assisting the state congresses in their own processes of amending their respective environmental laws. In 1998, advice was provided to the state of Puebla, and assistance was given to Colima, Sinaloa and Sonora; in 1999, the laws of the states of San Luis Potosí, Guanajuato, Morelos and Yucatán were revised and published (December 15, 16, 22 and 23, respectively).

1.3 Goals Achieved Since 1995

With the creation of the Ministry of the Environment, Natural Resources and Fisheries (*Secretaría de Medio Ambiente, Recursos Naturales y Pesca—Semarnap*), the protection function previously divided among various ministries was unified. The Semarnap, in charge of comprehensive environmental management, strengthened its structure through the creation of Profepa, a decentralized agency in charge of environmental and natural resources law enforcement.

With these reforms, an attempt was made to eliminate the conflict that had prevailed for many years among these branches of the Federal Public Administration mandated to promoting the resource use and those in charge of conservation.

During its first three years, Profepa's jurisdiction encompassed air pollution, hazardous waste and noise pollution sources under federal jurisdiction as well as works and facilities under federal jurisdiction that are subject to environmental impact assessment. As of 1995, Profepa took on significantly expanded responsibilities, including law enforcement for natural resources under the jurisdiction of the Semarnap, i.e., fisheries and forestry; wildlife trafficking; environmental land-use planning; works and activities subject to environmental impact assessment; the Federal Coastal Zone (*Zona Federal Marítimo-Terrestre*), phytosanitary inspection of forest products and subproducts entering the country, and natural resource emergency response.

Below, we present the actions taken by Profepa to enforce domestic and international environmental laws and commitments in 1998 and 1999. The information is organized into the three thematic areas of compliance promotion, inspection and result indicators.

2 Compliance Promotion

2.1 Petitions and Complaints

The citizen petition is a legal instrument whereby citizens can report to the competent environmental authorities any facts, acts or omissions that cause or may cause ecological imbalance, damage to the environment or natural resources, or that contravene environmental law. It is one of the channels whereby citizens can express their opinions and participate in the monitoring, preservation, improvement, protection and appropriate use of the environment and natural resources.

In 1998, the Head Office of Petitions and Complaints (*Dirección General de Denuncias y Quejas*) redistributed administrative responsibilities so that the response, follow-up and resolution of petitions and complaints would be handled in a holistic fashion by each administrative area (natural resources, Federal Coastal Zone, environmental land-use planning and environmental impact, industrial matters). In addition, it decentralized its method of response to petitions received by the head office, which nevertheless fall within the purview of Profepa state offices. The latter offices process the file and report to the headquarters to ensure adequate control and gathering of statistics on results.

Moreover, the criteria and mechanisms for the operation of the Petitions and Complaints Information Subsystem, a part of Profepa's Information Systems and Statistics Program, were updated for more accurate and timely reporting on trends in citizen petitions.

Response to citizen petitions—a societal means of defense against acts, events and omissions which cause or may cause environmental damage—was strengthened with the establishment of a clear, systematic procedure consistent with both the legal provisions and actual conditions. This made better liaison possible between the authority and the petitioners for a more effective, efficient and timely response to their petitions.

During 1998, the Citizen Petition Response Manual (*Manual de Atención a la Denuncia Popular*) was updated to reflect the LGEEPA reforms. Noteworthy, among other matters, was the extension of the bounds of public participation, the possibility of conciliation, mandatory time limits for processing of complaints, causes for closing of files, and the creation of a system of concepts and categories for the classification of petitions.

In that same year, Profepa received a total of 5,173 complaints, addressed in accordance with the citizen petition procedure prescribed by the LGEEPA. Of these, 3,892 files (about 75 percent) were closed.

Nationwide, the breakdown of petitions by affected resource is shown in the following table:

Petitions Received Nationwide, 1998		
Area	Number of Petitions	Percent
Fauna	2,337	45.18
Air	882	17.05
Land	664	12.83
Flora	624	12.06
Water	272	5.25
Federal Coastal Zone	112	2.16
Noise	96	1.86
Forestry	133	2.57
Environmental land-use planning, fisheries, miscellaneous	53	1.04

In 1999, Profepa received 5,425 petitions of which 2,089 (39 percent) are still pending;⁵ 1,175 files (21 percent) were closed;⁶ and 2,161 petitions are being processed (40 percent).⁷

It is important to highlight the activities of the public response counters installed within the headquarters and also the state offices because, of the 766 petitions received by the Head Office of Petitions and Complaints, 369 were presented at these counters.

Regarding the programs of the Head Office of Petitions and Complaints, it is important to mention its liaison and coordination with the National Human Rights Commission (*Comisión Nacional de Derechos Humanos*—CNDH). In 1999, 61 environment-related complaints were received; 17 of these were addressed as information requests, four are being processed, and 40 were closed by the CNDH in the following manner: 26 by referral of the complainant, 8 for lack of jurisdiction of the CNDH, 5 resolved during the process, and one by amicable settlement.

It should be specified that Profepa's state offices of Natural Resources and Industrial Inspection, as well as the head offices of the Under Attorneys for Natural Resources and Industrial Verification, initiate inspection and surveillance procedures for the investigation of the acts, facts or omissions mentioned in the petition, subject to the provisions of the LGEEPA. As a result of such procedures, various safety measures were ordered, certain facilities were closed, products and subproducts of wildlife species, forestry resources and fishery resources were seized, along with vehicles and instruments directly related to the offense, and in some cases, administrative sanctions were ordered.

In 1999, supervisory visits were conducted in 19 state offices in order to review and revise the application of the citizen petition response procedure, from receipt, processing and response through to resolution and closing of files. In this way, an attempt was made to help the state offices correctly apply the criteria contained in the Citizen Petition Response Manual.

During the supervisory visits, the Profepa Institutional Information System (*Sistema Institucional de Información de la Profepa*—SIIP) was installed. Training was provided in the use of this system, which is designed to systematize the processing of petitions. Through the SIIP, it is now possible to obtain up-to-date information on all matters relating to citizen petitions.

The SIIP integrates various information systems developed for a range of enforcement issues. It concentrates and standardizes the processes and procedures applicable to these areas. The automation of the planning, programming, follow-up and evaluation components of Profepa's programs through the SIIP has generated statistical information about the agency's actions.

In brief, it may be stated that the SIIP brings together and integrates the points of interface among these diverse programs. It meets the need for an instrument that provides for comprehensive follow-up to the actions stemming from the work programs developed by Profepa's operational divisions, as well as the processes initiated by the filing of a petition or by the issuance of a permit or authorization.

Finally, during the period in question, the Internal Auditor of Semarnap referred 55 complaints against the actions of civil servants in the employ of Profepa. Timely responses consisted of sending the requested report and copies of the documents necessary to carry out the relevant procedures.

⁵ It should be noted that petitions are considered to be "addressed" when an inspection visit has been conducted and the facts or acts denounced have been verified.

⁶ "Closed" petition files are those which, as a result of the inspection procedure, gave rise to an administrative decision in which corrective measures were ordered, a fine was imposed or the total or partial closing of the facility was ordered, or which were resolved for the following reasons: lack of jurisdiction of the Profepa to hear the petition; the corresponding recommendation was issued; no violation of environmental law was found; the petitioner had no legal interest; a file consolidation order was issued; the citizen petition was resolved through conciliation between the parties, or the petition was withdrawn.

⁷ Petitions "being processed" are those for which an inspection visit is planned or additional information has been requested from the petitioner.

2.2 Environmental Protection through Voluntary Programs

Environmental audits have become a standard instrument of environmental management that enables industry to carry out its environmental obligations, including those aspects that are not regulated in Mexico but are covered by international standards and good engineering practices.

It is satisfying to note the number of environmentally concerned industry representatives who have requested audits for their companies and have agreed upon the timelines and scopes of these audits.

Environmental audit benefits for business, the responsible authorities and society include:

- Determination of the level of environmental compliance.
- Complete review of the industrial process and its impact on the environment.
- Planning of actions to minimize the risks of alteration of the environment and to ensure compliance with the applicable law.
- Reduced cost of insurance premiums.
- Substantial savings due to better management of raw materials and finished products, leading to reduced emissions, spills and losses.
- Improved public image of the company.
- Promotion of a culture of environmental awareness and prevention.

In regard to environmental auditing, Profepa welcomed 165 new companies into the National Environmental Auditing Program in 1998, and 294 more in 1999. Added to those participating since 1992, this makes a total of 1,345 companies registered in the program, including the principal industries of the country:

State-owned entity sector: Petróleos Mexicanos, Ferrocarriles Nacionales de México (National Railways of Mexico), Comisión Federal de Electricidad (Federal Electricity Commission) and Aeropuertos y Servicios Auxiliares (Airports and Auxiliary Services).

Private sector: Alfa Group; Vitro Group; Cementos Mexicanos; Cydsa Group; Peñoles Group; General Motors; Nestlé; Ford Motor Company; Cementos Apasco; Industrias Luismin; Nissan Mexicana; Acerero del Norte Group; Colgate Palmolive; Celanese Mexicana; Industrias Resistol; Cervecería Cuauhtémoc; Cervecería Moctezuma and Cervecería Modelo, among others.

Companies joining the National Environmental Auditing Program in 1998 and 1999	
1998	1999
165	294

A significant fact is that in the six years of the program, among 1,345 companies audited, only three minor accidents have occurred, to which the response was so rapid and effective that, fortunately, no loss of human life occurred.

With the LGEEPA reform, starting 1 April 1997, Profepa implemented a system of recognition for companies that perform an audit and complete the ensuing corrective action plan. Companies are allowed to publicize their status for two years in the national and foreign media as evidence of their clean or environmentally responsible processes. Since 1997, 412 Clean Industry Certificates have been issued nationwide, as follows:

Clean Industry Certificates Issued			
1997*	1998*	1999	TOTAL
115	112	175	412

Note: * Since the certificates are valid for two years, companies certified in 1997 and 1998 had to renew their certificates in 1999 and 2000 respectively.

Companies holding the Clean Industry Certificate may renew it for an equal period upon request and subject to review by an approved coordinating auditor to determine whether the conditions forming the basis for the original certificate have remained unchanged or have improved. The costs of renewal are therefore 30 to 60 percent less.

It is felt that this strategy will help Profepa to:

- Offer an incentive to management to proactively protect the environment, above and beyond the requirements of the law.
- Inculcate in consumers the habit of purchasing products manufactured in an environmentally friendly manner.
- Facilitate the marketing of products in the region and subsequently on the continent and around the world.

Various companies have begun to use the Clean Industry Certificate logo on their packaging (targeted at both primary and secondary consumers) so that it may be seen by children, homemakers and large volume distributors.

Also of note is that the companies participating in the program between 1992 and 1999 invested an approximate amount of US\$1.5 billion in environmental management improvements and on compliance with the preventive and corrective programs arising from their environmental audits.

For other environmental management aspects, it is more difficult to pinpoint the changes made by the companies using the audit progress reports. That is why in 1999, the Under Attorney for Environmental Auditing commissioned a survey to assess the environmental and economic benefits arising from the audits.

The study was performed on an initial sample of 377 companies holding the Clean Industry Certificate or showing progress equal to or greater than 90 percent in carrying out their action plans. The questionnaire received a response rate of 44 percent, or 166 of the companies solicited.

The survey contained a total of 102 questions divided into eight sections. A database was created to process the information and to facilitate reporting the results. This database will remain in use for future collection, entry and processing of data from certified companies.

From the results, it was possible to analyze the trends in qualitative environmental benefits; among others, the respondents reported improved operational efficiency, decreased accidents and incidents and better use of assets.

The study showed that 88 percent of the companies experienced environmental and economic benefits following the audits of their facilities and the implementation of the preventive and corrective actions contained in their action plans.

A generalized reduction in all categories of pollution was detected during the audits and reported for 1999, this despite the average 13.4 percent increase in production levels by the respondent companies during the period between the audit and the survey.

The most relevant results are as follows:

Air Emissions

The data presented by 107 companies indicated a reduction of 10.5 percent in air emissions, equivalent to 850,000 tonnes/year. After adjustment for the effects of higher production, the unit decrease is 22.5 percent (1.8 million tonnes/year). This quantity is equivalent to the pollution caused by 2.57 million automobiles

in a year. In particular, 32 of the companies surveyed had no control equipment at the outset, and now that they do, they have cut their emissions by at least 90 percent.

Water Consumption

The 145 companies responding to this question reported a combined reduction of 11.2 m³/year, i.e., six percent below the volume identified during the environmental audits. If the effects of the production increase are accounted for, the per-unit savings rise to 18.6 percent, or 34.75 million m³/year—enough water to supply a city of 476,000 for one year or to supply Mexico City and its metropolitan area for nine days.

Wastewater

Wastewater discharges from processes generated by the 128 companies answering this question decreased 32 percent or 12 million m³/year. Adjusted for increased production, the per-unit wastewater reduction amounts to 15.5 million m³/year (41.2 percent). This reduction is equivalent to the volume of wastewater discharge generated during one year by a population of 212,000 people.

BOD in Wastewater

The biochemical oxygen demand (BOD) generated in the wastewater of 97 companies decreased by 2.72 percent, or 15.76 percent on a per-production-unit basis (154,124 tonnes/year). It is important to mention that during the audits, 27 companies were found to have no treatment plant or had to recondition their existing one; their pollution reduction averaged 70–85 percent.

Liquid Fuel Consumption

The use of liquid fuels increased by 3.2 percent according to the data provided by 110 companies. Taking into account the increase in production, this resulted in a per-unit decrease of 10.65 percent (approximately 116 million liters per year), equivalent to the annual gasoline consumption of 58,000 average private vehicles (at 2,000 liters/year/vehicle).

Gas Fuel Consumption

The consumption of gas fuels (primarily natural gas) decreased by 0.3 percent according to the data provided by 106 companies. This was principally a result of the increased production by the companies and the substitution of natural gas for liquid fuels used in the service sector and by cargo and transportation units.

Liquid Hazardous Waste Generation

The information provided by the 125 companies answering this question suggested an increase of 9.7 percent (five percent per-unit decrease). However, the environmental audits had found that the majority of the companies possessed no procedure for management and control of the hazardous wastes that they generated. Thus, they were unable to provide data for the period prior to the implementation of the control system.

Solid Hazardous Waste Generation

The survey shows an increase of 21.6 percent. However, using the same criteria as above to account for increase, this represents a 5.2 percent per-unit increase.

Economic Benefits

Seventy percent of the companies (116 companies) reported economic benefits. Those that reported a breakdown by item of the total amount, 283 million pesos, attributed 60 percent of the total to lowered insurance premiums, 22 percent to more efficient electricity consumption and 14.5 percent to reduced water consumption and wastewater discharge taxes.

On average, the respondents reported that the highest share of their total investment under the action plans related to risk (30 percent), air (20 percent) and water (17 percent), while the remainder was allocated to actions on soil and subsoil, safety and hygiene, hazardous waste, energy, non-hazardous waste and noise. The average investment by each audited facility to carry out its action plan was approximately 10 million pesos (ranging from as low as 50,000 to as high as 20 million pesos). Thus, the total investment in environmental improvements generated by the audits is estimated at more than one billion pesos.

Note that the outlays at issue are investments rather than true expenses, in the sense that on average, the savings realized over an average period of six years are enough to repay the amount invested.

Finally, it is worth mentioning that the companies, on their own initiative, carried out an average of 11 percent more activities or projects than initially envisioned in the action plan they submitted to Profepa. This is further demonstration of their commitment to finding a comprehensive solution to the problems detected by the audit.

Comments made by the companies suggest that the program may be improved and structured so as to augment the ensuing environmental, social and economic benefits as well as to recognize the efforts of companies to maintain a policy of growth while simultaneously protecting the environment.

In this regard, it should be added that the results of the audits translate into benefits for industry and quality-of-life improvements for society, with reduced pollution levels and enhanced safety, reduced risks represented by hazardous material and waste transportation and the freeing up of large volumes of water for human consumption.

This program has also afforded greater peace of mind to the neighbors of the audited industrial facilities, which are investing continually in prevention and control of environmental pollution and in industrial safety, while preparing to respond to any emergencies that may arise from their routine operations.

The governments, too, have benefited from the environmental audits, because they no longer need to carry out the regular inspection of the 1,345 companies participating in the program. These resources have been assigned to polluting industrial facilities that have not yet opted to join this select group of environmentally responsible companies.

Under the revised LGEEPA, Semarnap, acting through Profepa, is empowered to set up a system of approval and certification of environmental experts and auditors. The criteria are set down for interested parties to participate in this process, including the requirement of complying with the provisions of the Federal Metrology and Standards Law (*Ley Federal de Metrología y Normalización*). To oversee the process, an environmental auditor evaluation and approval committee has been formed with representatives of research institutions, professional associations and industry associations.

The committee assists the authority in the work of assessing the capacity and experience of professionals interested in obtaining auditor certification. It is in turn assisted by specialty subcommittees which, among other tasks, review the resumes submitted and administer the examinations to candidates. The committee is governed by its rules of operation which were revised and approved by the members. The rules establish the objects and structure of the committee, the duties and responsibilities of the committee members and the specialties approved.

Furthermore, as part of the work and commitments undertaken, the committee approves a general procedure for evaluation and approval of environmental auditors. The procedure defines the profile and the criteria that the candidates must meet, the characteristics of the evaluation process, the responsibilities entailed by certification and the appeal procedure in the event of a dispute.

One of the prime objectives of the auditor evaluation and approval system is to guarantee that the environmental auditing processes are under the responsibility of persons with sufficient capacity and experience.

This system has led to an increase in the number of audits performed, as indicated by the data mentioned earlier. To date, 138 auditors have been approved and their names may be viewed on the Profepa web site at <<http://www.profepa.gob.mx>>.

Moreover, further to the mandate of Council Resolution 97-05 of the North American Commission for Environmental Cooperation on "Future Cooperation regarding Environmental Management Systems and Compliance," Mexico chaired the CEC working group exploring the role and effect of voluntary environmental management systems (EMSs), including ISO 14001, on environmental compliance and performance. The group delivered an initial report to Council on "Environmental Management Systems and Compliance" in June 1998. In its preliminary findings, the report noted that while EMSs are a useful tool to assist an organization in achieving improved compliance and overall performance, they do not per se guarantee compliance with environmental law. On its own behalf, Mexico undertook a review of the effectiveness of the environmental management systems in use in the country and found that of 27 ISO 14001 certified companies, 21 were not fully compliant with Mexican law. Mexico has continued to work with the CEC working group on EMS issues and, based on its own experience with the National Environmental Audit Program, has contributed to the production of the CEC's Guidance Document "Improving Environmental Performance and Compliance: 10 Elements of Effective Environmental Management Systems."

3 Inspection

3.1 Inspection and Surveillance Policies and Programs for Pollution Sources (Industrial Inspection)

Since Semarnap began operating in August 1994, Profepa has been managing three basic inspection programs:

- pollution sources under federal jurisdiction;
- in-plant new vehicle inspection;
- air pollution reduction during environmental contingencies in the Mexico City Metropolitan Area.

The mission of the first inspection program is to verify that sources under federal jurisdiction comply with environmental law on air pollution, hazardous waste, high-risk activities, environmental impact and noise.

These four verification programs can be further described as follows:

- a) Regarding the operation of facilities that emit or may emit odors, gases or solid or liquid particles into the atmosphere, Profepa is responsible under Article 111bis of the LGEEPA for inspecting industrial establishments in the chemical, petroleum and petrochemical, paints and dyes, automotive, pulp and paper, metallurgy, glass, power generation, asbestos, cement and lime and hazardous waste treatment sectors.
However, it merits clarification that with the reforms to this law, the sugar and beverage industries and industrial activities in all sectors inside the Mexico City Metropolitan Area will continue to fall under federal jurisdiction until such time as the relevant administrative procedures are completed.
- b) Regarding hazardous waste, the sources under federal jurisdiction are all those industrial, commercial and service establishments that generate, transport, store, recycle, treat or provide final disposal for such waste.
- c) For high-risk activities, sources under federal jurisdiction are those activities which manage, store or process substances deemed hazardous for the environment or for its ecological balance by virtue of their corrosive, reactive, explosive, toxic, flammable or biological/infectious characteristics provided that quantities exceed the reportable quantities set out in the lists published in the DOF on 28 March 1990 and 4 May 1992, and depending upon the location of the establishment.
- d) Regarding environmental impact law, Profepa inspects works and activities that may cause ecological imbalance or exceed the limits and conditions set out in the applicable LGEEPA provisions for the protection of the environment and the preservation or restoration of ecosystems.

The second area is designed to ensure that vehicles are legally compliant in their combustion gas and noise emission levels before leaving the assembly plant.

In the third inspection program, environmental contingency response is carried out under the auspices of the Metropolitan Environment Commission (Comisión Ambiental Metropolitana). In the event of a contingency, it is the responsibility of Semarnap, acting through Profepa, to verify immediately that the pollution sources (numbering 649 companies) are complying with measures to reduce the pollution levels of their operating processes. An environmental contingency is defined as a risk situation arising from human activities or natural phenomena that may jeopardize the integrity of one or more ecosystems.

Between 1992 and 1997, Profepa set a goal of 12,000 annual visits in its inspection and surveillance program, representing a twelve fold increase over the number of visits performed in the 20 years prior to the existence of this institution.

Profile of Officials Conducting Industrial Verification

To address the needs of the inspection and surveillance programs for pollution sources under federal jurisdiction in the areas of air pollution, hazardous waste generation, treatment and disposal, high-risk activities, environmental impact and noise, a solid multidisciplinary staff of inspectors was hired, composed of professionals in various fields such as biology, chemistry, biochemistry, mechanics, electricity and environmental science. The staff as a group possesses years of valuable experience in inspection, verification and technical

consulting. Some twenty-five years after the Mexican government first enacted pollution control measures, some of the pioneers are still present and are providing their knowledge as a guide to the new generation of civil servants responsible for law enforcement.

Furthermore, the inspectors have achieved a high degree of specialization in specific enforcement areas (air emissions, hazardous waste treatment and site restoration) through the annual training program of the Office of the Under Attorney for Industrial Verification and through trilateral technical training exchanges with Profepa's counterparts in Canada and the United States. Thanks to this, the efficiency and efficacy of the inspectors has reached a level in keeping with the dynamically evolving nature of environmental law, with adherence to the priority strategies directed at the pollution sources of greatest impact.

Impact of Industrial Inspection in Mexico

Between 1971, the year the first pollution prevention control law was enacted, and June 1992, when Profepa was created, some 21,000 inspection visits took place (an average of less than 1,000 per year). In the majority of cases, the corresponding administrative procedure went no further than the production of an official record (files were never closed, even when corrective measures were ordered and potentially polluting sources were shut down). For that reason, in its initial years of operation, Profepa conducted a series of rapid visits to identify the group of sources under federal jurisdiction. Whereas prior to the creation of Profepa, files existed on approximately 3,000 pollution sources, presently there are over 40,000.

Under the LGEEPA, published 28 January 1988, the number of establishments classified as sources under federal jurisdiction was slightly over 39,000; however, under the revised law, the number of establishments was reduced to about 31,000.

An analysis of the results of these inspection visits helps to illustrate the trend in corporate environmental performance. Noteworthy is a considerable reduction in the percentage of visits that identified serious violations: from 22.2 percent in 1992 down to 3.0 percent in 1994 and 1.6 percent in 1999. In all cases where irregularities were identified, corrective measures were ordered and economic sanctions were applied.

In 1996, the percentage of visits that detected no violations decreased, while the number of visits detecting only minor violations increased. This is because in that year, the standard governing the management of biological/infectious hazardous waste came into effect, bringing a group of new sources under federal jurisdiction, and practically all of them were visited between 1996 and 1998.

International Impact of Industrial Inspection

The effective enforcement of environmental law in the three NAAEC countries is fundamental to the achievement of each country's environmental objectives and to the prevention of transboundary environmental problems.

In regard to cooperation on technical training and assistance, in 1998 Profepa and Environment Canada jointly organized a course in Mexico City called "Inspection and Surveillance of the Foundry Industry" attended by 45 industrial verification technicians from around the country.

Concerning cooperation with the (US) Environmental Protection Agency (EPA), the two institutions held a workshop in Sonora, Mexico, in 1998 on "Law Enforcement Principles." The workshop included a simulation exercise on environmental law enforcement in an imaginary country in which federal, state and municipal environmental officials of Mexico and the United States took part. That same year, a workshop for Resource Conservation and Recovery Act (RCRA) inspectors was held in Texas in conjunction with the EPA, with the participation of Mexican industrial verification technicians as both observers and speakers.

Inspection and Surveillance

The purpose of inspection visits is to verify that the persons responsible for the industrial, commercial and service establishments under federal jurisdiction are complying with the obligations prescribed by Mexican laws, regulations and official standards as well as other legal provisions.

Inspections allow Profepa to:

- assess the level of compliance with environmental obligations;
- confirm compliance or non-compliance with these obligations;

- induce voluntary compliance with environmental obligations by the persons responsible for establishments under federal jurisdiction;
- establish an official presence in order to secure compliance with environmental obligations;
- order safety, corrective and urgent measures;
- order sanctions for noncompliance with environmental obligations; and
- order additional corrective measures.

In this respect, Profepa's inspection activity goes beyond detection of compliance with environmental law to focus directly on the protection, preservation and restoration of the environment.

As a new phase in Profepa's activities, the industrial verification program identified the strategy of targeting sources with the greatest polluting potential or highest risk, by means of an inspection procedure known as a comprehensive inspection report.

In the course of this procedure, the authority obtains detailed information on the environmental status of the industrial and service establishments under federal jurisdiction. The procedure involves a detailed analysis of acts and omissions relating to the environmental obligations of these facilities. It is organized by enforcement area: air pollution, hazardous waste, environmental impact and risk.

The procedure enables the authorities to identify instances of noncompliance as well as to determine the environmental performance of the industrial and service establishments in question. This information is indispensable for establishing the environmental compliance indicators discussed below.

The comprehensive inspection report aims to:

- produce full and detailed knowledge of the environmental status of sources under federal jurisdiction;
- improve control of establishments posing the greatest polluting potential or risk; and
- obtain information required to determine the environmental compliance indicators.

The comprehensive procedure is of one of three types:

- comprehensive inspection;
- verification with comprehensive inspection; and
- comprehensive inspection for biological-infectious hazardous waste.

–The type used depends on the existence or absence of files at Profepa on the facility to be visited or the status of the facility or enforcement area in question.

–The comprehensive inspection procedure is used on the first visit to an establishment, i.e., where Profepa has no open file on the establishment. It also applies in cases where a file does exist but no technical measures have been ordered or these were not complied with and a new procedure is being initiated.

–Verification with comprehensive inspection applies to establishments for which a file is already open, where technical measures have been imposed (by agreement or decision) and where these have not yet been verified or, if verified, have not been complied with. In these situations, the corresponding measures must be on-going verification or compliance.

–Comprehensive inspection for biological/infectious hazardous waste applies only for visits to medical service establishments (hospitals, clinics, doctors' offices, veterinary offices, research centers, etc.) listed in Mexican official standard NOM-087-ECOL/1995.

Environmental Compliance Indicators

To improve and complement the evaluation of the verification program as well as to quantify compliance with the legally prescribed environmental obligations, Profepa developed a set of environmental compliance indicators. A weight is assigned to each obligation according to its importance, so that the total of the weights assigned equals 100 points. The compliance level is calculated separately for each given enforcement area. The compliance level for any particular company is the sum of the scores on each obligation.

The indicators are calculated by Profepa inspectors and technical personal based on the results of the inspection visits, the files and additional documentation presented by the persons responsible for the pollution sources.

One indicator or group of indicators is defined for each regulated area: air emissions, hazardous waste generation, biological/infectious hazardous waste generation, hazardous waste services, high-risk activities and environmental impact.

It should be noted that this is not an additional task imposed on the companies nor does it entail any cost. The indicators enable the authority to track progress on environmental compliance by company, industry, area (air emissions, hazardous waste, noise, risk and environmental impact), obligations (each of the legal requirements) and geographical location.

In this regard, an initial report was issued in January 2000 on the 6,048 qualified establishments. It indicates that:

- the indicators applied most often were those concerning air emissions (1,513 plants), hazardous waste generation (4,077 establishments) and biological/infectious waste generation (1,165 establishments);
- the air emission sources evaluated scored 51.4 on average; the hazardous waste generators, 52.1; and the biological/infectious waste generators, 60;
- 33 percent of the air pollution emitters, 23 percent of the hazardous waste generators and 34 percent of the biological/infectious hazardous waste generators achieved high levels of environmental compliance;
- 76.4 percent of the air emission sources, 75.9 percent of the hazardous waste generators and 64 percent of the biological/infectious hazardous waste generators had more management irregularities than environmental performance irregularities, so that it will be easy for them to raise their scores; and
- only 2 percent of the air pollution emitters, 1.9 percent of the hazardous waste generators and 1.7 percent of the biological/infectious waste generators committed major performance violations; these sources will have to make a considerable effort to comply with the environmental law.

Outlook

The introduction of the indicators implied the need for a more detailed inspection program. Therefore, it was necessary to adjust the goals of the program to substitute quality for quantity as well as to achieve more efficacy and efficiency. For this reason, the original goal of 12,000 inspection visits per year was reduced to 7,600.

With the introduction of the comprehensive procedure for verification and inspection visits, Profepa embarked on a consolidation phase with the goal of reorienting its environmental control strategies towards the sources of greatest impact and risk as well as toward those that have excessively delayed their environmental compliance.

In this sense, the environmental compliance indicators were designed as the cornerstone of the environmental inspection and surveillance policy for industrial and service establishments. The indicators are firmly based on both the comprehensive inspection procedure and the other documentation assembled, with a view to giving effect to the formalities of the environmental law.

3.2 Natural Resource Inspection Policies and Programs

In December 1994, the responsibility for the enforcement of the law on natural resource use and conservation was centralized in Profepa. The federal government thereby ordered the creation of the Office of the Under Attorney for Natural Resources, in which the powers of inspection and surveillance formerly exercised by three different ministries of government were now concentrated.

In January 1995, the Office of the Under Attorney for Natural Resources, as central entity, developed the policies and strategies necessary to promote and verify environmental compliance in the area of natural resources inspection and surveillance. These strategies and policies, which are put into effect by Profepa's state offices of Natural Resources, are indispensable for fulfilling the assigned mandate. They include:

- Integrating and carrying out inspection and surveillance by forming and organizing an institutional corps of highly qualified inspectors who possess suitable professional training and high moral standards.

- Striving for the maximum efficiency in law enforcement by putting a priority on those resources and geographical areas in which noncompliance poses a major threat of loss or severe harm, or where a higher frequency of organized unlawful activities is detected.
- Involving organized civil society groups and state and local governments in the task of natural resource protection and surveillance for unlawful activity. This has been achieved through the signing of coordination agreements between the federal authority and various population centers, aboriginal communities, local communities or producer or user organizations as well as through tripartite agreements among state or municipal authorities, the federal authority and civil society organizations.
- Carrying out inspection and surveillance actions with the support of the federal, state and municipal institutions in their areas of competence. In this regard, the Marine Ministry (*Secretaría de Marina*), the Ministry of National Defense (*Secretaría de la Defensa Nacional*), the Federal Preventive Police (*Policía Federal Preventiva*), the Attorney General of the Republic (*Procuraduría General de la República*), the state attorney generals and the state and municipal police forces provide substantial support to the actions of Profepa's offices in their work of protecting natural resources, combating organized crime and surveillance the legality of resource use.
- Meeting the Mexican government's international commitments on natural resources law enforcement. Profepa is participating actively in the management, promotion and observance of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity, the International Plant Protection Convention, the North American Agreement on Environmental Cooperation (NAAEC) and the Tulúm Declaration for the Conservation of the Meso-American Caribbean Reef System. In addition, it participates in multilateral forums such as CITES, the World Customs Organization, the United Nations Environment Program (UNEP) and Interpol, as well as regional and bilateral forums within the North American Commission for Environmental Cooperation, the Trilateral Committee for Wildlife and Ecosystem Conservation and Management and the Border XXI Program.

As the authority responsible for environmental law enforcement in the area of natural resources, Profepa divides its institutional operations into nine programs based on the priority areas established by the federal government's Environment Program 1995–2000:

- forestry inspection and surveillance;
- protected natural areas inspection and surveillance;
- fisheries and marine resources inspection and surveillance;
- wildlife inspection and surveillance;
- inspection and surveillance at ports, airports and borders;
- verification of environmental impact assessment relating to natural resources;
- inspection and surveillance for Federal Coastal Zone and Reclaimed Land;
- environmental land-use plan verification; and
- natural resource contingency response.

Profile of Natural Resources Inspector

In accordance with the Resolution published in the DOF on 28 April 1997, establishing the National Inspection and Surveillance Service for Natural Resources and the Environment under Profepa, inspection and surveillance personnel must be Mexican citizens holding or working towards a degree, possessing a suitable profile and the physical and mental capacity to carry out inspection duties. In addition, the Profepa natural resources inspector must have no criminal record or record of administrative sanctions.

In order to give full effect to the Resolution and the service policy, the broad range of areas covered by the institution's programs made it necessary to hire a wide range of professionals into the inspector and management corps; that is, each of the functioning programs requires an appropriate professional profile. For inspection of fisheries and marine resources, inspectors must be biologists, ecologists, marine ecologists or fisheries or marine biologists; forestry and forest plantation inspection demands forest engineers or agronomists; and the wildlife programs require professionals in biology, zoology, botany, veterinary medicine and animal science.

The areas of environmental impact verification, Federal Coastal Zone and environmental land-use planning require ecologists, geographers, topographers and civil engineers and architects with knowledge of land-use planning.

The broad diversity of resources to be protected in protected natural areas, which include marine, terrestrial and lagoon ecosystems, necessitate the hiring of professionals in all of these disciplines.

The natural resources inspectors are trained through seminars or courses in aspects of the LGEEPA and its regulations, the Federal Administrative Procedure Law (*Ley Federal de Procedimiento Administrativo*), the Mexican official standards and other legal provisions applicable to their sphere of action. Further courses and seminars discuss techniques and procedures that are indispensable for the performance of their duties as law enforcement officers. These techniques and procedures include sampling, wildlife pest and disease control, species identification and handling, surveillance procedures, social management, use of specialized equipment and use of geographic information systems, among others.

International Impact of Natural Resource Inspection

In fulfillment of the international commitments arising from the NAAEC, Profepa, through its inspection and surveillance programs, carries out a range of activities designed to guarantee observance of domestic environmental law. In the context of the international natural resources and wildlife agreements to which Mexico is a signatory, these activities include inspection of forest and wildlife products at ports, airports and borders; inspection of fisheries and marine exports; verification of the use of marine turtle excluder devices on shrimp trawlers; verification of tuna logbooks and auxiliary safety equipment on tuna boats operating in the eastern Pacific Ocean; inspection and surveillance in the monarch butterfly refuge areas, and constant monitoring of the reservoirs used as refuges by migratory birds.

Regarding CITES and the Convention on Biological Diversity, the main thrust of compliance verification is the inspection for protected species shipped or carried by passengers at maritime ports, airports and land border points. Profepa's actions since 1995 have resulted in stricter observance of CITES by the international traders in wildlife species, with the cooperation of the Attorney General of the Republic and the authorities responsible for the enforcement of this Convention in other countries, as well as the detection and breakup of various illegal trafficking rings and the recovery of wildlife specimens returned to the country.

The protection and conservation of migratory species shared among the North American countries has been improved thanks to the activities and work programs of Profepa. For example, the conservation programs implemented in the monarch butterfly refuge areas have important underpinnings in the inspection and surveillance actions carried out by Profepa personnel together with the communities living in these areas. To ensure the sustainability of the resources in the area, the local residents have been oriented toward alternatives to forest cutting. Monitoring of habitats and routes used by migratory birds in the region as part of an ongoing Profepa program has notably decreased mortality due to disease, poaching and poisoning.

In fisheries, compliance with international legal instruments has cut accidental mortality of marine species and made it possible to recover major sources of income for the country from the tuna and shrimp industries. The monitoring of the entire national shrimp fleet to ensure its use of turtle excluder devices has guaranteed protection against the accidental capture of these endangered species. The implementation of these devices represents the fulfillment of one of the technical conditions in the fisheries-related Mexican official standards that entails the greatest environmental impact reduction.

Furthermore, the enforcement of authorized fishing methods among Mexican tuna boats provides protection for various dolphin species, and has brought dolphin mortality due to tuna fishing below the internationally stipulated limits. This has led to official international recognition and major advances on the protection of dolphin populations.

Finally, the protection of the country's forests has been stepped up since Profepa, in observance of the International Plant Protection Convention, assumed responsibility for verifying the sanitary status of forest products and subproducts entering the country. This work has curtailed the entrance of wood products infested with high-risk pests or diseases. The United States has supported this work by facilitating the Profepa inspectors' access to shipments prior to their entry into the country, thus enhancing protection of the shared forests along the border.

Profepa Participation in NAWEG and EWG

In the area of natural resources, since 1995 the Office of the Under Attorney for Natural Resources has created, in conjunction with Environment Canada and the US Fish and Wildlife Service (US FWS), the North American Working Group on Wildlife Enforcement (NAWEG), an organization officially incorporated into the North American Working Group on Enforcement and Compliance Cooperation (EWG) of the CEC.

In a broad exercise of international cooperation, Profepa officials, as members of the Working Group, have developed and implemented three law enforcement programs in collaboration with Canadian and US authorities:

- Technical training and professional development for wildlife inspectors of the three countries, in order to render their work and results more effective in North America.
- Joint actions by the three countries internationally to promote compliance with international agreements and cooperation with other law enforcement agencies outside the region.
- Development of a network of wildlife laboratories of the three countries to provide regional support for the forensic aspects of wildlife law enforcement.

In 1999, Mexico assumed the presidency of the Working Group and, represented by Profepa, participated in the organization's trilateral activities. These included a second seminar on forensic aspects of wildlife in Cheyenne, Wyoming (the first was held in Mexico in 1997), 1998 workshop on corals and protection of reef resources held in Los Angeles, California and a 2000 seminar on Trophy Hunting and Game Farming held in Monterrey, Mexico. As part of the exchange agreement on training, during 1998–99, Mexican inspectors and middle managers participated in courses given by the US FWS in West Virginia on inspection practices used in the region.

Profepa personnel also supported the Canadian initiative to produce a guide to the identification of terrestrial and marine turtles by participating in its development and taking responsibility for publication of the Spanish version.

In the area of international cooperation, Profepa took part in CITES and Interpol conferences in conjunction with US and Canadian agencies. Interpol, it should be noted, has recognized NAWEG as a regional group; Profepa also addresses matters under its jurisdiction in the context of the Trilateral Committee for Wildlife and Ecosystem Conservation and Management.

Finally, Profepa supported the creation of a regional directory of wildlife laboratories (completed in 1999), with the aim of consolidating the Regional Laboratory Network.

Outlook

Profepa's work on natural resources under the NAAEC is currently restricted to the enforcement of wildlife laws. The mandate of the NAAEC and the Commission itself is much broader, and so Profepa intends to support the expansion of cooperation structures and programs to include other types of natural resources, such as forestry and fisheries. This proposal will require greater participation of our regional organizations and a heightened capacity for coordination and response in order to manage and protect our resources of common interest.

4 Results Indicators

Since its inception, Profepa has developed a set of indicators to track progress on pollution control. These indicators consider the number of inspection visits, their results and the safety measures and sanctions imposed.

4.1 Inspection Activities of the Office of the Under Attorney for Industrial Verification, 1998–1999

Between January 1998 and December 1999, some 18,261 inspections or verification visits took place. The results of these visits are as follows:

- 186 temporary partial closings
- 111 temporary total closings
- 14,169 minor violations identified
- 3,795 companies legally compliant.

Inspection or Verification Visits, 1998–1999			
Visits	1998	1999	Total
Completed	9,590	8,671	18,261
With temporary partial closing	107	79	186
With temporary total closing	45	66	111
With minor violations identified	7,357	6,812	14,169
No violations	2,081	1,714	3,795

The percentage of inspection visits that identified serious violations of environmental law dropped from 22.2 percent in 1992 to 1.6 percent in 1998 and 1999. It is felt that this was primarily due to the application of a strict policy on compliance verification whereby, when serious irregularities were detected for pollution sources, these were sanctioned with partial or total closing whose rescission was conditional upon total compliance and the imposition of urgent corrective measures as well as heavy fines.

In addition, the scope of the inspection and verification visits (now referred to as the comprehensive inspection procedure) was redefined. The visits serve as the basis for the determination of the compliance indicators. The goals for number of visits were revised from 12,000 annually up to 1997, through a transitional period in 1998, down to 7,600 for 1999. These goals were fully attained.

On average, 20.78 percent of the visits to pollution sources detected no violations while 77.59 percent detected only minor violations, as recorded in the inspection and activity reports of the inspectors. Note that since sources may have received more than one visit, these figures do not precisely correspond to the number of pollution sources.

It is important to mention that between January 1998 and December 1999, a total of 4,322 inspection or verification visits were conducted specifically on the northern border, with results as shown in the following table:

Inspection or Verification Visits on the Northern Border, 1998–1999			
Visits	1998	1999	Total
Completed	2,308	2,014	4,322
With temporary partial closing	37	33	70
With total closing	14	18	32
With minor violations	1,814	1,686	3,500
No violations	443	277	720

Regarding the results on hazardous waste management, the quantity sent for controlled landfill rose from 433,000 tonnes in 1997 to 453,000 tonnes in 1999, while the quantity of hazardous waste generated through the use of raw materials imported into the country under the Temporary Import Regime and returned to the United States grew from 49,000 tonnes in 1997 to 54,000 in 1999.

Sound Management of Hazardous Waste			
Management	1998	1999	Total
Tonnes/year	632,600	663,650	1,296,250
Final disposal	433,100	453,150	886,250
Return to the United States	49,500	54,500	104,000
Recycling	150,000	156,000	306,000

As examples, we discuss below several successful cases as well as others that posed problems to Profepa due to their environmental implications, health risks and associated costs:

Peñoles, S. A. de C. V., located in Torreón, Coahuila is a company involved in refining non-metallic minerals, mainly lead. It had partially implemented a program arising from a voluntary audit. Because of complaints from the community, it was inspected in January 1999. As a result of the violations identified during the inspection, urgent actions were ordered to reduce and control air pollutant emissions, assess the health effects on the neighboring population, systematically measure gas and particle emissions from ducts and chimneys, monitor gases and particles in the zones bordering the plant and conduct site remediation to bring contaminants to levels not entailing health risks. These measures were satisfactorily implemented. In September 1999, air quality in terms of lead content met the applicable standard and in August 2000, major progress on cleanup of the contaminated area was recorded. The majority of the dust samples taken from paved streets, sidewalks and roofs exhibited a significant reduction in lead levels (less than 40 mg/m²). The company is continuing its cleanup operations in the neighboring areas under the strict supervision of Profepa, and reports spending US\$45 million in these efforts.

The **Federal Electricity Commission** has a construction and distribution warehouse at Perote-Teziutlán highway, km 1.5 in the state of Veracruz. This case concerns a temporary hazardous waste storage facility affected by the landslides resulting from the intense flooding of 1998. The facility

contained 1,200 PCB-filled drums. Profepa took and analyzed soil samples but, contrary to the community's assertions, found no evidence of PCB contamination. The corresponding administrative procedure involved an order for safety measures including the shipping to Finland for destruction of the remainder of the PCB-containing materials stored at the facility.

Decoplas, S. A. de C. V., located in the Mexico City Metropolitan Area, is an automotive parts manufacturer. Following an inspection that led to the ordering of measures to prevent and control air pollution, noise and vibrations, the company installed equipment designed to prevent the emission of 2,000 tonnes/year of volatile organic compounds at an approximate cost of US\$1 million.

4.2 Activities of the Office of the Under Attorney for Natural Resources, 1998–99

Concerning natural resources, Profepa, in the course of exercising its powers to enforce compliance with environmental law, achieved the following results for 1998–99:

In forestry, it performed 10,839 inspections plus 3,000 special operations and more than 5,000 systematic surveillance rounds. These actions led to the seizure of 747.65 tonnes of coal, 89,399.41 m³ of timber, 1,161 forestry machines and tools and 1,361 vehicles. As well, 7,491 administrative procedures were processed. Concerning prevention of unlawful activity, 107 community vigilance committees were set up in forestry communities and ejidos made up of producers, ejido and community authorities, and forest resource owners in general in order to promote societal participation in forestry surveillance.

Regarding forest fires, 377 reports of alleged criminal acts were received, resulting in 597 administrative procedures.

During the period in question, Profepa continued to expand its inspection and surveillance coverage in both terrestrial and marine protected natural areas, reaching an extent of 8,057,531 ha, or 64 percent of the total area covered by the National System of Protected Natural Areas.

In these areas, a total of 7,309 inspection and surveillance actions were carried out, leading to the seizure in 1999 alone of 15.84 tonnes of fisheries products, 45 vehicles, motors and fishing boats, 50 nets and tackle items, 294.1 m³ timber, 809 kg coal, 32 forestry vehicles, 49 machines and tools for forest product extraction, 428 wildlife specimens, 4,413 wildlife parts and 9 wildlife subproduct parts. In these two years, 225 administrative procedures were processed and 53 community vigilance committees were set up and consolidated.

For the protection of the country's forests, during 1998–99, Profepa conducted 129,778 inspection actions on 1,444,446 m³ of new timber, 398,672 m³ of used timber, 98,223,680 pieces of timber products and manufactured goods and 1,945 imported Christmas trees at the country's ports, airports and borders. These actions resulted in the detection of 1,495 cases of imports infested with pests that had to be treated and 468 cases infested with pests that required quarantine measures, which prevented the entry of 1,962 shipments bearing high-risk pests or diseases into the country.

As part of the inspection activities at ports, airports and borders in relation to transboundary trade and movement of wildlife specimens, products and derivatives in compliance with CITES and the Convention on Biological Diversity, Profepa carried out 143,189 inspections of international traveler and tourist baggage as well as 8,156 inspections and verifications of shipments covered by CITES authorizations and certificates, leading to the opening of 4,841 administrative procedures for violations. Based on these procedures, 1,519 products and derivatives were seized, exporters were required to regularize 406 live specimens and the export or import of an additional 506 specimens was barred.

The inspection and verification of uses for wild flora on national territory was carried out through the performance of 1,127 inspections, 627 surveillance actions and 211 special operations; similar activities for fauna involved 3,839 inspections, 2,294 surveillance actions and 817 special operations. As a result, 4,344 live specimens and 945 products and derivatives of wild flora were seized along with 12,466 specimens and 35,230 product and derivatives units of wild fauna.

These actions led to the opening of 2,618 administrative procedures, the closing of 1,679 procedure files, the irrevocable seizure of 3,115 specimens and 950 products and derivatives of wild flora and fauna as well as the imposition of penalties for a total of 9.7 million pesos.

To involve citizens in the protection of wildlife resources, a total of 214 community vigilance committees were set up, bringing the total number in existence to 514.

Regarding fisheries and the protection of marine resources and species, during the two- year period there were 9,006 operations, 23,252 inspection and surveillance actions and 4,111 turtle exclusion device inspection actions, amounting to complete verification of the shrimp fleet during the two-year period in question.

These actions resulted in the seizure of 4,112.7 tonnes of fish products, 1,355 vehicles and boats and 51,032 nets, tackle items and prohibited devices, leading to the institution and closing of 5,522 administrative procedures.

Concerning the natural resources contingency response program during the period in question, a national wildlife laboratory network was implemented. Also, the following documents were published:

- a sampling manual for wildlife emergency response, with one volume on birds and mammals and another on marine mammals;
- a procedures manual for wildlife emergency response; and
- a guide to the identification of migratory and resident waterfowl.

In terms of contingency response, during the period, a total of 85 natural resource emergencies were reported; 81 of these were addressed by Profepa state offices, with the support of scientists and institutions making up the national network.

Natural Resource Contingency Response								
Year	Reported	Addressed	Affected ecosystem			Origin of contingency		
			Freshwater	Marine	Land	Natural	Anthropogenic	Nd*
1998	38	34	19	18	1	18	14	6
1999	47	47	20	25	2	19	20	8
Total	85	81	39	43	3	37	34	14

* Not determined

As may be observed in the table, the marine ecosystem was most affected over the period, with 50 percent of contingencies; freshwater ecosystems accounted for 45 percent, while terrestrial ecosystems experienced only three incidents.

Anthropogenic phenomena (organic waste, hydrocarbon and toxic substance spills) caused 40 percent of the reported emergencies; 43 percent were of natural origin (red tide and eutrophication); while for 16 percent of the cases it was impossible to determine the cause.

The consolidation of the National Emergency Response System enabled Profepa to cover all the incidents occurring in 1999.

In addition, for the fourth consecutive year, all necessary steps were taken to monitor the environmental conditions in the lagoons located along the Central, Gulf of Mexico and Pacific Ocean flyways of North American migratory birds. Furthermore, preventive visits were made to various marine bird nesting areas in the northern Gulf of California.

Moreover, during 1998–99, Profepa conducted 1,748 verifications of compliance with the conditions set by the National Institute of Ecology (*Instituto Nacional de Ecología*) for various public and private works projects. These actions led to the institution and substantiation of 732 administrative procedures.

Likewise, 1,423 inspection visits were made to the premises and concessions within the Federal Coastal Zone, leading to the opening and processing of 1,043 administrative procedures.

Finally, Profepa assisted the local and state environmental land-use planning authorities by issuing 80 opinions and recommendations arising from 130 verification procedures.

Special Report on Enforcement Activities in the United States

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Preface

To meet national environmental goals, all levels of government, business, communities and individuals need to work together in cooperative partnerships. Over the past five years, a number of innovative environmental compliance and enforcement programs have been developed by national and state environmental agencies that facilitate building more effective partnerships to improve the nation's overall environmental quality.

The headquarters offices of the US Environmental Protection Agency (EPA) were reorganized in 1994 to consolidate all enforcement and compliance assurance activities. The reorganization provided the opportunity to improve effectiveness of traditional enforcement tools, develop new approaches to compliance incentives and compliance assistance, and in so doing, dramatically improve the impact of the national program. All of these efforts benefited tremendously from extensive stakeholder involvement in their development.

EPA has built a strong and aggressive enforcement program that has achieved significant environmental results, while also providing compliance assistance to both large and small businesses and offering real incentives to bring violators into compliance. Enforcement actions concluded in fiscal year (FY) 1999 will reduce over 6.8 billion pounds (some 3.1 billion kilograms) of pollutants. Additionally, polluters were required to spend a record (US)\$3.4 billion to correct violations and take steps to protect the environment. EPA also achieved a record \$236.8 million in environmental beneficial projects. A record \$166.7 million in civil penalties was assessed, 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 75 million tons (68 million tonnes) of nitrogen oxide reductions over the next quarter century. EPA took 3,935 civil judicial and administrative enforcement actions in 1999, 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 serves as an extremely important deterrent to others.⁸

This special enforcement report does not discuss the full range of expanding partnerships between national/state and local governments, the regulated community and the public, but focuses instead on the following three aspects of the compliance assurance and enforcement program: compliance promotion, inspections (compliance monitoring), and measurement of program results.

⁸ US Environmental Protection Agency, Office of Enforcement and Compliance Assurance, "Annual Report on Enforcement and Compliance Assurance Accomplishments in 1999, July 2000, p.i.

1 Overview

Due to the complexity of its environmental programs and the sheer number of facilities to be regulated, environmental programs in the US rely on shared authority and cooperative agreements between the national government and the state governments to implement and enforce environmental laws. In recent years, states have become stronger environmental managers, and a new relationship with the states is emerging—one that allows more flexibility in adapting to changing priorities and experimenting with new ideas. The states share with the national government concurrent jurisdiction over the environment. For matters regulated by national law, state laws must be consistent with, or the equivalent to, the national laws, and not less restrictive or protective. Generally, state laws may exceed national standards and may regulate areas that the federal government does not, such as the management of non-hazardous solid “municipal” waste that most, if not all, states regulate. Several states have environmental laws that are more stringent than, or different from, federal laws, or have developed innovative environmental programs that serve as models for other states and for the federal government as well. Those authorities are preempted by national law only to the extent that they are inconsistent or less stringent than the national programs. Conversely, other states have adopted legal provisions which prescribe that state requirements may not exceed national standards.

States may be authorized or delegated the authority to issue permits and take enforcement actions under national programs if their programs are approved by the national EPA. Many states have developed their own departments of environmental protection and like institutions. States with nationally approved programs issue the majority of all permits granted pursuant to national laws, conduct the largest number of facility inspections and initiate most enforcement actions against violators. In states with nationally approved pollution control programs, the national government’s role is limited to establishing national policy, developing national pollution standards, supporting the state program and monitoring the state programs to ensure that their actions are appropriate and consistent with national policies and standards. This cooperative regulatory arrangement ensures a key role for states in environmental enforcement, while reserving the national government’s authority to determine whether the state programs meet the national requirements in delegated or approved programs. The national government has the authority to step in and take over where a state fails to perform. This can take place with reference to a single action, a targeted part of the program or the whole program. Over the years, EPA has developed various policies with input from the states, that define our oversight role, when we would take an overfiling action, and how disputes will be resolved.

As part of the growing trend towards results-based management, EPA has developed a process to evaluate how these partnerships are performing and learn what areas may need improvement. The Government Performance and Results Act (GPRA), legislated by Congress in 1993, requires agencies to develop strategic plans for what they intend to accomplish, measure how well they are doing, make appropriate decisions based on the information they have gathered, and communicate information about their performance to the US Congress and to the public. The EPA Strategic Plan establishes ten major goals for environmental protection:

- 1) clean air;
- 2) clean and safe water;
- 3) safe food;
- 4) preventing pollution and reducing risk in communities, homes, workplaces and ecosystems;
- 5) better waste management, restoration of contaminated waste sites, and emergency response;
- 6) reduction of global and cross-border environmental risks;
- 7) expansion of Americans’ right-to-know about their environment;
- 8) sound science, improved understanding of environmental risk, and greater innovation in addressing environmental problems;
- 9) a credible deterrent to pollution and greater compliance with the law; and
- 10) effective management.

OECA National Priorities for FY 2000/2001

- Clean Water Act—Wet Weather
- Safe Drinking Water Act—Microbial Rules
- Clean Air Act—New Source Review/Prevention of Significant Deterioration (NSR/PSD)
- Clean Air Act—Air Toxics
- Resource Conservation and Recovery Act—Permit Evaders
- Petroleum Refinery Sector
- Metal Services (Electroplating and Coating) Sector

The National Guidance for Fiscal Years (FY) 2000 and 2001 of the Office of Enforcement and Compliance Assurance (OECA) is a key component in its planing process. This featured seven national priorities for the enforcement and compliance assurance program (see box) to be addressed by EPA over the next two years. These priorities were developed with the input of state partners through a year-long stakeholder participation process. In 2000, OECA initiated an expanded stakeholder process to seek the views of states, industry, environmental groups, local and tribal governments and community groups, in developing the National enforcement priorities for the FY 2002/2003 planning cycle.

The enforcement and compliance assurance programs also seek better ways of ensuring compliance by implementing innovative approaches to enforcement as outlined in the “Action Plan for Innovation,” issued by OECA on October 1, 1999. The Action Plan, developed with input from states and other stakeholders, will aid OECA in providing the regulated community with incentives to comply, including the currently revised Audit Policy and Small Business Policy. The Action Plan is an ambitious strategy that builds on many of the innovations launched six years ago when EPA reorganized the enforcement and compliance assurance programs. The Action Plan spells out twenty-two commitments that will affect the major components of EPA’s regulatory enforcement program. Most of the commitments in the Action Plan respond directly to suggestions made during two conferences held in January and February of 1999 to evaluate the enforcement and compliance program five years after the reorganization. The conferences were cosponsored by EPA and the Vice President’s National Partnership for Reinventing Government and included representatives from the regulated community, state, local and tribal governments, environmental groups and community organizations.

OECA coordinates closely with state associations such as the National Association of Attorneys General (NAAG) and the Environmental Council of the States (ECOS) to ensure that the environmental laws and regulations are fairly and vigorously enforced. OECA actively seeks the input of these groups, and other associations of co-regulators, comprising air, water, and waste managers, on various enforcement and compliance assurance policies and guidances. This interaction provides critical information on the state and local perspectives and provides a high sense of accountability to our environmental customers.

The National Environmental Performance Partnership System (NEPPS) established in 1995, gives states and EPA a more flexible process for setting priorities, clarifying responsibilities, and making the most effective use of taxpayer dollars. The centerpiece of the new system is a Performance Partnership Agreement, which sets expectations for performance while offering flexibility in meeting goals. This agreement is an innovative way to identify priorities, solve problems, and make the most effective use of our collective resources. It emphasizes performance rather than process and environmental results rather than administrative details. It gives a state greater freedom to focus resources on its highest environmental priorities and to select the best strategies for getting results. Prior to developing an agreement, a participating state assesses its environmental problems and conditions, while actively involving citizens in the process. Based on this information, the state then proposes environmental and public objectives along with a plan of action. This forms the basis for negotiating an annual agreement with EPA.

Another feature of the new partnership system is flexibility in administering grants. States now can consolidate a variety of individual grants into one. A Performance Partnership Grant reduces administrative burdens by cutting paperwork and simplifying financial management. It also allows the states more

flexibility to use grant money to address their most pressing environmental problems. Forty-five states have chosen this option.

The National Environmental Performance Partnership System has led to some important developments:

- Maryland has seen its administrative reporting requirements cut in 13 areas, and the goals and objectives we jointly identified serve as the environmental component in the state's strategic plan.
- Florida's emphasis on showing results led the state to develop a new performance measurement and tracking system that received an "Innovations in Government" award from the Ford Foundation and Harvard's Kennedy School of Government.
- Mississippi's interest in targeting resources to solve priority problems resulted in a reorganization around specific functions, business sectors, and geographic areas.
- Washington saw the paperwork associated with its annual work plan for grants fall from about 40 to four pages.

Creating effective cooperative partnerships is also a key task of EPA's Office of Environmental Justice. It works with a wide range of stakeholder groups to ensure that environmental justice concerns are an important component of not only the enforcement and compliance assurance program, but also EPA's overall policies and regulations. These efforts include working with concerned stakeholders to reduce litigation around environmental justice issues, where appropriate, by facilitating early and meaningful involvement in the decision-making process and by promoting structured, principle-based negotiations.

Fish and wildlife protection programs are administered under the US Department of the Interior by the US Fish and Wildlife Service. The Service's Division of Law Enforcement works to manage ecosystems, save endangered species, conserve migratory birds, preserve wildlife habitat, restore fisheries, combat invasive species, and promote international conservation. To accomplish its goals, the Service works in close partnership with other federal agencies and departments such as EPA, the US Customs Service, US Department of Justice, National Oceanic and Atmospheric Administration (NOAA) of the US Department of Commerce, international organizations such as Interpol, state environmental departments, and tribal counterparts.

2 Compliance Promotion

Recently EPA undertook a five-year review to assess how well the reorganizations begun in 1994 had improved the effectiveness of the enforcement and compliance assurance program. This assessment began in early 1999 with EPA and the administration's National Partnership for Reinventing Government co-sponsoring two major conferences. More than 290 people participated in these conferences, including representatives from environmental and community groups, trade associations, small and large businesses, academia, and federal, state, tribal and local governments. Through these conferences, a *Federal Register* notice, and further follow-up conferences with stakeholders, EPA gained valuable input on its current efforts and insight on how it can further improve its programs.

Two themes emerged from the hundreds of comments, reactions and suggestions:

- EPA needs to do more to help organizations comply with the law.
- EPA needs to encourage those who are willing and able to do more.

Current programs continue to build on these themes by promoting the compliance of the regulated community through incentives and compliance assistance and facilitate public's understanding of and access to compliance and enforcement information.

EPA is committed to working with its wide array of stakeholders to develop and implement more cost efficient and effective programs to build a credible deterrent to pollution and improved environmental performance.

2.1 Compliance Incentives and Voluntary Programs

Audit Policy

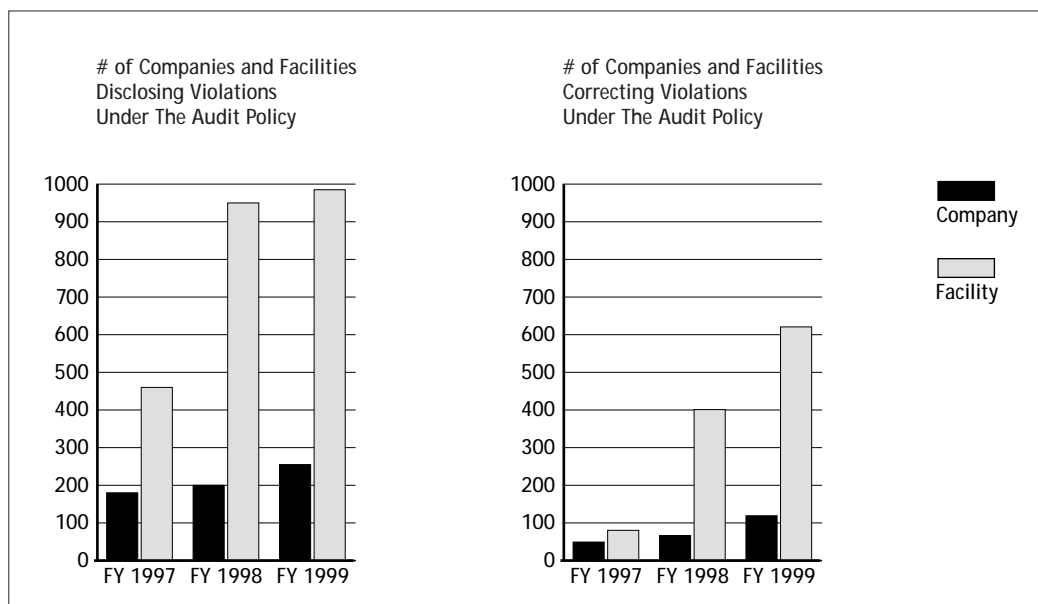
EPA encourages companies and other regulated entities to play an active role in improving environmental performance and protecting public health by conducting self-audits of their facilities. EPA's policy, *Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations* (December 1995) was the result of an intensive, 18-month public process to find the best way to encourage companies to police themselves while preserving fair and effective enforcement. In developing this policy, EPA sought input from other federal agencies, state attorneys general and local prosecutors, state environmental agencies, the regulated community and public interest organizations.

The Audit Policy provides incentives for companies to develop environmental audit and compliance management systems to detect, disclose, and correct environmental violations. When companies voluntarily discover and promptly disclose environmental violations to the Agency (and meet other specified conditions of the policy), EPA will waive or substantially reduce gravity-based civil penalties by 75 percent or, in most cases, by 100 percent. The Audit Policy also sets forth a positive alternative to state audit privilege and/or immunity laws which undermine law enforcement and the public's right-to-know.

Over 470 regulated entities have identified and disclosed violations at more than 1,880 facilities under the Audit Policy, leading to numerous environmental improvements (reduced pollution, reduced likelihood of spills, safer management of PCBs and other hazardous wastes). EPA has settled over 150 cases under the Audit Policy for more than 525 facilities, with approximately 126 resulting in no penalty. The number of multi-facility disclosures is increasing as well, with 16 parent companies disclosing the same types of violations at more than 900 facilities, resulting in nationwide auditing and widespread environmental benefit. (See Exhibit #1: 3-Year Audit Disclosures and Settlements—National Totals.)

EPA recently surveyed users of the Audit Policy. Eighty-eight percent of the respondents said that they would use the policy again, and 84 percent would recommend it to others. The survey results also reveal that the policy encourages about half of the users to make specific improvements in the auditing programs and environmental management systems. About half of the users that had formal auditing programs or compliance management systems (CMSs) reported that the Audit Policy encouraged improvements in their environmental auditing programs or CMSs.

Exhibit 1. Three-Year Audit Disclosures and Settlements—National



Source: ORE-Office of Regulatory Enforcement. 12 January 2000.

In follow-up to the survey and Agency review of the auditing program, the Audit Policy and the Small Business Compliance Policy were revised with the changes effective May 11, 2000. The key revisions:

- Lengthen the amount of time from 10–21 days that entities have to disclose a violation after discovery;
- Clarify that a facility may qualify for Audit Policy credit even if another facility owned or operated by the same parent organization is already the subject of an inspection, investigation or information request;
- Clarify that companies with newly acquired facilities will have at least 21 days to disclose violations discovered at those facilities and that the “no repeat violations” conditions will not disqualify disclosures.

Use of corporate-wide auditing agreements is expanding. During the past two years, EPA has negotiated corporate-wide auditing agreements with companies to audit and correct violations of Clean Air Act (CAA), New Source Review (NSR) Standards at 40 facilities; emergency notification and spill prevention requirements at 17 telecommunication companies; CAA federal fuel standards at a major airline; and Toxic Substances Control Act (TSCA) violations at two major chemical companies. Some examples of how self-policing pays off:

- In FY 1999, an audit settlement agreement between EPA and American Airlines (AMR Corp.) resolved violations discovered through a corporate audit of the company’s facilities at 152 airports. Based on the audit, American Airlines reported numerous violations, occurring from October 1993 to July 1998, of federal diesel fuel regulations that prohibit the use of high-sulfur fuel in motor vehicles. 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. The company also agreed to additional pollution reduction measures at Boston’s Logan Airport.
- In 1997, GTE used the audit policy to resolve spill prevention and right-to-know violations at 314 facilities in 21 states. They paid a \$52,000 penalty, the amount they saved while noncompliant. But in light of their outstanding cooperation in resolving the matter, EPA waived nearly \$2.4 million in potential penalties. Last year, 10 more telecommunications companies followed GTE’s lead. They

found and promptly corrected 1,300 violations at more than 400 sites. They were fined approximately \$129,000, but may see waivers totaling more than \$4.2 million.

- EPA's Region 5 Mini-Mill Project used the Audit Policy to provide all mini-mills in the in the six states within the Region a six-month window of opportunity to report any violations found and correct the problems. Ten of the 22 mini-mills carried out self-audits and Region 5 followed up with inspections at the remaining 12. No penalties were assessed for mills that voluntarily disclosed and corrected violations through a self-audit. Enforcement actions have been taken against several of the mills that chose not to self-audit and that were later inspected and found in violation.

**AUDIT PROTOCOLS DEVELOPED
FOR 11 DIFFERENT ENVIRONMENTAL MANAGEMENT AREAS**

- Generation of RCRA hazardous waste
- Treatment, storage and disposal of RCRA hazardous waste
- RCRA-regulated storage tanks
- Universal waste and used oil under RCRA
- Managing nonhazardous solid waste under RCRA
- Clean Water Act (Municipal Wastewater Treatment)
- Safe Drinking Water Act (Public Water systems)
- Management of toxic substances (e.g., PCBs, lead-based paint, and asbestos)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)
- Pesticides management (FIFRA)
- Emergency Planning & Community Right-to-Know Act (EPCRA)

Audit Protocols

EPA is encouraging facilities to self-audit, has developed a series of 11 separate audit protocol guidebooks to encourage this practice. The protocols are designed for use by persons with various backgrounds, including business owners and operators, engineers, scientists, and lawyers. They provide detailed regulatory checklists that the user can customize to meet specific needs.

Each protocol summarizes key statutory requirements, defines regulatory terms and gives an overview of the federal laws affecting the respective environmental management area. The key feature of each protocol is the regulatory checklist containing detailed procedures for conducting a review and audit of facility operations and conditions. The checklists outline performance objectives for the auditor and offer a line of inquiry when evaluating a facility for compliance. The audit protocols allow facilities to manage their own compliance by identifying: (1) where compliance is being met; (2) potential areas for improvement; and (3) opportunities to correct deficiencies.

Small Business Policy

Under the 1996 Small Business Regulatory Enforcement Fairness Act, EPA must assist small businesses and communities through outreach and compliance assistance, develop flexible penalty policies, and consider the potential impacts on small entities in regulatory development and review. This Policy is available for companies with 100 or fewer employees. It promotes environmental compliance among small businesses by providing incentives for voluntary discovery, prompt disclosure and prompt correction of violations. The Agency will reduce or waive penalties for small businesses that disclose and make good faith efforts to correct violations provided they meet the criteria in the policy. In FY1999, 76 small businesses came forward to disclose violations under the Small Business Policy program, a seven-fold increase over FY1998.

As mentioned earlier, both the Small Business Compliance Policy and the Audit Policy were revised in 2000, following extensive input from the regulated community and other stakeholders. The key revisions affecting the Small Business Compliance Policy are that it lengthens the amount of time, from 10 to 21 days, that entities have to disclose a violation after discovery; and it expands the number of ways violations can

be discovered to include online compliance assistance centers, checklists, or other means. Since 1996, when EPA started creating the incentive policies, more than 150 companies have returned to compliance. In addition, EPA has reduced or waived nearly one million dollars for more than 90 small entities that disclosed and corrected their violations.

As part of its small business policy, EPA encourages its state partners to combine their delegated enforcement authorities and compliance assistance efforts to help small businesses. EPA defers to state policies that provide penalty mitigation or waiver for small entities generally consistent with EPA policy. Many states have created small business assistance centers that work with EPA.

Like small businesses, small communities often lack the administrative, technical, or financial capacity to ensure environmental compliance, but their compliance problems can have a major impact on the state of the environment. EPA's *Policy on Flexible State Enforcement Responses to Small Community Violations* promotes increased compliance by small communities. It provides the tools and flexibility that small communities need to achieve compliance on a sensible schedule and with penalty reductions for correcting violations.

Environmental Management Systems (EMS)

EPA recognizes that environmental management systems (EMS) are an important tool that can help organizations integrate environmental considerations into day-to-day decisions and practices as well as improve both environmental and economic performance, including areas that are not subject to regulation. At the same time, EMSs should not be seen as a replacement for the existing regulatory system in the US. EMSs can work best when they complement existing regulatory programs. Regulatory agencies at all levels must and will continue to assure that existing regulatory requirements are met, using a range of available tools, including taking formal enforcement actions when necessary.

For several years, EPA has been engaged in a number of important activities designed to both promote and evaluate the effectiveness of EMSs in a variety of settings. These activities vary widely and include such things as a major EMS research program conducted in partnership with states through the Multi-state Working Group (MSWG), programs to promote and demonstrate the value of EMSs in various sectors such as local government, metal finishing, and screen printing, and using EMSs as a component of voluntary leadership programs. The Agency has also used EMSs as an important component in enforcement settlement agreements. These activities have allowed EPA to gain valuable practical experience and they will continue.

In July 1999, EPA, after extensive consultations with a variety of outside stakeholders, released a major report from its Innovations Task Force, "*Aiming for Excellence: Actions to Encourage Stewardship and Accelerate Environmental Progress.*" This report makes clear that EPA will expand its commitment to promote the use of EMSs. The action plan sets out the steps EPA will take to fulfill this commitment. While the creation of a performance track program for environmental leaders is one element of the plan, most of the activities referenced in the plan will be focused on a much larger number of organizations, in both the private and public sectors, that wish to work with EPA and implement high performing EMSs, but may not qualify for or wish to participate in a performance track program.

In carrying out this Action Plan, EPA will work in collaboration with other partners, where appropriate, including state and local governments, academia, industry, and others. The efforts will be transparent and the policy decisions made as a result of these efforts will occur only after soliciting appropriate input from outside stakeholders.

EPA will also work closely with other federal government departments and agencies that are taking a leadership role in EMS or are interested in learning more about EMSs. EPA will support their efforts, provide a platform for cross-agency coordination and learning, and prepare a review of lessons learned from these efforts that can assist future government efforts to adopt EMSs.

The agency will support implementation of Executive Order 13148, of 22 April 2000, on "Greening the Government through Leadership in Environmental Management" and the Code of Environmental Management Principles for Federal Agencies issued by EPA pursuant to Executive Order 12856. The agency also will continue to conduct Environmental Management Reviews (EMRs) at selected federal agency facilities. To accomplish these objectives, the EPA will need to ensure that it has adequate internal capacity in terms of trained staff. While a few EPA offices and regions have established EMS training programs or have held EMS workshops, there is no EPA-wide program. Therefore, the agency will develop an internal EMS

training and awareness program to increase general awareness regarding the benefits of EMSs and to ensure there are sufficient numbers of individuals with the requisite skills in the various applications of EMSs.

EPA's effectiveness in promoting beneficial applications of EMSs in the US can be significantly enhanced through international cooperation. In addition to the agency's involvement in the ISO 14000 standards development process, various EPA offices are engaged in international initiatives involving development and evaluation of EMSs. EPA can use its international engagement in various multilateral organizations (e.g., OECD, UNEP), bilateral environmental cooperation programs, and partnerships with foreign assistance agencies (e.g., USAID) to learn from and build on the wide array of experiences.

National Environmental Performance Track

In June 2000, EPA, along with business leaders, state government officials, and environmental advocates, launched the National Environmental Performance Track (Performance Track). Through this unique program, EPA recognizes and encourages top environmental performers—those who go beyond compliance with regulatory requirements to attain levels of environmental performance that benefit people, communities, and the environment.

The overall program consists of two tracks: the National Environmental Achievement Track (Achievement Track) and the National Environmental Stewardship Track (Stewardship Track) to be announced in summer of 2001. By December 2000, 225 businesses and facilities had been selected as charter members in the National Environmental Achievement Track. These are facilities and companies that already maintain high performance in the area of environmental protection and are willing to do even more. They must meet high standards of past environmental performance, systematically manage their environmental responsibilities, make specific commitments for public outreach, and commit to continued improvement in key areas like energy, water, and materials use; air and water pollution; waste disposal and accidental releases; and conservation and product performance.

Performance Track builds on lessons learned from EPA's Common Sense Initiative, Environmental Leadership Program, Star Track, partnership programs and many state performance programs. Through these programs and other experiences, the Agency has learned that innovations in environmental management can be used to create strategic business opportunities and advantages while maximizing the health and productivity of ecosystems and communities. The expectation is that the program will motivate other companies and facilities to achieve similar improvements and complement existing regulatory activities. The program has been designed so that criteria for participation are proportional to the benefits and that small, medium-size and large facilities will participate. Emphasis is being placed on continued environmental improvement, effective state/EPA partnerships, and the need to inform and involve citizens and communities. The roster of companies in the program includes small businesses and large corporations, representing the automotive, pharmaceutical, sports equipment, food processing, chemical and petroleum industries. Municipalities and branches of the federal government are also among the 225 charter members.

Participation in the Performance Track program enables facilities to implement flexible and potentially more efficient approaches to environmental protection. Participating facilities will receive several incentives in return for their environmental commitments. Incentives include: a package of benefits to lower their costs, streamline their administrative operations, and put a public spotlight on their environmental accomplishments.

2.2 Compliance Assistance

Most businesses want to do the right thing, but they need better information to comply with environmental regulations. Recognizing that information is the key to compliance, EPA has greatly increased its efforts to develop compliance assistance tools—particularly for small businesses. Feedback from stakeholder discussions has led EPA to shift its role from a “retailer” to a “wholesaler” of compliance assistance. As a wholesaler, EPA will promote the use of compliance assistance by developing tools and materials in a timely manner and then working with a network of state, tribal, local and private compliance and technical assistance providers who deliver the assistance directly to the regulated community.

National Compliance Assistance Clearinghouse

As part of the shift to “wholesaler,” the EPA Compliance Assistance Clearinghouse was established to facilitate public access to compliance assistance tools and materials developed by EPA, states, trade associations and other providers. Through a network of web links, this Internet-based Clearinghouse acts as a single repository of directories to federal, state, local and other compliance assistance providers, their web sites, and the products/services that they have developed. It is the most comprehensive source of compliance assistance materials available for the compliance assistance community.

Compliance Assistance Centers

In partnership with industry associations, environmental groups, universities, and other government agencies, EPA has launched ten Compliance Assistance Centers, all accessible through Internet web sites as well as toll-free telephone assistance lines. These centers are just one approach to help businesses and governments, especially small and medium-size businesses and local governments, better understand and comply with federal environmental requirements. Each center targets a specific industry sector and explains, in plain language, the relevant federal environmental regulation.

10 COMPLIANCE ASSISTANCE CENTERS:

- Printers' National Environmental Assistance Center
- National Metal Finishing Resource Center
- National Agriculture Compliance Assistance Center
- ChemAlliance
- Transportation Environmental Resource Center
- Paints and Coatings Resource Center
- Local Government Environmental Assistance Network (LGEAN)
- Printed Wiring Board Resource Center
- Federal Facilities Compliance Assistance Center
- CCAR-GreenLink®: the Automotive Compliance Information Assistance Center

Features of the Compliance Assistance Centers include regularly updated news, compliance policies and guidelines, pollution prevention information, sources of additional information and expertise, summaries of regulations and initiatives, access to e-mail discussion groups, vendor listings and directories, environmental management software and benchmarking tools that can be downloaded from the Internet. Some of the centers also contain “expert help” features that guide a small business to information, “virtual shops” that allow a user to click on any facet of an illustrated operation and see what regulations apply, and online access to relevant state regulations.

For the first time, local governments also have a center devoted to serving their environmental information needs. In addition to serving as a clearinghouse for regulatory and compliance information, the local government center provides case studies and other “how to” information related to waste water management, brown fields, solid waste, and many other issues.

Businesses use the centers extensively according to usage data. From January to June 1998, the web sites of the five centers open at the time logged almost 75,000 distinct visits and responded to over 2,000 inquiries

via e-mail and telephone. In total, EPA annually provides telephone assistance to over 40,000 businesses, conducts workshops and training for over 100,000 people, and participates in over 2,000 on-site visits. Some of EPA's regional offices have set up local business centers to supplement the national centers.

Sector Notebooks

In addition to Compliance Assistance Centers, EPA has developed Sector Notebooks to help owners and operators of regulated industries understand regulatory obligations through comprehensive plain-English guides.

Each profile contains information on the overall compliance history of the industry, applicable federal laws and regulations, industrial processes, the amount and type of pollutants generated, applicable pollution prevention approaches, and current cooperative programs designed to improve the environmental performance of each industry. The notebooks are virtually the only government publication in which all of these cross-cutting environmental issues are presented in a single document by industry sector.

This information can be used to develop industry-based assistance strategies to improve overall compliance in ways that are cheaper, cleaner, and smarter. By using the notebooks, federal and state governments, the regulated industries, and the public will be better able to define the key environmental issues associated with each industry. The public will have greater access to information concerning industries within their communities.

Since 1995, EPA has published profiles of 29 major industries and distributed over 400,000 notebooks in printed and electronic form to audiences in the US and abroad. Within the first year alone, over 100 foreign governments requested notebooks and various international organizations were using the information.

Fish and Wildlife Service

The Special agents and wildlife inspectors of the US Fish and Wildlife Service conduct an extensive range of public outreach and education activities. These have included:

- Training classes to researchers and scientists at the National Zoo in Washington, DC;
- Coordinated piping plover training with the Nature Conservancy, New York State Department of Environmental Conservation and Krusos Foundation;
- Conservation programs for schools and career day presentations;
- International wildlife conservation assistance, which included training on anti-poaching and illegal wildlife trafficking; and
- Educational outreach to groups of hunters on provisions of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and import/export regulations.

Special agents worked successfully with utility companies that generate and distribute electrical power throughout the western United States to reduce the electrocution threat of power poles, lines and equipment to raptors and other migratory birds. The compliance assistance program developed emphasizes educating and training of both Fish and Wildlife Service personnel and the utility industry on how to avoid problems by identifying factors that contribute to raptor electrocutions. As a result, the industry is searching for ways to design, manufacture, and introduce more "bird friendly" products. Also, two television documentaries were produced and numerous newspaper and magazine articles have been published as part of the Service's effort to increase public awareness of the electrocution problem and gain public support for remediation efforts.

The Service has developed close partnerships with the Native American Fish and Wildlife Society in an attempt to provide wildlife law enforcement training to all of the Native American Indian tribes throughout the US. Training classes cover authority and jurisdiction, federal wildlife laws, firearms, laws of search and seizure, evidence collection, wildlife forensic and courtroom testimony. Over the last three years, more than 350 individuals representing more than 120 tribes have been trained as Native American wildlife officers.

2.3 Public Information

A central goal of EPA's reinvention efforts is to provide comprehensive information about environmental compliance and enforcement issues to the general public and the regulated community. These efforts seek to deter noncompliance, promote voluntary action by the regulated community, provide meaningful opportunities for public participation, and protect the public's right to know.

Public access to data allows communities to monitor environmental conditions and compliance records of nearby facilities and provides an additional incentive for businesses to comply with environmental laws. It also allows communities to monitor the performance of government agencies charged with implementing environmental programs and improves data quality as greater use of the information triggers better oversight.

Access to Interpretative Documents (AID)

In 1996, an EPA-wide project was begun to create an electronic collection of all Agency policy and guidance documents that is easily searchable by industry, regulatory agencies and the general public, and to make this collection available on the Internet. Expected results are: (1) foster environmental compliance by the regulated community; (2) institutionalize access by the public to policies that concern their health and environment; and (3) improve EPA's productivity.

Thus far, the Access to Interpretive Guidance effort has collected over 10,000 policy and guidance documents in electronic and hard-copy format. The task force has converted the hard-copy documents into electronic format and created "metadata"—key descriptive information in a structured format—for each document. An Internet-based "search and retrieval" mechanism, using this metadata, was developed so that regulated entities and the public could easily identify all documents applicable to their industry or of interest to them. The initial public "roll-out" of the system, containing headquarters documents issued since January 1999, is scheduled for June 2001.

Sector Facility Indexing Project (SFIP)

The Sector Facility Indexing Project (SFIP) is a pilot community right-to-know project designed to bring together environmental and other information from a number of data systems to produce approximately 650 facility-level profiles for five industrial sectors: automobile assembly, pulp manufacturing, petroleum refining, iron and steel production, and primary smelting and refining of nonferrous metals (aluminum, copper, lead, and zinc). The project gives citizens the ability to access multimedia environmental data about each facility on the Internet, such as the number of inspections, compliance with federal regulations, enforcement actions taken, chemical releases, and spills. In addition, each facility has background information on the location and production capacity as well as information on the population of the surrounding area.

The SFIP has undergone multiple federal and state data quality reviews and the public also had several opportunities to comment. Also, EPA gave each individual facility the opportunity to review and correct the data as needed.

EPA intends for the information on each facility to satisfy the needs of a range of stakeholders. These include:

- community groups interested in learning about the overall compliance record of a nearby facility;
- industrial trade associations interested in better understanding common compliance problems in order to design compliance and self-policing programs;
- individual facilities interested in identifying pollution prevention activities for its chemical releases, both in terms of its own record or benchmarking its performance by looking at the records of similar facilities; and
- state or local governments interested in better access to integrated, multimedia environmental data to evaluate the impact of current facilities in a specific geographic area.

In addition to its use by the public, SFIP allows EPA to track compliance records in individual sectors. This is important in terms of planning and measuring the effectiveness of compliance and enforcement strategies. A formal evaluation of the project identified widespread interest for an expansion of SFIP. Currently, EPA is expanding the project to include a subset of federal facilities with the goal that such an

expansion will encourage greater accountability on the part of federal facilities and will allow the public to obtain important compliance and inspection information about these facilities located in their communities.

Online Tracking Information System (OTIS)

EPA has recently developed a four-state public pilot for some parts of the Online Tracking Information System (OTIS) web site, which was developed as a way for state/local governments and federal agencies to access multimedia enforcement and compliance data. In contrast to SFIP, OTIS includes data on all the regulated facilities in the four-state area. Pending results of the pilot, it may be possible to release some parts of OTIS to the public in the future. (See further discussion of OTIS under “Inspections” heading.)

Toxics Release Inventory (TRI)

The Toxics Release Inventory (TRI), published by the EPA, is a valuable source of information regarding toxic chemicals that are being used, manufactured, treated, transported, or released into the environment. TRI provides the first comprehensive overview of toxic chemical pollution from manufacturing facilities in the United States.

Hailed as one of the most potent pieces of environmental legislation in 20 years, TRI was set up by the Emergency Planning and Community Right-to-Know Act (EPCRA). EPCRA's primary purpose serves to inform communities and citizens of chemical hazards in their areas. Sections 311 and 312 of EPCRA require businesses to report, via the TRI, the locations and quantities of chemicals stored on-site to state and local governments. This helps communities prepare to respond to chemical spills and similar emergencies. TRI provides citizens with accurate information about potentially hazardous chemicals and their use so that communities have more power to hold companies accountable and make informed decisions about how toxic chemicals are to be managed.

TRI facilities are required to report on releases of toxic chemicals into the air, water, and land. In addition, they need to report on off-site transfers—a transfer of wastes for treatment or disposal at a separate facility. Facilities are also required to report on pollution prevention activities and chemical recycling. Reports must be submitted on or before July 1 each year and must cover activities that occurred at the facility during the previous year.

The TRI database includes information on:

- what chemicals were released into the local environment from reporting facilities during the preceding year;
- how much of each chemical went into the air, water, and land from those facilities in a particular year;
- how much of the chemicals were transported away from the reporting facility for disposal, treatment, recycling, or energy recovery;
- how chemical wastes were treated at the reporting facility;
- the efficiency of waste treatment; and
- pollution prevention and chemical recycling activities.

In essence, TRI functions as a public “report card” for the industrial community, creating a powerful motivation for waste reduction. For example, between 1988 and 1998 total releases decreased 45 percent or 1.5 billion pounds (0.7 billion kilograms). Between 1997 and 1998 total releases decreased approximately 3.5 percent or 90 million pounds (41 million kilograms). This annual accounting of the nation's management of industrial toxic chemical wastes is a valuable source of information for concerned individuals and communities. Citizens can use TRI to evaluate local facilities through comparisons, determine how toxic chemicals are used, and with other information, evaluate potential health risks for their community.

Environmental Monitoring Public Access and Community Tracking (EMPACT)

In 1997, EPA set out to develop real-time, publicly available environmental information that is more relevant and useful. The Agency joined with the US Geological Survey, the National Oceanographic and Atmospheric Administration of the Department of Commerce, and the Department of the Interior in developing the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. This program works with state and local governments to provide the public with up-to-date information about local

environmental conditions they can understand and use in their day-to-day decision-making about their health and the environment. Some initial EPA-funded projects will:

- Provide daily information to help children avoid harmful exposure to ultraviolet radiation in Phoenix, AZ.
- Provide immediate clean-water information at beaches in Los Angeles, CA.
- Reduce the risk of lead exposure to children in their own backyards in the Boston (MA) area.

3 Inspections (Compliance Monitoring)

A strong enforcement effort provides the foundation for the national compliance program, motivates regulated entities to seek assistance and use incentive policies, and provides fairness in the marketplace by ensuring that noncomplying facilities do not gain an unfair competitive advantage. EPA believes an effective compliance monitoring program is needed to:

1. demonstrate a credible field presence to the regulated community,
2. establish a deterrent effect to noncompliance
3. fulfil statutory mandates to achieve compliance,
4. support and enhance the overall enforcement program,
5. evaluate state and tribal environmental and compliance and enforcement programs, and
6. oversee environmental programs not delegated to states and tribes.

Compliance monitoring includes a range of activities to determine whether an individual facility or group of facilities is in compliance with environmental laws and regulations. Some of the primary compliance monitoring activities include:

- performing compliance inspections, surveillance, and investigations;
- collecting, analyzing, evaluating, and managing compliance data;
- targeting, gathering information, and developing enforcement strategies;
- collecting and analyzing environmental samples;
- reviewing and evaluating self-reported documents, permits and records;
- responding to citizen complaints and referrals from other governmental entities; and
- preparing reports and updating databases with compliance findings and inspections results.

Inspections are the backbone of most enforcement programs. In the US, inspections for compliance with national requirements are largely conducted by state inspectors in those states which have been delegated the responsibility for implementing the national compliance and enforcement programs. Nationally, on average, states conduct over 80 percent of all inspections and are responsible for 84 percent of formal enforcement actions. In partnership with the states and nationally (or federally) recognized tribes, EPA's enforcement and compliance assurance program regulates approximately eight million entities that range from community drinking systems to pesticide users to major industrial facilities. Almost 1.3 million of these are facilities such as municipal wastewater treatment plans, large manufacturing and industrial operations, or hazardous waste treatment and storage facilities, for which performance is closely tracked and data maintained. The remaining 6.5 million entities range from small facilities to individual property owners.

Given the broad scope of regulatory requirements under the various environmental statutes and the large and diverse universe of regulated entities, the enforcement and compliance assurance program must use a variety of tools and strategies to maximize compliance. In the US, each of the major environmental statutes have specific inspection and investigation requirements for the various media; e.g., air, water, waste.

While state inspectors may be authorized to conduct both state and national (or federal) inspections, they use federal credentials when conducting inspections for compliance with federal requirements, which are not state requirements. Inspectors for possible civil violations do not carry firearms.

Inspections can be routine (i.e., there is no reason to suspect that the facility is out of compliance) or "for cause" (i.e., a particular facility is targeted because there is reason to believe it may be out of compliance). Civil or non-criminal inspections are usually conducted during ordinary business hours, may or may not be announced in advance, and may not be resisted if the inspectors have a search warrant. Government inspectors typically have the authority to copy all records relating to the regulated matter and to take samples of regulated substances for laboratory analysis. However, EPA is required to keep certain information on the operations confidential to protect business interests.

Inspections may focus on one or more of the following:

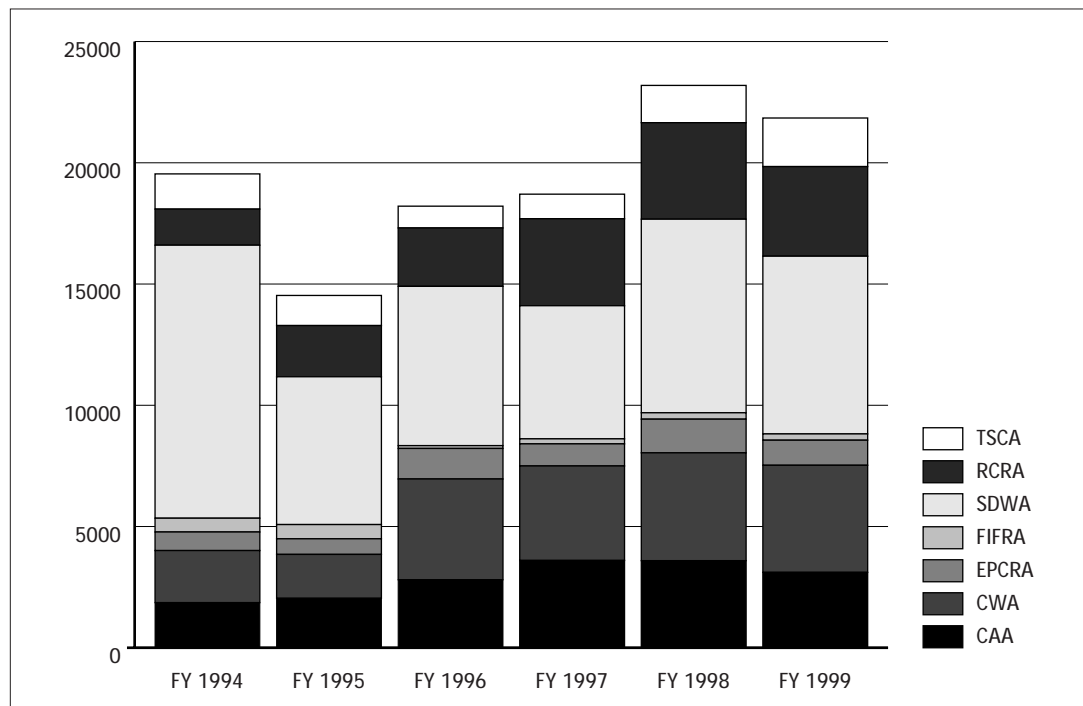
- Does the facility have an up-to-date permit or license?
- Has required pollution monitoring or control equipment been installed?

- Is the equipment being correctly operated?
- Are records of self-reported data properly prepared and maintained?
- Is the facility properly conducting any required sampling and analysis?
- Do the facility's management plans and practices support the required compliance activities?
- Are there any signs of knowing or willful violation of requirements and/or falsification of data? (e.g., conflicting data, conflicting stories from different employees at the same facility, monitoring data for which there is no supporting documentation, and tips from employees or citizens in the local community). If evidence of a willful or knowing violation of environmental regulations is found, the case is generally referred to EPA's Office of Criminal Enforcement for further investigation.

Civil inspections can be very resource-intensive, and therefore, require careful planning and targeting. Failure to follow correct administrative procedures and requirements can jeopardize subsequent enforcement action. Each inspection must be conducted as if it would go to court and be contested. By standardizing inspections procedures, enforcement officials can help ensure that all facilities are treated equally and all the appropriate information is gathered. By specifying deadlines for preparing inspection reports, program managers can help ensure that reports can be made available to enforcement personnel without delay if there is a possibility of noncompliance.

In FY 1999, EPA conducted 21,847 inspections. (See Exhibit 2: EPA Regional Inspections FY 1994–1999 By Statute and Exhibit 3: EPA National Totals FY99, Regional Inspections.) The most inspections (34 percent) were conducted under the Safe Drinking Water Act (SDWA) program followed by the Clean Water Act (CWA) (21 percent) and Resource Conservation and Recovery Act (RCRA) and Underground Storage Tank (UST)(17 percent) programs. Overall, the number of facilities inspected (i.e., coverage) by US/EPA or states in fiscal year 1999 varied considerably across programs. (See Exhibit 4: FY99 Facilities Inspected [Coverage] by EPA or States.) For example, 46 percent of facilities under the Clean Air Act (CAA) program were inspected. Under the CWA program 73 percent of majors and 36 percent of facilities with pretreatment programs were inspected. Under the RCRA program, 63 percent of treatment, storage, and disposal facilities were inspected, and 22 percent of large quantity generator facilities were inspected.

Exhibit 2. EPA Regional Inspections FY 1994 to FY 1999



Source: OECA/OC/EPTDD/TEB. 2 March 2000.

Exhibit 3.	FY 99 - US National Totals	
Program	Inspections	
CAA [Stationary (includes chlorofluorocarbon), asbestos and mobile sources]	*3,109	
CWA [NPDES (minors & majors), 311 and 404]	4,417	
SWDA	7,329	
EPCRA/FIFRA/TSCA	3,296	
RCRA and UST	3,696	
Total	*21,847	

Note: * These numbers are higher than reported in the EOY press release because of the addition of asbestos inspection data which was not previously available. There were also 113 GLP inspections and 363 data audits by HQ (OC/AED/LDIB).
Source: Program databases/IDEA. Manual reports.

Exhibit 4.	FY99 Facilities Inspected (Coverage) by EPA or States	
Statutory Program	Facilities Inspected	
CAA	46% of operating facilities (major, synthetic minor, and Part 61 NESHAP sources)	
CWA	73% of majors	
RCRA	63% of treatment, storage, and disposal facilities (TSDFs)	

Note: CAA universe: 41,003 facilities; CWA: 6,704 majors; 1,470 pretreatment facilities; RCRA: 3,100 TSDFs; 19,933 LQG facilities

Inspections typically assess facility compliance broadly. Investigations generally focus on suspect aspects of a facility's operations or on a predetermined set of compliance concerns, and do so in substantially more depth than an inspection. They may involve considerably more time (often weeks or months of work) and resources to complete than an inspection. Typically, an investigation is initiated: 1) as a sampling of an overall industry sector or specific regulatory or statutory area, 2) based on information discovered during an inspection, or 3) following observations or an informant's tips or leads to evidence of illegal behavior. (See Exhibit 5: Compliance Monitoring, Civil Investigations and Citizen Complaints.)

Exhibit 5.	Compliance Monitoring, Civil Investigations and Citizen Complaints	
Media Program	Civil Investigations	Citizen Complaints
CAA Stationary	443	2,230
CAA Mobile Sources	88	273
Asbestos	1	1
CWA	102	798
SDWA	3	215
OPA	0	119
EPCRA	0	7
TSCA	38	168
FIFRA	7	700
RCRA	20	392
UST	11	91
CERCLA	0	15
Multi-Media	3	86
Total	716	5,095

Source: US EPA OECA. Annual Report on Enforcement and Compliance Assurance Accomplishments in 1999. July 2000.

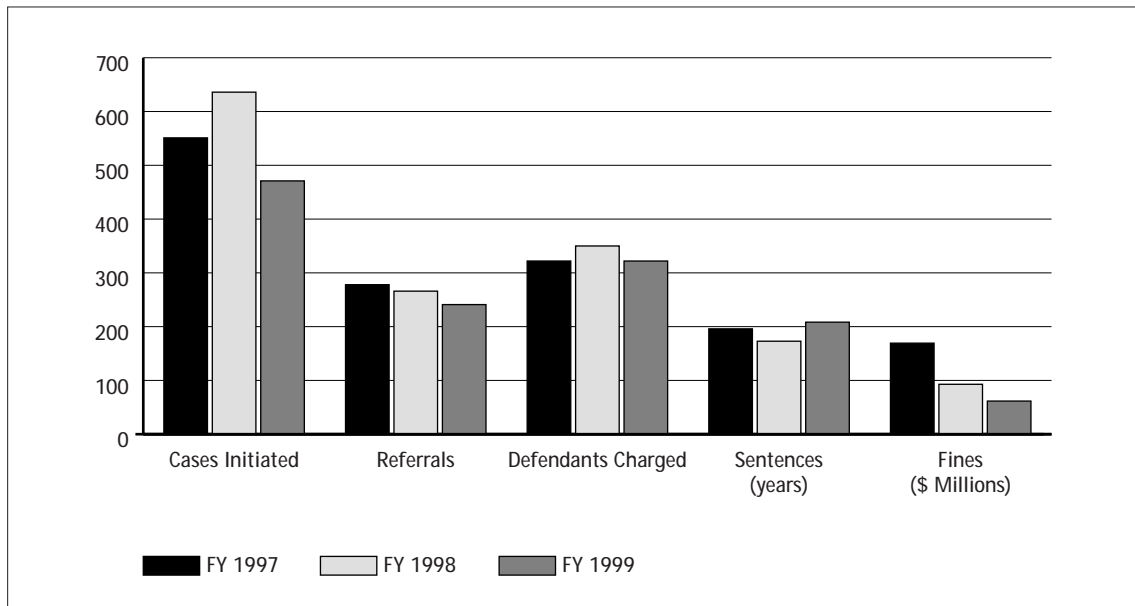
Investigations may be referred for “criminal investigation,” if there is an indication of possible knowing or willful violation of environmental requirements. Other aggravating factors, such as evidence of actual environmental harm or a history of repeated violations, may be present in an investigation that is criminal. Such investigations involve, but are not limited to, the illegal disposal of hazardous waste; the export of hazardous waste without the permission of the receiving country; the unpermitted discharge of pollutants to water of the US, the improper removal and disposal of asbestos-containing materials; the illegal sale/distribution of restricted or regulated chemicals; illegal discharge to a drinking water supply; and falsification of data. Environmental criminal investigations may also address violations of the US criminal code (Title 18) to cover such crimes as false statements to the government (EPA), mail fraud, wire fraud, conspiracy, and money laundering relating to environmental criminal activities.

In EPA, the Criminal Investigation Division (CID) investigates allegations of criminal wrongdoing. CID Special Agents are sworn national law enforcement officers with statutory authority to conduct investigations, carry firearms, make arrests for any federal crime and to execute and serve any warrant. CID participates nationwide in a multitude of environmental crime task forces that include tribal, state, other national and international law enforcement agencies and organizations. (See Exhibit 6: Criminal Enforcement, Major Outputs FY97—99.)

Both civil and criminal investigators utilize the services of the National Enforcement Investigations Center (NEIC) in Denver, Colorado. Multi-disciplined teams of experts conduct field investigations associated with highly complex technical and regulatory pollution problems and provide litigation support. The NEIC laboratory is a recognized center of expertise in forensic environmental chemistry. The laboratory also evaluates other laboratories that analyze samples to determine compliance with environmental statutory requirements. NEIC provides expert analysis to a regulated entity's financial records to determine its ability to pay proposed fines and/or cleanup costs. Cost recovery activities can include research of corporate structures, investigation into corporate and individual finances, and tracking unreported corporate or individual finances.

National district court judges handle criminal cases and those civil cases that are not handled administratively. EPA and the Fish and Wildlife Service do the field investigations and then refer appropriate cases to the US Department of Justice, which is responsible for conducting civil and criminal environmental litigation in national (or federal) courts.

Exhibit 6. EPA Criminal Enforcement: Major Outputs, FY 1997 to FY 1999



Source: OECD/OC/EPTDD/TEB, 3 January 2000.

As part of the increased emphasis on results-based management, EPA is developing pilot projects to collect outcome measures information on civil inspections and investigation activities as well as other aspects of the compliance assurance and enforcement program. EPA inspectors participating in these pilots are recording inspection-specific information related to compliance assistance, deficiencies observed, specific actions taken to respond to deficiencies, and other actions taken in response to the inspection. For example, based on one pilot involving 24 inspections:

- 21 inspections identified deficiencies;
- compliance assistance was provided in 21 of the 24 inspections;
- corrective actions were taken by the facility after 17 of the inspections; and
- other beneficial actions were taken by the facility after eight of the inspections.

In fiscal year 2001, the Agency will review the data and determine whether the data collection for inspection outcomes should be implemented on a national basis.

Other pilot projects are underway to measure how inspections and investigations bring about environmental and human health improvements. By collecting information from a variety of sources outside EPA, such as industry publications, Internet search, US Security and Exchange filings, the Agency may learn that pollutant reductions and other improvements are occurring or may discover some serious environmental noncompliance. For example, recent compliance investigations in the electric utility and petroleum refinery sectors that incorporated outside sources of information have uncovered serious noncompliance. A number of major enforcement actions have resulted from these investigations and ongoing investigations may uncover further noncompliance. After cases are concluded, the team of investigators and attorneys assigned to that case fill out a case conclusion data sheet, which estimates the pounds of pollutants reduced or eliminated, e.g., nitrogen oxides, particulate matter, and sulfur dioxides.

3.1 US Fish and Wildlife Service

Fish and wildlife protection programs are administered under the US Department of the Interior by the US Fish and Wildlife Service. Enforcement of the pertinent laws is essentially criminal. For the criminal investigation of violations of fish and wildlife laws and pollution control laws, the states and national government share concurrent jurisdiction. For all criminal law enforcement, there is no procedure for national or federal delegation to states of program authority. Within their respective states, state law enforcement officers have independent and parallel authority with national law enforcement officers. Depending on the coverage of the laws, either national or state law may control, and sometimes both are applicable. In such cases, federal-state collaboration is especially appropriate. The national headquarters' Office of Law Enforcement of the Fish and Wildlife Service provides national oversight, support, policy and guidance for Service investigations and the wildlife inspection program. In addition, it trains Service law enforcement personnel and fields a special investigations unit.

The 90 wildlife inspectors and 216 special agents are vital links in the US Department of the Interior's program to enforce US and international laws, regulations, and treaties that protect wildlife resources. Service wildlife inspectors are stationed at the major international US airports, seaports, and border crossings, to maintain import-export control. They review documents on commercial wildlife shipments and conduct physical inspections. They make sure that the required licenses and permits have been obtained; that the contents of shipments match the items listed on import-export declaration forms; and that live animals have been shipped humanely. If the paperwork or cargo is not in order, the shipment is detained or seized. Some seizure at ports of entry provide Service special agents the starting point for full-scale criminal investigations—investigations that may result in felony prosecutions involving smuggling, conspiracy, wildlife, and money laundering charges. In FY 1998, the Service inspected 86,409 shipments worth \$1.05 billion, and in FY 1999, 75,252 shipments were inspected (as of 12/15/99).

The Branch of Special Operations conducts long-term, complex investigations into the illegal commercialization or large-scale take of protected plants and animals. These investigations, which are generally national and international in scope, involve the penetration of well-organized, highly secretive groups of individuals engaged in the illegal wildlife trade. Special agents are plainclothes criminal investigators with full national (or federal) law enforcement authority and authorized to carry firearms. Recently, special agents combated the unlawful commercial exploitation of native wildlife, solving crimes that ranged from illegal guiding and bear poaching to large-scale trafficking in freshwater mussels and Hawaiian coral. They worked in partnership with industry to remove threats to migratory birds, and effected successful public outreach in wolf and grizzly bear conservation. Efforts on behalf of endangered species included boat patrols in Florida to protect manatees from deadly collisions; work with landowners to stem the loss of wildlife habitat; and environmental contaminants cases, such as the probe of a Georgia chemical plant for mercury poisoning. Special agents also working the international trade "beat" broke up sea turtle egg and caviar smuggling rings, secured the first national felony conviction for coral trafficking, and snared one of the world's best known wildlife dealers for profiteering in rare reptiles. Service special agents and inspectors also provided training in Thailand, Tanzania, China, and Madagascar.

The Clark R. Bavin National Fish and Wildlife Forensics Laboratory is the only full-service crime laboratory in the world devoted to wildlife law enforcement. Over the past decade, laboratory scientists have analyzed more than 35,000 evidence items, providing crucial support to national, state and international investigations of wildlife crime.

3.2 Role of Regions and States in Targeting and Setting Priorities

As a result of the delegation/authorization provided for by most statutes, state, tribal, and local governments bear much of the responsibility for ensuring the compliance of regulated facilities and other entities. States also are the primary vehicle for delivering on-site compliance assistance to regulated sources.

The Office of Enforcement and Compliance Assurance (OECA) develops biennially a Memorandum of Agreement (MOA), an agreement between the national headquarters and each of the ten EPA Regions, which outlines the enforcement and compliance assurance activities, priorities and programs that will be implemented to promote and achieve the US program goals. The MOA guidance articulates the national enforcement and compliance assurance program vision of the most important goals, objectives, and

priorities which OECA, the Regions, states, and its other partners (including tribes, local governments, and communities) should refer to in planning their annual activities.

The MOA continues to place emphasis on a balanced enforcement and compliance program that addresses community-based, sector, and media priorities as inter-related and integral components of a successful and effective program. While the primary purpose of the MOA is to serve as a negotiated agreement between the Regions and national headquarters addressing common, cross-cutting issues or concerns, much of the implementation efforts involve both Regional and state activities. The Regions work cooperatively with the states to develop state agreements and work plans that, where appropriate, address implementation of national priorities that match state environmental problems, strategies and resources. Because states face unique situations, it is important that flexibility be maintained to ensure that their most significant environmental problems are addressed.

It is in MOAs or state agreements that final decisions on priorities and directions must be made. These decisions include inspection priorities jointly agreed to by the Regions and the national headquarters. In an effort to balance the need for a comprehensive national focus on key industry sectors with the need for flexibility to accommodate Region and state-specific issues and concerns, EPA developed a tiered approach to establishing sector priorities. To assure that attention is focused on resolution of compliance issues in sectors found to be nationally significant, EPA identified specific sectors as “national priority sectors” and others as “significant sectors.” (See Overview section for list of OECA’s National Priorities for FY2000/2001.) These sectors were selected as priorities based on factors such as high noncompliance rates; high-volume Toxics Release Inventory (TRI) releases, carcinogenic emission release amounts, significant presence and impact in most Regions and states; and feedback provided through national headquarters/regional/state in-house expertise.

Designation as a national program priority or significant sector means that these sectors receive special emphasis, such as in-depth analysis of sector-specific compliance problems and focused application of the appropriate compliance/enforcement tools which would be most effective in increasing establishment of sector-specific compliance assistance centers, technical assistance and focused outreach and follow-up efforts, where appropriate. Regions should establish a process for initially screening for multimedia impacts within a sector and then tailor a strategy to address identified needs. EPA’s goal is the development of innovative approaches to achieve increased compliance within these sectors.

As part of required reporting on inspection activities, depending on the federal statute involved, the Regions make projections for both state and federal inspections and report data by individual states on such aspects as:

- number of federal inspections at major facilities (and percent of universe inspected),
- number of state inspections at major facilities (and percent of universe inspected),
- number of federal inspections at minor facilities,
- number of state inspections at minor facilities, and
- number of significant noncompliers.

If a Region or a state believes its unique situation or problems necessitate finding a substitute for a significant sector in the MOA, it needs to explain why that sector was selected and what enforcement or compliance activities are underway or planned. Of, if a Region or a state feels that a national priority sector does not need further emphasis, it can provide a rationale in its MOA (including an analysis of the measures, associated results and trend data on the facilities within the Region or state) for adjustment in its particular focus of activities.

Even though the national headquarters generally delegates authority, through the ten Regions to the states, to implement the national compliance and enforcement program, the Regions are expected to routinely review state compliance and enforcement programs and state data quality. Regional strategies include periodic meetings and/or conferences calls to discuss progress or problems encountered in meeting commitments to MOAs. The regional office, and in a few cases headquarters, is responsible for implementing nondelegated programs (e.g., asbestos or radionuclide national emission standards for hazardous air pollutants (NESHAPS), chlorofluorocarbons (CFCs), certain new source performance standards (NSPS) and maximum achievable control technology (MACT) and for inspections of facilities on tribal lands.

3.3 Root Cause Analysis

The EPA and the Chemical Manufacturers Association (CMA) created an unprecedented partnership to understand industry's perspectives on the causes of noncompliance and recommendations for improving environmental performance. Through this partnership, EPA and CMA implemented a root cause analysis pilot project. The goal of this joint venture was to better understand: (1) the causes of noncompliance and (2) the impact of environmental management systems (EMS) on compliance. Information for this project was obtained through a voluntary completion of a survey by CMA member facilities. The survey focused on four theme questions:

- What were the root causes of noncompliance?
- How did the facilities respond to noncompliance events, and what are the lessons learned?
- How have Responsible Care and other management systems affected the overall environmental performance of facilities?
- What changes on the part of the facility or the Agency will improve compliance and the efficiency of the compliance process?

The report summarizes survey responses regarding the root and contributing causes of noncompliance and makes recommendations, for industry and government, to improve compliance with environmental regulations. The report is valuable to the regulated community, state and federal regulators, and other persons interested in the challenge of promoting regulatory compliance.

The most revealing portion of the study identified the root causes (defined as the primary factor that led to the noncompliance event) of noncompliance. The six categories of root causes and the specific causes within each category identified most frequently, in order, are:

- Regulations and Permits—facility unaware of applicability of regulation or permit;
- Human Error—individual responsibility or professional judgment;
- Procedure—operating procedures not followed;
- Equipment Problems—design or installation;
- External Circumstances—contracted services, such as haulers or handlers; and
- Communications Difficulties—between facility and regulatory agencies.

Ninety-four percent of the respondents identified multiple causes for a single noncompliance event. For example, the two root causes—“individual responsibility or professional judgment” and “unaware of applicability of regulation or permit”—were both frequently identified for noncompliance events associated with reporting, operation and maintenance, and record keeping.

Survey responses also indicated that environmental management systems (EMSs) play a larger role in improving compliance than often is recognized. This is clearly supported by the types of actions that were taken to address the instances of noncompliance identified. Seventy-eight percent of the respondents stated that they had taken actions, such as improving policies and procedures and enhancing auditing programs, that are fundamental EMS elements. However, respondents did not consistently recognize that these types of actions were related to their EMS. The mere existence of an EMS is not sufficient. It is critical that facilities maintain comprehensive EMSs—with elements working together and routinely evaluated—to improve environmental compliance and performance.

A thorough examination of the causes of noncompliance is a valuable tool that can help improve compliance and minimize the occurrence of noncompliance. Any root cause analysis should focus on an exhaustive and diligent identification of all causes and the implementation of corrective measures that may yield long-term solutions. Because of the limitations of the data on which this report are based, the results of this survey are representative only of large CMA member facilities in the project's study population. Beyond this study population, the project findings should be considered largely as a guide to further root cause research.

3.4 Online Tracking Information System (OTIS)

The Online Tracking Information System (OTIS) was developed to assist state/local governments and federal agencies by EPA as a way to access and easily use facility-level inspection, violation, and enforcement data. OTIS allows nontechnical users to easily access data and perform analysis. Eventually, OTIS may possibly be made available to the general public. Data in OTIS are from the Integrated Data for Enforcement Analysis (IDEA) system which extracts and integrates many databases during the middle of each month. The original data sources extracted by IDEA and used by OTIS are: Clean Air Act AIRS Facility Subsystem (AFS), Clean Water Act Permit Compliance System (PCS), and the Resource Conservation and Recovery Act Information System (RCRAInfo) and Toxics Release Inventory (TRI). OTIS also provides demographic data from the US Census. Data shown is a combination of federal and state data. Planned future additions to OTIS include: further integration data pertaining to environmental justice, Government Performance and Results Act (GPRA) and Reporting for Enforcement and Compliance Assurance Priorities (RECAP) data.

3.5 Chemical Baseline Report

The Chemical Baseline Report was developed as a baseline against which to measure compliance trends among the various subsectors of the chemical manufacturing industry. Through an analysis of data related to economics, demographics, the Toxics Release Inventory (TRI), compliance monitoring actions, and violations and enforcement actions, the baseline report provides an overview of the US chemical industry sector as a whole (Standard Industrial Classification [SIC] codes in the 2800 series) and its subsector components (SICs 281 to 289).

It is intended for use by regulators, states, industry, and the public as a general profile of the chemical industry and its environmental performance from 1990–1994. The report provides information that may serve as a catalyst for the development of innovative compliance initiatives and similar profiles for this and other sectors on a state or regional basis.

Data in this report also may be of use to EPA in evaluating environmental performance and identifying specific segments of the industry that might benefit from tighter enforcement and expanded compliance monitoring. It may be possible, through a comparison of environmental performance, risk-based criteria, and other factors, to select certain industrial sectors for special assistance and outreach efforts, maximize efficiency in the use of resources for traditional enforcement activities, and fashion custom compliance assistance programs to meet the unique needs of specific industry groups. Through such activities, the Agency can promote efforts to achieve and maintain compliance, and industry can attain a higher level of environmental performance.

4 Measurement of Program Results

Many countries are struggling with the question of how to use limited resources to achieve the most environmental gains. This is perhaps the key question that EPA program managers face in determining how to use taxpayer's money most effectively to carry out the Agency's mission: To protect human health and safeguard the national environment—air, water, and land—upon which life depends. EPA uses both formal and informal approaches to evaluate the effectiveness of its enforcement and compliance assistance program. Evaluation methods range from the formal process of as required by the Government Performance and Results Act (GPRA), OECA evaluations of Regional, state, and tribal performance to the use of stakeholder meetings to solicit views on effectiveness.

The 1993 Government Performance and Results Act (GPRA) is a management reform initiative that holds federal agencies accountable for achieving program results and using resources wisely. Federal agencies are required to develop a five-year Strategic Plan, which includes a mission statement and sets out long-term goals and objectives; annual performance plans, which provide annual performance commitments toward achieving the goals and objectives presented in the Strategic Plan; and Annual Performance Reports, which evaluate an agency's progress toward achieving performance commitments. (See Overview section for list of ten goals.) In the "US Environmental Protection Agency Fiscal Year 1999 Annual Performance Report," OECA discusses its success in meeting or exceeding its particular Annual Performance Goals.

For example, OECA has the responsibility of implementing Goal 9, which requires EPA to provide a credible deterrent to pollution and greater compliance with the law. The primary objectives are to identify and reduce noncompliance with environmental laws and to promote compliance through assistance and incentives. There are four annual performance goals and measures against which OECA's process towards achieving the objectives set forth for Goal 9 is measured. Those are annual performance goals and measures 58–61. Two other goals also represent important parts of OECA's mission: Goal 7—expands public involvement in environmental protection by giving citizens easy access to information about their local environment, and Goal 5—ensures that wastes will be managed in an environmentally protective manner and that polluted sites will be restored. Both Goals 5 and 7 also have specific annual performance goals and measures.

OECA's "Annual Report on Enforcement and Compliance Assurance Accomplishments" contains a more detailed analysis of the outputs and outcomes of its programs. This is a "plain English" presentation with easy-to-read charts to encourage its understanding and use by a wide range of readers. (See Exhibit 7, Dollar Value of FY 1999 EPA Enforcement Actions [by Statute].)

4.1 General Enforcement Management System (GEMS)

A key aspect of EPA's reinvention efforts is to provide comprehensive information about environmental compliance and enforcement issues to the general public and the regulated community in order to help deter noncompliance, promote voluntary action by the regulated community, provide meaningful opportunities for public participation, and protect the public's right-to-know. The states and EPA are committed to a partnership to build locally and nationally accessible, cohesive and coherent environmental information systems that will ensure that both the public and regulators have access to the information needed to document environmental performance, understand environmental conditions, and make sound decisions that ensure environmental protection.

Exhibit 7.	Dollar Value of FY 1999 EPA Enforcement Actions (by Statute)				
	Criminal Penalties Assessed	Civil Judicial Penalties Assessed	Administrative Penalties Assessed	\$ Value of Injunctive Relief	\$ Value of SEPs
CAA	\$2,227,024	\$104,625,294	\$5,092,301	\$1,110,783,266	\$141,995,706
CERCLA	\$12,715,144	\$2,852,000	\$2,000	\$721,955,206	\$12,600
CWA	\$20,385,292	\$7,416,728	\$5,200,575	\$577,486,331	\$8,620,321
EPCRA	\$0	\$0	\$3,802,384	\$528,264	\$4,151,296
FIFRA	\$442,775	\$1,300	\$1,359,055	\$393,910	\$211,310
RCRA	\$21,482,514	\$24,522,800	\$7,351,627	\$200,467,307	\$74,803,427
SDWA	\$3,170,418	\$1,793,577	\$353,772	\$811,483,657	\$5,811,950
TSCA	\$16,000	\$0	\$2,348,165	\$1,125,792	\$1,191,942
Title 18/MPRSA*	\$1,113,707	\$0	\$0	\$0	\$0
Totals	\$61,552,874	\$141,211,699	\$25,509,879	\$3,424,223,733	\$236,798,552

Note: * Criminal cases with US Code - Title 18 or other violations. Data comes from EPA criminal and civil dockets.

Source: OECA/OC/EPTDD/TEB. 4 January 2000.

OECA seeks to improve the quality of and access to the Agency's enforcement and compliance information through its multi-year Enforcement and Compliance Information (ECI) Initiative, which is commonly referred to as the General Enforcement Management System or GEMS. Currently, dozens of EPA and state information systems store enforcement and compliance data. States input more than 90 per cent of the data that are entered or transferred to EPA's compliance/enforcement data systems. Because enforcement and compliance systems are managed independently, their data are inconsistent and often incompatible. Compiling data from these systems is difficult due to the lack of standardization of data elements among enforcement and compliance programs. For example, information from the same regulated entity is stored in different systems under different data standards, resulting in that regulated entity being identified differently among systems.

Regulated entities are required to report enforcement and compliance data about their own operations to their regulatory authority. These reporting data typically are entered into a state enforcement and compliance system or an EPA enforcement and compliance system (e.g., Permit Compliance System (PCS) supports National Pollutant Discharge Elimination System (NPDES). In addition, state systems are required to transfer data from their own systems to enforcement and compliance systems at EPA. Once at EPA, data may again be transferred to central OECA systems to be used for other activities.

The Integrated Data for Enforcement Analysis system (IDEA) is currently the tool used to create integrated reports for enforcement and compliance data. Once a month IDEA retrieves large quantities of data from each regulatory system, integrates the information, and makes the data available. This process, however, results in some information that is duplicated, inconsistent, and not current.

In the future, GEMS will be central to the enforcement and compliance information systems landscape. Stakeholders envision GEMS to be a system that integrates enforcement and compliance data to support multimedia and cross-section analysis and promotes the integration of other environmental information.

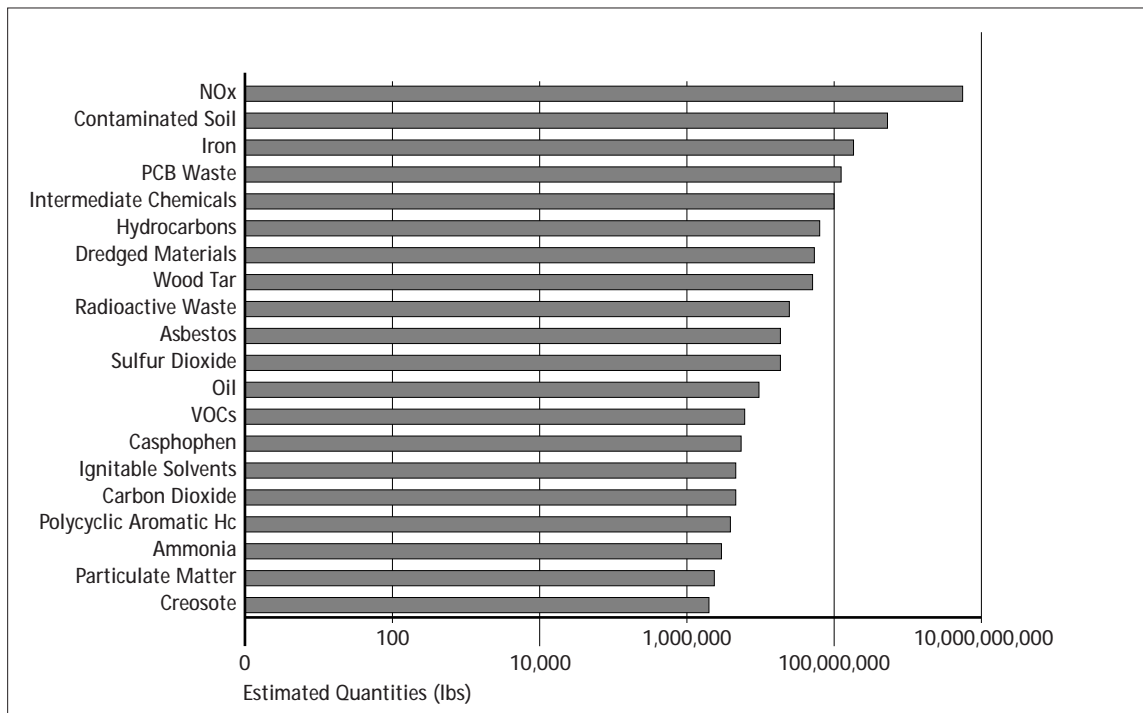
Because GEMS will be an integrated system, users will be able to access multimedia information on a single regulated entity and track any action taken from initiation to conclusion. Users will create reports directly from GEMS based on a variety of criteria (e.g., by regulated entity, sector) and for various purposes. For example, a regulator will be able to run a report based on compliance assistance type or to access the

compliance history for a particular regulated entity. In addition, managers will analyze program effectiveness with information stored in GEMS.

Solving the current inconsistencies that exist among the program system modernizations will not be easy. However, during the transition to full integration, the data modernization experts can influence the choices EPA program offices make by explaining the long-term vision for regulatory information systems and utilize a translator that reads data from that current system and loads it into GEMS. Other EPA offices, not yet in the process of being modernized, will also be able to take advantage of the GEMS database and functionality by creating a “plug-in” to address their unique regulatory needs.

Because of the diversity within the enforcement and compliance community and the variety of media-based regulatory programs (e.g., NPDES, Hazardous Waste, Stationary Sources), there are wide range of data and functional requirements. Knowing that the modernization of OECA systems cannot realistically address every requirement of the compliance and enforcement community, the stakeholders must continue working together to develop a system that meets the widest set of requirements possible without adding unnecessary complexity. The implementation of GEMS is scheduled to be completed by Fiscal Year 2002 and the implementation of Modernized PCS is scheduled to be completed by 2003.

Exhibit 8. Twenty Pollutants with the Largest Reductions Reported for FY 1999
EPA Enforcement Settlements.

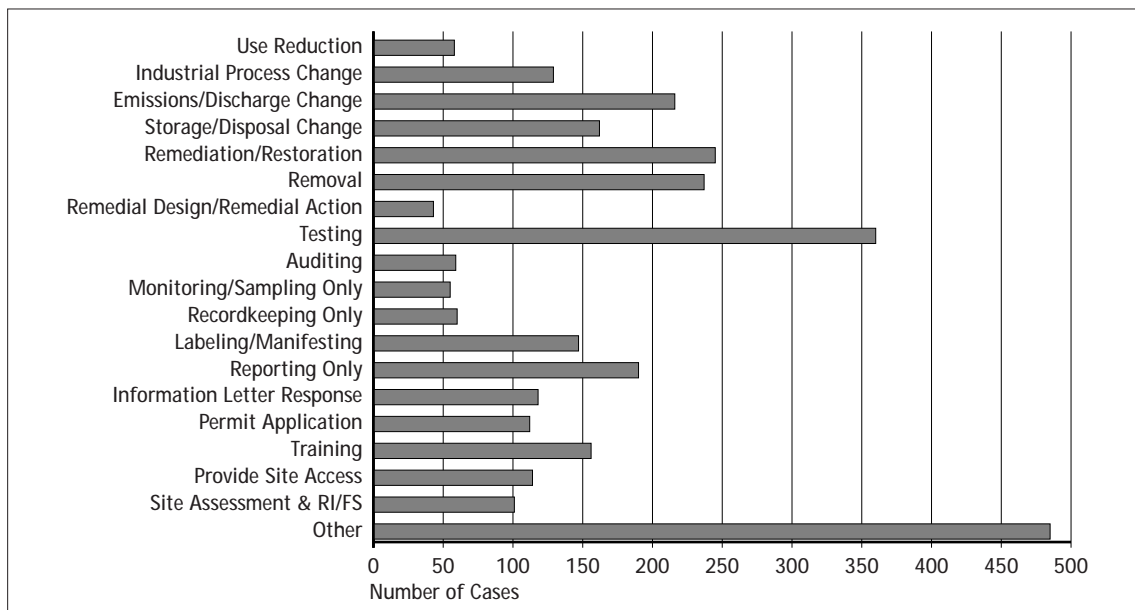


Note: Chart does not include over 9 billion pounds (4.1 billion kg) in water pollution (thermal, TSS, BOD, and toxic materials).
Source: OECD/OC/EPTDD. 6 January 2000.

4.2 Case Conclusion Data Sheet

EPA's case conclusion data sheet is an important source of information for measuring the results of the compliance monitoring program. Investigators and attorneys associated with a particular case use this data sheet to compute the qualitative and quantitative results of enforcement cases concluded. The data sheet includes information on: the type of compliance actions associated with each case, the expected environmental and public health impacts of the settlement, the pollutants reduced, the dollar value of injunctive relief, and similar information for supplemental environmental projects. The case conclusion data is now fully integrated into the enforcement Docket and the IDEA system. (See Exhibits 8 and 9.)

Exhibit 9. Results of EPA Civil Enforcement Actions Concluded in FY 1999



Note: Complying actions were reported for 3,043 of the 3,451 FY 1999 settlements. Multiple complying actions were reported for some settlements.

Source: OECA/OC/EPTDD/TEB. 8 December 1999.

4.3 National Performance Measures Strategy—Performance Profile

The National Performance Measures Strategy is EPA's pioneering effort to identify, design, implement, and use meaningful performance measures to assess the effectiveness of our national enforcement and compliance assurance program. By focusing on better ways to measure the results of its compliance and enforcement activities, OECA hopes to determine the real impact of compliance and enforcement on risk reduction and environmental protection. In doing so, EPA can determine which tools and strategies are working best to ensure compliance and to allow the public and other stakeholders to examine whether the regulated community is meeting its responsibilities to comply with the law.

In the past, EPA primarily used activity or output measures, such as the number of inspections conducted, enforcement cases issued, and penalty dollars assessed, as its principal measures of performance. These numbers remain a useful measure of the general presence of the EPA enforcement and compliance assurance effort, but they do not help us measure the state of compliance with environmental laws, the environmental results achieved, nor the degree to which program objectives are being met and noncompliance problems are being addressed.

During 1997, EPA held more than 20 public meetings with stakeholders—including environmental organizations, regulated industries, environmental justice advocates, state environmental departments, Oversight agencies, and academic experts—to identify the “vital few” performance measures which could best serve EPA and the public. In 1998, EPA managers and staff, assisted by contractors and expert consultants, worked to design the measures by developing definitions, information collection and reporting processes, and modifications to existing data systems. During 1999, the measures were implemented in stages, and the entire set of measures (known as the Performance Profile) became fully operational since the beginning of the Fiscal Year 2000. EPA is making available approximately \$1 million to eight states to support their development and implementation of outcome measures.

The Performance Profile includes the following measures of environmental results or outcomes:

- noncompliance rates for selected regulated populations;
- environmental and human health improvement from compliance assurance and enforcement activities;

- disclosure and correction of violations using EPA's compliance incentive policies;
- timeliness of return to compliance by significant violators; and
- recurring or new violations by significant violators.

The Profile also includes the following output measures:

- number of inspections and investigations conducted;
- number of enforcement actions taken;
- compliance assistance provided; and
- capacity building efforts.

These measures help EPA and the public assess the state of compliance, the environmental improvements resulting from the full range of EPA's enforcement and compliance assurance activities, and the changes in behavior of regulated entities. The Profile also includes four measures of program activity or output. The number of inspections conducted and enforcement cases issued remain important activity measures, while other output measures of the number of facilities/ entities reached through compliance assistance and the amount of capacity building efforts for state, tribal and local governments will also be used to measure performance.

The Performance Profile allows EPA and the public to know more than the amount of activities conducted by the enforcement and compliance assurance program. It also measures the results achieved by those activities, enables EPA and the public to examine the relationship between activities and results, and helps identify how strategies and activities need to be changed or applied to produce the best possible environmental results.

EPA can now determine the pounds of pollutants reduced through enforcement actions, the percentage of enforcement actions that produce particular kinds of benefits to the environment, and the number of instances in which facilities reduced emissions or took other beneficial actions as a result of EPA enforcement action.

EPA is aware that funding constraints make it difficult for many states to implement data system improvements and cure known problems. Therefore, as part of NPMS, OECA is in the process of developing some pilot funding projects to assist states in developing systems and approaches to managing data that will maximize the quality of the data that is provided to the national systems and minimize reporting burdens. These one-time funding projects will contribute to the existing information integration and modernization efforts and continue improvement of compliance assistance outcome measurement.

4.4 Program Status Reports

Program status reports/reviews are a set of charted, key information on enforcement and compliance assurance that is primarily produced from the EPA national data systems. The reports are produced on a regional basis, semi-annually, and provide critical data on the operations of different statutory programs to acquaint management with material for discussion on regional visits or to understand how programs are operating overall. State information is included, although most of the detailed information concerns direct EPA activity.

Typically, on an annual basis, a team of experts from the national headquarters visits each of the ten Regional offices to review its current progress towards meeting the agreed upon goals in the Memorandums of Agreement, the Performance Partnership Agreements (PPAs), and Core Performance Measures (CPMs). If requested by the Region or state, the team may also meet with representatives from particular state offices involved in a compliance and enforcement issue for that Region. This is important an opportunity for the headquarters-based experts to hear first-hand about problems encountered or suggestions for more effective ways of reaching the agreed upon program goals and provide assistance. Currently, the set of Program Status Reports/Reviews are undergoing management review, and some changes are anticipated.

4.5 National Priority-Setting for OECA Program

Effective targeting and priority-setting are critical to successfully meeting OECA's responsibility to identify and reduce noncompliance with environmental laws and to promote compliance through assistance and incentives. Effective compliance and enforcement is dependent not only on a partnership with states, tribes,

and territories, but also on effective targeting of the most significant public health and environmental risks. Recognizing that government resources are finite, EPA is working to improve its ability to target our efforts to areas of the greatest need.

EPA has enhanced these targeting approaches by using a broad array of environmental quality information, demographics, and information on the results of our compliance monitoring activities. Major considerations in setting targeting priorities are:

- sector-based environmental problems or compliance patterns;
- statute-specific compliance problems; and
- an analysis of compliance/enforcement history and pollutant releases.

Sectors were selected as priorities based on several factors including compliance history, regional and state concerns, national scope of the sector, and potential environmental and human health risk identified from pollutant loading and Toxics Release Inventory (TRI) risk data. New methods of examining these data incorporate risk considerations, which predict the relative effects of facilities, or groups of facilities, on the human population. A critical aspect of the data used for decision-making on targeting is the need to further modernize and improve cross-media analytical capabilities of EPA's data's systems as well as the data input.

In 1999, EPA continued to make great strides toward targeting high-priority areas for enforcement and compliance assistance and completing baseline data assessments in major databases needed to measure changes in key indicators of compliance. Specifically, the Agency met its goal of identifying five high priority areas and improving two data systems. With respect to identifying compliance priorities, the Agency conducted several targeting analyses to identify the most significant environmental areas. For example, the Agency analyzed industrial sectors using new data integration techniques, including a compliance index based on such factors as inspection coverage, current significant noncompliance rates, and a pollutant index. This analysis led to the identification of seven environmental problems areas to target, thereby meeting the goal. (See Overview section for list of seven OECA national priorities.) OECA has reduced the number of sectors it will focus on in FY2000 in order to concentrate national resources on a few key areas to allow the Regions and states greater flexibility in addressing their priority areas. EPA's efforts to provide Regions with targeting tools are also yielding results. For example, EPA Region 3 recently conducted investigations of sources with plant modifications to assess compliance with New Source Review/Prevention of Significant Deterioration (NSR/PSD) requirements.

The Agency continued to develop a complete baseline data assessment for multiple industries through the Sector Facility Indexing Project (SFIP) discussed earlier. SFIP's collection of facility-level profiles provides information on compliance and inspection histories, chemical releases and spills, demographic characteristics of surrounding areas, and facility production trends. This type of information is critical to the decision-making for setting targeting priorities. (See 2. Compliance Promotion, 2.3. Public Information.)

4.6 Core Accountability Measures for Performance Partnerships

EPA continues to work together with states to implement the National Environmental Performance Partnership Systems (NEPPS) to achieve better environmental performance. Performance Partnership Agreements (PPAs) continue to serve as a foundation of the relationship between EPA and state agencies and as a vehicle to facilitate agreements on the joint planning and priority setting under NEPPS, and set out federal and state roles and responsibilities. PPAs may also serve as grant work plans. Key to the system is the use of Core Performance Measures (CPMs) to evaluate states performance in accomplishing their goals. As an outgrowth of NEPPS, EPA and senior officials of the Environmental Council of the States (ECOS) endorsed the Core Measures Agreement. The core performance measures are a way of evaluating outcome and output measures. The challenge is to test the efficacy of these measures. To this end, OECA has awarded \$1.8 million in cooperative agreements to the states of Wisconsin, Colorado, Washington, Oregon, Missouri, Texas, Connecticut, California, Indiana, Maryland and New Hampshire to develop, implement, and share the results of outcome-based performance measures pilot projects for enforcement and compliance assurance programs.

4.7 State Measurement Programs

Florida

In order to achieve its mission of “more protection, less process,” the Florida Department of Environmental Protection believes that a performance measurement system grounded in the public policy outcomes expected of the agency and tied to a responsive, results-oriented management culture is essential. The first generation of performance measurement began with the 1997 Secretary’s Quarterly Performance Report.

Using four “tiers” of performance measurement as an organizing principle, the Report provides detailed analysis of each of the Department’s several program areas in easily understood language:

- **Tier 1:** Environmental and Public Health Outcome Indicators that track long-term trends in the condition of Florida’s natural resources, public health and general environmental quality.
- **Tier 2:** Behavioral and Cultural Measures that track compliance rates, best management practices, volunteerism and other behaviors that impact environmental quality.
- **Tier 3:** Department Outputs and Activities that track the traditional measures of program performance, such as numbers of inspections, numbers of compliance assistance activities, or numbers of violations.
- **Tier 4:** Resource Efficiency Measures that track the agency’s budget, the cost of services, and the cost effectiveness of interventions used to solve environmental problems.

This “tiering” of performance data allows one to understand the underlying causes of problems and to design appropriate interventions. The summary of each major program segment is designated as “Good, Watch, or Focus.” Areas in which outcomes are being achieved and the associated programs are performing well are designated “Good.” “Watch” areas are those in which the data show a moderate cause for concern. Such situations suggest the presence of an emerging trend or pattern and require further investigation prior to taking specific action. “Focus” areas are those that require immediate attention. Upon nomination as a Focus area, the responsible program provides the Secretary with further details and an action plan to address the issue.

California

As part of the California Environmental Protection Agency’s Quality Improvement Partnership, it developed a guide to Performance Measurement for Quality Improvement Teams. The purpose is to offer suggestions to assist management teams in incorporating measurement into their decision-making (e.g., budgeting), to improve employee performance as well as the organization’s strategic planning and goal setting, and to use as a critical internal management for determining if a project is “on track” and the extent of the nonconformance.

Outcome measures are defined as the result or impact of the output and includes events, occurrences, or conditions that indicate progress toward achievement of the mission and objectives of the program. It is a tool or indicator to assess (count) the actual impact of the actions of the program/process. Some examples are:

- Acres of soil decontaminated and returned to safe, productive economic use.
- Acre-feet of water treated and available for safe drinking or irrigation.
- Percent of Californians living where the air meets ambient air quality standards.
- Percent of US EPA non-attainment area deadlines with which California has complied.
- Number of exceedances of National Ambient Air Quality Standards in non-attainment areas.
- Percent of counties with general plans adopted or updated within the last five years.
- Percentage of cropland, pastureland, and forest land within allowable soil loss erosion rates.

The guide includes a series of easily understood worksheets to assist managers in incorporating performance measures into program activities.

Helpful Web Sites

Overview

- Reinvolution progress and assessments:
<http://www.epa.gov/oeca/polguid/oeca5sum.html>
<http://www.epa.gov/reinvent>
<http://www.epa.gov/opei>

Compliance Promotion

- Compliance Incentives and Voluntary Programs
 - Audit Policy:
<http://www.epa.gov/oeca/auditpol.html>
 - Audit Protocol:
<http://es.epa.gov/oeca/main/strategy/crossp.html>
 - Small Business Policy:
<http://www.epa.gov/oeca/smbusi.html>
<http://www.epa.gov/ttn/sbap/offices.html>
 - Environmental Management Systems:
<http://www.epa.gov/ems>
<http://www.mswg.org>
 - Performance Track:
<http://www.epa.gov/performance-track/index.htm>
- Compliance Assistance
 - Compliance Assistance Centers:
<http://es.epa.gov/oeca/main/compasst/compcenters.html>
 - Sector Notebooks:
<http://www.epa.gov/oeca/sector>
 - US Fish and Wildlife Service Compliance Assistance:
<http://www.fws.gov> and <http://www.le.fws.gov>
 - State Programs in Compliance Promotion:
<http://es.epa.gov/oeca/fedfac/cfa/statesmap.html>
 - State and Local Business Assistance Cooperatives:
<http://es.epa.gov/cooperative/stateandlocal/>
 - National Conference of State Legislatures:
<http://www.ncsl.org/public/sitesleg.htm>
 - The Environmental Council of the States:
<http://www.sso.org/ecos>
 - National Association of Attorneys General:
<http://www.naag.org>
- Public Information
 - Sector Facility Indexing Project:
<http://www.epa.gov/oeca/sfi>
 - Toxics Release Inventory (TRI):
<http://www.epa.gov/tri>
 - Access to Interpretative Document (AID):
<http://epa.gov/guidance>

Inspections (Compliance Monitoring)

- Enforcement and Compliance Assurance:
<http://es.epa.gov/oeca/fy98accomp.pdf>
<http://es.epa.gov/oeca/fy99accomp.pdf>
<http://www.fws.gov>
- Detailed statute-specific information on investigations can be found at
<http://epa.gov/oeca/oc/metd/inspector/npmsphas.html>

Targeting, Priority setting

- Root Cause Analysis and Chemical Baseline Report:
<http://www.epa.gov/oeca/ccsmd/rootcause.html>
<http://es.epa.gov/oeca/ccsmd/ogp/survey.pdf>
- Online Targeting Information Systems (OTIS):
<http://www.epa.gov/idea/otis>
- Environmental Monitoring for Public Access and Community Tracking (EMPACT):
<http://www.epa.gov/empact>

Measurement of Program Results

General Enforcement Management Systems (GEMS)

- National Performance Measures Strategy—Performance Profile:
<http://www.epa.gov/oeca/perfmeas/npmsfinal.html>

National priority setting for OECA program

- US FWS Annual Performance Plans and Reports:
<http://www.fws.gov/r9gpra>

North American Enforcement Cooperation through CEC Programs

4 North American Enforcement Cooperation through CEC Programs

The North American Working Group on Environmental Enforcement and Compliance Cooperation (Enforcement Working Group) is a regional network of environmental enforcement officials from Canada, Mexico and the United States. Since its original establishment in 1995 under the auspices of the CEC, the Enforcement Working Group has served to promote increased cooperation across North America in environmental law enforcement and compliance promotion. The group's mandate is to act as a forum to exchange expertise, build enforcement capacity, and explore alternative approaches to effective enforcement. The North American Wildlife Enforcement Group (NAWEG), a regional network of wildlife enforcement officials, participates as a member of the Enforcement Working Group by providing guidance in identifying priorities for regional cooperation to protect wildlife on the North American continent. Due to its unique origin and mandate, the Enforcement Working Group is a model for the establishment and operation of regional and international enforcement networks and participates as the North American regional member of the International Network for Environmental Compliance and Enforcement (INECE)

Since 1995, the Enforcement Cooperation Program, under the guidance of the Enforcement Working Group, has provided support to a number of significant regional enforcement and compliance initiatives, including:

Reporting

The Enforcement Working Group has been involved in preparing annual updates of how the three countries carry out their obligation to effectively enforce their environmental laws. These updates are published as part of the CEC's Annual Report and can be reviewed on the CEC web site at <http://www.cec.org> under the publications heading.

Alternative Approaches to Compliance Promotion

Part of the Enforcement Working Group's mandate is to examine complementary approaches to effective enforcement and compliance with environmental and wildlife laws, including voluntary initiatives to enhance environmental performance. In 1997 the CEC published *Voluntary Measures to Enforce Environmental Compliance*, a report on the North American experience with respect to voluntary approaches to compliance.

This initial work led the Enforcement Working Group to focus on a type of voluntary initiative known as environmental management systems (EMSs). The CEC Council directed the Enforcement Working Group in Council Resolution 97-05 "to explore (1) the relationship between the ISO 14000 series and other voluntary EMSs to government programs to enforce, verify, and promote compliance with environmental laws and regulations and (2) opportunities to exchange information and develop cooperative positions regarding the role and effect of EMSs on compliance and other environmental performance."

In June 1998, the Enforcement Working Group delivered an initial report to Council on "Environmental Management Systems and Compliance." In its preliminary findings, the report noted that while EMSs are a useful tool to assist an organization in achieving improved compliance and overall performance, they do not per se guarantee compliance or improved environmental performance. As a follow-up to this report, the CEC sponsored a public forum in 1999 in Washington, DC, on EMSs and on ISO 14001, in particular.

The Enforcement Working Group has continued its work to examine the link between government programs and private sector initiatives to improve environmental quality. In particular it is exploring use of EMSs as a tool to (i) achieve effective enforcement and enhanced compliance with the respective environmental requirements of the three Parties and (ii) promote "beyond compliance" efforts.

In 2000, a Task Group of the Enforcement Working Group produced a guidance document for users of EMSs: "Improving Environmental Performance and Compliance: 10 Elements of Effective Environmental Management Systems." This document represents the first time the three North American governments have jointly expressed their views on how voluntary EMSs, designed for internal management purposes, can also serve the broader public policy goals of compliance assurance and improved environmental performance in regulated and nonregulated areas.

The document sets out what the three governments have agreed is important to address in implementing EMSs. It is intended to assist EMS users make responsible decisions and take actions to achieve

better environmental performance through maintaining compliance with environmental laws and moving beyond compliance.

In 2000 the Enforcement Cooperation Program collaborated with the CEC's PRTR program to host a workshop on "Forging Alliances to Prevent Industrial Pollution: New Approaches and Tools for Environmental Management." The workshop focused on the role of pollutant release and transfer registers, public access to information and EMS as tools for sound environmental management and effective community-industry dialogue.

Copies of the 1998 report, the summary proceedings of the 1999 public forum, the executive summary of the 2000 "Forging Alliances" workshop and the EMS Guidance Document are available on the CEC web site at <<http://www.cec.org>> under the publications heading for the Law and Policy Program.

Outreach

The Enforcement Working Group is continually seeking opportunities for cooperation and exchanges with other enforcement networks, including the International Network on Environmental Compliance and Enforcement (INECE), the World Customs Organization and Interpol. For example, NAWEG acts as the North American regional link to the Wildlife Crimes Subgroup of Interpol. In addition, its participation as a subgroup of the North American Trilateral Committee for Wildlife and Ecosystem Conservation and Management helps facilitate additional regional dialogue on both enforcement and broader policy matters. In Canada, NAWEG is the link between foreign agencies and the federal and provincial chiefs responsible for natural resources law enforcement.

The Enforcement Working Group has worked with the Joint Public Advisory Committee on EMS issues. It carried out one phase of its consultation on the *Guidance Document on Environmental Management Systems* at a public JPAC meeting in Guadalajara, Mexico, in April 2000. It also cosponsored with JPAC a seminar on public participation in enforcement activities in June 2000 in conjunction with the Council's annual meeting in Dallas, Texas.

The CEC web site hosts the NAWEG web page. From this site, the Secretariat provides hyperlinks to the enforcement-related home pages of the Parties' wildlife enforcement agencies to facilitate access to enforcement information. See <<http://www.cec.org/naweg>>.

Enforcement Training and Capacity Building

One of the direct benefits of the CEC Enforcement Cooperation Program is its ongoing support to initiatives to enhance the Parties' respective capacities for effectively enforcing their environmental laws and regulations.

Enforcement of international illegal trade is a priority for the Parties, which requires the cooperative partnership of enforcement agencies in Canada, Mexico and the US. All three countries are signatories to the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) and all have domestic legislation to implement their obligations under this agreement. Activities have focused on the cooperative development and delivery of training seminars for the benefit of wildlife and customs officials in the three countries in order to improve enforcement of CITES legislation in North America. They include:

- **April 1996**—Fur-bearing animals seminar, Toronto.
- **October 1996**—CITES Bird Conference, Xalapa
- **November 1997**—Reptile Skin Trade Seminar, El Paso
- **November 1998**—Trade in coral and marine invertebrates Conference, Los Angeles, California
- **August 2000**—Seminar on Trophy Hunting, Monterrey, Mexico

The CEC Enforcement Cooperation Program has also facilitated attendance of Canadian and Mexican enforcement officers at Wildlife Enforcement Inspector training sessions in US FWS Special Agent in Service Training and other national training initiatives.

NAWEG with the support of the CEC Enforcement Cooperation Program has also organized a series of forensic training seminars:

- December 1997—Wildlife Forensics Symposium, Mexico, DF

- October 1999—Wildlife Forensic Symposium, Cheyenne, Wyoming

Building on the success of this last seminar, it issued two trilingual information bulletins on forensic investigative techniques for distribution to enforcement officers and inspectors throughout North America. It also facilitated the formation of a network of wildlife forensic experts—resulting in initial agreement to standardize procedures for DNA databases on wildlife species. Finally, it has published a *Directory of North American Forensic Laboratories*, which is available on the NAWEG page hosted on the CEC web site.

Capacity building initiatives have also focused on environmental pollution issues, particularly transboundary movement of hazardous wastes. Meetings were organized to support initiatives by enforcement agencies in the three countries to identify and examine environmental enforcement issues along specified border areas. This included meetings to improve capacity to track hazardous waste movement across North America, including monitoring compliance with and enforcement of laws regulating transboundary transport. The goal was to explore the technical means for enhanced international and interagency cooperation in compliance monitoring and enforcement of transboundary hazardous waste laws. This activity culminated in 1999 with the publication of the report *Tracking and Enforcement of Transborder Hazardous Waste Shipments in North America: A Needs Assessment*. It identifies tracking/enforcement difficulties arising from differing definitions, tracking forms and databases, and options for resolving these difficulties.

Compliance Indicators

In an effort to help all three countries improve government accountability and ability to communicate results to the public in the area of performance measurement, the CEC initiated a project to explore development of indicators of effective enforcement.

In 1998, the CEC sponsored a multi-stakeholder dialogue in Puebla, Mexico, to examine current policies and practices for reporting on, responding to, and evaluating enforcement and compliance with environmental laws, alternative indicators of effective enforcement, and compliance strategies and responses. Participants were from government, industry and NGOs. In 1999, the CEC published and distributed the report *Indicators of Environmental Enforcement: Proceedings of A North American Dialogue*. This report also includes overview papers on Canadian, Mexican and United States policy and practice with enforcement indicators; an overview of European policy and practice; and a paper on use of public response indicators for evaluating effective enforcement. In 2000, the Enforcement Working Group chose to work on a pilot project in the area of hazardous waste to test gathering and analysis of data in development of compatible indicators. This allowed the group to build on the information contained in its report on *Tracking and Enforcement of Transborder Hazardous Waste Shipments in North America: A Needs Assessment*.

Future Initiatives

5 Future Initiatives

The CEC Enforcement Cooperation Program will be working on the following projects, subject to available resources, for enforcement cooperation in North America in the coming years:

1. Public outreach

- NAWEG seminar on public participation in wildlife enforcement activities in Washington, DC, in the fall of 2001

2. Capacity building

- NAWEG training seminar for customs and wildlife enforcement officers on alien invasive species (2002)
- a training seminar for customs and enforcement officers on enforcement issues regarding illegal trade in ozone-depleting substances (2001)

3. Reporting

- the Enforcement Working Group will continue to cooperate in the preparation of the enforcement section of the CEC annual report and will plan for subsequent special enforcement reports

4. Alternative approaches to compliance

- the Enforcement Working Group will promote the CEC Guidance Document: *Improving Environmental Performance and Compliance: 10 Elements of Effective Environmental Management Systems* and will work with other groups to evaluate its use in encouraging better compliance and environmental performance by those entities using environmental management systems

5. Links to other CEC program areas

- the Enforcement Cooperation Program and NAWEG will contribute enforcement expertise to the invasive species component of the Conservation of Biodiversity program
- the Enforcement Working Group will provide implementation expertise to the Sound Management of Chemicals program, with respect to the North American Regional Action Plan on Mercury, Phase II

Appendix

**List of Members of the North American Working Group on Environmental
Enforcement and Compliance Cooperation (EWG) as of June 2000.**

Canada		
Dale Kimmett	Director of Enforcement	Environment Canada
Dennis A. Durrant	Special Advisor Environmental Protection Service	Environment Canada
Ned Lynch	Manager; Compliance Assurance	Environment Canada
George Pilpe	National Reporting Officer	Environment Canada
David Wotton	Assistant Deputy Minister Environmental Operations Division	Manitoba Conservation
Robert Chouinard	Directeur adjoint Direction des enquêtes	Ministère de l'environnement Gouvernement du Québec
Mexico		
Norma Munguía Aldaraca (Chair)	Coordinadora de Asuntos Internacionales	PROFEPA
José Luis Calderón Bartheneuf	Subprocurador de Auditoría Ambiental	PROFEPA
Miguel Ángel Cancino Aguilar	Jefe de la Unidad de Asuntos Jurídicos	PROFEPA
Myriam González Villamil	Directora Consultiva	PROFEPA
Carlos González Guzmán	Secretario Técnico Subprocuraduría de Auditoría Ambiental	PROFEPA
Miguel Ángel Irabién	Director de Apoyo Técnico a Inspecciones	PROFEPA
Eduardo Jiménez López	Director General de Planeación y Coordinación	PROFEPA
United states		
Sylvia Lowrance	Principal Deputy Assistant Administrator Office of Enforcement and Compliance Assurance	US EPA
Tom Maslany	Director International Enforcement and Compliance Division	US EPA
Mimi Guernica	Deputy Director Office of Policy, Planning and Analysis, OECA	US EPA
Catherine Malinin-Dunn	Office of Enforcement and Compliance Assurance	US EPA
David W. Ronald	Chief Environmental Crimes Unit	Arizona Attorney's General Office
Russell Smith	Attorney; Policy, Legislation and Special Litigation Section	US Department of Justice
Beverly Updike	Environmental Specialist	US EPA

**List of Members of the North American Working Group on Wildlife
Enforcement (NAWEG) as of June 2000.**

Canada		
Yvan Lafleur	Chief Wildlife Division	Environment Canada
Mexico		
Victor Ramírez Navarro (Chair)	Subprocurador	PROFEPA
Carlos A. Sandoval García	Director de Asistencia Técnica Subprocuraduría de Asistencia Técnica	PROFEPA
United states		
Benito A. Perez	Associate Deputy Director Special Agent Division of Law Enforcement	US Fish and Wildlife Service