Environment Canada | Environnement Canada

Departmental Strategic Plan 1984 – 1989

Canada

ENVIRONMENT CANADA

1984–1989 STRATEGIC PLAN

October 20, 1983

A MESSAGE FROM THE DEPUTY MINISTER

I am pleased to issue Environment Canada's 1984-89 Strategic Plan. This is the third such plan and the first since I have become Deputy Minister. The plan builds upon its predecessors and reflects the department's continuing commitment to the concerns of Canadians for a healthy and sustainable natural environment.

A Strategic Plan is an attempt to look five to ten years ahead, and to identify the directions, priority issues and operating principles which will guide our actions over the longer term. These directions, priorities and principles constitute the marching orders to all members of the department in charting the future course of our programs. They will be reflected in the department's Operational Plans to be reviewed by Senior Management Committee later this year. The 1984-89 Strategic Plan is the result of extensive discussions among the department's senior managers. In June, the Senior Management Committee reviewed the working documents on which this plan is based. In particular, we gave detailed attention to the identification of priority issues. Our discussions also benefitted from the regional and national public consultation meetings held during the last year, and from thoughtful comments and suggestions received from many individuals and groups.

Seven priority issues have been selected to receive special attention over the next several years. This selection was based on issues which have, or are likely to have, significant environmental, economic and social impact; which have a high degree of public concern; and which present opportunities for positive federal action. Activities aimed at these priority issues will be closely scrutinized for efficiency, effectiveness and their contribution to the department's four objectives. They are complementary to the program priorities of the department's Services which must be achieved if the department is to meet the responsibilities assigned to it by Parliament.

The department is characterized by diversity, a diversity which converges around a common objective: to foster harmony between society and the environment for the benefit of present and future generations. The elaboration of that theme constitutes an important addition to this year's Strategic Plan. The analytical framework presented in Section II is intended to draw attention to the commonality among the diverse activities and programs of the department. It also offers to Canadians a way to better understand the various dimensions of our interactions with the natural environment. Over the long term we will be striving to encourage all Canadians to incorporate an environmental ethic into their day-to-day activities and decisions.

In 1985, Canadians will have many opportunities to celebrate "100 Years of Conservation of Heritage Places in Canada", the theme chosen to mark the Centennial of the establishment of Banff as Canada's first national park. To prepare for this event, a Citizens' Centennial Committee has been formed. Its aim is to stimulate public involvement in celebrations to be held

across the country and to solicit funds for this purpose from the private sector. The Centennial will provide opportunities for this department and all Canadians to celebrate our natural and cultural heritage and to recognize that our natural environment is the responsibility of all.

We in DOE are doing useful things for Canadians. We can be proud of our work and accomplishments, but we can not stop here. Our effectiveness can continuously be improved by carefully listening and learning. Our lines of communication with our clients must remain open. Our relationship with the people we serve must be meaningful to both them and ourselves and be based on mutual respect for differing points of view and values. Problems do not get solved and opportunities can not be exploited by sitting on our hands and studying issues to death. We must focus on achieving results and recognize that this will often have to be done without having all the information we would like to have. Only by doing and learning from our mistakes will progress be made.

I am continually impressed with the quality of the people in this department. In some areas of expertise we are world class and I want us to remain that way. Let us keep our reporting relationships as simple and straight forward as possible. Let us set realistic and clear goals for ourselves and let us recognize and reward excellence. I also want to see improvements in the management and development of our people. In particular I want each employee to be provided with the opportunity and the challenge to fulfill both his or her goals and those of the department.

I would like to thank the many people who have thoughtfully and energetically participated in developing this year's Strategic Plan. It marks the conclusion of the development phase of strategic planning in DOE. Although annually revisions will be made as circumstances change, this document sets our course to the 1990s. The task now is to implement our Strategic Plan. I count on each of you to do your part in achieving our common goals.

Jacques Gérin
Deputy Minister

STRATEGIC PLAN

Table of Contents

I. MANDATE

Environment Canada's statutory mandate is derived from the Government Organization Act (1979). This Act, as modified by an Order-in-Council under the Public Service Rearrangement and Transfer of Duties Act, establishes that the duties, powers and functions of the Minister of the Environment extend to and include all matters over which Parliament has jurisdiction not otherwise federally assigned, and relating to:

- national parks, national historic parks and sites, and heritage canals
- preservation and enhancement of the quality of the natural environment, including water, air and soil quality
- renewable resources, including forest resources, migratory birds and other non-domestic flora and fauna
- water
- meteorology
- enforcement of rules and regulations arising from the advice of the International Joint Commission relating to boundary water and questions arising between the United States and Canada that relate to the preservation and enhancement of environmental quality
- other federal matters relating to the natural environment which are assigned to the Minister.

The Act also specifies functions of the Minister in carrying out these responsibilities, including programs to: promote adoption of objectives or standards relating to environmental quality and pollution control; mitigate adverse environmental impacts of new federal projects; and provide Canadians with environmental information.

It gives to the Minister of the Environment broad responsibilities to influence federal departments and agencies, and to work with provincial governments and the public to preserve and enhance environmental quality. The Minister is also authorized to develop guidelines for activities of federal bodies, and enter into agreements with provincial governments or agencies.

More specific powers and duties of the Minister of the Environment are defined by the:

- Canada Water Act
- Canada Wildlife Act
- Clean Air Act

- Environmental Contaminants Act
- Forestry Development and Research Act
- Game Export Act
- Historic Sites and Monuments Act
- International River Improvements Act
- Migratory Birds Convention Act
- National Battlefields at Quebec Act
- National Parks Act
- Ocean Dumping Control Act
- Weather Modification Information Act.

The Department of the Environment also has responsibility to administer pollution control provisions of the Fisheries Act and to provide specific advice and information under certain sections of federal legislation assigned to other departments. The operation of the Federal Environmental Assessment Review Office is an assigned responsibility of the Minister of the Environment as is federal coordination in response to environmental emergencies.

II. ENVIRONMENT CANADA'S PURPOSE AND OBJECTIVES

The many policies, programs and activities of Environment Canada are all directed toward a common purpose:

to foster harmony between society and the environment for the benefit of present and future generations of Canadians.

Achieving this objective is clearly beyond the reach of any one government department. It is the responsibility of us all. The decisions we make today, as individuals and as institutions, affect the world we will live in tomorrow. The broad base of public support for federal involvement in environmental matters, which brought the department into being over a decade ago, continues today. Based on that support, Environment Canada provides many services designed to help members of society, in the home and in the workplace, live more harmoniously with the environment.

Society and the Environment

The term "environment" means different things to different people. Scientists describe the environment in terms of the physical, chemical and biological processes that determine our surroundings, our climate and landscape, and the complex relationships among organisms inhabiting different regions or areas. To most Canadians, the environment means the natural world. It embraces wilderness, forest, aquatic, arctic, urban and rural milieus as well as climate and geography. Some people stress the wilderness aspect as a reminder of mankind's place in nature. For others, the environment is a storehouse of renewable and non-renewable resources, and a dumping ground for the products and wastes generated by human activities. From another perspective, it is a force to be reckoned with, if not tamed. But unifying these different views is a growing awareness among Canadians that we humans are part of the natural ecosystems that support life on earth, and that we are dependent on the health and diversity of these ecosystems for our very survival and well-being.

The natural environment both shapes and is shaped by human societies. Climate, geography and resource endowments, for example, have profound effects on human settlement patterns and economic activities. At the same time, humans shape the natural environment to a degree unequalled by any other species. This impact is caused not only by growing human populations, but by new and powerful technologies that can be used to transform nature, sometimes dramatically, sometimes in insidious or unseen, but no less drastic, ways. Even where there are no human settlements the effects of human activities are evident. For example, chemicals from industrial regions have been detected under arctic ice.

With great technological power comes great responsibility. We humans, as individuals and through our institutions, have the duty to preserve the vitality and resilience of our ecosystems. Learning to live harmoniously with the natural environment means that our understanding of dynamic natural systems

needs to be blended with an understanding of human and institutional behaviour. This objective requires a willingness to examine the attitudes, ethics and values that underlie our production and consumption patterns as well as our relationship with the non-human world. It also requires us to recognize that the decisions Canadians make today will affect the environment we pass on to our children and to generations yet unborn.

A Framework

Environment Canada has found it useful to describe the society-environment relationship as having four interrelated and mutually supportive elements: (1) the environment as a life-sustaining and productive source of resources; (2) the environment as a resilient yet sensitive receptor of industrial products and wastes generated by human activities; (3) the environment as a force in its own right, with natural processes that impact upon society and human activities; and (4) the environment as a heritage from the past to be passed on to generations yet unborn.

1. The environment as a life-sustaining and productive source of resources:

   Society depends upon the environment to satisfy human needs and wants. The environment provides the basic necessities for life itself -- air, water, food, fuel and shelter. It also provides materials that we harvest and mine:--trees, wildlife, fish, minerals and fossil fuels. It is a source of energy--water, solar heat, tide and wind energy. Some of its components are used to provide services--parks for recreation, or water and air for transportation, production and recreation.

   When using environmental resources choices must be made in responding to current and future demands. Using the environment in ways that threaten the sustainability of natural ecosystems and the natural resource base are to be avoided. This calls for acceptance of the principle that sound economic development requires sound environmental management.

   Environment Canada promotes the enhancement and wise use of those renewable resources for which it has various degrees of responsibility, including inland waters, lands, forests, wildlife and national parks. The department also provides environmental guidelines for certain proposed federal government uses of the environment. Through interpreting and disseminating its scientifically-based information and advice, the department contributes to improved management by other users of renewable and non-renewable resources. In this way, Environment Canada helps to ensure that environmental considerations are an integral part of economic decision-making.

2. The environment as the ultimate depository for all products and wastes:

The environment is the recipient of a wide variety of industrial and human wastes and products, some of which are toxic. The inherent resilience of natural ecosystems can accommodate these stresses within certain tolerance limits before the environment is substantially or irreversibly damaged.

It is therefore important to understand the capability of the environment to withstand or adjust to stresses associated with wastes and products generated by human activities. We need to ensure that human and environmental health are not unduly threatened. This requires society to reduce wastes where possible, to determine "acceptable levels of risk", and to employ environmentally appropriate technologies in the life cycle of products and wastes.

Environment Canada's role is to reduce the impact of industrial products and waste disposal on the environment through guidelines, persuasion, scientific information and regulations. The department pays particular attention to those wastes or products which could threaten the life support systems of humans and other organisms. This necessitates appropriate screening, assessment and review processes as well as public education and active involvement in society's decision-making processes.

3. The environment as modifier of human activities:

Nature itself is a powerful dynamic force. People must adapt to such phenomena as weather and storms, climate change, drought cycles, earthquakes, floods, and epidemics and diseases afflicting plants and animals. Their effects may be prolonged and pervasive--climatic conditions forcing Canadians to be high users of energy to keep warm during the winter--or violent and dramatic--floods or power failures during thunderstorms.

Society must adapt to certain environmental conditions and phenomena in order to reduce risks to life and property and to maintain economic viability. This aspect of the society-environment relationship also highlights the importance of understanding the response of ecosystems to disturbances over time--in particular, the fact that natural turbulence often renews and revitalizes dynamic ecosystems.

To facilitate human adaptation to natural phenomena, Environment Canada continuously monitors environmental processes and advises Canadians of changes in weather and climate, approaching storms, sea and ice conditions. The department also identifies population explosions of insects and pests, provides criteria for forest fire

danger ratings, maps flood-prone areas and advises on risks of floods and shortages of water.

4. The environment as heritage

A fourth facet of the society-environment relationship is concerned with society's stewardship role. The environment is not only a heritage from the past to be experienced and enjoyed by Canadians today, but a treasure borrowed from future generations. The concept of stewardship highlights society's willingness, if not moral obligation, to ensure the continuance of the biosphere's life-support systems and the preservation of representative and unique examples of our cultural and environmental heritage.

This element emphasizes the importance of setting aside wilderness, parks and heritage sites so that they will not be destroyed, and of protecting special wildlife locales, both in their own right and for the purpose of broadening our understanding of environmental processes and phenomena. It also calls on us to ensure that future generations have access to as rich a biological inheritance as possible.

Environment Canada manages our national parks and historic sites to preserve outstanding archaeological, historic, natural and scenic treasures whose value can only grow with time. The department also manages wildlife areas and bird sanctuaries, identifies and protects endangered species, and monitors the environment to ensure that today's actions do not result in a significant deterioration of the biological capacity of oceans, soils, and fresh water systems.

Environment Canada is committed to helping Canadians live in harmony with the natural environment. Its programs are all related to the general framework presented above, and to the four objectives the department pursues:

1. To influence human activities in a way that will achieve and maintain a state of the environment necessary for the health and well-being of man, the health and diversity of species and of ecosystems, and the sustained use of natural resources.

2. To conserve and enhance Canada's renewable resources of water, land, forests and wildlife and their related ecosystems, and to promote their wise use in a sustainable manner.

3. To facilitate the adaptation of human activities to the environment.

4. To protect for all time those places which are significant examples of Canada's natural and cultural heritage, and encourage public understanding, appreciation and enjoyment of this heritage in ways which leave it unimpaired for future generations.

III. PLANNING CONSIDERATIONS

The following trends are anticipated in several key areas of importance to Environment Canada in charting its course over the next ten years.

Public Attitudes and Expectations

The 1980s will be a period of public debate on the most appropriate directions for government policy and delivery of services. Public pressures will increase for leaner, more responsive and relevant government; for greater public participation in governmental and corporate decision-making; and for greater access to information.

Individuals and groups will continue to search for ways to contribute to community, personal, and public welfare that are less dependent on government. As well, volunteer activities in support of government programs may increase. The public will demand government action in support of what are perceived to be basic rights. These include protection from threats to human health and the environment such as those arising from industrial chemicals, acid rain, pesticides and nuclear energy. The public is becoming progressively better informed on environmental and resource issues. Environmentally sound development and the protection of heritage resources will continue to be supported by a substantial portion of the Canadian people. Leisure activities will increase as the population ages and the work week shortens and this may place greater demands on our natural and cultural heritage resources.

Fiscal Restraint

Fiscal restraint will continue throughout the decade. The purchasing power of the department's budget will almost certainly decline. Canadians expect better service from their governments which in times of budget restraint presents a challenge to us all. Environment Canada's efforts to improve its efficiency and effectiveness and its accountability to Parliament and the public must be pursued diligently. Additional funding is likely to become available from time to time for employment creation programs.

The Economy

Slow economic growth and relatively high unemployment levels are expected for the next several years. Structural adjustment linked with economic recovery is likely to produce firms which are more competitive, innovative and less wasteful than at present. The new technology industries may be more environmentally benign and the progressive modernization of our resource based industries will likely yield environmental benefits. New developments in

science and technology, such as genetic engineering will influence the issues to which the department must respond.

There will be pressures to downplay the negative environmental consequences of certain economic development activities. However, the slowdown or deferral of many mega-projects provides an opportunity to increase the knowledge base necessary for their safe, economically efficient and environmentally appropriate design and operation. There may also be opportunities to pursue smaller scale development projects which may be more environmentally benign and more labour intensive.

Stable, or at best modestly increasing, real disposable incomes will encourage Canadians to make goods last longer through repairs and recycling. This will lead to greater efficiency in the use of goods, including energy, and less per capita drain on the natural resource base. Total per-capita consumption, apart from food, has declined over the last five years and this change in consumption patterns, such as fewer and smaller cars, may be more than temporary.

Resources

The world demand for Canada's non-renewable and renewable resources including agricultural, fish and forest products will grow towards the end of the decade, provided that Canadian exports remain internationally competitive. The development of natural resources has been identified as a major policy thrust of the federal government's economic renewal program. DOE's forestry, water, land, environmental information and environmental quality activities are directly involved in support of this policy initiative. Preservation and enhancement of soil fertility, the sustainability of yields, multiple resource use, and the loss of agricultural lands and wetlands will be major renewable resource issues. The focus for non-renewable resources including energy will be on economically efficient and environmentally appropriate development.

Freshwater could be the issue of the 1990s that energy was in the 1970s. The economic and social significance of managing Canada's water resources is increasing. The major elements of the issue are growing imbalances between water supply and demand, particularly on the Prairies; deteriorating water quality in the Great Lakes-St. Lawrence Basin; depletion and contamination of ground waters; potential water exports to the United States; proposals for major diversions in Canada between river basins and across provincial/territorial boundaries; and water allocation amongst various users and political jurisdictions.

In the forest sector, housing starts in both Canada and the United States are approaching normal levels. Consumption of pulp and paper products, specifically newsprint, tends to lag the economic recession and recovery cycle and thus markets are expected to remain soft in the short term. Even if the current economic recovery continues, the forest sector is facing a slow return to operating near capacity with adequate profit margins. By 1990 forest management is expected to be on a firm self supporting financial footing in some

provinces. During the next 20 years, the most pressing issue facing the forest sector will be to remain internationally competitive through renewal of the forest resource, continuous plant modernization, the application of new technology, improved quality control and aggressive marketing.

Tourism will remain a major economic sector having good medium term growth potential. Wildlife and natural and cultural heritage areas are major contributors to Canada's tourist industry. 1985 is the centennial of Parks Canada and a national celebration of "100 years of Conservation of Heritage Places in Canada" is being planned.

Intergovernmental Relations

The overall climate for federal-provincial relations will not change substantially over the short to medium term. Over the longer term, there are indications that tensions may decrease. Resolution of offshore jurisdictional questions will have a bearing on the protection of coastal zones and the marine environment.

Canada-U.S. relations are of particular importance because of geographic proximity and economic and ecological interdependence. Current U.S. policies including deregulation have the potential to adversely affect that country's environmental protection capability and its stance on transboundary resource and environmental issues. However, there is evidence that the American public is not willing to accept environmental deterioration as a price of economic growth. The overall climate of Canada-US relations is expected to improve and this should help resolve the contentious environmental issues facing the two countries.

Internationally, increasing disparity between rich and poor nations coupled with economic difficulties in the industrial world will lead to policy conflicts related to the protection of the world's natural and cultural heritage and the exploitation of resources.

IV. DEPARTMENTAL DIRECTION TO THE 1990s

Service to Canadians, contributions to development, and increased departmental productivity are the three basic themes which will guide Environment Canada into the 1990s.

Service to Canadians

Individually and institutionally we have a responsibility to respond quickly and effectively to the needs and wishes of the Canadian people. To do this we must increase our dialogue with all segments of the public and learn to listen carefully with our hearts as well as our heads. Assisting Canadians to live in harmony with the environment is a goal worthy of our deepest personal commitment. It is a challenge to all Canadians. We in Environment Canada have a special responsibility to provide the leadership, imagination and dedication needed to achieve our common goal.

Environment Canada provides a wide range of services to Canadians. Last year approximately 25 million visitors were welcomed to the National Parks and National Historic Parks and Sites. We provide extensive research support to the forest sector as well as annual funding of over $100 million for better forest management. DOE is deeply involved in environmental assessment and the maintenance and enhancement of Canada's environmental quality. Daily weather forecasts are perhaps the best known atmospheric environment service which includes iceberg and sea-state, climate and air quality information. We are also responsible for the management of migratory birds. Through our hydrometric monitoring and research activities essential data on water quantity and quality is provided to industry and the public.

Development and the Environment

Canada's economic development in the 1980s, as in the past, will depend to a large extent upon the exploitation and processing of our natural resource base. Forestry, agriculture and fishing, as well as the mining and processing of our non-renewable mineral and energy resources will be of major importance. There is a growing realization, however, that the natural resource base is finite, and needs to be better managed and utilized. The government's policy framework paper Economic Development for Canada in the 1980s recognizes that "the maintenance of the quality of our water, our air and our soil is essential to our long-term development and to the quality of life to which that development must contribute." It also commits the federal government to "manage those resources for which it is responsible in such a way as to ensure their health and sustainability" and to "encourage others to do so as well".

A healthy environment is a necessary condition for healthy long-term economic development. The one in ten Canadian jobs dependent upon forestry rely

upon a sustainable yield of timber. The multi-billion dollar tourism and recreation industries heavily depend upon the preservation of our natural and cultural heritages in National Parks and Sites and Wildlife areas. Industry and agriculture alike require non-polluted water in adequate supply at reasonable prices. The maintenance of commercial and sport fishing and hunting are dependent upon viable natural resources and habitats. In sum, a healthy environment goes hand in hand with sound long-term economic development and job creation.

1. Appropriate and Sustainable Development

In times of economic difficulty there is a tendency to forget longer-term economic and social considerations. In our pursuit of economic renewal we must be mindful that our ultimate goal is not growth for growth's sake, but a better quality of life for all Canadians. Over the long-term sound environmental and conservation practices make good economic sense.

There will be a shift in DOE activities from remedial to preventive measures. Particular attention will be given to ensuring that the environmental and conservation implications of federal government policies, programs and activities are considered at an early stage in the planning process. It is also our intention to strengthen departmental contributions to the Environmental Assessment Review Process and to intervene more often with regulatory bodies such as the National Energy Board.

Regulatory powers will be used as appropriate and necessary. Greater emphasis will be placed on the use of market forces in support of a more competitive and less wasteful industrial structure which will make efficient use of our natural resources in a sustainable manner. Increased recycling of goods and materials will be encouraged, as will changes in lifestyle that will bring us closer to a conserver society.

2. Environmental Information

Based upon world class scientific and technical capability, DOE will continue to provide the wide variety of information, analysis and advice which permits environmental, resource management and heritage preservation considerations to be built into the early stages of project and program development.

Weather, ice and sea-state, land characteristics and water quantity and quality data for example, are important for a wide range of economic activities including agriculture, forestry, oil exploitation, manufacturing, flood control and land use planning. A broad range of information and research results are provided in support of wildlife management, the preservation of our natural and cultural heritage, and forest development.

3. Environmental Management

Environment Canada contributes directly to Canada's development: through management of the national parks systems and of migratory game birds; by funding intensive forest management; by providing hydrometric data and research and federal leadership for transboundary water allocation and water quality issues; and through provision of advice on the management of federal land holdings.

DOE actively participates in the government's employment creation programs and in 1983 employed over 15,000 people in full or part-time jobs. In forestry, conservation, heritage preservation and environmental monitoring, jobs are being provided to Canadians across the country and in the future we intend to do more.

Productivity

As well as being more selective in what we do and where we do it, we intend to be more productive. Productivity increases will come from clearly defined goals and objectives, better human resource management, more effective use of planning and management systems and the application of appropriate technology. Productivity gains and improved quality of work life must be complementary and not competing objectives.

1. Human Resource Management

People are the catalyst of any productivity improvement. Therefore, human resource management must become the first priority of DOE managers. As a first step, all parts of the department have or are currently preparing comprehensive human resource management plans. Other steps being taken include:

- Developing an overall departmental management philosophy;
- Clarifying the responsibility and accountability for human resource management at all levels of the department;
- Integrating human resource considerations with the departmental planning and decision-making processes;
- Implementing government policies with regard to affirmative action and official languages programs;
- Increasing consultation at all labour-management levels; and
- Upgrading management and technical skills.

2. System Enhancement

Improved financial, personnel, materiel, and other administrative and management systems can yield productivity improvements throughout the department. These systems should continually be assessed using cost effectiveness as a key criterion. Particular attention needs to be paid to program evaluation and the implementation of the IMPAC recommendations.

3. Technology

DOE will continually implement technological improvements which increase our productivity. Office automation has already begun, a new vector computer has come on stream and further development of satellite systems and remote sensing for both data acquisition and communications has the potential to improve our productivity substantially.

The implementation of automated systems will require major capital investments and on-going expenses. Therefore, the department must be prepared to phase out existing systems as their replacements become operational. Careful financial and human resource planning is essential to ensure that resources are available when required, that contingency plans are developed to deal with breakdowns in highly sophisticated systems, and to ensure that the changes take place with a minimum of disruption to the people involved. DOE will also emphasize technology transfer whereby the R&D results achieved in departmental laboratories will be quickly made available to the private sector and to other levels of government.

V. DEPARTMENTAL PRIORITIES

The priorities for each of the department's five program areas are presented starting on page 20. In addition, seven priority issues have been chosen by senior management to receive special attention. Departmental activities on these issues will be closely scrutinized for effectiveness and efficiency. The departmental list of priorities will be revised from time to time as circumstances change.

1. Toxic Substances

DOE's basic strategy is to prevent toxic substances from entering the environment. To this end we advocate a reduction in the amount of toxic waste by the adoption of more conserving lifestyles, direct reuse, recycling and detoxification. A "cradle to grave" toxic chemical management system with clearly identified responsibilities for all concerned is being developed. Integral features of this system will be testing, monitoring, registration and where necessary the development of guidelines and regulations to be consistently enforced.

Many toxics have already escaped into the environment while others, stored under questionable circumstances, threaten to do so. Remedial actions are necessary and must be shared amongst governments and polluters. The most pressing issue is the clean-up of the Great Lakes - St. Lawrence system. The Niagara River, with its threat to the safety of drinking water, is a most insidious troublespot.

Pesticides and herbicides are to be given particular attention. DOE will initiate actions to improve the evaluation of new applications for registration, will cooperate to increase public knowledge about the safe use of chemical pesticides, and will develop biological control materials for forest pests.

Through its chairmanship of the Interdepartmental Committee on toxic chemicals, DOE will coordinate the implementation of the federal government's program to resolve toxic chemical problems.

2. Acid Rain

Acid deposition in Canada is a serious environmental problem caused by emissions of sulphur dioxide and nitrogen oxide both here and in the United States. The government's goal is to reduce acid deposition in central and eastern Canada, by 1990, to no more than 20 kilograms per hectare per year. This level is required to protect moderately sensitive aquatic systems.

The Department will negotiate agreements with the United States and the provinces to reduce harmful emissions. It will intervene whenever proposed developments may add to the problem. Research and monitoring of the effects of acid rain on the forests and water of eastern Canada will continue. Models of atmospheric processes and transport will be perfected in support of the Canada - U.S. negotiations and the development of emission control strategies.

3. The Forest Sector

The federal government's economic development program for the 1980s identifies forestry as one of five key resource sectors to receive special attention. The forest sector accounts directly and indirectly for one in ten Canadian jobs and is by far the country's largest net export earner ($11.8 billion in 1981). The government's objective is to ensure the long-term development and international competitiveness of the forest sector in an environmentally sound manner. Expanding and increasing the value of our exports and ensuring an adequate volume of timber at a competitive cost are key goals.

The new federal-provincial forest development agreements are designed to stimulate increased levels of forest management by the provinces and industry with the ultimate aim of a self-sustaining and growing forest sector in Canada. The immediate focus will be on the rehabilitation of the backlog of neglected forest land and on timber stand improvement. These efforts will create employment opportunities for many Canadians while increasing the quality and quantity of productive forest land.

The long-established forestry research role of CFS will concentrate on developing cost effective silviculture and protection methods, biological pest control, tree genetics and biotechnology to improve forest growth and yields, and forest ecosystem research. In all aspects, technology transfer to the provinces and industry will be stressed.

4. Water Management

Fresh water could be the issue in the 1990s that energy was in the 1970s. Elements of this issue include growing imbalances between water supply and demand, particularly on the Prairies; inadequate water quality in Québec and various other parts of the country; multiple-use management in the Fraser Estuary; potential major diversions between river basins and ecological zones; and water allocation amongst various users and political jurisdictions.

In meeting its responsibilities to provide leadership federally for inland waters, DOE will launch a comprehensive public

examination of the water management issues facing the country. A federal water strategy will be brought forward following this initiative.

DOE will seek active cooperation from the provinces and territories in meeting its water management responsibilities.

5. Climate Change

The past decade has demonstrated increasing worldwide climate variability. Drought in the Prairies during the early 1970s, recent mild winters in Eastern Canada and droughts in India, Mexico and Southern Africa, are examples of climatic fluctuations. DOE's goal is to forecast for Canada monthly climate by 1990 and seasonal climate by 1995 at a minimum accuracy level of 60%. To meet this goal the department will improve its understanding of climatic variations.

Increasing levels of carbon dioxide (CO_2) and other atmospheric pollutants may well have a significant effect on climate variability and change. CO_2 concentration levels are increasing by 3 percent per decade primarily as a result of the burning of fossil fuels. This rate of increase may produce significant warming of the earth's surface within the economic lifetime of projects and structures now being planned and built. A warmer climate would expand growing and maritime transportation seasons in the north, but at the same time it would increase aridity in the southern Prairies. DOE will develop a better understanding of the effect of increasing CO_2 and other pollutants on our climate.

6. Protection of Natural Heritage

A society's wealth comes not solely from its economic prowess, but from its contribution to knowledge, its pursuit of social justice, its cultural endeavors and its ability to pass on its heritage from generation to generation. Canada is blessed with some of the most beautiful, unique and diversified natural features and ecosystems on this planet. DOE will continue the past century's farsighted actions which have preserved from desecration and alteration selected natural areas. In some cases these sites were preserved for their beauty; in others they represented undisturbed ecosystems and gene pools and in others they were critical wildlife habitats. These natural areas are visited annually by millions of Canadians and foreign visitors and have become an integral part of the tourist industry.

Many areas, however, still need protection. DOE will be giving particular attention to the acquisition of national parks and wildlife conservation areas in the North. When opportunities arise to complete the National Parks System south of 60°N, as in the case of the Bruce Peninsula and the Mingan Islands, these will

be pursued. The heritage building and heritage river programs will be emphasized and in 1985 Parks Canada will celebrate its Centennial.

Wetlands, fast disappearing in Canada make valuable contributions to the maintainance of wildlife populations and water tables. More effective mechanisms for their protection will be sought.

7. The North

The environmental uniqueness and sensitivity of the area north of 60°N, its harsh climate and geography for economic development, and the federal government's broad responsibilities in the territories all make the north a DOE priority. The Minister of the Environment has recently released a discussion paper outlining DOE's role and plans for contributing to the management of the northern environment. Three items will be emphasized: northern conservation, environmentally sound technology, and appropriate resource use. Specific actions include the establishment of ten new National Parks by 1990; expansion of the wildlife areas and migratory bird sanctuaries to 5% of the land mass by 1990; development of historic parks and sites with particular emphasis on native culture; improved environmental assessment of major developments; leadership in the management of the larger northern river systems; active participation in and support for the government's land use planning initiatives; and enhancement of weather services for safer and more efficient air transportation. The Department will be seeking the views of all concerned publics on these proposed initiatives.

Special Priorities

The National Parks' Centennial will be celebrated in 1985. Parks Canada is planning many activities including a series of NFB films for television, touring exhibits, publications, a heritage learning program tied to the 1985 Year of Youth and a major national conference on the future of National Parks. The other Services of Environment Canada and other federal departments are developing projects that will contribute to the Centennial program. The birthday celebration in 1985 is an opportunity for all Canadians to participate in the preservation and enjoyment of our natural and cultural heritage.

The Québec Region's Strategic Plan was approved by the Senior Management Committee this spring. The priorities for action are the restoration of the St. Lawrence river and the conservation of important areas within the basin; the development of the forest sector; the reduction of acid precipitation; and the reduction and control of toxic chemicals.

VI. OPERATING PRINCIPLES

Over the years a number of basic principles and ways of doing business have been established in the department. Some of these approaches have arisen from government-wide initiatives while others have evolved from our particular policy and program experiences. The nine operating principles presented below provide specific guidance for developing and implementing departmental policies, programs and activities.

Relationships

1. The department will cooperate with and seek the advice of provincial and territorial governments in planning and implementing its policies, programs and activities.

2. The department will play a leadership role, both nationally and internationally, in addressing transboundary environmental, resource management and conservation issues.

3. The department will provide the public with comprehensive information and analysis on environmental, conservation and resource management issues and trends; will provide comprehensive information and will seek the public's advice on the formulation and implementation of departmental policies, programs and activities; and will encourage and support voluntary action in pursuit of Environment Canada's purpose and objectives.

Policy and Program Principles

*4. The department will apply the polluter pays principle and will encourage others to do so in order to ensure that costs associated with maintaining environmental quality are a normal cost of doing business. Subsidies which shift real costs to non-beneficiaries will be avoided and discouraged.

*5. The department will encourage the owners and managers of our natural resources to capture a just return for their use and to reinvest in maintaining and enhancing resource productivity.

*6. The department will seek full cost recovery in all cases where it provides direct specialized services to identifiable beneficiaries.

7. The department will encourage the growth and diversification of the Canadian private sector by such means as contracting out, technology transfers, joint ventures and privatization, and by not undertaking those activities which the Canadian private sector can or could be encouraged to do.

8. The department will encourage preventive measures in preference to remedial actions in resource management, conservation and environmental matters.

9. Departmental policies, programs and activities will focus on those matters clearly within federal jurisdiction, recognizing the importance of Environment Canada's leadership role in matters of general concern.

* The implementation of these principles will be subject to the government's 6% and 5% restraint policies.

VII. PROGRAM STRATEGIES

Environment Canada's programs fall into five inter-related fields: natural and cultural heritage, atmospheric services, environmental quality, environmental conservation, and forestry. In each of these areas DOE has specific policies, programs and activities. Their planning and implementation are guided by the department's overall objectives and operating principles.

Natural and Cultural Heritage

Parks Canada has the primary responsibility for achieving the department's objective concerning the protection and use of Canada's natural and cultural heritage. The policy directions and basic operating principles of Parks Canada are detailed in its Cabinet approved 1979 policy paper.

Parks Canada is a mainstay of the Canadian tourism industry. The national parks system is highly visible, truly national in scope and significance and a source of national pride and unity. In 1981 National Parks welcomed over 21 million visitors while the number of visits to Historic Parks and Sites was over 4.3 million.

Nineteen eighty-five will mark the centennial of Banff as Canada's first National Park. To commemorate this event, a national celebration is being prepared under the theme "100 Years of Conservation of Heritage Places in Canada". Events and celebrations are planned for each of the 29 National Parks, 82 National Historic Parks and 9 Heritage Canals. The highlight of these celebrations will be in Banff with the restoration of the Cave and Basin complex, which together with a Royal visit and a specially commissioned book and feature films, will commemorate the National Parks Centennial.

Over the next decade, it is Parks Canada's intention to place more emphasis on the national historic parks system. The present system largely reflects Canada's military and fur-trading past, with little emphasis on our social or economic history. There is also a geographic imbalance with few sites in the west and north. Similarly the National Parks System is incomplete, with only 40% of the 48 natural regions represented. Agreements for Recreation and Conservation will be pursued only where there is an historic or natural element of national significance. Parks Canada will continue to work closely with the voluntary sector in pursuit of its objectives and will maintain and enhance its well developed public consultation processes.

In order of importance the priorities for Parks Canada are to:

1. Maintain levels of service where they are now adequate and restore levels of service where they have seriously deteriorated.

   - reconstruction of the facilities at Lake Louise;
   - highway reconstruction projects in Newfoundland, Nova Scotia and Alberta;
   - restoration work at Halifax Citadel and Quebec Fortifications; and
   - reconstruction program for the Rideau, Trent-Severn, and Chambly Canals.

2. Establish adequate levels of service in undeveloped parks and sites.

   Over the next decade minimum development of Pukaskwa and Grasslands National Parks will be carried out and some 11 historic sites which have been "mothballed" will be opened to the public including, l'entrepôt de la compagnie la Baie d'Hudson, Papineau House in Quebec and York Factory in Manitoba.

3. Complete the Parks Canada systems.

   The following initiatives will be undertaken:

   - negotiations for the establishment of ten national parks in the Northwest Territories and the Yukon by 1990;
   - establishment of a marine park in the Bay of Fundy;
   - acquisition and development of a national park on the Bruce Peninsula, Ontario;
   - acquisition and development of Manitou Mounds, an Indian burial site in Ontario;
   - implementation of the Canadian Heritage Rivers System;
   - acquisition and development of the Kitselas Indian site and the Steveston Cannery; and
   - implementation of the federal heritage buildings policy including the establishment of the Federal Heritage Buildings Review Office.

Atmospheric Services

The Atmospheric Environment Service (AES) has the primary responsibility for providing weather, climate, sea-state, ice and air quality services for the safety of Canadians, the security of their property, the improvement of the national economy, and the maintenance and enhancement of environmental quality.

AES (a) reports past and present, and predicts future conditions of the atmosphere, both physical and chemical (primary amongst such predictions are weather forecasts and warning); (b) reports and predicts the physical conditions of closely-related phenomena such as sea-ice and sea-state; (c) monitors and conducts research on acid rain and toxic chemicals; (d) conducts research into and monitors climatic change and variability resulting from natural physical phenomena, such as volcanoes, and increases in such things as carbon dioxide and air pollutants; (e) encourages the science and practice of meteorology in Canada; and (f) promotes Canada's atmospheric interests internationally.

Demand for atmospheric information is expected to increase substantially in support of human safety, economic development and environmental quality. To help meet this demand, AES will encourage other organizations such as private firms, universities and provinces to provide atmospheric services within their areas of responsibility. During the coming decade, AES will be interacting ever more closely with its clients to better satisfy their needs for environmental information.

The following are AES's priorities which define specific areas to which AES must devote special attention while continuing to provide an adequate level of meteorological, sea-state, and ice services. Provision of these basic services depends on optimizing AES's integrated systems for basic data acquisition, forecast production, communications, research, and human resources deployment and development. This infrastructure serves as the foundation on which to mount initiatives in the following priority areas:

1. Improve the utility of weather warnings and forecasts

   Substantial efforts will be made to increase the utility and accuracy of weather warnings and one day forecasts. With the atmospheric modelling capabilities of the vector computer, longer range forecasts (days 2 to 7) will be achieved by 1985. Emphasis will also be placed on improving services in French and on the utility and accuracy of all forecasts and warnings.

2. Improve air quality services

   Enhace our understanding of the long range transport and transformation of airborne pollutants (including acid rain, oxidants and toxics) in support of Canada-U.S. and Federal-Provincial agreements to control transboundary air

pollution. Special attention will be given to mission oriented atmospheric research, precipitation monitoring, the coordination of federal LRTAP research and compliance monitoring.

3. Implement the Canadian Climate Program

   By 1990 provide monthly predictions and by 1995 seasonal forecasts at a minimum accuracy level of 60%. Emphasis will also be given to enhancing our understanding of the climatic effects of increasing atmospheric CO_2 and other contaminants including volcanic emissions and radiatively active gasses.

4. Support Canada's economic development

   An iceberg forecasting service will be initiated on the East Coast primarily in support of energy development. Atmospheric services will be strengthened in support of safe, economically efficient and environmentally sound development with particular attention on forestry, water management, aviation and offshore oil and gas exploration and development.

Environmental Quality

The Environmental Protection Service (EPS) has lead responsibility for implementing DOE's environmental quality strategy. In cooperation with others, EPS seeks to ensure that all parties in the government and private sectors are aware of, and fulfill, their responsibilities for protecting and enhancing the quality of the environment and resolving transboundary environmental issues.

The management process by which EPS handles environmental concerns begins with the assessment of trends in environmental quality, and the identification of threats, actual or potential, from various human activities. The selection of specific preventive and remedial actions, which may range through economic, regulatory and advocacy approaches are considered in relation to social and economic benefits, and in consultation with the public.

The following issues will receive priority attention over the next few years:

1. Toxic Substances: In addition to managing the Toxic Chemicals Management Program (TCMP) and fulfilling its ongoing responsibilities such as chemical inventories and technology development, EPS will:

   - development and implement a TCMP Strategic Plan to ensure improved toxic chemicals management from "cradle to grave" in close cooperation with international efforts and through chairmanship of the Interdepartmental Committee on Toxic Chemicals;

- promote effective waste management, such as the reduction of quantities produced, direct reuse, recycling, and detoxification and disposal of residuals;

- through the Environmental Emergencies Program, ensure that the appropriate preparedness and response measures are in place to respond to hazardous chemical spills; and

- improve the capacity to evaluate new applications for registration of pest control products by Agriculture Canada, and coordinate DOE advice related to the environmental impacts of pesticide use.

2. Long Range Transport of Air Pollutants (Acid Rain): EPS coordinates and guides the LRTAP program on behalf of DOE and the federal government. This program focuses primarily on acid deposition but includes other LRTAP related problems. EPS will:

   - develop and implement strategies and tactics to achieve emission reductions in Canada and the U.S;

   - establish the role of the socio-economic component of the LRTAP program and coordinate the development of the socio-economic information base on damages caused by LRTAP;

   - update and refine inventories of present and future emissions of LRTAP related pollutants, and update and refine the knowledge base on abatement options and costs; and

   - contribute to the development and implementation of public information programs in Canada and the U.S.

3. Energy: EPS's contributions include:

   - acting as the departmental focus on nuclear matters related to the nuclear fuel cycle and participating in the federal-provincial effort to develop recommendations for radioactive waste disposal;

   - assessing environmental impacts and promoting environmental protection measures with respect to oil and gas, coal and biomass, other than from forest sources; and

   - supporting energy conservation through development and implementation of the National Recycling Policy.

4. Environmental Impact Assessment

   Coordinate the departmental involvement in the Environmental Assessment and Review Process and develop guidelines and provide advice on environmental impact assessment within DOE and to other departments and agencies.

5. Public Consultation

In addition to on-going public information and consultation efforts, coordinate the semi-annual publication of the Departmental Regulatory Agenda which provides early public notice and tracking of DOE's regulatory activities.

Environmental Conservation

The Environmental Conservation Service (ECS) has lead responsibility for departmental policies and programs related to inland waters, wildlife and lands. Based on the objective to conserve and enhance Canada's water, lands, forests and wildlife and their related ecosystems and to promote their wise use in a sustainable manner, DOE has established a renewable resources conservation policy. In accordance with this policy, ECS is developing strategies for water, lands and wildlife.

ECS is also a major contributor to other DOE programs such as the North, Toxic Chemicals and the Long Range Transport of Atmospheric Pollutants. The contribution of ECS is normally the provision of scientific and technical data and analysis. Particular emphasis is being placed on toxic chemicals and their pathways in the environment.

The ECS priorities are set out below:

Inland Waters

1. Develop a Federal Strategy for Inland Waters.

   Approval will be sought to establish a committee of outside experts to undertake a comprehensive public examination of how best to use and allocate our freshwater resources.

2. Removal of water constraints to economic growth.

   The federal government, with the cooperation of the provinces, will encourage better use of existing water supplies and develop efficient water use technologies.

3. Resolution of Transboundary Water Issues.

   Emphasis will be placed on avoiding pre-emptive use of water in transboundary rivers and lakes and the unilateral contamination of these waters by one party.

4. Contribute to the control of toxic chemicals in the aquatic environment.

   Undertake research and provide baseline information on the fate of mercury and other heavy metals. Work will be focused on the Niagara, Detroit and Ottawa rivers.

5. Undertake measures to facilitate northern development.

   Water quantity and quality sampling networks will be expanded. A communications system, involving data collection platforms in remote areas, will be developed jointly with AES.

6. Improve public information and consultation activities, and review and update legislation and guidelines.

Wildlife

1. Continue management of direct demands on wildlife.

   The Canadian Wildlife Service will prepare annual hunting regulations, and nationally assess sport and subsistance harvests of game birds. Five year crop damage prevention agreements will be negotiated with the Prairie provinces, prevention programs will be adjusted in light of research, and strategies for dealing with nuisance birds will be developed. Amendments to the Migratory Bird Convention regarding native harvest of waterfowl will be proposed. A North American Waterfowl Management Plan is to be negotiated, and management plans developed for each province.

2. Direct the conservation and rehabilitation of certain populations of rare and endangered Canadian species.

   A overall strategy will be developed and recovery programs implemented for Whooping Cranes and Peregrine Falcons. A new Wildlife Export-Import Act will be proposed.

3. Mitigate the increasing losses of important migratory bird habitats across Canada, through an accelerated federal habitat protection program - Habitat, Canada; and the completion of management plans for National Wildlife Areas.

4. Encourage and provide opportunities for Canadians to enjoy their wildlife heritage.

5. Support research and information on humane treatment of wildlife, with particular emphasis on humane trapping.

6. Conclude and implement Federal-Provincial and International Wildlife Research and Management Agreements.

7. Revise the federal policy on wildlife.

Land

1. Support the development and administration of effective policies and strategies designed to promote the wise use of Canada's land resource. Implement the Federal Policy on Land Use, administer the Federal Land Management Policy and develop a land conservation strategy.

2. Contribute to the identification and assessment of resource-based development proposals and to the resolution of land use conflicts affecting Canada's prime land resources.

3. Support northern development and conservation initiatives.

Forestry

The Canadian Forestry Service (CFS) has responsibility for fulfilling the federal government's mandate related to the forest resource. CFS also supports the department's activities in such priority areas as acid rain, toxic chemicals and water management. The federal government has identified forestry as one of five key resource sectors to which priority will be given for new economic development initiatives. The government's objective is to ensure the long-term development and international competitiveness of the forest sector in an environmentally appropriate manner. A stable long term supply of competitively priced wood and industrial productivity are two major components of this issue.

Cabinet has approved A Forest Sector Strategy for Canada (1981); A Forest Renewal Strategy (1982); and strategy papers on Human Resource Development and Research and Development. These policies provide the basic direction for the department over the medium term. They will guide the negotiation and establishment of five year Federal-Provincial Forest Development Agreements with each province. These agreements, coupled with a vigorous and selective research and development program are our principle means for providing leadership and direction to Canada's forest sector. The Canadian Forestry Service will continue to coordinate its efforts with the provinces and industry through the existing consultative and advisory bodies.

The following priorities are being pursued by CFS:

1. Forest renewal strategy

   Environment Canada has been given the responsibility for regional economic development activities in the forest sector. Regional development agreements will be used to encourage better forest management by the provinces and industry. Forest renewal measures and forest protection initiatives will be emphasized. The agreements are designed to use federal resources to increase expenditures on forest management by provinces, industry and private landowners. New agreements were signed with Nova Scotia

in 1982 and Prince Edward Island in 1983. Agreements with the other provinces will be negotiated during 1983-84 for the next five years. As well, there will be a special emphasis on federal land management directed towards Indian and DND lands.

2. Research, development and technology transfer

Research and development responsibilities are an integral part of the Canadian Forestry Service mandate and continue to be a major priority. Research and development activities are critically required to support forest management initiatives. These activities encompass:

- Criteria for cooperative arrangements and the apportionment of R&D responsibilities among the federal/provincial governments, the universities and the private sector. Agreements have already been signed with British Columbia, Alberta, Manitoba, Nova Scotia and Newfoundland and those with Saskatchewan, Ontario and PEI will be finalized in 1983;

- Redefinition of research priorities to be more responsive to changing conditions in the forest sector;

- Greater focus will be placed on mission oriented research with particular emphasis on genetics; biological disease and pest control; soil chemistry; tree physiology and ecosystem functioning; intensive forest management practices; and forest protection; and

- Technology transfer in close cooperation with the industry, the provinces and the universities.

3. Technological Innovation

The application of new processes and the development of new and better products are of prime importance. FORINTEK and FERIC have important roles to play. More work needs to be done on product codes and standards, quality control and equipment development. By the end of 1983 a federal policy for improving and increasing wood product research will be finalized.

4. Human Resources

A continuous supply of adequately trained scientists is essential for the development of the forest sector. Cabinet has recently allocated $15.5 million over the next five years for this purpose. The objective is to assist in the training of forestry and related science graduates and postgraduates. As well, attention will be paid to establishing a centre of economic expertise, encouraging forest economics at Canadian universities and fostering increased analytical capabilities within the private sector.