



The ROLE of the  
*Federal Government* in the

**OCEANS  
SECTOR**



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Canada

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*Federal Government* in the

**OCEANS  
SECTOR**

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# FOREWORD

As the lead federal Minister responsible for the management of our oceans, I am pleased to release this catalogue of federal activities in the oceans.

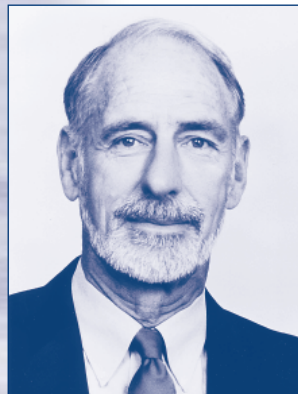
The purpose of the document is to provide Canadians with easy access, under one cover, to the various roles played by the federal government within Canada's oceans sector. Even though the individual details of each federal activity are beyond the scope of this work, the paper is intended to provide the reader with a broad understanding of the total federal oceans program. The information was collected in 1996 and reviewed and approved in the Spring of 1997 by all concerned federal departments and agencies.

This document represents one of a long list of initiatives that the Department of Fisheries and Oceans will be co-ordinating with its oceans partners, and that will contribute toward the eventual development of Canada's Oceans Strategy.

I hope that this paper will help to build on the enthusiasm that exists in the oceans community. I would appreciate your comments on its usefulness.



David Anderson



DEPARTMENTS AND AGENCIES WITH OCEANS-RELATED ACTIVITIES

Atlantic Canada Opportunities Agency  
Canadian Environmental Assessment Agency  
Canadian Heritage  
Canadian International Development Agency  
Canadian Transportation Agency  
Environment Canada  
Fisheries and Oceans Canada  
Foreign Affairs and International Trade  
Health Canada  
Indian and Northern Affairs  
Industry Canada  
International Development Research Centre  
Justice Canada  
National Defence  
National Energy Board  
National Research Council of Canada  
Natural Resources Canada  
Natural Sciences and Engineering Research Council  
Public Works and Government Services  
Royal Canadian Mounted Police  
Transport Canada  
Transportation Safety Board  
Western Economic Diversification Canada

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# OUR OCEANS SPACE AT A GLANCE

Canada is a coastal state, with vital sovereign interests in three bordering oceans: the Atlantic, Arctic and Pacific. Canada has the world's longest coastline and one of the largest continental shelves. Its sea-surface area, out to the limits of the Exclusive Economic Zone, is equivalent to about 34 percent of Canada's land-mass. Many cities and coastal ports are located along the Pacific, Arctic and Atlantic coasts, as well as the St. Lawrence River. About 23 percent of Canadians live in coastal communities that border ocean waters, where approximately \$135 billion of economic activity occurs.

The oceans sector of the Canadian economy, whether it be for purposes of pleasure, commerce, trade or economic development, is broadly defined as including fishing, shipping, boating, tourism, oil and gas, marine defence industries, and oceans-related manufacturing and services, and is currently estimated to account for between 3 to 6 percent of Canada's gross domestic product.

Jurisdictionally, eight of ten provinces and both territories are bordered by our oceans. Federally, 23 departments and agencies have oceans-related programs and 62 of 295 federal ridings are bordered by marine waters.

# INTRODUCTION

CANADA IS A COASTAL STATE, WITH VITAL SOVEREIGN INTERESTS IN THREE BORDERING OCEANS — THE ATLANTIC, ARCTIC AND PACIFIC. CANADA HAS THE WORLD'S LONGEST COASTLINE AND ONE OF THE WORLD'S LARGEST CONTINENTAL SHELVES. ITS SEA-SURFACE AREA, OUT TO THE LIMITS OF THE EXCLUSIVE ECONOMIC ZONE, IS EQUIVALENT TO ABOUT 34 PERCENT OF CANADA'S LAND-MASS. MANY CITIES AND MAJOR PORTS ARE LOCATED ALONG THE PACIFIC, ARCTIC AND ATLANTIC COASTS, AS WELL AS THE ST. LAWRENCE RIVER. WEATHER AND CLIMATE, WHICH ARE STRONGLY INFLUENCED BY OCEANS PROCESSES, ARE KEY DETERMINANTS OF THE LOCATION AND SUCCESS OF OUR IMPORTANT AGRICULTURE AND FORESTRY INDUSTRIES.

The oceans sector supports a number of industries, such as:

- a marine commercial fishery, which in 1994 had approximately \$3.2 billion in production and ranked fifth in the world in terms of fish exports. In 1994, the Atlantic fishery had a total production of more than \$2.1 billion and provided employment to more than 45,000 active fishers and another 61,500 workers in processing plants. The Pacific fishery accounted for production of \$900 million and employment of 13,500 active fishers and 6,500 plant workers.
- a marine aquaculture industry, which in 1994 had an output of about \$270 million. Approximately 58 percent of that production was on the west coast and the remaining 42 percent on the east coast.
- a tidal water sport fishery, which generates \$600 million in value-added economic activity and 15,000 person-years of employment, resulting from anglers' expenditures on goods and services. On average, 500,000 anglers (Canadians and visitors) sportfish in tidal waters each year.
- an offshore oil and gas industry, which is becoming increasingly important as a generator of economic activity, particularly on the Atlantic coast. The offshore regions are believed to contain 70 percent of Canada's unexploited oil reserves and much of its gas potential. The Hibernia oil project on the Grand Banks will soon be into production and the Sable Island gas project is also anticipated to be into production in the future.
- an offshore mining industry, which is still in its early years of development, as the private sector has not yet shown great interest in exploring and developing offshore mineral interests. Some forecasters believe that by the year 2000, projected revenues from offshore mining could be anywhere from \$25 million to \$400 million.
- an extensive marine shipping industry, which comprises international and Canadian vessels relying heavily on Canadian ports, container services, stevedores, etc. About one half of Canada's exports are reliant on the shipping sector.
- a shipbuilding and repair industry, which is spread across the country, with major coastal yards located in Halifax, Saint John, Lauzon, Quebec and Vancouver, and smaller yards in a number of other coastal ports.
- an **oceans manufacturing and services** industry, which is made up of hundreds of firms across the country, whose products range from oceano-



## Introduction

graphic and hydrographic instruments to marine-related remote sensing devices, submersibles and seabed systems.

Given the above factors in combination with the constitutional authorities vested in the federal government, it is not surprising that the federal government has a very substantial and diversified presence in the oceans sector.

The Department of Fisheries and Oceans (DFO) has the lead role in oceans activities co-ordination. The 1979 *Government Organization Act*, which created DFO, provided that the duties of the Minister would include:

- all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, board or agency of the Government of Canada, relating to the co-ordination of the policies and programs of the Government of Canada respecting **oceans**, and
- such other matters over which the Parliament of Canada has jurisdiction relating to **oceans** as they are assigned by law to the Minister.

Canada has already made significant progress in adopting a new approach to oceans management with the proclamation of the new *Oceans Act* on January 31, 1997. The objective of the *Oceans Act* is to establish a framework for oceans resource management and marine environmental protection in Canada by: defining the oceans area that Canada proposes to manage and protect; establishing guiding principles and assigning the authority to negotiate partnerships for the development of an oceans management strategy; and consolidating and defining some oceans programs to improve the effectiveness of Canada's conservation and protection initiatives.

*NOTE: This report summarizes the roles and activities of 23 federal departments and agencies in the oceans sector. The report is primarily based on information published in the government's 1995 Main Estimates, Part III Expenditure Plans, as well as more recent programming information provided by individual government departments. The departmental expenditure data in this report are also estimated from the 1995 Main Estimates, Part III Expenditure Plans. Since that time, the Program Review exercise of the government has brought about reductions in expenditures and public service employment across the federal system; this report, however, has not attempted to capture the effect of those reductions on the oceans sector. Some numbers are rounded. Not all departments and agencies reflect expenditures.*

# OVERVIEW

**T**HIS REPORT DESCRIBES THE ROLE OF 23 FEDERAL DEPARTMENTS AND AGENCIES THAT ARE INVOLVED IN THE OCEANS SECTOR THROUGH POLICIES, PROGRAMS, SERVICES, REGULATION AND/OR PROCUREMENTS.

IT IS ESTIMATED THAT, IN 1995-96, THESE DEPARTMENTS AND AGENCIES SPENT ABOUT \$4 BILLION IN THE OCEANS SECTOR, THE TWO KEY DEPARTMENTS BEING:

- 1) THE DEPARTMENT OF FISHERIES AND OCEANS, WHICH, FOLLOWING ITS MERGER WITH THE CANADIAN COAST GUARD IN 1995, HAD TOTAL MAIN ESTIMATES EXPENDITURES OF \$1.4 BILLION FORECAST FOR 1995-96; APPROXIMATELY \$1.2 BILLION OF THESE EXPENDITURES ARE TIED TO THE OCEANS SECTOR; AND
- 2) THE DEPARTMENT OF NATIONAL DEFENCE, WHICH, THROUGH ITS MARITIME FORCES ACTIVITY, HAD \$2.3 BILLION IN ANTICIPATED OCEANS-RELATED EXPENDITURES IN 1995-96.

The Department of Fisheries and Oceans has, under statute, the **lead oceans role** and is responsible for co-ordinating federal policies and programs related to the oceans. DFO is also the lead federal department for fisheries, fish habitat conservation and protection, maritime safety (excluding safety of ships, which rests with Transport Canada), aquaculture and hydrographic services. Through the Canadian Coast Guard, the Department is heavily involved in the provision of marine navigation services (e.g., buoys, communications), icebreaking services, and related marine regulation. The Department operates an extensive fleet in coastal waters. The Department works closely with universities and industry counterparts in oceans science and technology, research and development. It also maintains over 2,100 fishing and recreational harbours across the country. The Department operates nine major science institutes from Newfoundland to British Columbia, dealing with all phases of fisheries and oceans science and technology.

The Department of Foreign Affairs and International Trade is a major player in oceans issues, having the lead policy role for **sovereignty and trade** issues (e.g., boundary disputes, Law of the Sea) and for international trade matters. The Canadian International Development Agency also provides a number of benefits to Canada's oceans sector

through its measures to help developing countries. The International Development Research Centre draws on Canadian expertise, such as that in the oceans sector, to help foster scientific research and development in many parts of the world. The Department of National Defence (DND) has a major presence in the oceans sector and contributes to the maritime sovereignty objective of the government through its operation of maritime forces and many maritime institutions across the country. DND has a lead role with respect to national security issues in Canada's ocean areas (e.g., surveillance). DND also has the lead role for co-ordinating the government's search and rescue program, which is of critical importance to vessels and people involved in maritime shipping, fishing, offshore oil and gas exploration, etc. Through its procurements, DND is a major purchaser of products from the firms engaged in the oceans manufacturing and services sector. The Department of Justice also contributes to the maritime sovereignty objective of the government by its administration of the laws provisions of the *Oceans Act*.

The Department of Indian Affairs and Northern Development (DIAND) has the lead federal role for meeting the federal government's objectives for **northern development**. DIAND influences activities and development in the oceans sector through

a range of services and programs, such as northern land claim settlements, devolution of authority to Territorial governments and sustainable development in the North (e.g., regulation of offshore oil and gas, environmental protection).

Several departments and agencies contribute to the government's **industrial development** objectives in the oceans sector. Industry Canada has a number of policies and programs that affect shipbuilding, satellite communications, science and technology. The National Research Council of Canada (NRC) operates some oceans-related research facilities and assists industries in the oceans sector under S&T activities (e.g., Industrial Research Assistance Program, scientific information). The Natural Sciences and Engineering Research Council (NSERC) supports university-based research in oceanography and marine sciences through a variety of programs (e.g., research grants, targeted research). Natural Resources Canada (NRCan) has a wide array of policies and programs to assist development in the oceans sector; these cover policies and programs related to offshore oil and gas, offshore mining, marine geoscience services and energy R&D. The National Energy Board (NEB) has a regulatory role, which is used in part to encourage the orderly and safe development of offshore oil and gas in non-accord frontier lands. DFO has a number of programs that contribute to the development of marine-based industries and the market potential of their products and services. The Atlantic Canada Opportunities Agency and the Western Economic Diversification Department assist a number of oceans-related firms and activities under some of their respective programs and services for regional economic development.

There are three departments and agencies that contribute significantly to the government's transportation objectives in the oceans area. Transport Canada has a range of applicable programs (e.g., management of 550 public harbours and ports, ferry service, marine regulation) and Crown corporations (e.g., for major ports, eastern ferry services, pilotage services). The National Transportation Agency is responsible for the economic regulation of all

modes of transportation (including marine) under federal jurisdiction. The Transportation Safety Board of Canada investigates accidents, such as those of oil tankers, in the federally regulated parts of the transportation system. DFO also contributes to the maritime transportation objective, largely through services provided by the Canadian Coast Guard.

Health Canada plays a lead federal role on issues pertaining to the maintenance and protection of the health of Canadians. As a health agency, Health Canada is a major player in ensuring the safety and wholesomeness of the Canadian food supply. Health Canada is thus involved in the oceans sector as part of the services and programs aimed at ensuring safe utilization of marine species for human consumption.

Environment Canada has the lead federal role for issues pertaining to the environment. It is a major player in the oceans sector, with services and programs related to atmospheric matters (e.g., weather forecasts, ice services), environmental protection (e.g., ocean disposal and control of land-based sources of marine pollution), environmental conservation (e.g., wildlife conservation, biodiversity), and, through the Canadian Environmental Assessment Agency, environmental assessment activities. The Department of Canadian Heritage also addresses the government's environmental objectives and is involved in the oceans sector mainly through the planning for and management of national marine conservation areas.

Public Works and Government Services Canada has the lead role for real property and supply services, as the federal government's designated common service agency in these areas. It provides a wide range of real property-related services, such as dredging waterways, constructing wharves and breakwaters, and providing engineering services. It works closely with all departments and agencies and, for oceans-related procurements, has particularly close links with DFO, DND, Transport, EC, DIAND and NRC, which regularly need to make purchases for products and services so that they can deliver on their oceans-related responsibilities.

# LEAD FEDERAL ROLE IN THE OCEANS SECTOR

## Department of Fisheries and Oceans

THE 1979 GOVERNMENT ORGANIZATION ACT PROVIDES FOR THE DEPARTMENT OF FISHERIES AND OCEANS TO BE THE LEAD FEDERAL DEPARTMENT WITH RESPECT TO OCEANS POLICIES AND PROGRAMS. AND, MORE RECENTLY, THE 1997 OCEANS ACT REQUIRES THE DEPARTMENT, IN SUPPORT OF ITS MINISTER, TO LEAD THE DEVELOPMENT OF A NATIONAL OCEANS MANAGEMENT STRATEGY.

WHILE OTHER GOVERNMENT DEPARTMENTS CONTRIBUTE TO THE MANAGEMENT OF CANADA'S WATER-BASED ACTIVITIES, DFO IS THE ONLY FEDERAL DEPARTMENT WITH RESOURCE MANAGEMENT RESPONSIBILITIES HAVING A PRIMARY FOCUS ON WATER AND THE RESOURCES IT CONTAINS.

ASIDE FROM ITS LEAD ROLE IN BOTH OCEANS PROGRAM CO-ORDINATION AND FISHERIES MANAGEMENT ACTIVITIES, DFO HAS ALSO TRADITIONALLY MAINTAINED A NUMBER OF OTHER KEY RESPONSIBILITIES, SUCH AS THE OPERATION OF FEDERAL FISHING AND RECREATIONAL HARBOURS AND THE PROVISION OF HYDROGRAPHIC AND FISH INSPECTION SERVICES.

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April 1, 1995, marked the beginning of a new era for the Department. DFO's merger with the Canadian Coast Guard (CCG) consolidated the government's main civilian marine programs, creating one of the largest civilian marine organisations in the world. The new vision for the restructured DFO is "to be a world leader in oceans and aquatic resources management."

As DFO plans for the future, it will focus on its fisheries and oceans responsibilities, and withdraw from a number of its present freshwater activities. DFO will concentrate its efforts on six new objectives:

1. Manage and protect the fisheries resource;
2. Manage and protect the marine and freshwater environment;
3. Understand the oceans and aquatic resources;
4. Maintain maritime safety;
5. Facilitate marine trade, commerce and ocean development; and
6. Improve client relations.

The Department's Main Estimates called for

resource requirements of approximately \$1.423 billion in 1995-96. Roughly 90 percent of these DFO resources in fiscal year 1995-96 were tied to the oceans sector — in terms of marine fisheries, marine aquaculture, marine navigation systems, ice-breaking, rescue and environmental response, coastal harbours, operation of a marine fleet, oceans-related science, hydrographic services, oceans programming, etc. The remaining 10 percent related to activities undertaken in (or in support of) freshwater programs.

The following sets out DFO's major program areas and summarises their application to the oceans sector, excluding reference to inland fisheries.

### *Canadian Coast Guard*

In 1995-96, the CCG program called for resource requirements of close to \$582 million. The vast majority of CCG activities are oceans-related. Some freshwater activities continue. Key oceans-related activities are:

- **Marine Navigation Systems:** provides, operates and maintains a system of short-range and long-range aids to navigation; waterways development, maintenance, and protection; and safety and public communications.
- **Icebreaking Operations:** provides, operates and maintains icebreakers, facilities and icebreaking services for safe, timely and efficient marine traffic navigation in ice covered waters. Minimises the effects of flooding caused by ice jams on the St. Lawrence River; and assists in resupply efforts for Northern settlements.
- **Rescue and Environmental Response:** provides marine search and rescue, and emergency preparedness capabilities; promotes safety to the marine public; and responds to clean-up requirements following pollution incidents from shipping.
- **Marine Regulatory:** develops, promulgates and implements marine regulations and standards governing recreational vessels, fishing vessels under 15 gross registered tonnes, and waterways development.
- **Support to Other Government Objectives:** provides support to other marine-related activities, including dedicated services to other government departments; ice management; and co-ordination of the annual Eastern Arctic Sealift.

## Science

In 1995-96, the Science program called for resource requirements of approximately \$190 million. The three major activities are:

- **Fisheries and Oceans Science:** provides a reliable scientific basis for the conservation of marine and anadromous fishery resources, for aquaculture and for protecting the health of wild and cultured fish and marine mammals. Scientific data on oceans and coastal waters are collected in support of fisheries management, integrated resource management, offshore development, climate prediction, marine services, coastal engineering, defence and shipping.
- **Habitat Management and Environmental Science:** achieves an integrated, cohesive approach to marine environment and habitat protection that demonstrably results in a net gain of habitat. It encompasses the development and implementation of policies, plans and programs, and the administration of statutes related to the protection and conservation of aquatic habitats and the environment. It also involves investigating and monitoring chemical and physical conditions that affect the quality of aquatic environments, and the collection, analysis and interpretation of information to support the sustained economic utilization of Canada's renewable aquatic resource and to assess, approve and monitor activities that affect the quality and quantity of fish habitat.
- **Hydrography:** provides a reliable scientific basis to enhance the safety and efficiency of navigation for vessels operating in Canadian waters by undertaking field surveys to measure water depth, bottom morphology, tides, water levels, near-surface currents and sound velocity, and compiling and publishing accurate charts and other navigational information on Canadian and adjacent international waters. Hydrographic data are also used to delimit maritime boundaries and to support the exploration and exploitation of maritime resources.

## Fisheries Management

In 1995-96, the Fisheries Management program called for resource requirements of approximately \$196 million. The programs are oriented toward fisheries that are biologically sustainable, economically viable and operated in a co-management context. The activities are guided by the conservation principle; the respect of Aboriginal rights; the need to balance fishing capacity with the sustainable carrying capacity of the resource; the restructuring of the industry through licensing policies. The major activities are:

- **Resource Management:** involves the development (through a co-management and partnering approach) of fishery management plans, policies and programs, in partnership with industry, to provide for the conservation and sustainable utilization of the fisheries and the biomass to ensure self-generation of stocks and the fair distribution of harvestable surpluses among user groups. Management measures include fisheries quotas, gear restrictions, season closures and licensing conditions. Collection and analysis of harvest data and stock assessments permit in-season manage-

ment and the development of future fishing plans.

- **Licensing:** regulates access to and participation in the fishery to ensure that the harvest remains within conservation limits, and promotes economic viability for individual participants. This includes the registration and categorization of commercial fishers, issuance of licences for fishers and vessel registrations, processing of licence transfers and appeals, and the development of licensing policies and guidelines.
- **Conservation and Protection:** ensures compliance with Canadian fisheries and habitat legislation to conserve and protect the fisheries resource for the benefit of Canadians. This involves the enforcement of the Fisheries Act and regulations, as well as management measures such as quotas, gear restrictions, seasons, closed areas and licence conditions. This is provided through aerial surveillance, vessel patrols, deployment of observers on fishing vessels, and the activities of fishery officers stationed in fishing communities across Canada.
- **Aboriginal Affairs:** oversees the Aboriginal Fisheries Strategy (AFS), DFO's program for the management of Aboriginal fisheries. Through the AFS, DFO ensures Aboriginal access to fisheries resources in a manner consistent with Aboriginal and treaty rights and also aims to increase Aboriginal involvement in the management of fisheries, including fish habitat management, and to increase participation by First Nations in commercial fishing and related economic opportunities.
- **International:** advances Canada's international fisheries and oceans interests in conservation and trade vis-à-vis international fora. Key areas are Atlantic fisheries relations, Pacific fisheries relations, and trade policy.

### **Industry Services**

In 1995-96, the Industry Services program called for a resource requirement of about \$93 million. The major activities are noted below. However, it must be noted that DFO is seeking to devolve or otherwise divest itself of these activities.

- **Small Craft Harbours:** provides clients with safe

and accessible harbour facilities to launch and moor vessels, from which to undertake fish operations and recreational boating. Small Craft Harbours maintains and operates 2,127 harbours nationally, of which 1,307 are designated as commercial fishing harbours and 820 as recreational harbours, with some sites being shared by both types of vessels. DFO plans to divest itself of this activity by devolving responsibility to provincial governments and private interests.

- **Inspection:** involves the development and implementation of national regulations, policies, and programs to ensure that Canadian-produced fish and fish products meet appropriate Canadian or foreign grade, handling, identity, process, quality and safety standards; and that imported fish and fish products meet acceptable Canadian standards of identity, quality and safety. This function is being transferred to the new Canada Food Inspection Agency.

### **Policy Sector**

In 1995-96, the Policy Sector program called for a resource requirement of roughly \$14 million. Key oceans-related activities are:

- **Economic and Policy Analysis:** concentrates on economic policy analysis and national policy development of both the fisheries and oceans sectors, and the coordination of international oceans trade issues. Economic and Policy Analysis provides the departmental lead in developing Canada's Oceans Policy and the Oceans Management Strategy. It also includes industry renewal, with the objectives of fisheries renewal, professionalization of fishers, and reduction of capacity in the industry.
- **Strategic Planning and Liaison:** provides support for the overall direction of new departmental initiatives and the development of strategic directions; and supports DFO's legislative and regulatory framework.

### **Corporate Services**

In 1995-96, this activity called for resource requirements of about \$234 million.

The objectives of these functions are to ensure that the activities of DFO are supported and strengthened both at Headquarters and in the regions and

sub-activities. They include: design of program instruments, communications, audit and evaluation, human resources management, financial administration, and asset management. The bulk of expenditures under this activity are made regionally and tied to asset management (e.g., small craft harbours management, vessel acquisition and management of buildings).

DFO also has major procurement requirements, which are of benefit to private sector firms in the oceans sector. The replacement value of the Department's fleet is estimated to be \$3.5 billion and the replacement value of its facility program is \$1.8 billion; the Department's equipment base is valued at approximately \$784 million. New acquisitions and upgrades in these areas create jobs and production opportunities in shipbuilding and repair and oceanic manufacturing and services.

### ***Research Facilities***

DFO operates nine science institutes across the country. Much of the research directly benefits developments in the oceans sector.

- On the Pacific coast, the largest facilities are the **Institute of Oceans Sciences**, Sidney, British Columbia, where research includes work on oceans productivity and hydrography; and the **Pacific Biological Station**, Nanaimo, British Columbia, where work focuses on marine and anadromous fisheries science, including stock assessment, multi-species relations and aquaculture.

- In Quebec, the **Institute Maurice Lamontagne**, Mont-Joli, Quebec, focuses on three areas of science — fisheries research, oceanography and hydrography. The institute's working language is French, making it one of the world's major Francophone marine science centres.
- On the east coast, the **Bedford Institute of Oceanography**, Dartmouth, Nova Scotia, is the largest of DFO's research facilities. Scientists there work on marine fisheries science, stock assessment, oceans science, environmental sciences and hydrography.
- The **St. Andrews Biological Station**, St. Andrews, New Brunswick, is DFO's centre for aquaculture research, fish health science and environmental sciences.
- The **Freshwater Institute**, Winnipeg, Manitoba, conducts research on contaminants in Arctic species, and other Arctic and freshwater habitat sciences.
- Other important research centres include the **Bayfield Laboratory**, Burlington, Ontario, the **Northwest Atlantic Fisheries Centres**, St. John's, Newfoundland, and the **West Vancouver Laboratory**, Vancouver, British Columbia. An initiative is being undertaken to devolve the operations of the West Vancouver Laboratory (1997). This effort will enhance the ability of others to be involved in research while enabling DFO to continue to carry out its essential functions.

Most of these centres include marine engineering laboratories, wharves and harbour facilities for research vessels and related equipment.

# SOVEREIGNTY AND TRADE

## Foreign Affairs and International Trade

THE DEPARTMENT OF FOREIGN AFFAIRS AND INTERNATIONAL TRADE HAS A WIDE RANGE OF ACTIVITIES AND PROGRAMS THAT CONTRIBUTE TO CANADA'S INTERESTS IN THE MANAGEMENT OF OCEANS ACTIVITIES.

### *Sovereignty*

The Department of Foreign Affairs and International Trade (DFAIT) has the lead role for co-ordinating federal policy related to sovereignty, including sovereignty over Canada's territorial sea and sovereign rights with respect to the natural resources of the 200 nautical mile Exclusive Economic Zone and the continental shelf. The ministers of DFAIT and Justice share responsibility for all international litigation. In maritime boundary negotiations and litigation, DFAIT seeks to achieve international acceptance of Canada's claims. Through international adjudication in recent years, Canada has resolved most of its maritime boundary dispute with the United States in the Gulf of Maine and the one it had with France with respect to the waters off the islands of St. Pierre and Miquelon. However, such disputes remain with the United States (Beaufort Sea, Dixon Entrance, Juan de Fuca Strait and the landward and seaward extensions of the line drawn by a Chamber of the International Court of Justice in the Gulf of Maine) and Denmark (Davis Strait and Baffin Bay).

DFAIT co-ordinates measures to preserve sovereignty over the waters of the Arctic archipelago. Last year, the government appointed an Ambassador for Circumpolar Affairs, to give greater focus to Canada's Arctic diplomacy.

In consultation with other interested government agencies (particularly DFO), DFAIT reviews foreign requests to conduct marine scientific research in offshore areas under Canadian jurisdiction.

A major task of DFAIT is to preserve and enhance Canada's rights and interests related to Law of the Sea issues. The government is committed to ratification of the *United Nations Convention on the Law of the Sea*, as stated in its Foreign Policy Statement of February 1995, and reiterated by the Minister of Foreign Affairs on June 12, 1995 and in the Speech from the Throne in 1996.

Fisheries conservation remains an important concern for DFAIT. Securing agreement on a proposal to draft a conservation convention at the United Nations Conference on Straddling Stocks and Highly Migratory Species, which was initiated by Canada, was a major achievement in 1994-95. The adoption by the Conference of a new Straddling Stocks Agreement was another major achievement. DFAIT will continue to work with DFO and the Department of Justice to ensure that Canada can be among the first nations to ratify this agreement in order to hasten its entry into force.

In 1993, DFAIT, along with DFO, ensured that Canada was a key participant in the negotiations conducted under the auspices of the United Nations Food and Agriculture Organization, which led to the adoption of the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas. In 1994, Canada became the first nation to become a party to this agreement.

In co-operation with DFO, DFAIT negotiates and implements bilateral and multilateral fisheries agreements. DFAIT is also responsible for the interpretation of such agreements.

### *Trade*

DFAIT is active in defining and expanding markets abroad for Canadian fish and fisheries products. This involves the development and implementation of market plans, the provision of market assistance, interpretation of trade regulations, promotional programs, etc. A key program of DFAIT is the Program for Export Market Development (PEMD), which provides a wide array of marketing assistance, such as for the conduct of trade fairs and missions abroad.



A National Sector Team for Fish and Seafood has been established to strengthen links among all public and private stakeholders to co-ordinate and pursue international business more effectively for Canada's fish and seafood industries. The team will focus on international trade issues, as well as technology and investment opportunities.

Canada's International Business Strategy provides Canadian industry with the opportunity to influence the government's international business priorities. The Ocean Industries and Fish and Seafood strategies identify the objectives that the government and industry will pursue to help Canadian firms capture emerging global trade, technology and investment opportunities.

The Department is actively involved in seeking resolution to bilateral trade issues for fish and seafood, including, for example, the removal of a ban on Canadian fresh salmon imports into New Zealand.

## Canadian International Development Agency (CIDA)

CIDA is the principal agency responsible for implementing, monitoring and coordinating Canada's Official Development Assistance (ODA) program. In a 1995 foreign policy review, the Government of Canada defined the goals of Canadian assistance to developing countries in the following terms: The purpose of Canada's ODA program is to support sustainable development in developing countries, in order to reduce poverty and to contribute to a more secure, equitable and prosperous world.

A number of CIDA's ODA initiatives are of benefit to the oceans sector, for example:

- assistance to developing countries to develop appropriate national and regional frameworks for the formulation of policies for sustainable ocean development, including legal frameworks for delivery of services, in accordance with agreed international standards;
- knowledge and skill base capacity building for integrated planning and management for oceans and coasts;
- the provision of technology and skills needed to develop the primary, secondary and tertiary sub-sectors related to ocean resources within the Exclusive Economic Zones of developing countries;
- infrastructural facilities and related management

and maintenance training;

- the provision of research facilities, equipment and training of scientists for the management and conservation of resources within the Exclusive Economic Zones of coastal states; and
- the provision of food aid, which includes Canadian fish products.

CIDA's ODA mandate is sustainable development, a goal to which Canada is committed domestically and, through UNCED, internationally. As one of the world's leading coastal states, Canada, through CIDA, encourages developing countries to pursue sustainable development in the vast and vital marine area for which they are responsible and which present them with immense challenges and opportunities.

## International Development Research Centre (IDRC)

IDRC was created by the Parliament of Canada in 1970 to stimulate and support scientific and technical research by developing countries for their own benefit.

IDRC-supported projects have traditionally been designed to alleviate poverty, maximize the use of local resources, and strengthen human and institutional capacity. The areas of the world that benefit from these investments are Africa, Asia, the Middle East, Latin America and the Caribbean.

At the United Nations Conference on Environment and Development in June 1992 in Brazil, the Prime Minister of Canada announced that IDRC's mandate would be expanded to emphasize support for the implementation of Agenda 21 through research. Agenda 21 is a global action plan for the 21st century, designed to provide direction and information to the governments of the world as they work to solve the urgent environmental problems facing our world.

A number of IDRC's projects build on Canada's experience in the oceans sector and utilize some of the related expertise in Canada so that developing countries can benefit from this experience and expertise. IDRC participates with many international organizations in the management of the Strategy for International Fisheries Research. This strategy was established in 1992 to encourage the co-ordination of fisheries research for the sustainable development of living aquatic resources.

## Department of National Defence (DND)

The mandate of DND follows from the National Defence Act. Under that legislation, the Minister is responsible for the management and direction of the Canadian Forces and for all matters relating to national defence. One of the sub-objectives of the Department, which is of particular relevance to the oceans sector, is:

- to defend Canada by protecting Canada's national territory and jurisdictional areas, helping civil authorities protect and sustain national interests, and assisting in national emergencies.

The defence activities of greatest importance to the oceans sector are those of the maritime forces.

### *Maritime Forces*

Our national geography poses a formidable challenge for Canada and determines many of the requirements for naval operations off our coasts. To establish sovereignty, international law demands that, as a minimum, a state be capable of monitoring activity in nationally claimed areas. Providing peacetime surveillance and control of Canada's oceans is the day-to-day business of Canada's maritime forces through regular patrols by surface ships, aircraft and submarines and through regular training exercises and operations with allied forces. The ships of Maritime Command and the aircraft of Maritime Air Group maintain military surveillance of Canadian territorial waters and the 200 nautical mile Exclusive Economic Zone. Maritime Command ships support the fisheries research, management and surveillance activities of DFO, the police work of the Solicitor General/Royal Canadian Mounted Police (RCMP), the customs enforcement efforts of Revenue Canada, and environmental and illegal immigration surveillance. Maintaining the capability to field a naval presence to preserve and protect national security interests sends a clear signal that Canadians will not allow their maritime sovereignty to be compromised.

The Regular Force component of the navy consists of 20 frigates and destroyers (decreasing to 16 by 2002), 3 submarines, 3 operational support ships (decreasing to 2 by 2001), and a diving support/seabed operations ship. Five patrol vessels provide training for junior officers. Twelve Maritime Coastal Defence Vessels are being acquired, the first

of which was delivered in 1995. These vessels will be primarily operated by Naval Reservists and will provide Canada with an enhanced coastal defence capability and a limited mine countermeasures capability. An auxiliary fleet of oceanographic research vessels, ocean and harbour tugs, coastal oilers, diving tenders and other craft, supports the fleet. Shore infrastructure to support the fleet consists of dockyards, bases and supply depots, and radio stations on both the east and west coasts. The operational maritime air component provided by Air Command's Maritime Air Group consists of 18 Aurora long-range patrol aircraft, 30 Sea-King multi-purpose helicopters and 3 Arcturus maritime surveillance aircraft.

The main role of the Naval Reserve component of the navy is maritime coastal defence, harbour defence and naval control of shipping. The Naval Reserve is currently at a strength of approximately 4,000 personnel, organized into 24 divisions at locations across the country.

Canada's Maritime Forces are deployed on both the east and west coasts, as well as Air Command Forces assigned to the Commanders of Maritime Forces. They operate from four bases, three stations and one detachment, located primarily on the east and west coasts.

In 1995-96, Maritime Forces activities accounted for approximately \$2.3 billion in expenditures and approximately 16,000 staff.

### *National Search and Rescue Program*

The Minister of National Defence is the lead minister for search and rescue (SAR). The SAR program is a unique undertaking by federal and participating provincial, territorial, municipal and private organizations to contribute search and rescue services.

Central management for the national SAR Program is provided by the National SAR Secretariat. The federal delivery component of the program is provided by several departments, notably DND, the Ministry of the Solicitor General through the RCMP, Canadian Heritage through Parks Canada, Environment Canada through the Atmospheric Environment Service, and DFO through the Canadian Coast Guard. The Department of Indian and Northern Affairs, Emergency Preparedness Canada (under DND) and Canada Ports Corporation (under Transport Canada) are other contributing organizations.

Representatives of the major delivery departments make up the membership of the Interdepartmental Committee on SAR.

The national SAR Program is co-funded by the participating departments. In 1995-96, the estimated expenditures were \$228 million. In 1995-96, the major capital expenditure in the program was \$9 million toward the total cost of \$76 million for a new SAR satellite.

### ***Procurements***

DND has traditionally been the largest single departmental consumer of oceans-sector goods and services. Canada's Maritime Forces place substantial demands on the oceans science, technology and service industries, both for small-scale needs as well as major capital construction projects. The oceans sector support of defence industries occurs primarily in the oceanic manufacturing and services industry and the shipbuilding and repair industries.

The following are some examples of the 1995-96 procurements of DND that are of significant benefit to the oceans sector: Canadian Patrol Frigate (\$651 million); Maritime Coastal Defence Vessels (\$157 million); and Tribal Class Update and Modernization Project (\$85 million).

PWGSC is the designated common service agency of the federal government and acts on behalf of DND and other departments in such procurements.

### **Department of Justice**

The Oceans Act provides for the application of provincial and federal laws to some parts of the sea (referred to as "Canada's Maritime Zones"), its seabed and the subsoil of the marine areas. The Minister of Justice can recommend, in the Oceans Act, the making of regulations that will provide for the application or exclusion of provincial and federal laws, or parts thereof, to some parts of the sea. The Minister of Justice can also prescribe the method of determining "a safety zone", and a work or a class of works for the purpose of the definition of "marine installation or structure". Provinces, areas of the sea and the manner of determining the province that has the nearest coast to an area of the sea can be prescribed in the regulations. Finally, the Attorney General of Canada has to consent to a power of arrest exercised in the contiguous zone

on-board any ship registered outside Canada.

Responsibility for the conduct of all litigation for or against the Crown or any department rests with the Minister of Justice. This includes litigation in respect of subjects within the authority or jurisdiction of Canada with an international component such as the Maritime Zones. However, because of the foreign policy aspects of such litigation, responsibility is normally divided between the ministers of Justice and of Foreign Affairs and International Trade.

### **Solicitor General — Royal Canadian Mounted Police (RCMP)**

The RCMP, under the general direction of the Solicitor General of Canada, is responsible for federal matters relating to policing and the domestic aspects of national security. These include counter-terrorism and drug enforcement issues. Throughout Canada, the RCMP enforces all laws made by, or under the authority of, Parliament. Both criminal and liability offences are included. During 1996 the RCMP was the provincial police force in all provinces except Ontario and Quebec, and in the Yukon and Northwest Territories. It also provides policing services under separate municipal policing agreements to 191 municipalities (1996). The RCMP has more than 700 detachments located throughout Canada, which range in strength from 1 to 250 personnel. It has 8 patrol vessels, 402 inland water transport (less than 9.2 m in length), 7 fixed-wing aircraft and 4 helicopters.

The RCMP helps to protect Canadian sovereignty through the off-shore tracking and interdiction of drug smugglers and other international criminals. This is done with the support and assistance of DND (Canadian Forces), Revenue Canada (Customs) and a number of other federal departments.

To discharge its broad mandate, including assistance to other federal departments and agencies, the RCMP has memoranda of understanding (MOUs) with most federal departments and agencies. Specific to the ocean sector, these MOUs include agreements with DFO, the Canadian Coast Guard, Transport Canada, the Transportation Safety Board of Canada, DND and Environment Canada. In addition to their other peace officer duties, RCMP peace officers are Customs Officers, Excise Officers, Fishery Officers, Protection Officers and Game Officers.

# NORTHERN DEVELOPMENT

## Department of Indian Affairs and Northern Development

THE DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT IS THE LEAD FEDERAL DEPARTMENT IN THE NORTH, WHERE IT DELIVERS ON ITS NORTHERN RESPONSIBILITIES THROUGH ITS NORTHERN AFFAIRS PROGRAM, WHICH, IN 1995-96, HAD EXPENDITURES OF AROUND \$150 MILLION. LESS THAN 1 PERCENT OF THESE EXPENDITURES (\$1.3 MILLION) ARE ATTRIBUTABLE TO DIRECT NORTHERN OCEANS-RELATED ACTIVITIES UNDERTAKEN BY THE DEPARTMENT. THE OCEANS SECTOR IS AFFECTED BY THIS PROGRAM UNDER PRIORITIES SUCH AS:

### *Fostering sustainable development in the North*

The Northern Affairs Program (NAP) is responsible for effectively managing water, hydrocarbon, mineral and other northern resources, in preparation for eventual devolution to the territorial governments. It also manages offshore resources, maintains the ecological integrity of the northern environment, and co-ordinates federal circumpolar environmental concerns.

In keeping with these responsibilities, during 1995-96 the Department provided the overall co-ordination of the Arctic Environmental Strategy, which affects ocean resources, as well as other areas in the North. Also of considerable importance is the implementation of the Arctic Environmental Protection Strategy agreement among the circumpolar countries to reduce the level of pollution in the Arctic Ocean.

The Department administers offshore oil and gas rights and regulates coastal and non-shipping offshore activities, including pollution prevention under provisions of the Arctic Waters Pollution Prevention Act. The focus is to manage and administer these activities in a manner that is consistent with sustainable development objectives and land claim settlements.

***Participating in the negotiation and implementation of self-governmental and land claim agreements in the Northwest Territories and Yukon***

Some of the northern comprehensive land claims contain an offshore component based on the traditional use of offshore resources and the desire to continue such use.

In particular, the **Inuvialuit Final Agreement and Nunavut Land Claims Agreement** include offshore components for the western Arctic and the eastern Arctic, respectively. These agreements not only provide access for the claimants to offshore resources, but guarantee Aboriginal participation in the management of these resources.

The Department is currently involved in negotiations on a land claims agreement with the Inuit of the Nunavik region in the eastern Arctic.

***Pursuing devolution of provincial-type programs to the territorial governments, based on the federal strategic approach.***

As devolution proceeds, the territorial governments may increasingly take over a number of DIAND's traditional responsibilities in the North. Hence, the locus of decision-making with respect to many northern activities will shift to the North.

In 1995-96, the constitutional development of the territorial governments continued, with a priority on activities linked to the division of the Northwest Territories. Financial arrangements will be identified for the commencement of the Nunavut Territorial Government on April 1, 1999.

# INDUSTRIAL DEVELOPMENT

## Industry Canada

INDUSTRY CANADA'S MANDATE IS TO ENCOURAGE CANADIAN INDUSTRY TO BECOME MORE COMPETITIVE AND TO PROSPER IN A WORLD THAT IS BEING TRANSFORMED BY RAPID TECHNOLOGICAL ADVANCES AND A CHANGING MARKETPLACE.

THE DEPARTMENT'S STRATEGIC OBJECTIVES ARE TO: IMPROVE CONDITIONS FOR INVESTMENT IN OUR ECONOMY; IMPROVE CANADA'S INNOVATION PERFORMANCE; INCREASE CANADA'S SHARE OF GLOBAL TRADE; AND, BUILD A FAIR, EFFICIENT AND COMPETITIVE MARKETPLACE FOR BUSINESSES AND CONSUMERS.

The **Manufacturing and Processing Technologies Branch** is mandated to facilitate the growth of technology-based companies through the adoption of advanced manufacturing technologies. The Branch works very closely with and encourages the economic growth of companies that specialize in technologies that operate in an oceans environment. By leading the National Sector Team for Ocean Technologies, the Branch co-ordinates government and non-government resources to pursue international business development activities for the sector. As well, the Branch develops ocean strategies and provides input into ocean policies that work to improve the competitiveness of ocean technology firms.

The Department has a major **Science and Technology (S&T)** role to support the achievement of its overall objectives. The S&T component involves identifying and acting upon emerging areas of domestic and international science and technology critical for maintaining a competitive industrial base; linking science, technology and industry to achieve technology exploitation; and providing policy support for the government's overall S&T effort and for programs supporting the promotion of science to Canadian youth.

The Department includes the **Communications Research Centre**, which develops new telecommunications services, technologies and standards, and, through its R&D program, assists in the formulation of telecom policies. Many of the research programs are applicable to the extension of communications services to ocean regions. Examples are the MSAT program, which provides mobile voice and data service to several hundred kilometres offshore, high-

frequency data radio technology, and trans-oceanic aeronautical mobile service. The current emphasis on multi-media services associated with the Information Highway can contribute to offshore communications needs. These programs, particularly radio and satellite communications, have application to communications for fisheries, offshore resource exploitation and monitoring, and SAR.

## National Research Council of Canada (NRC)

NRC, Canada's principal science and engineering organization, serves the needs of Canadians by helping to maintain and enhance the socio-economic well-being and the competitiveness of the country. NRC maintains 17 research institutes with national mandates located across the country, and a network of scientific and engineering facilities. Of these, at least three are significant to the oceans industry sector.

- **Institute for Marine Dynamics (IMD)**, located in St. John's, Newfoundland, is Canada's principal centre for ocean technology research and development. Its mission is to enhance the nation's competitiveness by providing innovative solutions and technical expertise in engineering related to the world's oceans. IMD pursues research programs in the fields of marine systems, offshore engineering and advanced projects, and operates national facilities that support these programs. Its facilities include an ice tank, an offshore engineering basin with a multi-segmented wavemaker, a towing tank, a cavitation tunnel and computer-controlled model-making equipment.

- **Canadian Hydraulics Centre (CHC)**, located in Ottawa, Ontario, is Canada's largest and best-equipped hydraulics and coastal engineering facility. A multidirectional wave basin and coastal basins and flumes are national facilities used to test models of civil engineering structures in simulated coastal water conditions, to study shoreline erosion and sedimentation, and to determine the effect of waves and currents on breakwaters and harbour facilities. CHC undertakes physical and numerical model studies for port and marina development projects, shoreline protection and coastal environmental studies. Numerical modelling software is developed and used for the simulation of coastal and estuary problems, and the analysis, visualisation and animation of the resulting waves, currents, sediment movements and pollutant dispersion.
- **Institute for Marine Biosciences (IMB)** has a main laboratory located on the campus of Dalhousie University in Halifax, Nova Scotia. IMB also maintains an Aquaculture Research Station 25 kilometres from Halifax on the Atlantic coast. As one of NRC's five biotechnology research institutes, IMB's mandate is to create opportunities for economic growth and competitiveness through the application of marine biotechnology research. Programs include: aquaculture and seafood safety; the Marine Analytical Chemistry Standards Program; marine bioproducts, including drug discovery research supported by the pharmaceutical industry; advanced mass spectrometry, where IMB has a lead responsibility within NRC's biotechnology institutes; and genomics, for DNA sequencing and computer analysis of sequence data.

NRC also delivers the Industrial Research Assistance Program (IRAP). IRAP provides technical advice and contacts for technical matters, and financial support for cost-shared projects involving R&D, technology transfer and related activities. In 1994-95, IRAP contributions of \$3 million supported a wide range of aquaculture and ocean-related development projects related to fish hatcheries, docks and sea cages, fish sexing and monitoring, underwater vehicles, and acoustic imaging.

## Natural Sciences and Engineering Research Council (NSERC)

NSERC is the national instrument for making strategic investments in Canada's capability in science and technology.

NSERC makes strategic investments in basic university research through research grants, in project research through partnerships of universities and industry and government, and in the advanced training of highly qualified personnel in both areas through scholarships and fellowships. In working toward increasing Canada's capabilities in science and technology, NSERC's strategy is to develop activities that: foster research links between researchers in Canada's universities and other sectors of the economy; increase the exposure of students to industrial research and improve the relevance of their training; and improve communications among university researchers, users of research results and the public.

In 1995-96, NSERC invested at least \$6 million in oceanography and marine sciences-related research. The following are some examples of the activities supported by NSERC in partnership with industry or government:

- **Canadian Joint Global Ocean Flux Study Phase II** (\$2.8 million from 1995-1998). This investigation of the processes controlling changes in carbon in the ocean involves over 30 Canadian researchers.
- **Climate System History and Dynamics** (\$2.5 million from 1994-1997 — the oceanographic portion is \$0.5 million). This investigation of paleoclimatic change involves 11 Canadian researchers. This project uses data from ocean sediments to help calibrate computer models of climate change.
- **World Ocean Circulation Experiment** (\$1.5 million from 1993-96). This investigation of processes controlling ocean circulation patterns involves six Canadian researchers.
- **Ocean Drilling Program (ODP)**. This is an international program, which investigates the dynamics of the earth's environment (climate change) and the dynamics of the earth's interior, to which Canada pays a one-third membership (Australia pays another third, and a third member for the consortium is being sought). NSERC contributes \$600,000 per year to the membership fee. The

lead agency is NRCan, and DFO also contributes. Canadian scientists participate in ODP cruises and their activities are co-ordinated through the ODP Secretariat based at the University of Toronto and supported by NSERC.

- Three industrial Research Chairs (\$388,000 in 1995-96) are funded in the areas of Ocean Mapping, Ocean Acoustics and Fisheries Conservation.

NSERC supports the university-based marine sciences community through the provision of shiptime funding (approximately \$1 million per annum) for fieldwork.

NSERC also provides funding for oceanography and marine sciences through its Research Grants program, which provides funding in aid of ongoing research activities. Currently, 66 researchers are supported for a total value of \$1.8 million in 1995-96. Nine awards for a total value of \$1.2 million were made under the Strategic Grants program in 1995-96.

NSERC sponsored a Marine Sciences Workshop in May 1997. Participants were mainly university scientists and government representatives. The main aim of this workshop was to gain an overview of Canadian marine sciences, discuss strategies for ensuring the most impact given limited resources, and assess the resources required to achieve the scientific objectives of Canadian university-based marine science research in the next 10 to 15 years.

## Natural Resources Canada (NRCan)

NRCan is a scientific and economic department concerned primarily with Canada's land-mass and with promoting sustainable development and the responsible use of Canada's mineral, energy and forest resources.

The Department pursues several priorities, such as: development and international competitiveness of client industries; sustainable development of forest, energy, minerals and metals activities; co-ordination of national forest, energy and minerals and metals policy; maintenance and enhancement of environmental quality; health and safety of those associated with mineral, energy and forest industries; security of supply of mineral and energy commodities; and Canada's sovereignty and reliable system of geographical referenced information, remote sensing

data, surveys and maps describing the Canadian land-mass.

The Department shares science and technology responsibilities with other science-oriented federal departments and agencies. This is co-ordinated primarily through an MOU concerning science and technology, directed toward sustainable development between the four federal departments concerned with natural resources (Fisheries and Oceans, Environment, Agriculture and Agri-Food, and Natural Resources). Its programs are carried out by the following sectors of NRCan, whose activities with particular relevance to the oceans are summarized below.

### *Energy Sector*

- **Frontier Lands Management:** This group manages the Department's mandate with respect to the development of oil and gas resources located in the offshore areas of the east and west coasts, the Gulf of St. Lawrence and Hudson Bay. It is NRCan's responsibility to develop legislation and regulations that ensure that all activities related to the exploration, development and production of petroleum resources are undertaken using good oilfield practices. Safety, protection of the environment and conservation of resources are primary considerations.

Implementation of the legislation and regulations is effected on the Department's behalf by the Canada-Newfoundland Offshore Petroleum Board and the Canada-Nova Scotia Offshore Petroleum Board in their respective Accord areas, and by the National Energy Board in all other frontier areas.

The group also manages the \$300 million Canada-Newfoundland Offshore Development Fund and the \$200 million Canada-Nova Scotia Development Fund. These funds are aimed at developing infrastructure and research needed for the development of offshore oil and gas in their respective areas.

- **Program of Energy Research and Development:** The Office of Energy R&D manages the federal government's interdepartmental Program of Energy Research and Development (PERD), which covers all areas of energy R&D, except for nuclear fission. In addition to funding the energy research of various government departments, PERD also provides a mechanism

for co-ordinating and focusing their efforts on specific issues. Many PERD projects are directly related to the oceans sector. For example, numerous PERD projects support oil and gas exploration and development on the east coast and in the Beaufort Sea. The principal strategy is to work closely with industry in directing PERD funds to areas in need of a regulatory and information infrastructure for oil and gas development. The research covers offshore geotechnics, ice/structure interaction and safety; environmental studies including forecasting, design and impacts from energy activities; and pipeline and marine transportation of oil and gas.

PERD also supports research on the science of climate change and the capture and disposal of greenhouse gases. This involves issues such as changes to sea ice and marine weather conditions caused by global warming, as well as some considerations of the disposal and fate of CO<sub>2</sub> in the oceans.

### ***Minerals and Metals Sector***

This sector works with other federal government departments, the provinces, industry and other stakeholders to encourage the economic development of Canada's mineral resources. It also develops and recommends federal policies on sustainable mineral development, and initiatives on environmental and land-use issues. The sector is responsible for the administration of all federally owned mineral rights in the provinces and non-fuel mineral interests on offshore Canada land, south of 60° latitude.

The sector has been involved in the technical, administrative and regulatory consequences of Canada's potential ratification of the Law of the Sea. Within the limits of the continental shelf, this sector has led discussion with other departments and the provinces regarding the potential for development of its mineral resources, and the environmental consequences of such development through the Marine Environmental Quality Initiative.

In pursuing NRCan's lead in the sustainable development of Canada's mineral resources, the sector has emphasized activities in three areas: special land claims (and regulatory/policy precedents), provincial and Aboriginal partnerships, and fiduciary responsibility; environmental marine protected areas (resource assessments), environmental assessments and pollution prevention; and economic investment

climate, mineral development, revenue sharing/royalties and resource assessments.

### **Earth Sciences Sector Geological Survey of Canada (GSC)**

GSC is the principal source of marine geoscience information for the nation, relevant to territorial claims, marine non-renewable resources and environmental management. Cost-effective delivery of the program is facilitated through partnership with DFO and Environment Canada at two national multi-disciplinary marine institutions, the Bedford Institute of Oceanography in Dartmouth, Nova Scotia, and the Institute of Oceans Sciences in Sidney, British Columbia. GSC shares facilities such as ships and support infrastructures. Collaboration in oceans research with DFO and joint research projects in marine geoscience are also conducted with other government departments, universities and the private sector.

GSC's program related to the oceans is divided into three main activities:

- **Marine Regional Geoscience:** Baseline geological and geophysical data is acquired at a variety of scales used for territorial definition, resource identification and the solution of environmental problems. Coastal mapping provides fundamental data on the characteristics of Canada's coasts, prerequisites for coastal protection, engineering, environmental assessment, coastal zone management and resource use, including aquaculture. Geological mapping from the nearshore to the deep sea is applicable to all seabed-related activities, such as environmental, engineering, military, territorial, regulatory and scientific activities. Geophysical mapping provides knowledge about the history and evolution of Canada's offshore margins, shelves and ocean basins, for the development of new models of non-renewable resource occurrence. It will also be the basis for establishing the limits of Canada's continental shelf under the terms of Article 76 of the United Nations Convention on the Law of the Sea.
- **Marine Resources Geoscience:** Canada's offshore non-renewable resources such as seabed minerals, sub-seafloor oil, gas and gas-hydrates are identified and assessed by GSC. Specific oil- and gas-bearing frontier (offshore) basins are analyzed for their oil and gas resources where anticipated or where production has commenced. Basin mod-



elling targets specific basins, often in conjunction with industry, to assess key basin characteristics and resource potential. In particular, the genesis of mineral deposits formed by large amounts of fluids circulating through the sea floor is studied off the west coast. The occurrence of non-renewable and seabed minerals, such as aggregates and places (e.g., gold), are also mapped as a basis for the assessment of future commercial seabed mining in Canada's nearshore zones.

- **Marine Environmental Geoscience:** GSC provides knowledge of the geoscience component of environmental systems for sustainable development with two distinct mandates — the understanding of natural geological processes and constraints to development of Canada's coastal and offshore areas, and the evaluation of potential or previous development impacts on natural environmental systems. There is, for example, a continuing effort to understand the distribution, magnitude and frequency of marine geologic hazards, such as seabed erosion, fluid escape and submarine landsliding. On the west coast, the potential for a large earthquake (magnitude = 9), probably offshore, and expected to cause \$300 billion damage, has driven much of the environmental program. The possibility of such an earthquake affects the design criteria (and the cost) of all future structures in this region. Knowledge of coastal and seabed processes, such as erosion and sea-floor stability, are important to the construction of coastal and offshore engineering structures, such as jetties, platforms, pipelines, cables and coastal facilities, such as ferry terminals and super ports. Aspects of coastal pollution and its mitigation are being addressed under the interdepartmental Marine Environmental Quality Initiative Action Plan.

### ***Geomatics Canada***

The objective of Geomatics Canada is to provide up-to-date geographical information on Canada's landmass. It does this by providing a reliable system of surveys, maps, remotely sensed data and geographically referenced information covering the Canadian territory, in support of national sovereignty, defence, environmental and socio-economic development and the governing of Canada; and by promoting the development of technologies for surveying, map-

ping, remote sensing and geographic information systems, and fostering the growth of related expertise in both the public and private sectors.

Within Geomatics Canada, the Geodetic Survey Group is responsible for providing and maintaining spatial reference systems, standards and national networks of control points for Canada in support of geomatics applications. Legal Surveys is responsible for providing and maintaining the Canada Lands Survey Record, which provides a legal survey framework for the property rights system in operation on frontier lands in the offshore. Surveys performed in accordance with this system facilitate the legal transfer of rights from the federal government to private companies seeking to explore for and develop petroleum and mineral resources in the offshore. The International Boundary Commission is responsible for the definition, regulation and maintenance of the International Boundary between Canada and the United States. The Canada Centre for Remote Sensing is responsible for the reception, processing, archiving and dissemination of remotely sensed data for Canada and, in conjunction with private industry, for the development of technology and applications for remote sensing.

### ***Polar Continental Shelf Project (PCSP)***

PCSP was created to help Canada establish and subsequently maintain its sovereignty in the Arctic through peaceful means. It does so by co-ordinating cost-effective logistic support for research scientists working in the Arctic, including the offshore.

PCSP-supported research, conducted by scientists from a variety of federal and territorial government departments and universities, has helped to define Canada's offshore limits in the Arctic and to establish Canada's claims to offshore hydrocarbon and mineral resources. PCSP supports weather, climate, ice and hydrology research; a wide range of environmental pollution, impact, protection and conservation studies; hydrographic surveys that have served to identify safe shipping routes in the North; marine bird, mammal and fish stock assessments; studies in support of the establishment of protected marine areas; and offshore geological mapping and mineral and hydrocarbon assessment research.

### ***National Energy Board (NEB)***

The NEB is an independent federal regulatory tri-

bunal, established in 1959. It reports to Parliament through the Minister of Natural Resources. The Board's regulatory powers under the National Energy Board *Act* include the granting of authorizations for:

- the construction and operation of interprovincial and international oil and gas pipelines, international power lines, and designated interprovincial power lines;
- the setting of tolls and tariffs for oil and gas pipelines under its jurisdiction;
- the export of oil, natural gas and electricity; and
- the import of natural gas.

The Board also has regulatory powers under the *Canada Oil and Gas Operations Act*, the *National Energy Board Act* and the *Canada Petroleum Resources Act*.

Some of the NEB's oceans-related responsibilities are the following:

- **Frontier Oil and Gas** — The Board has regulatory responsibility for oil and gas exploration, development and production activities on Canada's frontier lands, excluding those areas offshore of Newfoundland and Labrador, and Nova Scotia, which are subject to separate federal/provincial Accords. The Board regulates these activities to enhance worker safety, to protect the environment and to conserve oil and gas resources.
- **Environmental Matters** — The Board is responsible for environmental issues relating to the regulation of gas, oil and petroleum products pipelines, energy exports, international power lines, and frontier oil and gas activities. The Board is continuing its effort to obtain consensus and update the *Offshore Waste Treatment Guidelines*.
- **Emergency Response** — The NEB is the federal government's lead agency for response to oil spills in non-Accord frontier areas, if the oil has been spilled from exploration, production or pipeline transportation facilities. As the lead agency, the NEB may monitor the cleanup by the operator; with other government departments' involvement, the NEB may assist in the response; or, if the operator cannot or will not complete the response activities, the NEB may assume control of the response activities.

- **Program of Energy Research and Development** — (PERD) To ensure a sound knowledge basis for its regulatory functions, the Board participates in PERD to support technological programs investigating aspects of exploration, production, transportation and use of energy.

Project areas where the Board takes a leadership role include ice/structure interaction, personnel evacuation technologies, environmental forecasting and design, marine conditions (waves, ice, icing and winds), measurement technologies, marine weather and wind forecast verification, marine transportation of oil and gas, climate change issues, and marine oil spill response and remediation.

## Atlantic Canada Opportunities Agency (ACOA)

ACOA is the federal government's agent for economic development in Atlantic Canada. It was established in 1987 to strengthen the region's economy by boosting job creation and earned income. Its legislative mandate is to support and promote opportunities for economic development in Atlantic Canada, with particular emphasis on small and medium-sized businesses, through policy, program development and implementation. ACOA also acts as an advocate, attempting to increase the participation of Atlantic Canada in national economic policies, programs and projects.

The oceans sector has benefited, as Atlantic suppliers have received federal contracts for firms in the marine, electronics and communications areas. A number of examples follow:

- In 1992, Halifax Shipyards (HSL) as a subcontractor to Fenco, won a major contract for the construction of 12 DND Maritime Coastal Defence Vessels. ACOA was instrumental in ensuring that HSL could avail of this opportunity, and has since closely followed the award of contracts to Atlantic firms.
- Guigne International, St. John's, Newfoundland, has become a world leader in smart underwater acoustics. Through strong advocacy and financial support, ACOA has helped the company to apply its technology to problems related with processing materials in a micro-gravity environment. Guigne has won several related contracts from the Canadian Space Agency (CSA) and foreign government agencies.

- IOSAT, a new high-tech Nova Scotia company co-owned by Satlantic and Iotek, has developed, with the help of ACOA, CSA and provincial funding, a Transportable Satellite Imaging Terminal for use with RADARSAT and other earth and ocean observation satellites. There is excellent potential for export sales for this product.

ACOA pursues its mandate through a number of program tools. The following can be of significant benefit to the oceans sector:

- **The Business Development Program** was implemented on August 1, 1995, to replace the Action Program and to provide increased flexibility in the assistance of small and medium-sized enterprises and of non-profit business support groups in Atlantic Canada. All assistance to business is fully repayable and is focused on competitiveness-related projects such as technology development, quality assurance, productivity improvement and market development, as well as establishments and expansions. Assistance to oceans-related industries is limited to aquaculture and selected value-added, productivity-improvement technology development, or market-development projects in the fish processing industry.
- **The Cooperation Program** provides for federal-provincial cost-shared partnerships to assist the development of a variety of sectors of the Atlantic economy. As of November 1994, there were 62 CoOPERATION Agreements in place between the federal government and the four Atlantic provinces, cost-shared at an average of 60 percent to 40 percent. The agreements that had most applicability to the oceans sector were: Salmonid Enhancement and Conservation (\$21 million) and Fishing Industry Development (\$8.6 million) in Newfoundland; Fisheries (\$15 million) in Nova Scotia; Fisheries Development (\$10.6 million) in Prince Edward Island; and Recreational Fisheries (\$15 million) in New Brunswick.

More recently, in keeping with the first round of Program Review, ACOA has been working toward the consolidation of the remaining Cooperation Agreements into a single, comprehensive agreement per province. The new, single, broadly based agreements will place priority on strategic, innovative and knowledge-based infrastructure and technologies.

- **Canada Business Service Centres:** are located

in the provincial capitals and are intended to provide entrepreneurs with one-stop shopping and ease of access to information about government programs. They facilitate access to capital by providing a comprehensive listing of support available through federal government programming, provincial government programming and the private sector.

- **Community-Based Economic Development** provides development assistance to local communities, training and counselling to entrepreneurs, as well as provides capital to new or expanding businesses.
- **The Fisheries Alternatives Program** was designed to encourage fishery-dependent communities, affected by the downturn in the region's fishery, to diversify their economies. The program was terminated on February 7, 1995, after having provided \$96 million toward the development of 1,197 projects.
- **The Action Program** provided direct financial assistance to small and medium-sized businesses and to non-profit, business-support groups. Since the inception of the program on February 15, 1988, to its termination on July 31, 1995, approximately 16,000 projects received financial assistance amounting to approximately \$1 billion in the form of grants, non-repayable contributions, repayable contributions, interest buy-downs, unsecured loans and loan insurance. During the life of the Action Program, 291 applicants in the fish processing and aquaculture industries received \$30 million toward total project costs of \$107 million pertaining to 483 projects.

## Western Economic Diversification Canada (WD)

Since its establishment in 1987, Western Economic Diversification Canada's (WD) mandate has been to promote the development and diversification of the economy of Western Canada and to advance the interests of the West in national economic policy.

Instead of providing direct financial assistance to individual companies, WD is involved in several new innovative partnerships with both the public and private sectors to address the information and financing needs of small and medium-sized businesses in Western Canada.

Working in cooperation with industry associations,

financial institutions and the four western provinces, WD is working to address the needs of small business and business services. Resources are strategically targeted to industries having the greatest potential for growth and that support the federal government's Jobs and Growth Strategy.

To achieve its mandate in western Canada, WD focuses its efforts in four key areas of activity:

1. **Western Business Service Network** - The WD network offers a "single-window" source of information for small businesses in the West. In partnership with other business service organizations, WD's programs and services are now accessible on over 100 points of service in rural and urban centres in western Canada. This Western Business Service Network includes Community Futures Development Corporations (CFDCs), Women's Enterprise Initiatives, Canada Business Service Centres and WD offices throughout western Canada. Coastal communities are served directly by 11 coastal Community Futures Development Corporations in British Columbia.
2. **Capital Services** - WD is creating new and alternative sources of capital for small and medium-sized businesses by working closely with financial institutions to create a specialized series of loan programs. These loan programs target industry sectors important to western Canada and provide patient and flexible debt capital on commercial terms especially suited to the unique needs and cash flow requirements of these small businesses. Arrangements between WD and various financial institutions provide for increased financing of interest to businesses in the oceans and marine sectors in the areas of biotechnology, agriculture value-added, knowledge-based industries, advanced technology, environmental technologies, tourism, and advanced minerals and manufacturing technology. Other sectors supported include health, information technology and telecommunications, as well as a community investment loan fund. These programs provide western Canadian small businesses with access to incremental financing of up to \$405 million. In addition to providing access to new sources of incremental financing, the loan funds offer flexibility - longer repayment terms, subordinated debt, and the ability to defer principal and interest payments. WD also helps applicants develop their business case in preparation for consideration of the loan proposal by the financing institu-

tion.

CFDCs are WD supported community economic development organizations that work in partnership with other local organizations, business associations and municipal governments to enable rural communities to develop and strengthen the economic potential of their area. They provide small business financing in rural communities, including coastal communities, that fill a capital niche not addressed by other financial institutions.

The coastal CFDCs also work to mitigate the economic impact on their communities of the 1996 Fisheries Revitalization Plan. A consortium of the 11 coastal British Columbia CFDCs administers for DFO the program to provide loans to commercial salmon licence holders for the purpose of stacking licences. The CFDCs will also administer a Fisheries Legacy Fund for economic investments to aid community adjustments to declining employment in the traditional salmon fisheries.

CFDCs also assist with financing under the Western Youth Entrepreneurship Program (WYEP) and Entrepreneurs with Disabilities Program (EDP)

Women's Enterprise Initiatives in each western province offer access to a loan fund, advisory services, pathfinding to existing services plus a host of unique products and services tailored to meet the needs of women entrepreneurs in their province.

3. **Business Services** - WD works to enhance supplier development programs to help small business sell to government markets, advocating at the national level on behalf of western businesses. It advocates to simplify and streamline regulations affecting small business. WD also delivers trade and export support programs to small firms that have not exported but that have the potential.
4. **Alliances** - WD helps establish industry alliances to enhance the competitiveness and growth of industries vital to western Canada in areas such as aquaculture and the ocean industries. WD promotes community economic development in rural and coastal areas through CFDCs and urban centres through urban development initiatives, and establishes new private and public sector partnerships to streamline the delivery of programs and services to small businesses throughout western Canada.

# TRANSPORTATION

## Transport Canada

TRANSPORT CANADA CURRENTLY MAINTAINS A NUMBER OF PROGRAMS AND SERVICES THAT BENEFIT THE OCEANS SECTOR. FROM A MARINE POLICY PERSPECTIVE THESE INCLUDE: DOMESTIC AND INTERNATIONAL SHIPPING ISSUES; COASTING TRADE REGIME; PORT POLICY; FERRY SERVICES; SEAWAY AND MARINE CROWN COMPANIES; COMPETITIVENESS ISSUES; INSURANCE AND LIABILITY; ECONOMIC REGULATIONS; AND INTERNATIONAL MARINE ACTIVITIES.

### *Ports*

On December 14, 1995, the Minister of Transport announced the National Marine Policy. The National Marine Policy will change Transport Canada's direct operating role in the marine sector. The policy, through the introduction of new legislation, will consolidate and modernize the marine regulatory regime, cut red tape, reduce overhead costs and allow for faster business decisions. The policy will commercialize the operations of public ports by identifying a National Ports System to be managed by Canada Port Authorities. Ports of regional/local importance will be transferred to local interests. Transport Canada will continue to maintain remote ports as designated by the National Marine Policy.

### *Ferry Services*

The Department currently subsidizes several private ferry operations (estimated expenditures of \$9.7 million in 1995-96) on the Atlantic coast and the British Columbia ferry service through a grant arrangement (\$21.3 million in 1995-96). Examination of means to reduce the cost of federally subsidized ferry services is currently under way. Another major ferry operation is the Marine Atlantic service, covered under Crown corporations below.

### *Marine Regulation*

Transport Canada is responsible for the safety and ship-source pollution prevention regulatory environment for all commercial vessels, including fishing vessels. The Department is also responsible for the

associated inspection and certification activities carried out by the ship safety field staff for both Canadian and foreign flag vessels. DFO (Coast Guard) works closely with Transport Canada to develop standards and regulations for fishing vessels.

### *Transportation of Dangerous Goods*

Transport Canada's role in this area is to promote public safety in the transportation of dangerous goods. This has two aspects: prevention of accidents and incidents; and minimization of the consequences of accidents and incidents. One example of a service on the prevention side is the operation of the Canadian Transport Emergency Centre (CANUTECC), which provides a bilingual 24-hour chemical and regulatory information service.

### *Ship-Source Oil Pollution Fund (SOPF)*

The purpose of the SOPF is to pay claims for oil pollution damage or preventive measures, at any place in Canada, or in Canadian waters and fishing zones, including the Arctic, caused by the discharge of oil from any ship.

### *Crown Corporations*

The Minister of Transport reports to Parliament for a number of Crown corporations that provide transportation services. As required, funds for these corporations are voted by Parliament and directed to the corporations through Transport Canada. The Department monitors the activities of the corporations and provides independent policy advice to the Minister with respect to the future direction of the

corporations.

**Marine Atlantic Inc.** operates marine ferry services in the Atlantic, linking, for example, coastal Nova Scotia to Newfoundland, as well as providing services along the Labrador coast and linking Labrador to Newfoundland. In 1995-96, Transport Canada provided approximately \$100 million to Marine Atlantic Inc. in order to subsidize its activities. Marine Atlantic Inc. will substantially reduce its costs and increase efficiency by exploring new vessel management and procurement practices, the commercial operation of vessels and the streamlining of services, as well as schedule adjustments and the possible transfer of some services to private or provincial control.

**The St. Lawrence Seaway Authority** is a critical link between ports in North America's heartland and overseas and inter-regional trade. The government is committed to the long-term viability of the system, and, under the National Marine Policy, is examining various options aimed at commercializing the system.

**Pilotage Authorities** for the Atlantic, Laurentian, Great Lakes and Pacific areas are Crown corporations responsible for providing a safe and efficient pilotage service in the Canadian waters of their respective regions. The authorities establish compulsory pilotage areas, and prescribe ships or classes of ships that are subject to compulsory pilotage and the circumstances under which this may be waived. They license pilots, issue pilotage certificates to shipmasters/officers with the required knowledge of local waters and set tariffs to be paid by users of the service.

## National Transportation Agency of Canada (NTA)

NTA was established on January 1, 1988, as the federal body responsible for the economic regulation of all modes of transportation under federal jurisdiction in Canada. Following the enactment of the *Canadian Transportation Agency Act* in July 1996,

the NTA became the Canadian Transportation Agency. The regulatory regime of the Agency was designed to encourage more competition, reduce economic regulation and place a greater reliance on market forces.

On the marine side, the NTA/CTA activity encompasses the economic licensing of certain Canadian marine carriers. It also addresses the resolution and investigation of disputes involving shippers, travellers, carriers and other interested parties. It is also involved in the investigation of proposed acquisitions and mergers, the administration of the *Shipping Conferences Exemption Act*, the determination of the availability and suitability of Canadian ships under the *Coasting Trade Act*, and investigation of tariff regulations set by pilotage authorities.

## Transportation Safety Board of Canada (TSB)

The TSB is an independent transportation accident investigation agency that reports to Parliament through the President of the Queen's Privy Council.

The TSB is concerned with the analysis of safety failures in the federally regulated elements of the marine, rail, commodity pipeline and air transportation systems. The jurisdiction of the TSB includes all Canadian and foreign transportation occurrences that take place in or over Canada, including Canada's internal waters, territorial sea, or waters above the continental shelf, in the case of marine occurrences related to activities concerning the exploration or exploitation of the continental shelf.

The primary purpose of the Board's investigations is accident prevention. The Board seeks to identify deficiencies in transportation and to make recommendations designed to eliminate or reduce any such safety deficiencies.

Marine safety receives much public and media attention. The issue of groundings of large oil tankers has been quite topical since 1992, when the Government's Commission of Inquiry into Tanker Safety released its report with recommendations.

# HEALTH

## Health Canada

**H**EALTH CANADA'S MISSION IS TO HELP THE PEOPLE OF CANADA MAINTAIN AND ADVANCE THEIR HEALTH, SAFETY AND WELL-BEING IN COOPERATION WITH OTHER DEPARTMENTS, GOVERNMENTS AND THE PRIVATE SECTOR. THE HEALTH PROTECTION ACTIVITIES OF HEALTH CANADA INCLUDE REGULATORY RESPONSIBILITIES DEALING WITH THE SAFETY OF FOODS AND OTHER CONSUMER PRODUCTS. FOR EXAMPLE, HEALTH CANADA REGULATES THE USE OF FOOD ADDITIVES, SETS STANDARDS FOR FISH PRODUCTS, AND ESTABLISHES GUIDELINES AND TOLERANCES FOR VARIOUS CHEMICAL AND MICROBIOLOGICAL CONTAMINANTS IN FISH. THROUGHOUT ITS VARIOUS RISK ASSESSMENT AND MANAGEMENT ACTIVITIES, HEALTH CANADA PLAYS A MAJOR ROLE IN PROVIDING ADVICE TO OTHER FEDERAL, PROVINCIAL AND TERRITORIAL DEPARTMENTS ON FEDERAL POLICIES AND PROGRAMS INFLUENCING THE HEALTH AND WELL-BEING OF CANADIANS. SOME OF THE RESPONSIBILITIES RELATED TO THE OCEANS SECTOR ARE DESCRIBED BELOW.

### *Administration of the Food and Drugs Act and Regulations*

#### **Quality and Microbiological Standards and Food Additive Regulations**

Relevant to the commercial development of the oceans sector, Health Canada, in collaboration with DFO, establishes standards of quality for fish products sold in the Canadian marketplace. Division 21 of the Canadian Food and Drugs Regulations specifically deals with marine and freshwater animal products to ensure the safety and quality of such products. The prescribed standards in the Regulations include requirements for microbiological safety and limitations on the issue of food additives. Before food additives are recommended for use, Health Canada conducts detailed evaluations of the safety and utility of these substances. The *Food and Drugs Regulations* also set out requirements to ensure the microbiological safety of fish such as marine products packaged in hermetically sealed containers.

#### ***Establishment of guidelines/tolerances for chemical contaminants and micro-organisms in marine species***

In addition to setting standards, Health Canada establishes guidelines or tolerances for chemical contaminants in marine species, and develops guidelines intended to assure the microbiological safety of fish products for which no specific standards exist. Based on the estimation of the human risk presented by products identified as contaminated, Health Canada recommends risk management actions to limit human exposure to naturally occurring, microbiological and waste contaminants.

#### ***Compliance***

Health Canada offers support to DFO, the lead federal department, in enforcement and compliance activities involving fish products intended for human consumption. Microbiological guidelines established by DFO for the manufacture and processing of species harvested in the oceans are reviewed by Health Canada to ensure the continuing safety and high quality of Canadian fish products.

#### ***International Trade Policy***

Health Canada also plays a major role as the advisor to DFO on acceptable standards of quality and safety in the preparation of MOUs with foreign countries for imported fish products.

# ENVIRONMENT

## Environment Canada

ENVIRONMENT CANADA'S OBJECTIVE IS TO FOSTER A NATIONAL CAPACITY FOR SUSTAINABLE DEVELOPMENT IN CO-OPERATION WITH OTHER GOVERNMENTS, DEPARTMENTS OF GOVERNMENT AND THE PRIVATE SECTOR, WHICH WILL RESULT IN A SAFE AND HEALTHY ENVIRONMENT AND A SOUND AND PROSPEROUS ECONOMY.

### *Atmospheric Environment Program*

This responsibility centre in the Department provides services to Canadians in the areas of weather, climate, air quality, ice and hydrology. It also provides meteorological and hydrological warnings and forecasts designed to reduce the impact of hazards upon life and property. In the oceans area, services are provided 24 hours a day and seven days a week with information on weather warnings, forecasts and information on atmospheric, hydrological, sea-state and ice conditions. The Department monitors and predicts the movement, break-up and melting of ice and icebergs in eastern and northern Canada. It produces warnings, bulletins, charts and information concerning current, forecast and climatic ice conditions.

### *Environmental Protection Program*

This activity provides a wide range of services and pollution prevention is the key to its long-term strategy. One example of interest to the oceans sector is ocean disposal. In September 1994, new regulatory amendments under the Canadian Environmental Protection Act came into force to prohibit ocean disposal of radioactive waste and the ocean disposal of industrial waste. In 1995-96, the development of a National Program of Action for the Protection of the Marine Environment from Land-Based Activities was initiated. It addresses land-based sources of marine pollution and coastal zone management (Environment Canada and DFO lead respectively). Environment Canada also monitors shellfish-growing areas to help ensure public health protection under the Canada Shellfish Sanitation Program. The Department is also responsible for the pollution prevention control provisions of the Fisheries Act, including the control of discharges into the marine environment.

### *Environmental Conservation Program*

The major focus of this activity is on understanding what is necessary to sustain ecosystem health and biodiversity in Canada and communicating this information to Canadians.

An example of the key initiatives is the Atlantic Coastal Action Program (ACAP), which uses a community-based approach to restoring and conserving 13 severely degraded Atlantic harbours and coastal areas. Environment Canada assists multi-stakeholder groups in the production of comprehensive environmental management plans for the 13 ACAP sites, and participates in demonstration projects through funding and technical support.

Another initiative is the St. Lawrence 2000 Vision, which is aimed at restoring degraded sites, preventing pollution and conserving the St. Lawrence ecosystem, as well as continuing efforts to reduce toxic industrial discharges into the river.

The Department jointly administers the Fraser River Action Plan (FRAP) with DFO. The goals of FRAP are to create a management structure to ensure that the Fraser River Basin is managed in a sustainable fashion, restore fish and wildlife habitat, and reduce pollution.

An amendment to the Canada Wildlife Act in 1994 allowed for the establishment of protected marine areas for wildlife out to the 200 nautical mile limit (marine protection was previously limited to areas within the territorial sea). The main purpose in establishing these protected marine areas is to provide advice for wildlife conservation, research and interpretation, and to carry out conservation measures for wildlife in those areas. Environment Canada focuses its marine wildlife research on marine birds, due to its responsibilities under the *Migratory Birds Convention Act* (1917, 1994).



However, protected marine areas may also be established for other wildlife as well.

## Canadian Environmental Assessment Agency

The Agency, reporting directly to the Minister of Environment, administers the federal environmental assessment process. Its mission is to provide effective means of integrating environmental factors into federal planning and decision making in a manner that takes into account public values and the goal of sustainable development.

Environmental assessment provides decision makers with information to ensure that projects are compatible with a healthy, sustainable environment. The *Canadian Environmental Assessment Act* requires federal authorities to conduct an assessment before they carry out any project or, to enable a project to be carried out, provide financial assistance; sell, lease or otherwise transfer control or administration of land; or issue a licence, permit or other authorization included in the Act's regulations.

There are four types of assessment: screenings, comprehensive studies, mediations or reviews by a public panel. Projects affecting the oceans sector that have been or are being reviewed by a panel include, e.g., Hibernia, Terra Nova hydrocarbon developments and the Sable Island gas project.

## Canadian Heritage — Parks Canada

Parks Canada, within the Department of Canadian Heritage, handles the planning, establishment and operation of national parks (to represent Canada's 39 terrestrial natural regions), national marine conservation areas (to represent Canada's 29 marine natural regions), and over 100 national historic sites. Of particular interest to the oceans sector is the work of the Department on the following marine conservation areas:

### *Existing National Marine Conservation Areas*

National marine conservation areas (NMCAs), formerly known as national marine parks, protect and conserve a variety of marine ecosystems, critical marine wildlife habitats, and submerged cultural resources, such as shipwrecks. These areas promote the ecologically sustainable use of fisheries

resources and provide opportunities for public appreciation and enjoyment of the natural marine environment.

At the present time, three national marine conservation areas have been established, two of which are in tidal waters.

- **Gwai Haanas (NMCA)/South Moresby (British Columbia)** A federal-provincial agreement for this site was signed in 1988. Federal and provincial ministers recently agreed on the boundaries of the area (3050 km<sup>2</sup>). Work is under way to extinguish third-party interests and to prepare for discussions with the Haida Nation on co-management arrangements.
- **Saguenay-St. Lawrence Marine Park (Quebec)** In 1990, Canada and the Province of Quebec agreed to work toward the establishment of a marine park at the confluence of the Saguenay fjord and the St. Lawrence River estuary. Recently, both governments approved a management plan for the park and work is under way to put in place special federal and provincial legislation to protect the area.

### *New Proposals*

- Discussions are under way with the provincial government and local groups regarding the potential for establishing a national marine conservation area in the Bonavista Bay/Funk Island area of Newfoundland.
- Federal and provincial governments recently launched the Pacific Marine Heritage Legacy, a five-year program to create an expanded network of coastal and marine parks on Canada's Pacific coast. As part of the Legacy, the feasibility of two new NMCAs will be studied.

National Parks play a role in protecting adjacent ocean environments from upstream effects. In addition, the ocean environment is an important element of the public education program in most of Canada's 17 coastal national parks.

Some of Parks Canada's national historic sites also relate to oceans activities. For example, the fishing theme is being commemorated at the Gulf of Georgia Cannery at Steveston, British Columbia (west coast fishing) and the Ryan Premises in Bonavista, Newfoundland (east coast fishing). The planned expenditure at these two sites is \$755,000 in 1995-96.

# REAL PROPERTY AND SUPPLY SERVICES

## Public Works and Government Services Canada

THE DEPARTMENT CONTRIBUTES TO THE GROWTH AND VITALITY OF THE OCEANS SECTOR THROUGH ITS ROLE AS A COMMON SERVICE AGENCY THAT PROVIDES A SUBSTANTIAL PORTION OF THE GOVERNMENT'S PROCUREMENT AND REAL PROPERTY-RELATED SERVICES.

UNDER AUTHORITY OF THE DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES ACT, THE DEPARTMENT PROVIDES A WIDE RANGE OF REAL PROPERTY AND SUPPLY-RELATED SERVICES, SOME OF WHICH ARE OF DIRECT BENEFIT TO THE OCEANS SECTOR. THESE SERVICES INCLUDE:

### PWGSC Real Property Services

- **Marine Engineering Services:** professional engineering and technical services pertaining to all aspects of the planning, design, construction, maintenance and evaluation of federal government-owned harbour and coastal facilities, such as breakwaters, wharves, channels and launching ramps;
- **Dredging and Hydrographic Fleet Services:** survey of waterways, dredging of waterways and clearing channels of obstructions;
- **Architectural and Engineering Services for Parks Canada:** assistance to Parks Canada in the delivery of long-term capital programs, some of which (such as National Marine Conservation Areas) are directed to the oceans sector;
- **Real Estate Services:** acquisition, disposal and expropriation services for coastal and harbour-related real property and facilities, such as harbours, wharves, land and waterlots;
- **Land Information:** database development, support and integration using geographic information systems and other technology-based tools;
- **Strategic Planning:** comprehensive real property portfolio management planning, advice and support; and
- **Facilities and Property Management Services:** provision, planning, rationalization and operation of real property, including harbours, laboratories, offices and related infrastructure.

Business volumes for these real property-related services vary from year to year. Total PWGSC services business volume in this area was \$84 million in 1996. In addition, PWGSC provided \$32 million in general-purpose accommodation.

### PWGSC Supply Services

- **Acquisition Services:** for goods and related services, including market research, product planning, and solicitation, bidder selection, and negotiation and administration of contracts;
- **Major Crown Projects:** management of the procurement aspects of these projects, which are typically highly complex requirements exceeding \$100 million; and
- **Crown Assets Distribution:** disposal of surplus goods and materiel through sale, transfer, trade-in, donation, lease, loan or destruction.

Business volumes for these supply services vary from year to year. As an example of oceans program procurements in 1996, PWGSC handled 3,215 contracts valued at \$162 million for DFO, including 1,413 contracts valued at approximately \$57 million for the Canadian Coast Guard.

## Appendix

# FEDERAL OCEANS—RELATED LEGISLATION

<u>Legislation</u>	<u>Purpose as It Relates to Ocean Programs</u>
<b>Minister of Fisheries and Oceans</b>	
<i>Canada Shipping Act</i>	Marine navigation, marine search and rescue, pleasure craft safety, marine ship-source pollution prevention and response, lighthouses, receiver of wrecks, support to other federal departments and agencies.
<i>Coastal Fisheries Protection Act</i>	Monitoring, control and surveillance.
<i>Fisheries Act</i>	Conservation and management of fisheries and habitats, licensing, enforcement, international fisheries agreements.
<i>Fisheries Development Act</i>	Fisheries enhancement and development, aquaculture and resource development research.
<i>Fishing and Recreational Harbours Act</i>	Small craft harbours.
<i>Fish Inspection Act</i>	Promotes and supports the value, wholesomeness and marketability of fish products produced or sold in Canada.
<i>Government Organization Act</i>	Assigns responsibility for physical oceanography, chemical oceanography, marine ecology, oceans policy development.
<i>Navigable Waters Protection Act</i>	Protects the public right of navigation by providing for removal of obstructions and provides an approval mechanism for planned obstructions.
<i>Oceans Act</i>	Declares Canada's maritime zones in accordance with the provisions of the <i>United Nations Convention on the Law of the Sea</i> ; provides for the development and implementation of a national oceans management strategy; and provides for the consolidation and clarification of federal responsibilities for the management of Canada's oceans.
<b>Minister of Foreign Affairs and International Trade</b>	
<i>Coasting Trade Act</i>	Governs the granting of authority to foreign vessels wishing to conduct marine research within Canada's Exclusive Economic Zones.
<i>Foreign Affairs and International Trade Act</i>	Maritime boundary disputes, Law of the Sea.
<i>Oceans Act</i>	Establishes Canadian maritime boundaries.

<u>Legislation</u>	<u>Purpose as It Relates to Ocean Programs</u>
<b>Minister of National Defence</b>	
<i>Canada Shipping Act</i>	Search and rescue.
<i>Emergencies Act</i>	Permits temporary measures to ensure safety and security of Canadians.
<i>International Convention for the Safety of Life at Sea</i>	Search and rescue.
<i>National Defence Act</i>	Maritime Command.
<b>Minister of Justice</b>	
<i>Department of Justice Act</i>	Conduct of litigation (including international).
<i>Oceans Act</i>	Some federal and provincial laws can be applied in some parts of the sea to regulate activities that fall under Canadian jurisdiction (e.g., oil and gas exploration and exploitation).
<b>Minister for Indian and Northern Affairs</b>	
<i>Arctic Waters Pollution Prevention Act</i>	Regulations controlling the deposit of waste north of 60° latitude.
<i>Canada Petroleum Resources Act</i>	Regulates interest in petroleum in relation to frontier lands.
<i>Nunavut Land Claims Agreement Act</i>	Puts into effect land claim agreement.
<i>Western Arctic (Inuvialuit) Claims Settlement Act</i>	Puts into effect land claim agreement.
<b>Minister of Industry</b>	
<i>Government Organization Act, Atlantic Canada 1987</i>	Regional economic development.
<i>National Research Council Act</i>	Established NRC, which includes marine engineering, marine biology research.
<i>Natural Sciences and Engineering Research Act</i>	Established NSERC, which provides grant support to universities.
<i>Western Economic Diversification Act</i>	Regional economic development.

**Legislation****Purpose as It Relates to Ocean Programs****Minister of Natural Resources Canada**

<i>Arctic Waters Pollution Prevention Act</i>	Provisions concerning natural resources in areas of the Canadian Arctic for which the Minister has administrative responsibility.
<i>Canada–Newfoundland Atlantic Accord Implementation Act</i>	Development of offshore resources in Newfoundland.
<i>Canada–Nova Scotia Offshore Petroleum Resources Accord Implementation Act</i>	Development of offshore resources in Nova Scotia.
<i>Canada Oil and Gas Operations Act</i>	Regulation of exploration and exploitation of oil and gas.
<i>Canada Petroleum Resources Act</i>	Regulates interest in petroleum in relation to frontier lands.
<i>Resources and Technical Surveys Act</i>	Provides for surveys.

**Minister of Transport**

<i>Canada Shipping Act</i>	Services for the safe, economical and efficient movement of ships in Canadian waters.
<i>Coasting Trade Act</i>	Reserves cabotage in Canadian waters to domestic ships and provides for temporary use of foreign ships when no suitable Canadian ship is available. Applies to transportation of passenger and cargo and activities of a commercial nature.
<i>Government Organization Act</i>	Includes control of ship-source discharge.
<i>International Convention for the Safety of Life at Sea</i>	Search and Rescue.
<i>National Transportation Act (1987)</i>	Review of mergers and acquisitions of marine undertakings. Licensing of northern marine resupply. Dispute resolution mechanisms for shippers and carriers in the marine mode.
<i>Pilotage Act</i>	Marine pilotage in certain waters of Canada.
<i>Public Harbours and Port Facilities Act</i>	Provides for the management of public harbours and port facilities.
<i>St. Lawrence Seaway Authority Act</i>	Seaway operations.
<i>Shipping Conference Exemptions Act, 1987</i>	Provides an exemption from Canadian competition law to national and international shipping lines to collectively set prices, terms and conditions for international marine transportation. Does not apply to domestic marine transportation.

**Privy Council Office**

Canadian Transportation Accident Investigation and Safety Board Act	Transportation accident investigation.
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<u>Legislation</u>	<u>Purpose as It Relates to Ocean Programs</u>
<b>Minister of Environment</b>	
<i>Canada Wildlife Act</i>	Wildlife conservation, research and interpretation, especially through partnerships and establishment of protected marine areas for wildlife.
<i>Canadian Environmental Assessment Act</i>	Integration of environmental factors into federal planning and decision-making.
<i>Canadian Environmental Protection Act</i>	Provides for establishment of Marine Environmental Quality Guidelines; Ocean Disposal; and control of land-based sources of pollution, offshore oil and gas, and toxic substances.
<i>Fisheries Act (sections 36-42)</i>	Control of pollution from land-based sources, toxic substances, offshore oil and mineral resources development.
<i>Government Organization Act</i>	Assigns responsibility for ice services, marine weather and marine climate.
Migratory Birds Convention Act, 1994	Migratory bird conservation.
<b>Minister of Canadian Heritage</b>	
<i>National Parks Act</i>	Provides for the establishment of marine parks.
<b>Minister of Health</b>	
<i>Food and Drugs Act</i>	Ensures safe use of marine species for human consumption.
<b>Minister of Public Works and Government Services</b>	
<i>Department of Public Works and Government Services Act</i>	Provides for acquisition services for goods and materiel, major Crown projects, Crown assets distribution and disposal, marine architecture and engineering, dredging, fleet services, and other real property services.

During 1995 and 1996, the federal sector has experienced unprecedented activity in the preparation of new legislative instruments and amendments to existing instruments that impact Canadian oceans activities. Some of these initiatives have completed their journey through our Parliamentary process and some are still being reviewed.

Federal departments and agencies will be challenged with an even busier year in 1997, as programs with oceans-related activities will need to focus on strategies to implement these new domestic oceans governance initiatives.

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