Environment Canada | Environnement Canada

Departmental Strategic Plan

June 81

Canada

STRATEGIC PLAN

DEPARTMENT OF THE ENVIRONMENT

JUNE 1981

FOREWORD

This Strategic Plan has been approved by the Minister of the Environment as a basis for planning the future of Environment Canada.

The plan indicates the direction in which the department is to move over the next few years. It describes our:

- mandate - the legal framework in which we operate
- objectives - what we must seek to accomplish
- planning assumptions - external trends and events, and internal factors
- priorities - where greater efforts are needed, and some criteria for selection of program reductions.

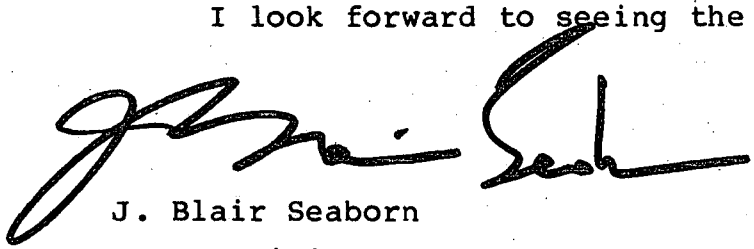
It provides to Assistant Deputy Ministers and to departmental staff my views on aims to be pursued over the near term (two years) and medium term (five years and more), and from these what needs to be achieved beyond that planning horizon. Assistant Deputy Ministers will indicate, through Operational Plans how (what steps), when and at what cost they will achieve these aims.

The plan also provides the basis for the Minister's Strategic Overviews which indicate to his colleagues the direction he intends to take the department over the next few years. Strategic Plans have internal, and Strategic Overviews external audiences. They have different scopes, appear in different formats, but should be consistent with each other.

Much of this first Strategic Plan has been derived from existing materials to provide adequate time to prepare Operational Plans. Every effort was made to involve services and regions in preparation of the plan.

The Strategic Plan can be improved. The experience gained in this year should improve the process and the product next year. In the meantime, this plan allows the challenging and worthwhile process of Operational Planning to continue.

I look forward to seeing the results of that work.



J. Blair Seaborn
Deputy Minister

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I. LEGAL MANDATE

Constitutional

Environment Canada has its constitutional origins in the division of jurisdiction between the federal and provincial governments, as set out in the British North America Act.

The B.N.A. Act provides for federal - or concurrent federal and provincial - jurisdiction over a number of activities with a collective impact on our environment. Included are elements of:

- coastal and inland fisheries
- oceans
- navigation and shipping
- the Territories
- federal and Indian lands
- health protection.

Federal government also has jurisdiction over:

- transboundary matters within Canada
- matters of a national character which, by their nature, can only be addressed at the federal level
- international matters between Canada and other countries, such as trade, taxation, immigration, and migratory birds.

Statutory

Environment Canada's statutory mandate derives largely from the Government Organization Act (1979). It establishes that 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:

- preservation and enhancement of the quality of the natural environment, including water, air and soil quality
- renewable resources, including forest resources of Canada, migratory birds and other non-domestic flora and fauna
- water
- meteorology
- enforcement of rules and regulations arising from 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; provide Canadians with environmental information.

It gives to the Minister 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.

In 1979, powers and duties under the National Parks Act and the Historic Sites and Monuments Act were transferred to the Minister of the Environment. He/she is also responsible for administration of:

- the Canada Water Act
- the Canada Wildlife Act
- the Clean Air Act
- the Environmental Contaminants Act
- the Forestry Development and Research Act
- the Game Export Act
- the International Rivers Improvement Act
- the Migratory Birds Convention Act
- the Ocean Dumping Control Act
- the Weather Modification Information Act.

The department 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 (such as emissions provisions of the Motor Vehicle Safety Act).

These statutes place responsibility on the department to design and implement regulations attached to legislation, and to set standards or limits for emissions or discharges of wastes into air and water systems.

II. OBJECTIVES

Governed by its legal mandate, the purpose of Environment Canada is to:

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

To achieve this, the department pursues four principal objectives:

1. Conserve and enhance Canada's renewable resources for sustained economic and social benefit
2. Protect the environment from the adverse impact of human activities
3. Facilitate the adaptation of human activities to the environment
4. Safeguard, and foster public understanding and enjoyment of, Canada's natural and historic heritage.

1. Conserve and enhance Canada's renewable resources for sustained economic and social benefit

1.1 Foster sound forest management for social, economic and environmental benefit to Canada.

1.2 Ensure conservation and wise allocation of international and inter-provincial waters and wildlife.

1.3 Support resolution of resource use conflicts and increased sustainable yields from the natural environment for food, fibre, recreation, energy and other economic and social purposes in environmentally sound ways.

1.4 Support and facilitate the best use of land and of water resources for sustained productivity and net social benefit.

1.5 Encourage application of environmental conservation principles in social and economic development.

2. Protect the environment from the adverse impact of human activities

2.1 Protect the environment and humans from damaging pollutants which cross international or inter-provincial boundaries, or which affect federally managed resources.

2.2 Protect the environment and humans from toxic substances.

2.3 Ensure that federal policies, programs and activities are environmentally sound and that federal monies, lands and facilities are managed in an environmentally responsible manner.

2.4 Support provinces and territories in development of sound environmental policies.

2.5 Encourage industry to harmonize its activities with the maintenance of environmental quality.

2.6 Contribute to world-wide understanding of the relationship between environmental quality, renewable resources and human activities, and foster development of practices to facilitate sustained use of renewable resources.

3. Facilitate the adaptation of human activities to the environment

3.1 Provide timely information on present and predicted weather and climate, and on sea-ice, inland waters and atmosphere; and advice in support of Canadian social, economic and environmental objectives.

3.2 Reduce adverse impacts on human activities and property of environmental phenomena such as droughts, floods, severe storms, climatic variability, climatic change, forest fire, and damage from fauna.

4. Safeguard, and foster public understanding and enjoyment of Canada's natural and historic heritage

4.1 Safeguard for all time those places, fauna and flora which are significant examples of Canada's natural and historic heritage, and those species in danger of extinction.

4.2 Provide opportunity for the use and appreciation of Canada's natural and historic heritage.

4.3 Contribute to public awareness and appreciation of environmental values.

5. Management Principles and Practices

To achieve these objectives, appropriate management principles and practices in the department must be established, maintained, or improved. Specifically, we must:

5.1 Develop strategic and long-range operational plans and explain to all managers DOE's objectives, priorities and strategies related to their work.

5.2 Within the planning system, develop a system for internal reallocation of resources to facilitate the management of change.

5.3 Develop a more effective basis for management accountability and control, through a work planning and control system.

5.4 Establish effective human resource planning by:

(a) making it an integral part of strategic and long-range operational planning;

(b) ensuring it is carried out under leadership of the accountable manager;

(c) ensuring proportional representation, recruitment and effective development of under-represented groups.

5.5 Develop practices for program management that extend beyond the responsibility of an individual service, and that involve other departments.

5.6 Foster public involvement in the planning and implementation of Environment Canada programs.

III. PLANNING ASSUMPTIONS

Strategic priorities of the department have been set within the framework of certain assumptions. These seek to identify external trends and future events, together with some internal strengths and concerns with implications for Environment Canada in the future.

Cabinet priorities

The government has established three overall priorities for the duration of its present mandate: the constitution, energy, and economic development. It also has broad social policy goals which focus on:

- improvement of the quality of life and the expansion of opportunities for all Canadians
- reduction of poverty and its effects
- assurance of social justice - i.e. "the just and humane treatment of all Canadians by their governments, other institutions and other individuals"
- enhancement of the sense of national identity and of a willingness by Canadians to share the benefits and bear the risks and obligations of common nationhood.

Policies towards economic development will be aimed at maximizing national and regional economic growth, consistent with Canadian social and political values. Measures will be directed to upgrading human resource skills and increase mobility, creating a favorable investment climate, and improving management of Canada's resource base.

These goals are to be accomplished in ways oriented to responsibilities that are clearly federal and which give public visibility to the federal effort.

Over the next three years and for the bulk of DOE's operations, dollar and person-year resources are expected to remain at about their current level in real dollar terms. Additional resources will be available for only a limited number of high priority items, requiring the department to make internal reallocations to support its new or expanded program initiatives. Resource projections beyond three years are more difficult to make and planning should be based on only modest resource increases.

International

Growing industrialization and continuing needs for basic survival in third world countries, combined with a continuing requirement of industrially advanced countries to import resources, will lead to a rising world demand for non-renewable and renewable resources. Meanwhile the world population will continue to rise with a corresponding need for more food.

There are growing shortages of world resources, intensifying energy problems for most nations, combined with pressures from rising populations, particularly in the less developed countries. These will create stresses leading to major economic, political and social disruptions and instability in some parts of the world (as in the middle east recently). Canada, as a politically stable, resource-rich country will be sought after as a source to meet rising demands for forestry, agricultural, energy and mining resource demands.

Canada has a modest population, a variety of resources, experience in living in a relatively harsh environment and is respected and trusted internationally. It will be in a position to provide world leadership in the management of resources (e.g. food, energy, water) in ways that relate demand and social benefit to natural endowment and environmental characteristics. The North-South issues will increase the importance of Canada in exercising leadership.

Polluting substances will continue to move by air, water and land between Canada, the United States and other countries. DOE will be concerned with renewable resources shared between Canada and the United States, particularly water, air, migratory birds and caribou. These matters will probably grow in importance to Canada in view of recent indications that the United States will reduce its environmental protection efforts over the next few years.

The economy

Medium term prospects for the Canadian economy are for a modest recovery, led by a growth in exports as the economies of our trading partners (particularly the U.S. and Japan) begin to strengthen. Canada, with its substantial resource base, is expected to experience a moderate investment surge in resource-related industries, led by but not confined to energy-related investment projects.

High unemployment and inflation rates are expected to continue. The result for government will be continuing spending restraint, measures to redress regional

economic disparities in central and eastern regions of Canada, and special programs to employ members of groups currently not fairly represented in the work force.

One characteristic of the medium term economic prospects will be a geographic redistribution of wealth and activity, with western Canada gaining through spending on huge energy projects (e.g. tar sands) and movement of industry from central Canada. The north and Atlantic regions are expected to be a focus of major capital projects associated with energy developments.

Natural resources that have had little value added to them through processing constitute a large proportion of Canada's exports. But Canada's imports are often finished products derived from processed natural resources. Canada has an opportunity to redress this imbalance through development of secondary and tertiary resource-based industry close to where resources are located. The Canadian forestry and newsprint industry already sets an example of what can be done.

Nature itself will present forces difficult to predict and to mitigate. Increasingly variable weather, leading to severe storms, floods, and droughts, and possible changes in climate will affect the public directly. It will alter their demand for resources and energy, and have important effects on environmentally sensitive industries - transportation, fishing, offshore energy developments, agriculture.

There will continue to be a perception that measures for the assessment, prevention and abatement of pollution are costly and materially affect some economic development decisions. However opportunities will arise to demonstrate the economic advantage of these environmental measures:

- pollution abatement industry
- maintenance of land values in highly developed regions
- protection of the land and water resource base for the tourist industry
- economic value of using wastes and the long-term sustained use of natural resources.

Energy

Exploitation of conventional energy resources will grow with hydro-carbon exploration, production and transportation in the arctic, Atlantic, and possibly Pacific areas. Unconventional hydrocarbon projects (e.g. tar sands) will come into production. Some provinces will move to a greater reliance on nuclear power and coal generation as sources of energy. A higher premium will be put on energy used for transportation and agriculture.

Rising energy prices, chiefly for oil and gas, together with the possible energy supply shortages, will add pressures for energy self-sufficiency. The movement toward energy self-sufficiency for Canada will offer opportunities for energy conservation measures and for research and development in alternative renewable energy sources from biomass, low-head hydro, solar, wind and tidal options.

Resources

World and Canadian demands will place increasing demands on Canada's food and forest production capacity,

and on its energy and other natural resources. Canada's ability to respond to these pressures will be affected by shortages of capital to invest in these developments, by our tax structure, freight rates, and shortage of infrastructure and skilled labor, resulting in serious dislocations. Meanwhile, other environmental and resource use conflicts will remain and, in most cases, grow in intensity. All have implications for DOE's role in promoting environmentally sound resource-based economic strategies for Canada.

Conflicts needing resolution include:

- degradation and loss of prime wildlife habitat and prime lands for agriculture, forestry and recreation through urban and industrial growth, agricultural intensification and other developments, and a failure to rationalize competing land uses
- water supply-and-demand imbalances, particularly in western Canada
- water quality in relation to industrial and municipal uses in the Great Lakes basin and elsewhere
- flood damage reduction in relation to urban and other developments in flood plains
- protection, recovery and upgrading of estuaries and deltas particularly vulnerable to industrial and resource-use conflicts
- sport hunting versus subsistence hunting.

Better forest management by provinces and industry will continue to be crucial if forestry yield is to be sustained and is to grow to fulfill anticipated domestic and world demands for forest products.

Improved land use, to obtain full benefits from multiple or sequential use of land and other natural resources, and better hydrological management to prevent erosion, maintain shoreline values and control water qualities, must be achieved if our natural resource wealth is to be maintained.

The natural environment, well-being of humans and wildlife

Scientific knowledge and public concern will focus more sharply on threats to humans and the environment from harmful substances in the air, water and land and on disposal of hazardous wastes, ocean dumping and disposal of nuclear wastes. There will be growing world concern over rising levels of carbon dioxide and ozone-depleting chemicals in the atmosphere with their respective impacts on global climate and health. Evidence being gathered will indicate the need for better weather information in support of aviation safety.

Human health will be held as non-negotiable in a policy sense, despite considerable tolerance of "acceptable risk" by individual members of the public.

The extensive, high quality natural environment found in Canada is a national asset of increasing value. The value is tangible and economic, as shown by tourism, recreation, property values; it is even greater in terms of national identity and confidence for the future. Yet heritage resources are in danger of being lost. They face threats from developments in the resource sector and continued urbanization and population growth.

Quality of life

Economic pressures are an incentive and a constraint in the quest for quality of life. While the drive for economic growth creates pressures to sacrifice long-term environmental quality for short-term economic gains, many Canadians are taking advantage of changing economic circumstances to improve their personal and collective quality of life.

This quest for a better and more balanced view of quality of life will put a growing obligation on this department to view its work not only in relation to the physical environment, but also to the well-being of man himself.

Distribution of powers

Constitutional changes may affect the division of federal and provincial powers. Meantime, there could be stiffening resistance to federal authority yet a growing demand for federal services and action.

The Yukon and Northwest Territories are expected to acquire increasing powers from the federal government and bring their environment-related responsibilities more in tune with those of the provinces. Experience in creating parks in southern Canada indicates the critical importance of placing reserves on lands required for conservation purposes prior to transfer of further resource responsibilities to territorial governments.

Negotiation and settlement of Indian and Inuit land claims may confer some environmental powers on them and affect related responsibilities of territorial,

provincial (mainly British Columbia and Quebec) and federal governments. There will probably continue to be a variation among provincial governments in the priority placed on environmental matters, and the capability for dealing with environmental problems. This will have implications for the division of operational responsibility, quite apart from the distribution of powers.

Government and the public

The federal government will continue to support and facilitate public access to government information and participation in government decision-making. The department has already anticipated this in its new policy on public consultation and information which supports and depends upon the already large and potentially growing public interest in being informed and involved in environmental issues.

Internal factors

The following internal DOE factors describe current rather than projected situations. However, they have important implications for future department actions.

1. Positive factors

A major strength of DOE lies in its strong information base and scientific and technical capabilities. It also has broad public visibility and acceptability in its parks, weather and wildlife services.

Another strength arises from the geographic dispersion of its human resources, information and facilities. The department can provide services to the public, industry and governments where required, close to where problems are encountered.

2. Negative factors

Although its scientific and technical capabilities are a strength for DOE, the potential is not fully realized as a consequence of budget restraint and the difficulties in adjusting to changing circumstances. This is partly a reflection of the evolving nature of Canada's major environmental issues; partly the difficulty experienced by the department in formulating its responsibilities in terms of achievements (objectives, goals, priorities) which will attract the necessary resources. The department's systems for planning and management accountability are of uneven quality and help account for other internal management concerns, including:

- management of programs that cut across service boundaries
- human resources management, including the need for an identified management and human resources strategy to cope with foreseeable change.

It is government policy that Ministers are responsible for the environmental consequences of their actions. DOE is charged with the responsibility of advising and encouraging other departments to achieve their objectives in environmentally responsible ways. This places a premium on the department's ability to influence actions of other departments - and on maintaining its position as an effective government focus for environmental matters.

Budget limitations will continue as another restraining force for DOE. This will call for increasing recovery of costs for services provided to other governments, departments and the private sector and place special demands on the Department's ability to meet new requirements by adjusting its internal resource allocations. Science and technology advances in automation and communications systems will provide opportunities to gather, organize and use information more efficiently. This will have implications for costly labor intensive activities such as water surveys, weather and ice observing, air and water quality monitoring and, again, for human resources planning.

IV. PRIORITIES

It is important to understand that the priorities that follow are restricted to only those areas where greater or lesser effort is required in the years ahead. These changes are additional to continuing high priority programs such as core weather forecasting, migratory birds, national and historic parks and canals programs which are to be maintained at least at present levels, with adjustments to meet new requirements.

This focus on priorities reflects the fact that the department exists in a constantly changing environment. This makes it important for DOE to assess periodically its future orientations. Where necessary, that orientation must be altered.

Recognition of high priority issues and programs does not diminish the importance of maintaining, at an effective level, services that are to be kept at their current level. I am also concerned that those who find their work reflected in an area of diminishing priority will be alarmed. They need not be, if we do our job well. This point is further addressed under the Management of Change heading.

Program priorities - National

1. Toxic substances, acid precipitation

Persistent toxic substances released into the environment, even in very small amounts, can have a

cumulative and serious effect on all living things and on human health. Acid precipitation causes irreversible changes in aquatic ecosystems, soil structure and chemistry, and accelerates corrosion of man-made materials and structures. Taken together, these two issues constitute a major threat to the Canadian environment, with international implications. Measures to identify the varied aspects of these issues and, within federal jurisdiction, to cope with them, including new environmental protection legislation, an agreement on acid rain with the United States and a program to prevent or mitigate the damaging effects of toxic substances, are the top priority of the department.

2. Forests

Renewal and improvement of commercial forests through better and more intensive management, and protection of all forests through measures to reduce losses from fire and epidemics, are necessary to the continuation of a strong and sustainable forest industry, and to maintenance of the essential environmental role that forests play in Canada. High priority is accordingly to be given to ensuring that the Canadian Forestry Service provides effective support and leadership in these areas.

3. Energy

Questions of the cost, availability, and use of energy will pervade and often dominate Canadian and international economics, and internal and external policies and relations, for the foreseeable future. Almost all aspects of energy questions have important environmental ramifications. Because of the diversity of Canadian energy resources, their wide geographic distribution, and the variety of technologies necessary to discover, exploit, and use energy resources, energy-related questions directly affect areas of expertise and responsibility throughout the department.

High priority must be given to a coordinated contribution from the department to achieve national energy goals and policies and to ensure that energy developments and uses are undertaken in environmentally responsible ways. Environmental considerations must be taken into account early in the planning and implementation of major energy developments in order to contribute to sound energy investment decisions.

Principal areas for increased attention are:

(a) <u>environmental impact assessment and protection for frontier energy developments</u>: oil and gas in offshore areas, in areas underlain by permafrost, uranium development in remote regions, pose special problems in assessment of environmental disturbance and control of environmental effects.

(b) provision of environmental information and forecasting services: planned and potential development of energy resources in northern and offshore regions, major coal developments in western areas, and new transportation and transmission technologies place inescapable demands on the department for environmental information and services, from iceberg surveillance to hydrological forecasting.

(c) renewable energy: DOE has a significant role in identification of renewable resource potential and in developing with EMR and provincial agencies, a regionally based strategy for environmentally responsible development of solar, wind, hydroelectric, tidal and biomass energy sources.

(d) energy conservation: a large number of the measures to reduce or avoid inefficient or unnecessary use of energy have important environmental implications. Appropriate DOE contributions to energy conservation goals will include:

- identification of opportunities in the forestry industry
- research on energy-efficient land use planning
- provision of climatic and hydrological information to aid more energy-efficient planning, siting of projects and selection of technologies
- promoting the development of energy-efficient and environmentally appropriate technologies

- identification of opportunities for materials re-use
- promoting public awareness of positive impact of energy conservation on environment and resources.

4. Water supply

Proposed resource developments (e.g. oil sands), planned changes in agriculture, growth of new industrial centres, demographic shifts, and possibly the effects of climate change will place new and increased demands on Canada's water supplies. Demands will be heaviest in areas where water supply is already limited; and measures to increase the availability through river diversion or otherwise must be managed carefully to safeguard options for future use. Some developments place strict demands on water quality, or seriously threaten the quality of water for other users.

At the same time, serious water problems in the United States will increase pressure on Canada to export water, but all feasible water export schemes appear to have significant long-term environmental ramifications. Because two-thirds of Canada's population and three-quarters of its industry is located in watersheds crossing interprovincial or international boundaries, the federal government and DOE have a heavy and direct responsibility in Canada's water policies and management. In addition to the on-going priority for hydrological surveys

and forecasts, increased emphasis must be given to obtaining adequate information on water quality and hydrogeology, and to improve understanding of the linkage between climate, land use, and hydrological or hydrogeochemical regimes.

5. Maintenance of the land resource base

Increases in the demand for Canadian renewable resources, including forestry and agricultural products, will have to be managed with due regard for the maintenance of the productivity of the land and related resource base, and the continued multiple use of these resources. Particular attention is to be given to possible degradation of soil quality and loss of wildlife habitat through higher production, increasing soil erosion and water supply considerations. DOE influence is needed to ensure that Canada's resource base, which provides our basic life support, can be sustained over the long term.

6. Climatic change

Rising costs of energy, increased use of more expensive and distant resources, a growing demand on transport and services, intensive management of forests and cultivation of farmlands and increasing pressure on marginal land all contribute to the sensitivity of the Canadian economy and social

behavior to climatic changes and extreme weather events. Many emerging priorities of the department, and many economic and social policies of Canada, increase the need for information about the variability of the Canadian and world climate, and the environmental implications of possible changes. Priority must be given to achieving improved understanding of the processes and effects of climate change, and what can be done to affect them or adjust to them. This work must be part of worldwide studies of this subject, and include investigation and assessment of natural changes and the climatic influence of human activities.

Where possible, these priority activities will be financed from additional resources provided to the department. The remainder will have to be carried out by redirecting resources from within.

Program reductions

It follows that the department must regularly and systematically determine not only those things it should be moving into but also what it should cut back or get out of altogether. It is a task of the planning system to help achieve these purposes through program evaluations, priority setting exercises and other means. The system for identification of program change and priority establishment is still under development and implementation, so it is not yet possible to identify precisely areas of program reduction in the department.

The following criteria are designed to identify, with the help of the planning system, some areas in which reductions might be made, bearing in mind the opportunity provided by the longer planning horizon to carefully prepare for and phase reductions over time:

- activities that could more appropriately be performed by provincial governments
- activities that can be performed effectively by the private sector
- activities now duplicated within DOE that could appropriately be left to other departments to perform
- activities for which DOE does not have a clear legal mandate
- activities that have achieved their purpose, or for which the need or demand has been reduced or radically changed.

Program priorities - Regional

In addition to national priorities, there are areas of environmental concern which are specific to different regions of the country, namely:

(a) Pacific region

(i) Offshore drilling and tanker routes

Marine weather forecasting and environmental protection issues are emerging as a priority concern with the lifting of the

moratorium on Pacific offshore drilling and the prospect of major offshore oil and gas reserves. A different but important set of environmental responsibilities and concerns, with international implications, relate to development of an oil tanker route from Alaska.

(ii) Coastal zone management

Threats posed by offshore developments and projected growth of inland mining activities, including coal with attendant port developments, indicate the need for greater attention to coastal zone management. Baseline information will be required to support this activity.

(iii) Forests

Appropriate forest management techniques will need encouragement and support to minimize conflicts between fishing and forestry industries.

(iv) Hydrocarbon and hydroelectric developments in the north

DOE has responsibility to provide overall environmental assessments including information and interpretation relating to weather, wildlife, hydrology, and pollution. They contribute to the policy, assessment, routing, siting and technical design implications of the Beaufort Sea and Alaska Highway pipeline developments, and the Yukon and Liard River power proposals.

(b) Western and Northern region

(i) Toxic substances and acid rain:

- Toxic substances - the major sources of concern are the petro- chemical industry, mining (including uranium) and toxic wastes disposals
- Acid rain
  - the need for monitoring, and a coordinated strategy to deal with the threat of acid rain to plants, trees and the Canadian Shield
  - the need for expertise in emission control technology for use in hearings on industrial proposals and in consultations with provinces.

(ii) Forestry:

Special issues include protection problems, renewal, and use of unconventional resources (e.g. poplar and undersized northern trees).

(iii) Energy and the environment:

- The N.W.T. and offshore - these areas are increasingly bearing the brunt of Canada's exploration efforts and, imminently, production (the most active field for panel reviews in the country)
- Unconventional resources (oil sands, etc.) in Alberta are coming close to production, giving rise to pollution, particularly transboundary, of air and water

. Hydropower reservoirs are being built and more are proposed on northward flowing rivers, with serious upstream and downstream effects.

(iv) Water supply:

The meagre water resources of this driest region of Canada are experiencing a growing demand, and pressure is mounting to bring new supplies from the north by diversion.

(v) Soils and land use:

Better information is needed on distribution, quantities and impacts of agricultural chemicals in the prairie (and northern aquatic) ecosystems, together with measures to anticipate and respond to effects of major climatic fluctuations.

(vi) Climate change:

In addition to the relationship between climatic and agriculture, regional concerns center on the potential in climate variations for shifting the biotic zones of the west, the prevalence of sea ice in the north, etc.

(vii) Heritage conservation

There is urgency to set aside nature reserves, particularly in the N.W.T., before development pressures make it impossible. The grasslands park and the rehabilitation of facilities in the oldest and most heavily used national parks in the mountains, are important regional priorities.

(c) Ontario region

Ecosystem management encompasses the four principal objectives of DOE. Its operational manifestation is found in the following priority activities and issues:

(1) Great Lakes basin ecosystem
  (a) management of toxic substances
    (i) disposal of hazardous wastes
    (ii) control of toxic discharges
    (iii) development of alternatives including resource recovery and recycling
    (iv) nuclear power generation.
  (b) eutrophication control
    (i) establish new phosphorous target loads
    (ii) develop and implement management plan for non-point sources.
(2) Long range transport of airborne pollutants
  (a) acidic precipitation
  (b) toxic chemical contamination
  (c) phosphorus and other nutrients.
(3) Renewable resource developments and impacts
  (a) management and protection of forested lands, including:
    (i) boreal mixed wood silviculture
    (ii) ENFOR - biomass harvesting
    (iii) wildlife management impacts of forest harvesting.
  (b) low-head hydro generation.

(d) Quebec region

(i) Water quality

The Province of Quebec is implementing a new and major water sanitation plan. There is a need for DOE to clarify its role in relation to that plan. The department is negotiating an agreement on water quality in Quebec.

(ii) Acid rain

The impacts of acid rain in Quebec are not well recognized by the public. Awareness of this problem needs to be raised, and a coordinated departmental strategy developed to address the issue.

(iii) Organic wastes

Within its mandate, DOE must assist or encourage the province to address the problem of adequate disposal of organic wastes.

(iv) Forests

As a consequence of the magnitude and importance of the forest industry in Quebec, forest management and protection are major concerns.

(v) Natural heritage

Consultations and negotiations with the Province of Quebec are required for protection of certain identified areas.

(e) Atlantic region

(i) Offshore and coastal zone management

Threats to the fishing industry, sea birds, marine environment and coastal zone - from the offshore energy developments, and oil and other transportation routes coming into or through the region - require establishment of baseline information and readiness to use environmental protection measures.

(ii) Iceberg, sea ice and marine weather forecasting

These forecasting services will need to be developed to support offshore oil developments.

(iii) Forests

Research on the management of forested lands and on insect and disease control will continue to be priorities.

(iv) The marine environment

The fishing industry, hydrocarbon developments, transportation, and other economic activities have implications, along with toxic substances and ocean dumping, that must be taken into account in defining our role and strategies relating to marine environmental quality.

External relationship priorities

Beyond national and historic parks and provision of environmental information on weather, water systems,

wildlife and land inventory, the job of this department is largely to influence the actions of others, both inside and outside government. Choices are available to us in how this influence is exerted. While there are no simple or absolute answers, priority in the years ahead should be given to an emphasis on:

1. Public support for environmental conservation

There already exists a base of public understanding and support for the environmental objectives of this department. This support brings pressure to bear on all agents, private and governmental, to perform in environmentally responsible ways. Much can be done to strengthen, consolidate and broaden the base of public support through systematic programs of public consultation and information, through the wide range of environmental information and interpretation programs, support to NGOs and the many contacts between DOE staff and the public. DOE's decentralized regional structure is a great asset, and should be fully used. DOE has much to learn from those same public sources, and must cultivate the ability to listen and to benefit from public opinion and participation.

2. Provincial responsibilities

Provincial governments should be encouraged and supported in developing the capability to administer a greater share of environmental responsibilities.

3. Other federal departments

Means need to be developed and acted upon to exert a stronger influence over activities of other departments that have environmental consequences.

4. Attitude toward development

DOE must earn and project an image of support for resource and other development in harmony with the environment. While it is inevitable and necessary that we act as environmental policemen where necessary, in balance greater gains will come from measures that seek to harmonize competing aims rather than those aimed at stopping developments.

Management priorities

1. Management practices and controls

The IMPAC action plan of Environment Canada stresses improvements in planning and control systems to ensure the precision and accountability expected of all departments of government. These elements must remain the top priority over the next eighteen months.

2. Human resources management

If DOE is to be an effective department, it must rely to a large degree on the quality, motivation and work of its employees. Accordingly, a

high priority is to be given to improvements in human resources management.

Some key aspects of improved human resources management are:

- Relating human resource planning closely with Strategic Planning
- Leadership of managers in human resource planning for their organizations
- Sensitivity to the importance of making best use of all opportunities to develop the capacity of potential managers
- Ensuring departmental services are available in the official language of the client
- Promoting special programs to recruit and manage effectively under-represented groups.

3. Knowledge base and scientific and technical capabilities

To achieve its objectives, the department must rely heavily on the quality of environmental information it provides to other departments, provincial governments, international agencies, and the public. To maintain and improve the extent and quality of this information, it is necessary to further develop the knowledge base, increase the calibre of the scientific and technical staff through more effective management, and provide the required research facilities and laboratory equipment. As a part of this effort, continued attention will be given to the implementation of decisions arising from the science program review (1980) and to new requirements that will arise. There is also a need to increase the

productive transfer of information between industries, universities, provincial governments and the department.

4. Financial management

Considerable effort is under way as part of the IMPAC action plan to upgrade the financial management capability. A substantial portion of that work qualifies as a top priority under the heading of planning and control systems.

5. Management of change

The department's strategic and operational planning activities should produce results that enable us to anticipate, prepare for, and respond effectively to changing external circumstances. Of equal importance are the steps we will take to manage the staff adjustments that will occur as a consequence of the program changes. In other words, importance must be attached to the effects of program changes upon staff as an essential part of the consideration of the program changes themselves.

6. Management under restraint

Projections of continuing government restraint in the years ahead require that measures be taken to:

(a) identify activities that can be scaled down or phased out over time
(b) increase the recovery of the department's costs
(c) foster shared responsibility
(d) make better use of the potential for automation
(e) support public groups and provinces to take over or augment activities now performed by DOE.