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The Role of the Canadian Government in the OCEANS SECTOR

Canada

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Foreword by the Minister of Fisheries and Oceans

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 sector.

The purpose of the document is to provide Canadians with easy access, under one cover, to information about the various roles the federal government plays within Canada's oceans sector. Although 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.

So much has happened in the oceans sector since the first time this document was published, in 1997. Canada's *Oceans Act* — a world first in comprehensive legislation for oceans management — was new in 1997. Since then, we have developed Canada's Oceans Strategy, Canada's Oceans Action Plan and a number of Health of the Oceans Initiatives.

Another difference from 1997 is that all this information is available on the worldwide Web. I hope that you will browse the Department's Web site to learn more about the activities and opportunities that we appreciate as a maritime nation. A companion piece to this document, *Role of the Provincial and Territorial Governments in the Oceans Sector*, is available on this Web site.

The Honourable Gail Shea,
Minister of Fisheries and Oceans

Federal Departments, Agencies and other Organizations with Oceans-Related Activities (30)

Agriculture and Agri-Food Canada	AAFC	www.agr.gc.ca
Atlantic Canada Opportunities Agency	ACOA	www.acoa-apeca.gc.ca
Canada Border Services Agency	CBSA	www.cbsa-asfc.gc.ca
Canadian Environmental Assessment Agency	CEAA	www.ceaa-acee.gc.ca
Canadian Food Inspection Agency	CFIA	www.inspection.gc.ca
Canadian Heritage	CH	www.canadianheritage.gc.ca
Canadian International Development Agency	CIDA	www.acdi-cida.gc.ca
Canadian Space Agency	CSA	www.asc-csa.gc.ca
Canadian Transportation Agency	CTA	www.cta-otc.gc.ca
Economic Development Agency of Canada for the Regions of Québec	CED	www.dec-ced.gc.ca
Environment Canada	EC	www.ec.gc.ca
Fisheries and Oceans Canada	DFO	www.dfo-mpo.gc.ca
Foreign Affairs and International Trade Canada	DFAIT	www.international.gc.ca
Health Canada	HC	www.hc-sc.gc.ca
Indian and Northern Affairs Canada	INAC	www.ainc-inac.gc.ca
Industry Canada	IC	www.ic.gc.ca
International Development Research Centre	IDRC	www.idrc.ca
Justice Canada	DoJ	www.justice.gc.ca

National Defence and Canadian Forces	DND/CF	www.forces.gc.ca
National Energy Board	NEB	www.neb-one.gc.ca
National Research Council of Canada	NRC	www.nrc-cnrc.gc.ca
Natural Resources Canada	NRCan	www.nrcan-rncan.gc.ca
Natural Sciences and Engineering Research Council of Canada	NSERC	www.nserc.gc.ca
Parks Canada Agency	PC	www.pc.gc.ca
Public Works and Government Services Canada	PWGSC	www.tpsgc-pwgsc.gc.ca
Royal Canadian Mounted Police	RCMP	www.rcmp-grc.gc.ca
Social Sciences and Humanities Research Council of Canada	SSHRC	www.sshrc.ca
Transport Canada	TC	www.tc.gc.ca
Transportation Safety Board of Canada	TSB	www.tsb.gc.ca
Western Economic Diversification Canada	WD	www.wed.gc.ca

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Introduction

Our Oceans at a Glance

Canada is a coastal state, with vital sovereign interests in three bordering oceans — the Atlantic, the Arctic and the Pacific. Canada has the world's longest coastline and one of the largest ocean estates on the planet. Its maritime zones, as defined by the *Oceans Act*, comprise internal waters, the territorial sea, the exclusive economic zone, and an extended continental shelf.[1] Together they amount to a staggering 7.1 million square kilometres — a full 70 per cent of the size of our landmass.

Oceans border eight of our ten provinces and the three territories. Many cities and coastal ports — home to more than 7 million Canadians — are located along the coasts and the St. Lawrence River. Almost half of Canada's federal Parliamentary ridings (144 of 308) are bordered by marine waters or the St. Lawrence River.

And Why They are so Important

The oceans sector contributes significantly to the Canadian economy because we use our oceans for pleasure, commerce, trade and economic development — for fishing, shipping, boating, tourism, energy resource development, marine defence industries and oceans-related manufacturing and services. It is currently estimated to account for between 2 and 3 per cent of Canada's gross domestic product[2] and could contribute even more if its potential were fully realized, for energy production and marine tourism, for example.

Oceans are also vitally important in Canada's — and indeed the world's — physical environment. Current widespread concerns about climate change are focused on our northern shores and their resources, but changing ocean levels could be devastating for all our shorelines. In Canada, the health and quality of Canada's marine environment are at risk from a number of important challenges such as declining fish stocks, the introduction of pollutants and invasive species, and habitat alteration and degradation. The well-being of our society is threatened by health effects from pollution, cultural shifts from disappearing species and the loss of heavily populated coastlines.

1 A general description of maritime zones can be found at http://www.dfo-mpo.gc.ca/oceans/canadasoceans-oceansducanada/marinezones-zonesmarines-eng.htm

2 In 2008/2009, Fisheries and Oceans Canada is working to more accurately determine the economic value of marine-related activities in Canada.

Roles of the Canadian Government in the Oceans Sector — Five Themes

Under the authority of the *Oceans Act*, the **Department of Fisheries and Oceans (DFO)** has the lead oceans role and is responsible for coordinating federal policies and programs related to the oceans.

This report describes the activities of DFO and the other 29 federal government departments, agencies and other organizations that are involved in the oceans sector through policies, programs, services, regulation and/or procurement responsibilities. It begins with a description of how they interact in five overarching themes and then gives a more detailed description of the activities of each starting on page 6. It updates a similar document published in 1997. Another report describing the *Role of the Provincial and Territorial Governments in the Oceans Sector* is also available.

In terms of spending, it is difficult to fully isolate the funds dedicated to the government's oceans activities,[3] but just three of the 30 departments and agencies allocate close to $3.8 billion on average to the oceans sector each year. In order of spending, the top three are the Department of National Defence, the Department of Fisheries and Oceans, and Transport Canada.

1. Sovereignty and Marine Security

Protecting Canada from illicit activities at sea and from maritime-based threats to its territorial integrity is the cooperative undertaking of a number of federal departments and agencies, each with different mandates, capabilities and resources. The government of Canada pursues an integrated approach to federal marine security activities in Canada, across North America and abroad. This approach includes efforts to clarify roles and responsibilities of marine security partners, increase on-water presence and surveillance, enhance security of marine ports and facilities, promote broader cooperation with our allies and operate marine security operations centres.

[3] Oceans activities are not a financial line item in financial records. Figures in this report are based on information published in the government's 2007-2008 Part II Main Estimates, Part III Reports on Plans and Priorities, Departmental Performance Reports (2005-2006) and personal communications with certain departments and agencies.

The **Department of Foreign Affairs and International Trade** is a major player in oceans issues, having the lead federal role for sovereignty and trade issues and for international trade matters. The **Department of Justice** also contributes to the government's maritime sovereignty objective by administering provisions of the *Oceans Act*.

The Department of National Defence (DND) has a major presence in the oceans sector and contributes to the government's maritime sovereignty objective through its maritime forces and institutions across the country. DND has a lead role with respect to national security issues in Canada's ocean areas.

DFO and the **Canadian Coast Guard, Transport Canada**, the **Royal Canadian Mounted Police** and the **Canada Border Services Agency** work collectively to provide a regulatory and law enforcement capacity to respond to situations relating to Canada's marine security. **DND** supports these organizations through use of their vessels and reconnaissance and surveillance activities, and leads missions related to the defence of Canada.

2. Economic Development, Trade and Overseas Aid

Several departments and agencies contribute to the government's industrial development objectives in the oceans sector. **Industry Canada** has policies and programs that affect shipbuilding, satellite communications, and science and technology. The **National Research Council of Canada** operates oceans-related research facilities and assists industries under its science and technology activities.The **Natural Sciences and Engineering Research Council** supports university-based research in oceanography and marine sciences. Similarly, the **Social Sciences and Humanities Research Council of Canada** supports university-based research related to the legal, economic, and regulatory aspects of the oceans sector through research grants and targeted research.

Indian and Northern Affairs Canada has the lead federal role in meeting the federal government's objectives for northern development. It influences activities and development in the oceans sector through a range of services and programs.

The **Atlantic Canada Opportunities Agency,** the **Economic Development Agency of Canada for the Regions of Quebec** and **Western Economic Diversification Canada** assist oceans-related firms and activities under their programs and services. They focus on community economic diversification, small and medium enterprises, and collaborative research and development.

Agriculture and Agri-Food Canada provides export market development support for Canadian fish and seafood products, and its Rural Secretariat has a role in the economic development of coastal communities.

Natural Resources Canada has an array of policies and programs to assist development in the oceans sector related to offshore oil and gas, offshore mineral assessments, marine geoscience services and energy research and development.

The National Energy Board has a regulatory role to promote safety, environmental protection and efficient petroleum resource extraction in the development of offshore oil and gas.

DFO has the primary responsibility for the fishing industry and also has a number of programs that contribute to the development of marine-based industries and the market potential for their products and services.

Foreign Affairs and International Trade (DFAIT) has the lead policy role for international trade matters. The **Canadian Food Inspection Agency** provides the certification required by Canadian exporters and importers of aquatic animals and seafood products to meet conditions for seafood safety and disease control measures established by the importing country or region. It also assists DFAIT with bilateral trade negotiations related to technical issues relevant to seafood safety or the health of terrestrial or aquatic animals.

The **Canadian International Development Agency** may assist developing countries with oceans-related development issues. The **International Development Research Centre** draws on Canadian expertise, in areas that include the oceans sector, to foster scientific research and development in many parts of the world.

3. Health and Environment

Health Canada is a major player in ensuring the safety and wholesomeness of Canada's food supply, including ensuring safe human consumption of marine species. The **Canadian Food Inspection Agency (CFIA)** verifies compliance with standards that contribute to the quality, safety and identity of fish and seafood products processed in federal establishments or imported into Canada. CFIA is also responsible for regulatory control of diseases of concern for trade and for the conservation of aquatic resource productivity. **DFO** provides science support for regulated disease control measures.

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, environmental protection and environmental conservation. The **Canadian Environmental Assessment Agency** is responsible for federal environmental assessment activities.

Indian and Northern Affairs Canada is responsible for protecting the environment in the Canadian Arctic. The **Parks Canada Agency** manages marine components of national parks and is working toward a system of National Marine Parks and National Marine Conservation Areas.

4. Transportation

Transport Canada is responsible for a range of legislation, regulation, policies and programs related to the marine sector. A number of its Crown corporations are also involved in oceans activities.

The **Canadian Transportation Agency** has responsibilities for the economic regulation of all modes of transportation under federal jurisdiction and is responsible for resolving disputes. The **Transportation Safety Board of Canada** investigates occurrences in federally regulated parts of the transportation system including the marine sector.

DFO also contributes to the maritime transportation objective, largely through services provided by the **Canadian Coast Guard**, and **DND** has the lead role for coordinating the government's search and rescue program. **Canadian Heritage** contributes to the conservation of historic shipwrecks and provides information about ships in Canada.

5. Real Property and Supply Services

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 services related to real property and works closely with all departments and agencies. For oceans-related procurements, it has particularly close links with DFO, DND, Transport, Environment Canada, Indian and Northern Affairs Canada, Natural Resources Canada and the National Research Council.

Through its procurements, **DND** is a major purchaser of products from firms engaged in shipbuilding and the oceans manufacturing and services sector.

Activities of Each Federal Department, Agency and Other Organization with Responsibilities for Oceans

AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

www.agr.gc.ca

AAFC provides export market development support for Canadian fish and seafood products. AAFC's **Canadian Agriculture and Food International (CAFI)** program supports Canada's agriculture and food industry by helping to build long-term international strategies that will help ensure the industry is well positioned to succeed in key markets, and to respond to increasing consumer demands and global competition. CAFI matches industry funds dollar for dollar to support activities that enhance and promote Canada's reputation as the world leader in supplying, among other products, safe, high-quality seafood products that meet the demands of world markets. In addition to CAFI, AAFC has developed country-specific strategies to promote seafood products.

The Rural Secretariat, through the **Canadian Rural Partnership (CRP)**, works with rural communities (including coastal communities) to help increase their capacity to adapt to sectoral changes through better use of local assets, including skills and infrastructure, and increase community and industry sustainability.

CRP provides research and analysis of economic and social issues affecting rural Canada and coordinates, through the Rural Development Network, collaborative approaches addressing rural issues across the federal government.

With the goal of improving the strategic information available to rural communities, CRP has developed the Community Information Database (CID). AAFC is working with DFO to integrate data from the Large Ocean Management Areas into the CID. This partnership would provide coastal rural communities with a more accurate information base to support their decision-making processes.

ATLANTIC CANADA OPPORTUNITIES AGENCY (ACOA)

www.acoa-apeca.gc.ca

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 enhancing earned income. Its mandate is to support and promote opportunities for economic development in Atlantic Canada, with emphasis on small and medium enterprises, through policy and 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.

ACOA actively participates in the development of federal marine-related initiatives and has recently had a good track record in negotiating funding allocations for products and services by Atlantic-based companies. Examples include the production of electronic navigation charts, advanced sonar technologies, molds for the production of pleasure craft, expansion of wooden boat building business, real-time oceanographic and metrological data collection, and the treatment of mussel processing effluent. Development of the ocean technology industry has been a priority for the Agency, particularly in Newfoundland and Labrador.

CANADA BORDER SERVICES AGENCY (CBSA)

www.cbsa-asfc.gc.ca

The CBSA provides integrated border services that support national security and public safety priorities and facilitate the free flow of persons and goods including plants and animals. The President of the CBSA reports to the Minister of Public Safety Canada. The CBSA has over 24 marine ports of entry throughout Canada that provide clearance to commercial and traveller marine vessels.

Container Security Initiative (CSI)

Under the Smart Border Action Plan, Canada and the United States are working together to enhance the security of our shared border while facilitating the legitimate flow of people and goods. In an effort to further harmonize commercial processes and improve container inspection, the CBSA and U.S. Customs and Border Protection officers are stationed in the other country's seaports (currently Seattle-Tacoma and Newark in the U.S. and Vancouver, Halifax and Montreal in Canada). They jointly target marine in-transit containers that arrive in Canada or the U.S. en route to the other country. In addition to the U.S., the CBSA has officers stationed in South Africa and is working toward stationing officers in Panama and Japan.

CSI is an extension of the Advance Commercial Information program, which requires that marine and air carriers electronically transmit marine and air cargo data to the CBSA 24 hours prior to loading cargo at a foreign port, thus allowing the CBSA to identify threats to Canada's health, safety and security prior to the arrival of cargo and conveyances in Canada.

Canada-U.S. Joint In-Transit Container Targeting at Seaports Initiative (JTI)

This initiative allows for maximum effectiveness in identifying high-risk containers at the first point of arrival in North America, and for sharing law-enforcement information from both sides of the border through an exchange of officers.

Passenger and Crew Screening Initiative (PCSI)

This initiative enhances the CBSA's ability to screen, target and examine the passengers and crew of international commercial vessels destined for Canadian ports, in order to interdict illegal migrants and terrorists seeking entry to Canada through the marine mode. To achieve this goal, the CBSA implemented additional resources and personnel to major Canadian port areas in the Atlantic, Quebec, Great Lakes-St. Lawrence Seaway and Pacific regions.

Radiation Detection Portals

The CBSA is implementing these portals as part of a comprehensive alert system to detect illegitimate radioactive material entering Canada. They are affixed to the ground at selected points on the dock in the marine terminal so that containers pass through them immediately after discharging from a vessel. This system allows the CBSA to mass-screen all containers entering Canada for illegitimate radiation. The portal system has been successfully tested in other countries.

National Risk Assessment Centre (NRAC)

The NRAC responds to all portal alerts and screens information to decide whether to cancel the alert or refer the data to a regional targeting unit for further examination. Scientific support for the decision is available at all times from the Laboratory and Scientific Services Directorate. The secondary inspection stage is at the container's port of entry. If the alert risk cannot be negated by the NRAC, the Marine Container Targeting Unit is notified to perform a car-borne examination. This car-borne scan will provide more detailed information, including identifying the type and level of radiation.

Alternative Means of Reporting and Overall Marine Processing

The CBSA also provides services to general aviation seaplane airports, ferry and tour boats, commercial cargo vessels, cruise ships, barges, yachts and small pleasure craft.

The CBSA provides service at designated small pleasure craft sites, also known as telephone reporting sites. Members and non members of alternative inspection programs (CANPASS and/or NEXUS Marine) may use the telephone to report to the CBSA at these sites upon their arrival in Canada.

The CANPASS and NEXUS Marine Private Boats Program provides expedited border clearance for low-risk, pre-approved persons entering Canada by private boat. Members may call a telephone reporting centre at least 30 minutes, but not more than four hours, prior to their estimated arrival time in Canada and then arrive at a telephone reporting marine site. They may also be entitled to use reporting sites not available to other boaters. As of June 2008, there were over 8,000 members.

The CBSA provides alternative means of reporting at specific remote locations for snowmobiles, private boats, pedestrians and highway travellers under the Remote Area Border Crossing program.

CANADIAN ENVIRONMENTAL ASSESSMENT AGENCY (CEAA)

www.ceaa-acee.gc.ca

The Agency, reporting to the Minister of Environment, administers the *Canadian Environmental Assessment Act*. Its vision is that environmental considerations, alongside social and economic considerations, are taken into account in all federal decisions respecting policies, plans, programs and projects in a manner that supports balanced, integrated decision-making and progress toward sustainable development. The Agency also supports oceans-sector-related research projects such as integrated assessment of ecosystem impacts due to climate change in coastal communities and evaluating biodiversity in marine environmental assessments.

Environmental assessments (EAs) provide decision-makers with information to ensure that projects are compatible with a healthy, sustainable environment. The *Act* requires federal authorities to ensure that an EA is conducted in accordance with the *Act* before they carry out any project or provide financial assistance to enable a project to be carried out; sell, lease or otherwise transfer control or administration of land; or issue a licence, permit or other authorization referenced in the *Act*'s regulations. The *Act*, in this regard, is premised on the principle of self-assessment. Under the federal Regulatory Improvement Initiative, however, the Agency has assumed new responsibilities, including managing the EAs and coordinating Aboriginal consultation for major resource projects.

There are four types of EA — screenings, comprehensive studies, mediations, and assessments by an independent review panel. Projects subject to a comprehensive study are listed in regulations to the *Act*. *The Canada Port Authority Environmental Assessment Regulations*, for example, obligate a Canada Port Authority to ensure that an EA of a project for which it must make a decision is conducted in accordance with the Regulations.

There are normally several major marine-related projects under public panel review at any one time. The Agency maintains the Canadian Environmental Assessment

Registry (http://www.ceaa.gc.ca/050/index-e.cfm), which contains information about projects undergoing environmental assessment.

In addition to the EA of projects, the *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* requires strategic environmental assessment (SEA) to consider the environmental impact of policy, plan or program proposals if the proposal is submitted to an individual Minister or to Cabinet for approval, and if implementation of the proposal may produce a significant environmental impact, whether positive or negative.

The Agency also works collaboratively with DFO and other partners to explore and define the relationship between project EAs as required under the *Act*, regional-scale assessment frameworks and integrated management in the marine environment and to support robust environmental management and efficient decision-making processes.

CANADIAN FOOD INSPECTION AGENCY (CFIA)

www.inspection.gc.ca

CFIA is led by a President who reports to the Minister of Agriculture and Agri-Food Canada. It enforces the Fish Inspection Act and the Food and Drugs Act and their associated regulations. Its role is to verify compliance with product and process standards that contribute to the quality, safety and identity of fish and seafood products processed in federally registered establishments and it inspects imported fish and fish products to prevent the marketing of unsafe or unwholesome or mislabelled products. Inspection effort is directed at foreign processors that have demonstrated a history of poor compliance with Canadian standards. Inspection effort is reduced through agreements with other countries having reliable inspection systems.

The CFIA's activities related to the ocean sector include:

- maintaining databases on contaminants in fish and fish products
- inspecting fishing vessels, facilities used in the offloading and holding of fish prior to processing, vehicles used in the transportation of fish, fish-packing facilities and cold storage facilities
- inspecting retail establishments and enforcing regulations, including enforcing label regulations
- testing chemical residue
- inspecting fish and fish-product labelling
- issuing communiqués and industry notices related to issues on fish inspection
- maintaining a bilingual list of acceptable common Canadian names for fish and seafood
- maintaining an online import alert list
- providing for the certification of fish and fish products for export

The **Quality Management Program (QMP)** requires any shellfish that is to be exported from a province or territory to be processed in a federally registered fish processing plant. All such plants must develop and submit QMP plans to the CFIA for approval and they must continue to maintain them.

The **Canadian Shellfish Sanitation Program (CSSP)** is administered jointly with DFO and Environment Canada. It regulates the import and export, processing, packaging, labelling, shipping, certification, storage and repacking of shellfish and can suspend operations or decertify shellfish processors on the basis of unacceptable operating or sanitation conditions. CSSP also regulates the depuration of shellstock, verifies product quality and purification effectiveness and maintains production and product quality records. It evaluates laboratories performing shellfish analyses and maintains a biotoxin surveillance program of shellfish growing areas.

National Aquatic Animal Health Program (NAAHP)

The NAAHP is designed to prevent the introduction or spread of infectious diseases that pose a threat to Canadian aquaculture or wild resource productivity. The measures to be applied for this purpose are being developed under the legislative authority of the *Health of Animals Act*. The NAAHP will also provide the basis for health certification for Canadian seafood and aquatic animal exports that meets international standards

set by the World Organisation for Animal Health. The NAAHP provides Canada's fisheries and seafood production sectors with a level of disease protection consistent with that applied to farmed and wild animals.

CANADIAN HERITAGE (CH)

www.canadianheritage.gc.ca

Canadian Heritage is responsible for policies and programs that promote culture, the arts, heritage, official languages, citizenship and participation, multiculturalism, Aboriginal people and culture, youth and sport. Several elements of the portfolio have an ocean sector component.

As part of its implementation of the *Cultural Property Export and Import Act*, Canadian Heritage administers a system of export controls over a broad range of cultural objects including objects "recovered from the soil or waters of Canada". This includes items recovered from heritage wrecks in Canadian waters. Depending on the age of such material, it cannot be exported from Canada either temporarily or permanently without an export permit issued under the *Act*. The ultimate goal is to prevent the uncontrolled loss by Canada of cultural material of outstanding significance and national importance.

The **Canadian Conservation Institute (CCI)** provides advice and information on the conservation of marine archaeological artefacts and shipwrecks. CCI has regularly investigated, analyzed and conserved objects from ship and aircraft wrecks. CCI has developed treatment techniques for stabilizing marine archaeological materials including both organic and inorganic objects, and is involved in monitoring underwater sites with Parks Canada. CCI staff has participated in several marine archaeology projects such as the 17th century wreck of the Anse aux Bouleaux from the Phips expedition in the St. Lawrence River and the recovery of a Fokker Standard Universal bush plane from Charron Lake in northern Manitoba. CCI has advised on the recovery of international shipwrecks, including the USS Hunley in the United States and the Kinneret vessel in Israel.

The **Canadian Heritage Information Network** hosts the *Ship Information Database* which contains information about ships that were registered in Canadian ports or sailed in Canadian waters. Based on a design by the Nova Scotia Museum, the database was developed by the federal archaeology office in cooperation with the provinces of Nova Scotia, British Columbia and Ontario and the Marine Museum of the Great Lakes to facilitate the management of archaeological shipwrecks. Its primary target group is archaeological resource managers but the information is of interest to marine curators, archivists, historians and others.

CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA)

www.acdi-cida.gc.ca

CIDA was established in 1968 to administer the bulk of Canada's official development assistance program. CIDA aims to reduce poverty, promote human rights and increase sustainable development. Its priorities are democratic governance, private sector development, health, basic education, equality between women and men, and environmental sustainability.

CIDA works with its development partners, fragile states and countries in crisis, selected countries and regions, and Canadian organizations and institutions. Some of CIDA's aid programs and projects have a marine dimension, such as fisheries management to support the sustainable governance and management of ocean and coastal resources; aquaculture projects to develop commercial, sustainable, aquaculture enterprises; technology transfer and training necessary to build fibreglass boats; and education and training to coastal states to help these states to prepare final submissions for the delimitation of their continental shelves under UNCLOS.

Examples of CIDA marine-related projects:

- A project in Jamaica to increase agricultural productivity. Among other objectives, the project aims to improve fisheries management practices in six pilot areas and to strengthen national fisher-folk cooperatives through training.
- Support for the clean-up of an oil spill off the coast of Lebanon, including its disposal. CIDA also helped restore the fishing sector by providing communities with nets and engines, repairing damaged boats and ports and rebuilding the fisheries cooperative and a major fish market.

CANADIAN SPACE AGENCY (CSA)

www.asc-csa.gc.ca

Canada is a world leader in earth observation. CSA manages programs and projects to support and promote the development and use of earth observation technologies and applications. From 2000 to 2008, CSA managed over 200 projects and distributed over $45 million in funding to federal departments, industry and universities.

Government Related Initiatives Program focuses on developing government use of space-based land, ocean and atmospheric observation systems and services. Its specific aims are to support the development and demonstration of new applications to increase benefits and effectiveness of government services; to ensure efficient use of Canada's investment in earth observation for understanding, monitoring and predicting the state of our environment, managing resources and surveying our territory; to raise awareness within the government of the uses and benefits of Canadian-supported earth observation missions and related enabling technologies; and to encourage use of Canadian earth observations solutions by the government in support of their international commitments.

The Earth Observation Application Development Program aims to promote the development of applications within industry that will maximize the use of earth observation satellite data generated by CSA-supported missions.

Coordination Activities

CSA formed strategic coordination committees to better plan for the use of earth observation satellites. **Coordinated Exploitation of Earth Observation for Marine Security** provides an exhaustive understanding of earth observation needs and requirements for operational users among the federal government's marine surveillance and security community. The **Earth Observation Marine Surveillance Coordination Committee** coordinates and promotes integrated use of space earth observation for the federal government's marine safety, security and environmental mandates. The **International Ocean Colour Coordination Group** promotes international cooperation and coordination in the distribution, calibration, validation and utilization of ocean-colour data from various ocean-colour sensors.

CSA supports the international **SAFARI** initiative (Societal Applications in Fisheries and Aquaculture using Remote-sensing Imagery), whose aim is to accelerate the assimilation of satellite data into fisheries research and ecosystem-based management on a world scale.

CSA and the European Space Agency have embarked on a program called **MORSE**, a joint initiative to develop, promote and operationalize earth-observation-based products and services to support the information needs of Arctic coastal users in government, non-governmental, municipal, industrial, aboriginal and scientific organizations.

CANADIAN TRANSPORTATION AGENCY (CTA)

www.cta-otc.gc.ca

CTA was created in1996 as the continuation of the National Transportation Agency. A quasi-judicial tribunal for the economic regulation of transportation under federal jurisdiction, it has marine responsibilities under the *Coasting Trade Act*, the *Canada Marine Act*, the *Pilotage Act* and the *Shipping Conferences Exemption Act*.

The Agency acts as an economic regulator for certain marine activities. Upon application, the Agency investigates issues in the marine industry and determines, for example, whether tariffs, tolls and fees are unjust, unreasonable, discriminatory or prejudicial to the public interest. It protects the interests of Canadian vessel operators when dealing with applications to use foreign vessels in Canada, while allowing foreign equipment to be used when suitable Canadian vessels are not available.

The Agency shares jurisdiction and interacts with Transport Canada, the Competition Bureau, Fisheries and Oceans Canada, the Canada Border Services Agency, Foreign Affairs and International Trade and Finance Canada. It deals with associations that represent Canadian and foreign ship owners, associations representing shippers, Canadian and foreign ship owners and operators, Canadian port authorities and port users, Canadian pilotage authorities, marine pilots, bridge corporations, the St. Lawrence Seaway Management Corporation and shipping associations.

The Minister of Transport may ask the Agency to look

into specific issues related to federally regulated transportation and to make recommendations. The Agency regularly participates in marine industry functions and activities in Canada and abroad, such as conferences, trade shows and special committees.

CANADA ECONOMIC DEVELOPMENT FOR QUEBEC REGIONS (CED)

www.dec-ced.gc.ca

CED promotes long-term economic development in regions of slow economic growth or where opportunities for productive employment are limited. CED emphasizes long term economic development and sustainable employment and income creation and focuses on small and medium-sized enterprises and on the development of entrepreneurial talent. In fisheries, CED intervenes only in secondary and tertiary processing.

CED supported the development of a centre of excellence in maritime science and technology in Quebec's maritime regions and contributed to the establishment of new companies in this sector. This has led to research and technology transfer in marine biotechnologies (nutraceuticals, cosmeceuticals and environment), maritime technologies (shipbuilding, electronic navigation equipment and maritime information), aquaculture and harvesting and marine products processing. CED also supports development of the international cruise ship industry in an effort to revitalize Quebec communities.

ENVIRONMENT CANADA (EC)

www.ec.gc.ca

EC has a mandate to preserve and enhance the quality of the natural environment, conserve Canada's renewable resources and biological diversity, conserve and protect Canada's water resources, carry out meteorology, prepare for and prevent environmental emergencies, monitor and report on the state of the environment to support sound environmental decision-making, and coordinate environmental policies and programs for the federal government. Science underpins EC's work as the Department's research, monitoring and assessment initiatives are essential to generate the knowledge required to support program and policy design and implementation.

EC supports the federal leadership role of DFO respecting oceans management by undertaking marine-related initiatives within the context of EC's mandate, legislative authorities, and in response to obligations acquired when Canada enters into international environmental commitments.

METEOROLOGICAL SERVICES (MSC)

MSC contributes to the safety and well-being of all Canadians by providing environmental information and advice and by promoting human behaviour that respects the present and future conditions of the atmosphere and hydrosphere.

MSC provides services and research in the areas of weather forecasting (public, aviation and marine, including sea state), climate, air quality, ice and hydrology. MSC also supports an extensive atmospheric and hydrometric observation network.

The Meteorological Service of Canada's main activities are:

- hydrometric and atmospheric observation networks, responsible for collecting and disseminating water and weather information
- meteorological (weather) prediction, to reduce the impact of natural or human-induced meteorological conditions and emergencies on life and property
- ice services to monitor, report and maintain archives on ice conditions
- meteorological and hydrological services to provide information and advice on past, present and future states of the atmosphere and hydrosphere
- atmospheric science to promote the development of scientific knowledge needed to respond to regional, national and global issues such as climate change, smog, ozone depletion, acid rain and hazardous air and water pollutants
- emergency support to respond in emergencies and to provide sufficient support to other organizations to assist them as they respond to the emergency

MSC also operates, on a 24-hour basis, a number of communication channels that could be used to broadcast emergency information via local weather radio, automated telephone systems, media Web page (www.media.weatheroffice.ec.gc.ca) and public access Web page (www.weatheroffice.ec.gc.ca).

ENVIRONMENTAL CONSERVATION

The Department's responsibilities pertaining to the conservation and management of migratory birds under the *Migratory Birds Convention Act (MBCA*) extends to the conservation and management of seabirds, shorebirds and other migratory bird species that complete one or more of their annual life cycle stages along Canada's coasts or further offshore. The *MBCA* and *Canada Wildlife Act* provide the Minister with the authority to establish Migratory Bird Sanctuaries and National Wildlife Areas along coasts and in marine environments for the purposes of protecting a wide diversity of habitat of national and international importance. At present, there are 13 National Wildlife Areas with marine components that total over 150,000 hectares, and 51 Migratory Bird Sanctuaries with marine components that total almost 1.5 million hectares. The *Species at Risk Act (SARA)* is jointly administered by DFO, EC, and Parks Canada Agency. The Minister of DFO is responsible for aquatic species at risk; EC is the federal lead for coastal migratory bird species at risk.

Canada has an international responsibility for the conservation and management of polar bears through commitments under the 1973 *Agreement on the Conservation of Polar Bears*. EC is the federal lead with responsibility for ensuring that Canada's obligations are met, including conducting a national research program on polar bears, protecting ecosystems of which polar bears are a part and consulting with other parties on the management of migrating polar bear populations. As well under SARA, Environment Canada is the federal lead for the conservation and recovery of polar bears in the ice-covered waters of the Canadian Arctic.

The Canadian Shellfish Sanitation Program (CSSP) is jointly administered by DFO, Canadian Food Inspection Agency (CFIA) and EC. Its objective is to protect the public from the consumption of contaminated bivalve molluscan shellfish by controlling the recreational and commercial harvesting of these shellfish within Canada. The CSSP is currently implemented on the Atlantic and Pacific coasts. The EC role is to assess pollution sources and sample water quality in shellfish harvesting areas in order to make shellfish area classification recommendations. DFO uses this information and information from CFIA on the presence of biotoxins and other contaminants in shellfish in order to authorize closures of these areas.

ENVIRONMENTAL PROTECTION

The *Canadian Environmental Protection Act, 1999 (CEPA)* aims to prevent pollution and to protect the environment, including the marine environment, and human health by preventing and managing risks posed by toxic and other harmful substances. More specifically, *CEPA* contains provisions aimed at controlling pollution and managing wastes affecting the marine environment — Protection of the Marine Environment from Land-based Sources of Pollution and Disposal at Sea. *CEPA* also provides for the management of environmental and human health impacts through a variety of authorities related to fuels, hazardous wastes and environmental emergencies. For example, respecting disposal at sea, *CEPA* prohibits the disposal of wastes and other matter at sea within Canadian jurisdiction and by Canadian ships in international waters and waters under foreign jurisdiction unless the disposal takes place under a permit issued by the Minister.

EC also regulates several industry sectors under such legislation as the *Fisheries Act* and *CEPA* including pulp and paper mills, fish processing plants and mining operations as well as effluents from municipal wastewater plants. Under an administrative agreement with DFO, EC is responsible for the implementation of section 36 of the *Fisheries Act*, which is used to manage and regulate the introduction of any substances into marine environments that would make the water deleterious to fish or fish habitat.

International Environmental Commitments

Environment Canada is responsible for contributing to meeting Canada's coastal and oceans-related obligations pursuant to international environmental agreements. For example, EC plays a major role in initiatives undertaken in response to marine-related agreements such as the *Global Programme of Action for the Protection of the*

Marine Environment From Land-based Activities (GPA), Commission for Environmental Cooperation, *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972* (London Convention and Protocol), and the *Agreement on the Conservation of Polar Bears and their Habitat*. EC also supports other federal leads to meet Canada's international commitments, such as the *Convention on Biological Diversity, the International Convention for the Prevention of Pollution from Ships* (MARPOL Convention), and *United Nations Framework Convention on Climate Change*.

While EC participates in a wide range of marine-related initiatives, many are part of larger integrated programs rather than simply marine focused. Examples of such integrated programs where EC and its partners have invested considerable resources are the Ecosystem Initiatives. Several have marine-related components, including the Atlantic Ecosystem Initiative, the St. Lawrence Plan, the Georgia Basin Action Plan, and the Northern Ecosystem Initiative. Other activities under EC research, monitoring and assessment initiatives also contribute knowledge and expertise applicable to coastal and marine issues.

FISHERIES AND OCEANS CANADA (DFO)

www.dfo-mpo.gc.ca

DFO is responsible for developing and implementing policies and programs in support of Canada's economic, ecological and scientific interests in oceans and internal marine waters. Ensuring safe, healthy and productive waters and aquatic ecosystems for the benefit of present and future generations is the essence of the Department's activities, which are built around three strategic outcomes:

- safe and accessible waterways
- healthy and productive aquatic ecosystems
- sustainable fisheries and aquaculture

DFO also provides support to other government departments and federal maritime priorities through activities that include drug interdiction and coastwatch programs with the RCMP; Arctic icebreaking and sovereignty in cooperation with DND and other members of the federal security community; collaboration with Transport Canada on marine safety issues, pollution prevention and other environmental issues in the marine sector; harbour patrols in cooperation with Port Authorities; and vessel support to domestic and international science expeditions and DFAIT.

1. Safe and Accessible Waterways is about providing access to Canadian waterways and ensuring the overall safety and integrity of Canada's marine infrastructure for the benefit of all Canadians. Contributions to this strategic outcome are primarily delivered through the Canadian Coast Guard, the Small Craft Harbours program, and the Canadian Hydrographic Service.

CANADIAN COAST GUARD

Aids to Navigation provides a mix of conventional and electronic aids to navigation to help make the movement of vessel traffic in Canadian waters safe and quick. Aids to navigation also support protection of the marine environment by maintaining maritime safety.

Waterways Management helps to ensure safe and efficient navigation, to protect the marine environment and to facilitate marine trade and commerce.

The **Icebreaking** program is conducted in partnership with Environment Canada's Canadian Ice Service, and helps maritime traffic move safely and expeditiously. Activities include icebreaking, ice routing, harbour breakouts, route planning and escort, all of which are intended to allow the commercial maritime industry, ferries, fishing vessels, ports, Arctic residents and federal and other government departments and agencies to function effectively.

Marine Communications and Traffic Services (MCTS) provides services to the marine community and the public by detecting distress situations and working to deliver help promptly. MCTS also screens vessels to prevent unsafe vessels from entering Canadian waters, broadcasts safety information, regulates vessel traffic movements, coordinates communications between ships and land-based customers on a cost recovery basis a nd manages an integrated marine information system.

Search and Rescue involves searching for and providing assistance to people, ships and other craft that are, or are believed to be, in imminent danger. The primary goal is to save lives at risk. The Coast Guard, along with the Coast Guard Auxiliary, provides and leads the maritime component of the federal search and rescue network, which is the primary responsibility of the Department of National Defence.

The **Environmental Response** program works to ensure the cleanup of ship-sourced spills of oil and other pollutants into Canadian waters. It monitors cleanup efforts by polluters (and their response contractors) and manages cleanup efforts when polluters are unknown, unwilling or unable to respond effectively. Canadian law holds polluters responsible for costs associated with cleaning up spills, including the Coast Guard's costs for monitoring and/or managing a response effort. Regional and area response plans are developed based on a National Response Plan framework. The Coast Guard is the lead response agency north of 60° latitude and it maintains an inventory of oil spill response equipment. It is available to provide services for spills to other lead agencies, such as the National Energy Board.

The **Canadian Coast Guard College** delivers maritime training for the Canadian Coast Guard.

Fleet Services supports Coast Guard activities and provides vessels and maritime professionals to support DFO's scientific and fisheries resource responsibilities. Coast Guard vessels also support the activities of other government departments and agencies in response to federal maritime priorities and natural or man-made emergencies.

Small Craft Harbours (SCH)

SCH operates and maintains a national system of harbours — on the coasts and inland — to provide commercial fish harvesters and other harbour users with safe and accessible facilities. The harbours are operated and managed by independent Harbour Authorities that represent users and local communities. These Authorities assume responsibility for all activities at their harbours, including management and operations. As of July 2008, SCH is responsible for 987 fishing harbours and 187 recreational harbours. SCH divests harbours not essential for Canada's commercial fishing industry to private or community interests.

Canadian Hydrographic Service (CHS)

CHS contributes by surveying, measuring, describing and charting the physical features of Canada's oceans, seas, rivers and navigable inland waters and making up-to-date, timely and accurate hydrographic information and products and services available to citizens, mariners and the government of Canada.

CHS is supported by the broader DFO science program, which undertakes oceanographic research and monitoring that enables forecasting of ocean conditions (tides, currents, etc.) and provides useful insight into the impacts of climate change on navigation. Hydrographic data and information are also provided to support territorial claims and international disputes associated with marine limits and boundaries.

2. Sustainable Fisheries and Aquaculture is about delivering credible, science-based, affordable and effective programs. Contributions to this strategic outcome are primarily delivered through the Fisheries and Aquaculture Management Sector, the Science Sector, and the Policy Sector.

FISHERIES AND AQUACULTURE MANAGEMENT SECTOR

Resource Management oversees the development and implementation of fisheries management plans for each fishery. These plans integrate conservation, management and scientific objectives and spell out measures required to conserve the resource and manage the fishery for which they are intended. Allocation between user groups and fleet sectors constitutes an important aspect of resource management. Harvest allocations are planned to meet legal obligations to First Nations. Fish stocks are managed by allocating quotas to entire fleet sectors, which then fish competitively or give specific percentages of the quota to individuals or businesses in the form of individual quotas, individual transferable quotas or enterprise allocations. Fisheries may also be managed by means such as controlling effort, gear escapement or by catch. Most fisheries, in fact, are managed using a combination of measures. The overall goals are always conservation, responsible and sustainable harvesting practices, equitable distribution of the resource among user groups and the promotion of economic viability. This requires extensive consultations with a diverse array of fishing interests to assure cooperation and collaboration in fisheries management and to meet legal obligations related to consultation.

Aboriginal Policy and Governance is responsible for policies and programs related to Aboriginal fishing matters, negotiating agreements on the management of Aboriginal fisheries and their integration into the overall fisheries management framework, advising federal negotiators on land claims and self-government, and

promoting fisheries-related economic opportunities for Aboriginal communities.

International Fisheries is responsible for advancing Canada's fisheries conservation objectives and optimizing economic opportunities for Canadians from internationally managed fish stocks. This includes negotiating and administering international treaties and agreements related to conservation, conducting bilateral and multilateral fisheries relations with other countries, advocacy, and developing and presenting international fisheries advice and policies to the Minister.

The program develops bilateral fisheries agreements and conducts advocacy campaigns with priority countries to further Canadian objectives and interests in international fora and it actively participates in international fisheries commissions.

Aquaculture works to create conditions for an aquaculture industry that respects the environment and brings benefits to Canadians. The program aims to ensure efficient and effective laws and regulations, investing in science and research and development, working in partnership with the provinces and territories, and providing support for industry development programs. The program conducts scientific research to develop public policy on aquaculture practices, regulations, environmental performance measures and aquatic animal health.

Licensing grants permission to a person (including Aboriginal organizations) to harvest certain species of fish or marine plants subject to conditions attached to the licence. Licences are issued to ensure that a balance between fleet capacity and the resource is achieved, to encourage environmentally sustainable harvesting, to foster greater economic viability of the fishery sector and to facilitate industry self-reliance.

The **Conservation and Protection** program promotes and maintains compliance with legislation, regulations and management measures implemented to achieve the conservation and sustainable use of Canada's aquatic resources and the protection of species at risk, fish habitat and oceans.

The program is delivered through a balanced regulatory management and enforcement approach, including the promotion of compliance through education and shared stewardship, monitoring, control and surveillance activities, and the management of major cases and special investigations in relation to complex compliance issues.

The program also works closely with its partners to ensure peaceful and orderly fisheries, makes a significant contribution to the protection of Canadian sovereignty and the identification of potential marine security threats through extensive marine surveillance activities, and plays a key role in the administration of the Canadian Shellfish Sanitation Program (CSSP) to help ensure that the public is protected from the consumption of contaminated fisheries products.

SCIENCE SECTOR

The sector provides advice and recommendations based on scientific research and monitoring, products and services, and the management of data on Canada's oceans and resources. This ensures that departmental and federal policies, programs, decisions and regulations associated with sustainable fisheries and aquaculture are informed by scientific knowledge. The science is provided through a network of research facilities in collaboration with other government departments, the private sector, academia and international organizations.

Fisheries Resources assesses, through monitoring, research and data management, the status (growth, abundance, recruitment, distribution, migration, etc.) and conservation objectives for fish, invertebrates and marine mammals. This information is provided to fisheries managers and decision makers to inform decisions on sustainable harvest levels and international negotiations on the management of straddling stocks.

Aquatic Invasive Species are a major threat to aquatic biodiversity, ecosystem health, and the fisheries and aquaculture industries that healthy and productive ecosystems sustain. Knowledge derived through science activities, such as research on pathways of invasion, methodologies to detect new invasions, risk assessments and control measures, as well as monitoring established populations, supports the development of regulatory frameworks, control of existing invasive species and rapid responses to newly discovered introductions.

Aquatic Animal Health provides monitoring, surveillance, detection and reporting of aquatic animal diseases of national and international importance in wild and cultured aquatic animals imperative to prevent serious disease outbreaks. Knowledge derived through science informs certification of aquatic animal health status to support the Canadian fish and seafood trade and the delivery of federal responsibilities under the *Health of Animals Act* and the *Fisheries Act.*

Sustainable Aquaculture plays an important role in supporting sustainable aquaculture production. Science efforts are directed towards improved fish nutrition, health, production and an increased understanding of the interactions between aquaculture and the environment. This knowledge is used by decision makers in the development of aquaculture policies and guidelines as well as by industry in adopting aquaculture practices that improve sustainability.

Genomics and Biotechnology provides knowledge generated through genomics (the science of genes and their function) and biotechnology is used in the sustainable development of aquatic resources. For example, genomics-based tools allow endangered populations of fish to be identified so that the fishery can be managed to avoid over-exploitation. These same tools can be used to prosecute poachers, improve aquaculture practices and control disease outbreaks. Research is conducted by DFO scientists on the potential adverse ecological effects of fish derived using biotechnology, including genetically engineered fish. These research results inform the regulation of such fish so as to protect the environment and human health from potential risks.

POLICY SECTOR

International and Trade Policy represents the Department, and in some cases the government, at key international fora where sustainable fisheries, marine, environment and trade matters are advanced and developed, and in cases where international instruments are being negotiated.

Legislative and Intergovernmental Affairs (LIA) provides strategic advice on federal-provincial-territorial issues of importance to DFO. LIA is also responsible for supporting the Minister and departmental officials at intergovernmental meetings and ensures that DFO has the legislative and regulatory tools necessary to achieve its fundamental goals. LIA works to ensure that intergovernmental concerns are taken into account in the policy-development process and ensures that potential impacts are understood within the Department and by DFO's primary clients.

Economics and Statistics provides the Department with socio-economic analysis and statistics support for all aspects of the Minister's mandate.

3. Healthy and Productive Aquatic Ecosystems is about ensuring the sustainable development and integrated management of resources in or around Canada's aquatic environment through oceans and habitat management, as well as to carry out critical science and fisheries management activities. Contributions to this strategic outcome are primarily delivered through the Oceans, Habitat and Species at Risk Sector, and the Science Sector.

OCEANS, HABITAT AND SPECIES AT RISK SECTOR

The **Oceans** program is primarily responsible for overseeing and implementing the *Oceans Act*. It leads the development of an integrated strategy to address the challenges of oceans conservation and protection, and the increased risks and potential conflicts resulting from new oceans uses. The centrepiece of the *Act* and of DFO's oceans program is integrated management — designed to bring together diverse oceans users, including provincial and territorial governments, and strong governance mechanisms into a single integrated management approach for the management of Canada's oceans estate. Mechanisms such as the Canadian Council of Fisheries and Aquaculture Ministers Oceans Task Group allow the provincial, territorial and federal governments to work together to develop and implement the *Canadian Oceans Strategy* and *Oceans Action Plan.*

Species at Risk programming in Canada is complex and cuts across federal, provincial and territorial jurisdictions, sectors, international boundaries and communities of interest. *The Species at Risk Act (SARA)* came into force in stages during 2003 and 2004. While Environment

Canada is the lead department for *SARA*, DFO and the Parks Canada Agency also share responsibilities for its implementation. In particular, *SARA* charges the Minister of Fisheries and Oceans with responsibilities for the protection and recovery of aquatic species at risk in Canada. In order to fulfil *SARA* obligations, activities are focused on developing and implementing recovery strategies, action plans and management plans for species listed under the *Act*. Identification and protection of critical habitat of species at risk is also an important function under *SARA*. Marine Protected Areas established under the *Oceans Act* are recognized in *SARA* as a potential tool for protection of critical habitat in the marine environment.

The **Habitat Management** program (HMP) is responsible for developing and implementing regulations, policies, programs and practices to support delivery of departmental responsibilities for freshwater and marine fisheries habitat. The 1986 *Policy for the Management of Fish Habitat* provides a comprehensive framework for the administration and enforcement of the habitat protection and pollution prevention provisions of the *Fisheries Act*.

At the core of HMP's responsibility are regulatory reviews of works and undertakings referred to the Department to assess their risk to fish and fish habitat, and to provide advice or authorizations required to comply with the requirements of the habitat protection provisions. Another related responsibility is to conduct monitoring programs to ensure conformity with policies and compliance with the requirements of the habitat protection provisions of the *Fisheries Act*.

In addition, HMP is responsible for ensuring the conduct of environmental assessments under the *Canadian Environmental Assessment Act (CEAA)* and other environmental assessment processes prior to regulatory decisions being taken under the habitat protection and pollution prevention provisions. It is also responsible for ensuring that requirements of the *Species at Risk Act (SARA)* and Aboriginal consultations are met prior to making regulatory decisions under the habitat protection provisions. These responsibilities have established the Department as a key federal regulator for most development projects across Canada occurring in, around or with fresh and marine waters and, as such, have significant implications on industry, businesses, communities and individuals.

HMP is responsible for liaising and coordinating with Environment Canada on the administration and enforcement of the pollution prevention provisions of the *Fisheries Act* (section 36).

SCIENCE SECTOR

Fish Habitat Science activities such as oil and gas exploration, development and production, forestry, mining, hydroelectric power generation and agriculture, which operate in or around marine and freshwater aquatic environments, have the potential to affect fish and fish habitat. Long-range transport and point-source introductions of contaminants and toxic substances also pose significant threats to aquatic ecosystems and their resources. The Science program provides scientific advice on potential impacts, mitigation measures and risks and on regulations in support of the habitat management authorities identified in the *Fisheries Act,* the *Policy for the Management of Fish Habitat, Species at Risk Act, Oceans Act* and the *Canadian Environmental Assessment Act.*

Aquatic Ecosystems finds that multiple and sometimes conflicting uses of oceans means that the integrated management of resources must be informed by sound science advice. The Science program provides advice, information and data management services to support the government's integrated management of aquatic ecosystems, such as the delineation of Marine Protected Areas through ocean mapping, preparation of ecosystem overviews and status reports on Large Ocean Management Areas, and frameworks of ecological and biologically significant ocean areas.

Ocean Climate explores the interaction between the oceans, ice and atmosphere that is a fundamental part of the earth's global climate system. As a nation that borders three interconnected oceans, Canada, together with the international community, has a vested interest in understanding the role of oceans in global climate and the impacts of climate change on aquatic ecosystems. Science efforts are directed towards enabling prediction of ocean responses to climatic change, and the assessment of potential impacts on marine environments, ecosystems,

fish and marine mammal populations.

Regional Research Facilities

Nationwide, DFO has 15 major science research facilities studying hydrography, biological science and physical and chemical sciences. Those with ocean-related or relevant activities are:

Pacific Region:

The **Centre for Aquaculture and Environment Research (CAER)** in West Vancouver, British Columbia, acts as a specialized centre for aquaculture and coastal research. Co-founded by DFO and the University of British Columbia, it conducts focused research programs that integrate ecosystem and conservation science with sustainable aquaculture practices for growing aquatic species of global importance. CAER's research activities focus on key areas related to sustainable aquaculture and marine ecosystems — biotechnology and genomics, coastal habitat issues, aquatic animal nutrition and salmon migration physiology and ecology.

The **Pacific Biological Station (PBS)** at Nanaimo is the main science facility for DFO in the Pacific Region. Research at PBS relates primarily to stock assessment, aquaculture, marine environment and habitat science, and ocean science and productivity priorities. (PBS also houses fisheries management personnel.)

The **Institute of Ocean Sciences (IOS)** in Sidney is home to scientists, technicians, support staff and ships' crews whose common interests are the coastal waters of British Columbia, the Northeast Pacific Ocean, the Western Arctic and navigable waters east to the Manitoba-Saskatchewan border. Science divisions at IOS include the Canadian Hydrographic Service and Oceans Science. The building also houses the Pacific Geoscience Centre of Natural Resources Canada, the Canadian Wildlife Service of Environment Canada, the Canadian Coast Guard and the North Pacific Marine Science Organization (PICES).

Central and Arctic Region:

Although they are not located ocean-side, two science institutes in the Central and Arctic region are national centres of expertise with relevance to oceans. The **Freshwater Institute** in Winnipeg, Manitoba, is a national centre of expertise in aquatic biology and freshwater and marine fisheries. The **Bayfield Institute** at the Canada Centre for Inland Waters in Burlington, Ontario, is a national centre of expertise in aquatic biology, freshwater fisheries and the Canadian Hydrographic Service.

Quebec Region:

The **Maurice Lamontagne Institute (MLI)** at Mont-Joli is one of the world's major francophone marine sciences centres. It houses the regional Science branch as well as the regional Oceans and Habitat offices of DFO. Its mission is to provide the federal government with a scientific basis for the conservation of living marine resources, the protection of the marine environment and safe maritime navigation, as well as to ensure application of legislation designed for the integrated management of the marine environment and the protection of fish habitat. Research, monitoring and assessments are conducted here, among other things, in relation to fisheries, marine mammals, oceanography and the habitats of the estuary, the Gulf of St. Lawrence and northern Quebec. The Canadian Hydrographic Service at MLI is responsible for approximately 75 nautical charts covering the navigable waters of the region.

Gulf Region:

The **Gulf Fisheries Centre** in Moncton, New Brunswick, is a bilingual management and research centre that serves the fishing industries of the southern Gulf of St. Lawrence with its applied research in the shellfish and finfish fisheries, as well as studies on habitat and environmental issues.

The **Charlottetown Aquatic Animal Pathogen Biocontainment Laboratory (CAAPBL)** is located within the Canadian Food Inspection

Agency's laboratory in Charlottetown, Prince Edward Island. All activity at CAAPBL supports DFO commitments to aquatic animal health programs. Specifically, CAAPBL undertakes research on pathogen-animal interactions involving virtually any described (or poorly understood) indigenous (or exotic) and potentially dangerous (economically or zoonotically) infectious agent and aquatic species (finfish and shellfish). CAAPBL also provides expertise in histopathology, veterinary medicine, molecular diagnostics and guidance in quality assurance and ISO/IEC compliance.

Maritimes Region:

The Bedford Institute of Oceanography (BIO) in Dartmouth, Nova Scotia, is Canada's largest centre for ocean research and the first major federal centre dedicated to oceanography. BIO performs targeted research mandated by the Canadian government to provide advice and support to government decision-making on a broad range of ocean issues, including sovereignty, defence, environmental protection, health and safety, fisheries and natural resources; it undertakes environmental and oceans management and planning. To solve problems related to the oceans, BIO houses over 400 scientists, engineers, technicians, natural resource and environmental managers and support staff from a variety of different disciplines. Currently, four federal departments are located at BIO — DFO, Natural Resources Canada, Environment Canada and the Department of National Defence.

The **St. Andrews Biological Station (SAB)** in St. Andrews, New Brunswick, provides the scientific basis for management of human activities, with a focus on the Bay of Fundy and Gulf of Maine and benefits from unique seawater facilities, under an umbrella of applied coastal ecosystem science. A large portion of the work is collaborative with universities, environmental groups and aquaculture and fishing industries. SAB is recognized nationally and internationally for research on aquaculture development, ocean sciences, environmental sciences, population ecology — fisheries and species at risk — and as a centre for integrated aquaculture science.

Newfoundland and Labrador Region:

The **Northwest Atlantic Fisheries Centre** in St. John's has marine and freshwater aquaria, a stream tank, toxicity laboratories, wet labs, an open seawater system and electronic, vessel, computer, oceanographic, diving and library support. Its mission is to provide information and advice to support conservation, protection, and the sustainable utilization of marine and aquatic resources. Research focuses on biology, life history and resource evaluations of commercially important fish and marine mammals, oceanography, ecosystem studies, aquaculture, environmental sciences and habitat protection.

Centres of Expertise: DFO currently has 12 Science Centres of Expertise and four Oceans Management Centres of Expertise to support DFO's mandate at various levels. These centres focus on areas where it is more effective to partner both internally and externally with academia, other departments and other governments to achieve results. Some use regionally based infrastructure and others are virtual, focusing experts from many locations on specific projects.

DEPARTMENT OF FOREIGN AFFAIRS AND INTERNATIONAL TRADE (DFAIT)

www.international.gc.ca

Sovereignty

DFAIT is the lead federal department for sovereignty issues, including the promotion and the conduct of Canada's diplomatic relations with our international partners. The discussion on sovereignty is often accompanied by concerns that Canadian sovereignty, particularly in the Arctic, is jeopardized and needs to be asserted. Such sovereignty discourse has generated speculation, as well as active interest.

Although much of the discussion focuses on a "race to the Arctic" and the "lawless" Arctic region, particularly in relation to the delimitation of the continental shelf beyond the 200 nautical mile exclusive economic zone, there is a comprehensive set of important and solid rules governing oceans, including the Arctic, primarily codified in the 1982 *United Nations Convention on the*

*Law of the Sea (*UNCLOS). UNCLOS governs many aspects of oceans affairs, from navigation and fisheries to scientific research and the rights of coastal states to explore, exploit, conserve and manage resources within 200 nautical miles of their shores. UNCLOS' success lies in delicately balancing the resources rights of coastal states with the demands of maritime states for freedoms on the high seas, particularly navigation for military and shipping purposes.

Canada ratified UNCLOS in 2003. DFAIT conducts and manages international negotiations on various Law of the Sea issues as they relate to Canada and is the lead federal department for providing legal advice on all aspects of UNCLOS. DFAIT is also responsible for coordinating the preparation of and presenting Canada's submissions to the appropriate international bodies, including the United Nations.

DFAIT provides legal and policy advice to federal agencies for the development and implementation of marine-related international instruments such as those progressing through the International Maritime Organization, the Food and Agriculture Organization, the Convention on Biological Diversity, the United Nations Environment Program and regional fisheries management organizations.

Maritime Boundary Delimitation

DFAIT is the lead federal department for managing maritime boundary delimitation issues.

Even though Canada and the United States have resolved most of their maritime boundary disputes, there remain four distinct areas in which a maritime delimitation is subject to dispute with the United States: the Beaufort Sea, Dixon Entrance, Juan de Fuca Strait and the Gulf of Maine. There are also two unresolved disputes with Denmark: Lincoln Sea (maritime boundary dispute) and Hans Island (land dispute). Additionally, the United States disputes the legal status of, but not Canada's ownership or sovereignty over, various waterways known as the Northwest Passage in the Arctic and Head Harbour Passage in New Brunswick.

Maritime Scientific Research

DFAIT manages the process for foreign vessels requiring permission to operate and conduct marine scientific research in Canadian waters, including the Arctic.

Trade

As part of its responsibility for international trade matters and in addition to its responsibility for negotiating and defending market access, DFAIT is active in defining and expanding markets abroad for Canadian oceans sector technology. This includes the development and implementation of market plans, the provision of market assistance, interpretation of trade regulations and promotional programs. A key program is the Program for Export Market Development, which provides an array of marketing assistance, such as the conduct of trade fairs and missions abroad.

HEALTH CANADA (HC)

www.hc-sc.gc.ca

HC's mission is to help Canadians maintain and improve their health. HC's partners include other federal departments, agencies, provincial and territorial governments and health organizations. HC's health protection activities include regulatory responsibilities related to the safety of foods and other consumer health products. For example, HC regulates the use of food additives, sets standards for fish products and establishes guidelines and tolerances for various chemical and microbiological contaminants in fish. In all its activities, HC provides advice to other federal, provincial and territorial departments on federal policies and programs influencing the health and well-being of Canadians.

Relevant to the commercial development of the oceans sector, HC, in collaboration with the Canadian Food Inspection Agency (CFIA), establishes **Quality and Microbiological Standards** and additives regulations for fish products sold in the Canadian marketplace. The *Food and Drugs Regulations* specifically deal with marine and freshwater animal products to ensure the safety and quality of such products.

Before food additives are recommended for use, HC evaluates the safety and utility of these substances.

Regulations also set out requirements to ensure the microbiological safety of fish such as marine products packaged in hermetically sealed containers.

In addition, HC regulates pre-market approval of drugs used in aquaculture, including establishment of quality, withdrawal periods and maximum residue limits allowable in marine species used for human consumption.

HC offers support to CFIA in enforcement and compliance activities involving fish products intended for human consumption. Microbiological guidelines established by CFIA for the manufacture and processing of species harvested in the oceans are reviewed by HC to ensure the continuing safety and high quality of Canadian fish products. HC also advises CFIA on acceptable standards of quality and safety in the preparation of memoranda of understanding with foreign countries for imported fish products.

HC helps protect Canadians from food-related hazards by providing consumers with critical information, including advisories and warnings, for example, a revised assessment of mercury in predatory fish such as tuna, shark, swordfish, escolar, marlin and orange roughy.

INDIAN AND NORTHERN AFFAIRS CANADA (INAC)

www.ainc-inac.gc.ca

INAC is the lead federal department in the North. Its responsibilities are delivered primarily through the Northern Affairs Program (NAP) whose programs and services fall into two key areas — supporting northern political and economic development through the management of federal interests, and promoting sustainable development of the North's natural resources and northern communities.

The agenda for the North includes the devolution of all province-like responsibilities to northern governments and the promotion of Canada's Arctic sovereignty. INAC's role in the North also involves settling and implementing land claims, negotiating self-government agreements, advancing political evolution, managing natural resources, protecting the environment and fostering leadership in sustainable development domestically and among circumpolar nations. INAC's approach in managing its responsibilities is based on partnerships and the principles of sustainable development.

NAP is responsible for:

- developing policies and legislation related to the political development of the North (apart from comprehensive claims and self-government agreements)
- negotiating devolution arrangements with northern governments
- delivering national programs in the area of science and technology and contaminants in the Arctic ecosystem
- promoting cooperation among the eight circumpolar countries in areas like sustainable development and science and technology exchanges
- developing policies and legislation related to the management of the North's land (including the clean-up of contaminated sites), water (including Arctic offshore waters), and mineral resources and the legislation implementing the resource management provisions of northern land claims
- administering non-shipping offshore activities, including pollution prevention, under the *Arctic Waters Pollution Prevention Act*
- managing oil and gas resources in the NWT, Nunavut and the Arctic offshore, including policy, administrative and certain regulatory aspects under the administrative responsibility of the Minister for Indian and Northern Affairs Canada. NAP administers matters in the Arctic offshore assigned by the *Canada Petroleum Resources Act* and the *Canada Oil and Gas Operations Act* to the Minister of Indian Affairs and Northern Development
- developing and coordinating policies and programs related to northern environment and conservation

NAP also provides research, advice, policy and legislative support for public governance and northern political development.

INDUSTRY CANADA (IC)

www.ic.gc.ca

Program areas include developing industry and technology capabilities, fostering scientific research, setting telecommunications policy, promoting investment and trade, promoting tourism and small business development, and setting rules and services that support the effective operation of the marketplace. The key activity areas which contribute to federal marine programming are as follows:

Communications Research Centre Canada (CRC)

CRC develops advanced innovative communications, broadcasting and information technologies and provides technical expertise for public policy decision-making related to regulations and standards. Many of CRC's research programs, in particular satellite communications, have application for fisheries, offshore resource exploitation and monitoring, and search and rescue.

Industrial Technologies Office (ITO)

ITO manages the Strategic Aerospace and Defence Initiative. This initiative supports private-sector industrial R&D in Canada's aerospace, defence, security and space industries. ITO also manages several legacy programs including Technology Partnerships Canada, which invested in St. John's Dockyard Ltd. to develop its sub-sea structures capability and in North Vancouver's OceanWorks International Corporation, a supplier of deep-sea diving and submarine rescue systems.

INDUSTRY SECTOR

The Industry Sector helps Canadian industry and businesses compete, grow and create jobs in the knowledge-based economy. It facilitates the delivery of industrial and related policy analyses and strategies designed to promote the global competitiveness of Canadian industry. As well, the sector offers services, information resources, and sector policies and strategies that support stronger business growth.

The **Aerospace, Defence and Marine Branch** is responsible for developing and implementing policies, programs and services aimed at encouraging international competitiveness, innovation and sustainable growth in the aerospace, defence, space and marine sectors of the Canadian economy. The Branch fulfills its mission by gathering and analysing sectoral and business intelligence from which it develops policies and strategies for promoting trade, attracting investment, advancing new technologies, and enhancing productivity and employee skill levels. The Branch also develops business-intelligence information products for delivery to industry clients.

In 2007 the government announced funding of $50 million over three years to renew the Structured Financing Facility Program for the Canadian shipbuilding and industrial marine industry. This program has contributed to many projects involving the construction or modification of ferries, cruise ships, ocean-going tugs, and fishing vessels, etc.

International Submarine Cables and Undersea Cable Landings

Industry Canada issues licences for the construction and operation of international submarine cables that fall under Canadian jurisdiction. There are currently five cable landings in Canada, under licences issued by the Minister of Industry pursuant to the *Telecommunications Act.* The cables and connection points are: Hibernia Transatlantic Cable from the Halifax region to Ireland and the United Kingdom; CANUS1 Cable connecting the Halfiax region and Manasquan, New Jersey, USA; CANTAT-3 Cable connecting the Halifax region and Iceland, Faroe Islands, the UK, Denmark and Germany; Greenland Cable connecting Newfoundland, Greenland and Iceland; and American-1 Cable connecting Cordova Bay, BC, and Point Roberts, Washington, USA.

INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC)

www.idrc.ca

IDRC was created to help developing countries use science and technology to solve social, economic and environmental problems. IDRC provides funds and advice to developing country researchers working to solve critical development problems and to build local capacity for research and innovation. Support is directed toward developing an indigenous research capacity to sustain policies and technologies needed to build healthier, more equitable and more prosperous societies. IDRC is guided by the principles of sustainable and equitable development, poverty reduction and the promotion of human rights.

IDRC works mostly in and with developing countries in Africa, Asia, the Middle East, and Latin America and the Caribbean. In addition to its Ottawa head office, IDRC has regional offices in Cairo, Dakar, New Delhi, Montevideo, Nairobi and Singapore.

Canada has considerable expertise in the oceans and aquatic resource management field. This expertise is used by IRDC to further overseas development assistance goals. IDRC supports research under the broad themes of:

- environment and natural resource management
- information and communication technologies for development
- innovation, policy and science
- social and economic policy
- research for health equity

Examples of recent IDRC marine-related research projects are:

- A project in the Eastern Caribbean focusing on understanding governance issues related to small-scale fisheries and coastal management. Researchers are examining how current and planned marine and coastal resource governance initiatives can be better adapted and more resilient to the needs of diverse stakeholders.
- A Uruguay–Canada collaboration implementing integrated coastal management of the Rio de la Plata estuary.
- UK–Canada collaboration launched the Climate Change Adaptation in Africa (CCAA) program, a five-year multimillion-dollar research and capacity-building partnership to help Africa's poor cope with climate change. One of these projects is working to improve fishing practices and policies in the face of climate change in six countries — Cape Verde, Gambia, Guinea, Guinea Bissau, Mauritania and Senegal.

DEPARTMENT OF JUSTICE (DOJ)

www.justice.gc.ca

DoJ's dual mandate derives from the dual role of the Minister of Justice who is also the Attorney General of Canada. In support of the Minister, DoJ provides policy and program advice and direction through developing the legal content of bills, regulations and guidelines. In support of the Attorney General, DoJ prosecutes federal offenders, litigates civil cases by or on behalf of the federal Crown, and provides legal advice to federal law enforcement agencies and other government departments.

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 can recommend, under 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 areas of the sea. The Minister 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". The manner of determining the province that has the nearest coast to an "area of the sea" can be prescribed in *Oceans Act* regulations to give effect to which laws apply to that area (e.g. offshore production platforms). The *Oceans Act* also allows for the making of federal laws or laws of a province or any of their provisions applicable, in such circumstances as are specified in the regulations in the exclusive economic zone of Canada or in a portion of that zone, in or above the continental shelf of Canada or a portion of that shelf, or in any area beyond the continental shelf of Canada, where that application is made pursuant to an international agreement or arrangement entered into by Canada.

Finally, the Attorney General has to consent to a power of arrest exercised beyond the territorial sea 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. 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 shared with the Minister of Foreign Affairs and International Trade.

DEPARTMENT OF NATIONAL DEFENCE AND THE CANADIAN FORCES (DND/CF)

www.forces.gc.ca

DND/CF's mission is to defend Canada and Canadian interests and its values while contributing to international peace and security. To carry out this mission, the Canadian Forces are called upon to fulfill three major roles: protecting Canadians at home, defending North America in cooperation with the United States and contributing to international peace and security.

Canada's Navy actively contributes to each of these roles on a daily basis. In partnership with other Canadian government departments, it exercises Canada's sovereignty at sea in our three ocean approaches, including the Arctic. It secures the maritime approaches to the continent in partnership with the U.S. Coast Guard and the U.S. Navy, and it contributes to global maritime security, helping to suppress lawlessness at sea in all its forms, and contributing to the safety of ocean commerce that is essential to Canada's economic prosperity.

The Navy deploys as much to prevent conflict as to prevail in it, to reassure friends as well as to deter those who might wish us harm, and to promote a mutual understanding between Canada and other countries that are strategically important to us.

Specific DND/CF activities related to the oceans sector include:

- supporting Canadian interests abroad, which may include providing forces for UN, NATO and other multilateral operations, as well as humanitarian assistance
- implementing the North American Aerospace Defence Command (NORAD)'s new maritime warning mission in cooperation with the United States
- conducting national maritime surveillance and control operations to ensure the integrity of Canada's territory, territorial waters and maritime approaches, including in the Arctic
- maintaining the capacity to support civil authorities in their response to terrorist attacks, natural disasters and other emergencies with a maritime dimension
- maintaining the capacity to coordinate a response to a marine threat or a developing crisis in Canada's Exclusive Economic Zone and/or along our coasts
- supporting other federal departments in activities such as drug interdiction operations and protecting our environment and fisheries (e.g. fisheries patrols to prevent over fishing by foreign vessels)
- providing leadership and expertise in Government of Canada efforts to establish two coastal Marine Security Operations Centres (MSOCs)
- strengthening interdepartmental collaboration in the Great Lakes and St. Lawrence Seaway by supporting the creation of an RCMP-led MSOC in this region
- providing a national aeronautical search and rescue (SAR) capability and ensuring the effectiveness of the federal aeronautical and maritime SAR system

Canada's **Maritime Forces**, including the Regional Air Control Elements (Atlantic) and (Pacific) assigned to them, are deployed on the east and west coasts. The naval fleet consists of 12 frigates, 3 destroyers, 4 submarines, 2 operational support ships and 12 Maritime Coastal Defence Vessels. As part of the *Canada First Defence Strategy*, the government has committed to acquire 15 ships to replace the navy's frigates and destroyers when they reach the end of their serviceable life. The Canadian Forces will also acquire 6 to 8 Arctic/Offshore patrol ships and 3 joint support ships.

An auxiliary fleet of oceanographic research vessels, ocean and harbour tugs, coastal oilers, diving tenders and other craft supports the fleet. Shore infrastructure consists of dockyards, bases and supply depots, and radio stations on the east and west coasts, as well as a planned deepwater berthing and refuelling facility in the North.

Air Command's Maritime Air Group consists of 18 Aurora long-range patrol aircraft and 2 Arcturus patrol aircraft. The Air Force also operates and maintains 27 Sea King multi-purpose helicopters. Under the *Canada First Defence Strategy*, the Canadian Forces will acquire 10 to 12 new maritime patrol aircraft to replace the Aurora fleet by 2020 and 28 CH148 Cyclone helicopters to replace the Sea Kings.

Naval Reserve

The Naval Reserve's 4,000 reservists are organized into 24 divisions located in major cities and populations across Canada. Serving alongside Regular Forces, these forces specialize in coastal operations, naval cooperation and guidance for shipping and mine countermeasures. As such, they are often called to serve on the Navy's Maritime Coastal Defence Vessels, which provide an enhanced coastal defence capability and a limited mine countermeasure capability.

Canadian Rangers are reservists who provide a military presence in sparsely settled northern, coastal and isolated areas, most notably as the Canadian Forces' eyes and ears in the North. Their activities within the oceans sector include reporting unidentified vessels within Canadian waters and reporting suspicious or unusual sea-based activity.

Search and Rescue

The Minister of National Defence is designated as the lead minister for the National Search and Rescue (SAR) Program, which includes aeronautical, maritime and ground SAR. The Minister is supported in this capacity by the National SAR Secretariat. National Defence is responsible for the overall effectiveness of the coordinated aeronautical and maritime SAR system and also provides primary aeronautical SAR resources for both air and maritime incidents. Even though Coast Guard vessels provide most maritime surface emergency responses, naval vessels respond to SAR events as required.

Coastal Marine Security Operations Centres (MSOCs), located on the east and west coasts, represent an integrated approach to marine security with participation from National Defence, the RCMP, the Canadian Coast Guard, Transport Canada and the Canada Border Services Agency. The envisioned function of the coastal MSOCs is to fuse and share surveillance information, within allowed legal parameters, in a timely manner for the production of actionable intelligence in the realm of national and marine security. This capability supports an organized response to potential threats and avoids duplication of both efforts and resources.

DND/CF is the operational lead in Canada's participation in the Proliferation Security Initiative (PSI). PSI is an international initiative that attempts to prevent the proliferation of weapons of mass destruction through intelligence and information-sharing between participants, and can lead to the maritime interdiction of vessels of interest. In addition to DND/CF, a broad range of departments and agencies support Canada's participation, including DFAIT, Public Safety, the RCMP, BCSA, CSIS and Transport Canada.

Defence R&D Canada (DRDC), a Special Operating Agency of DND/CF, provides science and technology (S&T) advice and support to the Canadian Forces and the federal security community at large, including how it relates to the oceans sector. The framework for DRDC support to the Canadian Forces is outlined in the Defence Science and Technology Strategy, released in December 2006. DRDC also supports the larger federal security community through participation in fora such as the Interdepartmental Marine Security Working Group and through federal initiatives such as the Public Security Technical Program. Specific contributions to the oceans sector include the development of technologies and systems for surveillance of Canada's maritime approaches, harbour and port security, and bathymetric mapping of shipping routes.

NATIONAL ENERGY BOARD (NEB)

www.neb-one.gc.ca

The NEB, an independent federal regulatory agency established in1959, regulates the following aspects of the energy industry:

- the construction and operation of interprovincial and international pipelines and international and designated interprovincial power lines
- federal offshore pipelines
- the export of oil and electricity and the export and import of natural gas
- frontier oil and gas exploration and production activities

NEB also has responsibilities under the *Canada Oil and Gas Operations Act*, the *Canadian Environmental Assessment Act*, the *Northern Pipeline Act*, and the *Canada Petroleum Resources Act*. The *Canada Transportation Act* broadened NEB's jurisdiction to include pipelines that transport commodities other than oil or natural gas.

Frontier Oil and Gas Activities

The NEB regulates Frontier lands and offshore areas that are under federal jurisdiction but not covered by provincial / federal management agreements. Responsibilities include the regulation of oil and gas exploration, development and production, worker safety and protection of the environment. Other frontier activities include the development of emergency environmental contingency plans, and fostering research programs that support and complement the NEB's regulatory responsibilities.

NEB's mandate also includes the provision of advice to the Canada-Newfoundland and Labrador Offshore Petroleum Board, the Canada-Nova Scotia Offshore Petroleum Board, Natural Resources Canada and Indian and Northern Affairs Canada.

Arctic Offshore Emergency Response

The NEB is the lead agency for emergencies related to oil and gas exploration and production in frontier areas such as Arctic waters. In regulations under the *Canada Oil and Gas Operations Act*, companies are required to develop contingency plans and ensure that equipment is available to cope with any foreseeable emergency situation during a drilling program or production operation. As part of its Emergency Management Program, the NEB evaluates the effectiveness of emergency response plans, spill contingency plans and spill response exercises.

Environmental Protection and Assessment

As a responsible authority under the *Canadian Environmental Assessment Act*, NEB ensures that appropriate environmental assessments are conducted for projects under its jurisdiction. Its environmental responsibility includes ensuring environmental protection during planning, construction, operation and abandonment of facilities within its jurisdiction. When making its decisions, NEB may consider environmental concerns related to air, land and water pollution, disturbance of renewable and non-renewable resources, the integrity of natural habitats, the disruption of land and resource use and the protection of landowner rights.

Public safety

NEB is responsible for ensuring that companies comply with regulations concerning the safety of employees, the public and the environment as they may be affected by the design, construction, operation, maintenance and abandonment of a pipeline or international power lines. Through an agreement between NEB and Human Resources and Social Development Canada, NEB staff has been designated as safety officers for the occupational health and safety of pipeline company field staff.

Environmental Studies Research Funds (http://www.esrfunds.org) is a research program that sponsors environmental and social studies to assist in the decision-making process related to oil and gas exploration and development on Canada's frontier lands and waters. ESRF, initiated in 1983, receives its primary legislative mandate through the *Canada Petroleum Resources Act* (CPRA). Funding for ESRF is provided through area based levies on oil and gas exploration, significant discovery and production licence holders. ESRF is directed by a joint government/industry/public management board reporting to the Ministers of Natural Resources and Indian and Northern Affairs, and is administered by a small secretariat based at the National Energy Board office in Calgary, Alberta.

NATIONAL RESEARCH COUNCIL (NRC)

www.nrc-cnrc.gc.ca

The NRC consists of more than 20 institutes and national programs. Its research focuses on life sciences, physical sciences, engineering and technology and industry support. Under the *National Research Council Act*, it is responsible for:

- undertaking, assisting or promoting scientific and industrial research
- establishing, operating and maintaining a national science library
- publishing, selling or otherwise distributing scientific and technical information

- investigating standards and methods of measurement
- working on the standardization and certification of scientific and technical apparatus and instruments and materials used or usable by Canadian industry
- operating and administering government of Canada astronomical observatories
- administering NRC's research and development activities
- providing scientific and technological services to the research and industrial communities

The following NRC facilities are oriented to the oceans sector:

NRC Institute for Ocean Technology (IOT), St. John's, undertakes work in ocean engineering research and ocean technology. In collaboration with industry, research organizations and government, it researches areas such as ship and underwater-vehicle dynamics, ice effects on marine systems, mooring and towed body simulation, wave current interaction, and wave impact analysis. Its facilities include an ice tank, an offshore engineering basin and a 200-metre towing tank. Its equipment includes a marine dynamic test facility, a yacht dynamometer and a cavitation tunnel.

The Industry Partnership Facility (IPF) allows companies to develop technologies with the expertise and facilities needed to bring ideas to market. Its expertise and facilities are able to meet the needs of small and medium-sized enterprises, consultants and large companies.

NRC Institutes for Marine Biosciences (IMB), Halifax, conducts marine biosciences and biotechnology research. In partnership with industry, research organizations and government, it conducts research on aquatic animal health and nutrition, natural toxins, mass spectrometry and proteomics, and cell and molecular biology. IMB has a suite of life sciences laboratories in Halifax and a Marine Research Station on the Atlantic coast.

The IMB IPF allows companies to develop ideas with the expertise and facilities needed to bring them to market. It acts as an incubator for marine biosciences and biotechnology and as a conduit for international technology coming to Canada.

The **NRC Canadian Hydraulics Centre (CHC)**, Ottawa, develops and provides services for studying maritime structures, coastal processes, environmental hydraulics and cold regions engineering. CHC is positioned to address topics such as climate change, energy efficiency, environmental impact assessment, water resources and quality, sustainable development and coastal environments. It works with other government departments to develop tools for their operational and regulatory measures.

CHC operates a hydraulics laboratory dedicated to applied research and commercial studies related to civil engineering hydraulics, coastal science and engineering, port and harbour developments, and offshore energy projects. The lab is equipped with several large basins and flumes and the technology for generating waves and for measuring and analysing experimental data. The laboratory is used to verify the performance and optimize the design of projects such as marina, port and harbour developments, breakwaters, revetments, piers, quay walls and other coastal structures, beach stabilization and shore protection schemes, LNG terminals, offshore platforms for energy exploration and production, ocean energy devices, dams, spillways, bridge piers, pipelines, outfalls and intake structures.

Complementing the laboratory are numerical modelling tools used to investigate issues such as flows in rivers, lakes, reservoirs and waterways; tides, tidal flows and circulation in harbours and estuaries; water quality and pollutant fate; coastal and inland flooding; wave conditions in ports, harbours and coastal waters; ship wakes and bank erosion; coastal processes; sediment transport, siltation and scour; and three-dimensional flows at complex structures.

NATURAL RESOURCES CANADA (NRCan)

www.nrcan-rncan.gc.ca

NRCan works to ensure the responsible development of Canada's natural resources, including energy, forests, minerals and metals. It also uses its expertise in earth sciences to build and maintain an up-to-date knowledge base of our landmass (including submerged positions) and resources. NRCan develops policies and programs that enhance the contribution of the natural resources

sector to the economy and improve the quality of life of all Canadians. It conducts innovative science in facilities across Canada to generate ideas and transfer technologies. NRCan also represents Canada at the international level to meet the country's global commitments related to natural resources.

NRCan's programs are carried out by the following sectors of NRCan; those activities with particular relevance to oceans are summarized below.

ENERGY SECTOR

Frontier Lands Management Division (FLMD)

'Frontier Lands' is a term used to describe those parts of Canada where, for the purposes of controlling hydrocarbon resources, the federal government has jurisdiction and where there is no federal/provincial shared management agreement. FLMD has a mandate to manage federal offshore oil and gas interests in frontier lands, and includes joint federal provincial management. FLMD maintains expertise in rights issuance, oil and gas engineering, environmental assessment, resource assessment, industrial benefits, joint management concepts and commercial loan facilities.

Implementation of the legislation and regulations is effected on NRCan's behalf by the *Canada–Newfoundland and Labrador 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 lands.

Office of Energy Research and Development (OERD)

OERD is responsible for the **Program of Energy Research and Development** (PERD) and other federal energy science and technology programs such as the ecoENERGY Technology Initiative (ecoETI). Collaboration, coordination and cooperation are important aspects of OERD programs. Partners include other federal science-based departments and agencies, industry and industry associations, the provinces, municipalities, universities and other funding programs.

PERD covers a broad range of energy research and development. Many PERD projects are directly related to the oceans sector and, in particular, in support to oil and gas exploration and development on the east coast and in the Beaufort Sea. Research areas include:

Offshore Environmental Factors for Regulatory, Design, Safety and Economic Purposes helps develop methods and technologies to describe, hindcast and forecast physical environmental factors that affect oil and gas exploration and production off Canada's coasts. Activities focus mainly on winds and waves, ocean currents and circulation, sea ice and icebergs, ice-structure interaction, and seabed stability.

Regulatory Requirements for Offshore Drilling and Production Wastes, Assessment of Cumulative Effects and Remediation of Offshore Discharges and Spills focus on environmental sensitivities related to offshore oil and gas exploration and production. In particular, activities address the ecological risks of production water returned to surrounding ocean waters, fate and environmental effects of drilling wastes and treatment of accidental spills.

Northern Hydrocarbon Production helps assess the extent and severity of environmental and geological hazards to support regulatory and environmental review processes as well as engineering design criteria with respect to oil and gas production in Canada's North. Activities include Beaufort Sea coastal hazards, seabed hazards, multi-year ice risks and assessment of the potential impact of industrial activity on various ecosystem components (for example, fish and marine mammals).

Pipelines supports research on the regulation and maintenance of aging pipelines and the regulation and construction of new pipelines to help federal decision makers fulfill their regulatory responsibilities and to reduce environmental impacts. Federal science and technology will help to extend and diversify Canada's oil and gas production from offshore and northern regions by performing the research and development needed for standards and regulations, and to reduce costs and mitigate environmental and safety concerns.

Marine Transportation and Safety supports development of regulations for the safe and efficient transportation of oil and gas by tankers and occupational and public safety standards in offshore operations. Activities focus mainly on operations and equipment to improve the safety of personnel working in offshore oil and gas facilities, better marine navigation systems and training for the detection of small ice pieces, and better ship design and studies on the effects of damage from ice impact.

Ocean Renewable Energy, a relatively new area of activity for OERD, includes wind, wave and tidal energy. Activities will support projects undertaken at the provincial level and foster the growth of the Canadian ocean energy industry. Activities will focus mainly on areas of federal responsibility and expertise such as codes and standards, environmental impact assessment, resource assessment and technology assessment that will assist in providing baseline information to ocean energy stakeholders.

MINERALS AND METALS SECTOR (MMS)

MMS is the government lead in promoting the responsible development and use of Canada's mineral and metal resources. It is a leader in the generation and dissemination of knowledge about Canadian minerals and metals industries. MMS interacts with a wide range of stakeholders, including industrial and academic partners, environmental groups, Aboriginal peoples, provincial and territorial governments, other federal departments and agencies, and international organizations. It also collaborates with and provides research services to governmental, institutional and industrial clients for the development of innovative technologies. It also develops and recommends federal policies on sustainable mineral development and initiatives on environmental and land-use issues. The sector is responsible for federally owned non-fuel mineral rights in the provinces and non-fuel mineral interests on offshore Canada land, south of 60° latitude. This includes hydrothermal vents if they have yielded metallic sulphide deposits.

EARTH SCIENCES SECTOR (ESS)

Geological Survey of Canada (GSC)

GSC is Canada's premier agency for geoscientific information and research. GSC is the principal source of marine geoscience information needed to address a range of important national objectives, including the sustainable development of Canada's offshore resources, environmental protection and technology innovation.

GSC supports a number of programs based on current government of Canada priorities. Cost-effective delivery of GSC marine activities is facilitated through partnership with DFO and Environment Canada at two national multidisciplinary marine institutions, the Bedford Institute of Oceanography in Dartmouth, Nova Scotia, and the Institute of Oceans Sciences in Sidney, British Columbia. GSC shares equipment and facilities, including research vessels and support infrastructure, at these two locations. 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. In addition to marine research, GSC maintains coastal geology expertise and a 30 year monitoring network of coastal change in the Arctic and eastern Canada.

GSC's current marine portfolio, based on 2006–2009 priorities, comprises five programs/initiatives — UNCLOS, Geoscience for Oceans Management Program, Secure Canadian Energy Supply, Gas Hydrates and Enhancing Resilience to a Changing Climate programs.

UNCLOS

Following the ratification of UNCLOS in 2003, GSC undertook scientific surveys as part of the process aimed at establishing the outer limits of Canada's continental shelf in both the Arctic and Atlantic oceans. The ESS-led delineation initiative conducts seabed surveying and mapping in support of developing Canada's submission for a juridical continental shelf under UNCLOS. This initiative will allow Canada to define the outer limits of its continental shelf and will provide legal certainty of the exact area over which Canada has sovereign rights for the purpose of exploring and exploiting mineral and hydrocarbon resources beyond the customary 200 nautical mile exclusive economic zone (EEZ).

Geoscience for Oceans Management (GOM)

Canada's future economic prosperity will increasingly turn to sustainable management of the offshore — non-renewable resources (hydrocarbons, gas hydrates, minerals), renewable resources (fisheries, aquaculture),

and conservation of the environment (Marine Protected Areas and National Marine Conservation Areas). Recent government initiatives strive to position Canada as a leader in environmental stewardship while capitalizing on opportunities to maximize the economic potential of our vast coastal and offshore areas.

GOM contributes to positioning Canada as a leader in economic development and sustainable management in our oceans by providing new geoscience knowledge to:

- better understand seafloor conditions to reduce uncertainties and contribute to a favourable business environment, thereby assisting regulators and attracting industry to offshore exploration and development
- resolve conflict between users of the ocean space and provide a geoscience foundation for integrated ocean management plans
- reduce exposure to risk (e.g. offshore hazards) and adverse environmental impacts to encourage sustainable development
- be used by agencies such as DFO, EC and PC to improve marine management practices, and by private industry to increase efficiencies

Secure Canadian Energy Supply Program (SCES)

SCES is provides geoscience information that reduces risks associated with exploration for new energy resources, informs resource management and environmental protection decisions and contributes to energy policy formulation. In the frontier exploration areas of Canada's offshore, geoscience data are being collected, compiled and analyzed to support assessments of resource potential. Studies that address sedimentary basin evolution and petroleum systems through mapping, sample analysis and modeling techniques are providing data and knowledge that will help to ensure a more secure Canadian energy supply through informed decision-making on exploration activities and investment.

Gas Hydrates Program

The program investigates the potential for solid methane hydrate to contribute to Canada's future natural gas supply. The program is researching mechanisms by which natural gas can be effectively produced from solid hydrate, as well as assessing the quality and quantity of Canada's gas hydrate occurrences. This material is found in two principal environments: in terrestrial settings characterized by permafrost conditions (such as the Mackenzie Delta) and in the offshore of Canada's three coasts. Research in the offshore comprises the development and application of geophysical techniques that can identify and characterize gas hydrates in the marine setting, and analysis of existing and newly acquired data to begin to assess the quality and quantity of offshore occurrences.

Enhancing Resilience to a Changing Climate (ERCC)

ERCC is conducting a study of rapid climate changes and extreme weather events on the Pacific coast. Research to increase our understanding of extreme and abrupt climate changes on the British Columbia coast is being integrated with oceanographic research and time series data from ice cores to identify key changes in coastal ocean and atmospheric circulation.

ERCC also conducts coastal marine mapping and assessment of the sensitivity of coastal areas to climate change on the Atlantic, Pacific and Arctic coasts.

GEOMATICS CANADA

Geomatics Canada provides a system of surveys, remotely sensed data and geographically referenced information describing Canada's landmass to address problems and opportunities in such areas as the environment, infrastructure management, sustainable development and coastal zone management and mapping. The Canadian Centre for Remote Sensing (CCRS) is an agency housed under Geomatics Canada, which receives earth observation data and information in support of operational oceans applications. The Canada Centre for Cadastral Management also has an important role related to oceans management.

Canada Centre for Remote Sensing (CCRS)

Through the CCRS Earth Observation Data Services, services to government in ESS, RADARSAT and ENVISAT Synthetic Aperture Radar (SAR) data are received and delivered in near-real time to Environment Canada's Canadian Ice Service (CIS) to produce ice forecasts for vessels navigating the East Coast, Great Lakes and Arctic regions. A capability has recently been added to receive ENVISAT MERIS data primarily for the Department of Fisheries and Oceans (DFO) to allow monitoring of ocean colour for the east and west coastal zones as well as inland waters.

The **Geodetic Survey Division** of CCRS maintains the Canadian Spatial Reference System (CSRS) providing fundamental reference values for latitude, longitude, height and gravity, including their rate of change over time, as the foundation for the nation's positioning and navigation activities. The resulting coordinate reference systems serve as standards and ensure the compatibility of positioning information for navigation, operation of navigation aids (for instance, all Canadian Coast Guard GPS stations are integrated into the CSRS), hydrographic surveys, as well as for the management of offshore resources and the determination of territorial limits. In addition, classical and satellite-based survey networks give rise to reference systems used for linking and integrating information from water-level gauges around the coastline, enabling monitoring of sea level with respect to a common reference system.

Furthermore, scientific information from maintaining reference systems contribute directly to oceans-related sciences. Knowledge of the earth's gravity field, as well as crust subsidence or uplift rate, are essential parameters for studies of sea-surface topography, ice motion, sea-level changes and ocean circulation.

Canada Centre for Cadastral Management

The Canada Centre for Cadastral Management is engaged in developing and maintaining a reliable modern property rights infrastructure on Canada Lands, including Canada's offshore. A marine cadastre provides the common information infrastructure that integrates the rights, restrictions and responsibilities of the various users of the marine space with other environmental and economic data to promote better and more informed decision-making. It is essential for managing competing uses within Canada's ocean environment, including renewable and non-renewable energy projects, protected areas, fishing and aquaculture zones, shipping routes and recreational areas. Although the Department is still in the early stages of developing an offshore cadastral system, once developed, such a system it will lead to improved government regulation, increased certainty for industry and faster and more efficient environmental assessments.

Polar Continental Shelf Project (PCSP)

PCSP was created in 1958 to help Canada establish and subsequently maintain its sovereignty in the Arctic through peaceful means. It does so by coordinating 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.

NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA (NSERC)

www.nserc.gc.ca

NSERC, created in 1978, is a departmental corporation of the government of Canada, funded by Parliament and reporting to it through the Minister of Industry. In 2007–2008, NSERC invested nearly $1billion in post-secondary-based research and training in natural sciences and engineering. NSERC's budget represents 10 per cent of the federal government's expenditures on science and technology, and 16 per cent of all university research and development funding in natural sciences and engineering.

NSERC's vision is to help make Canada a country of discoverers and innovators for the benefit of all Canadians. NSERC invests in people, discovery and innovation through programs that support post-secondary research in natural sciences and engineering, based on the results of national, peer-reviewed competitions. Its innovation programs involve partnerships with universities, governments and the private sector.

NSERC funds more than 11,500 university professors and 25,000 students and postdoctoral fellows, including over 50 Canada Research Chairs in ocean and marine related science and technology, and encourages about 1,400 Canadian companies to invest in post-secondary research and training.

PARKS CANADA AGENCY (PCA)

www.pc.gc.ca

PCA protects the natural and cultural heritage of Canada's special places and ensures that they remain healthy and whole, and fosters opportunities for Canadians to learn about and experience them. As part of this mandate, PCA is charged with establishing and managing a system of national marine conservation areas (NMCAs). The *Canada National Marine Conservation Areas Act*, enacted in 2002, provides the legislative mandate for the NMCA program.

Although no NMCAs have yet been designated under the Act, several areas are currently at various stages of the establishment process, four of which are in ocean waters. The fifth, in western Lake Superior, is the closest to legal designation; it was set aside under a federal-provincial agreement signed with Ontario in 2007. The proposed NMCAs in tidal waters are:

- Gwaii Haanas National Marine Conservation Area Reserve
- the Southern Strait of Georgia, where an NMCA feasibility study is at an advanced stage
- Les Îles de la Madeleine, where a feasibility study is in its early stages
- eastern entrance to Lancaster Sound in the Canadian Arctic, where a feasibility study is now beginning

The initiation of a NMCA feasibility study in the South Coast Fjords area of Newfoundland and Labrador is currently being considered.

In addition, two national marine parks have been designated and are managed by PCA — Fathom Five National Marine Park in Georgian Bay, Ontario, and Saguenay St. Lawrence Marine Park in Quebec, which is cooperatively managed with the province of Quebec under the *Saguenay-St. Lawrence Marine Park Act* and complementary provincial legislation. As well, several of Canada's national parks managed under the *Canada National Parks Act* include marine components.

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA (PWGSC)

www.tpsgc-pwgsc.gc.ca

Real Property

PWGSC provides other federal departments and agencies with expert professional and technical real property services.

Professional and Technical Services

The Branch supports service management and delivery in the areas of operations and maintenance, planning, design, renovation and construction of federal facilities. It provides expertise in project delivery, architecture and engineering, heritage conservation, geomatics, asset and facilities management, and energy conservation. For certain specialties, it also operates as a national centre for service delivery in such areas as bridge, marine and geotechnical engineering.

Architectural and Engineering Consulting Services

PWGSC solicits architectural and engineering consulting services related to real property including professional and technical services such as studies, planning, design and related services during construction of buildings and marine facilities, and specialized services such as environmental services, electronic imaging, communication engineering, building automation, heritage restoration and hydrographic surveys.

Esquimalt Graving Dock (EGD)

EGD is owned and operated by PWGSC. It is a solid-bottom commercial drydock in Victoria, available on a first-come first-served fee-for-service basis. It is the largest deep-sea shipbuilding and repair facility on Canada's Pacific coast with the capacity to service Panamax-sized vessels, up to 100,000 deadweight tons. Ship repair work is undertaken by private sector firms and takes place 24 hours a day, seven days a week, 365 days a year. Clients include West Coast cruise ships, bulk and general cargo vessels, and government-owned vessels — especially those belonging to the Department of National Defence and the British Columbia Ferry Corporation.

Goods and Services

PWGSC is the government's primary provider of procurement services and offers specialized contracts, standing offers, supply arrangements and electronic marketplaces.

The **Acquisitions Branch** provides market research, product planning, method of supply studies, maintenance of a statistical data base and reporting capability, policy framework development, policy review and promulgation, and the technological infrastructure to support the electronic procurement function.

In addition, the Branch bears responsibility for all procurement-related aspects of major Crown projects (those exceeding $100 million and assessed as high risk).

Afloat Logistics and Sealift Capability Project is for the acquisition and long-term in service support of a fleet of vessels to replace the Navy's Protecteur class vessels. In addition to the current fleet replenishment capability, replacement vessels would provide strategic sealift and support to forces ashore. This project is in its early planning stages. PWGSC will support modernization of the Navy's Halifax-class frigates and the construction of Arctic patrol ships.

PWGSC also offers marine inspection and technical services, surplus asset disposal and the registration of quality (ISO 9000) and environmental (ISO 14001) management systems. PWGSC purchases over 17,000 types of goods and services from private sector companies on behalf of federal departments and agencies. These include:

- aerospace and electronic systems (for aircraft, ships and military vehicles)
- computer hardware and software
- custom-manufactured and commercially-available products
- informatics services
- marine equipment and armaments
- marine inspection and technical services
- communications, audio-visual and printing services
- research and development services
- scientific and professional services

Crown Assets Distribution disposes of surplus moveable assets on behalf of federal departments and agencies through sales to the public at fair market value. (Transfers, trade-ins, donations, leases, loans and destruction are handled by the client department.)

ROYAL CANADIAN MOUNTED POLICE (RCMP)

www.rcmp-grc.gc.ca

The RCMP, as the national federal police force mandated by Parliament, is the principal policing and investigative body for the Canadian government and is responsible for enforcing all federal statutes. The RCMP works to ensure the safety and security of Canadians and their institutions, domestically and globally. It focuses efforts on intelligence to prevent, detect and investigate national security threats, organized criminals and other criminal activity. Federal policing activities involve some of Canada's most sensitive international relationships in areas of greatest emerging threat to public safety, national security and the economy.

The RCMP provides Provincial police services to all provinces (except Ontario and Quebec), Yukon, the Northwest Territories and Nunavut and to 197 municipalities.

Marine and Ports Branch (MPB) is a key component of the RCMP's Border Integrity Program. The primary focus of MPB programs is national security — targeting terrorist groups and organized crime networks that may utilize seaports, coastlines, waterways and marine borders. The MPB contributes to global marine security by working with the U.S. and other international law enforcement partners to protect the integrity of shared waters.

The RCMP's role in Canadian marine security is to enforce laws that deal with national security and organized

crime, and other federal statutes such as those involving smuggling, illegal drugs and immigration. Five national marine security initiatives have been developed and implemented to further integrate federal, provincial and municipal partners.

National Port Enforcement Teams (NPET) investigate federal statute offences at ports in Halifax, Montréal, Vancouver, and Hamilton. Teams consist of federal, provincial and municipal law-enforcement agencies and focus on national security investigations and organized crime.

Marine Security Operation Centres (MSOC) bring together civilian and military interagency staff. Their purpose is to produce actionable intelligence, concentrating on national security, organized crime and other criminality and to communicate the information to the appropriate jurisdiction/decision-makers in a timely manner. In addition to MSOCs on the east and west coasts (led by DND), an MSOC has been established for the Great Lakes and St. Lawrence Seaway (led by the RCMP).

Marine Security Enforcement Teams (MSET), staffed with members from provincial and municipal departments and the RCMP, work on board patrol vessels crewed by the Canadian Coast Guard. Their primary role is to address federal water enforcement requirements and provide an armed fast-response capacity to address potential threats in the Great Lakes and St. Lawrence Seaway region.

Marine Security Emergency Response Teams provide a tactical police response and an enhanced ability to board ships and apprehend persons who pose security risks in the Great Lakes/St. Lawrence Seaway Region. The teams integrate the RCMP with provincial and municipal police officers from the region.

National Waterside Security Coordination Program: The National Waterside Security Coordination Team conducts research to identify vulnerabilities and provide recommendations on what is needed to close the gaps and provide a coordinated and integrated solution to waterside security.

The team consults with police agencies, federal and provincial government departments and private stakeholders. The core groups involved in the program are members of provincial and municipal departments, along with the RCMP.

The RCMP operates 5 patrol vessels, 432 smaller boats (less than 9.2 metres in length), 26 airplanes and 9 helicopters.

SOCIAL SCIENCES AND HUMANITIES RESEARCH COUNCIL OF CANADA (SSHRC)

www.sshrc.ca

SSHRC is the federal agency that promotes and supports university-based research and training in the humanities and social sciences. Created in 1977, SSHRC is governed by a 22-member Council that reports to Parliament through the Minister of Industry. SSHRC grants and fellowships programs allow researchers to explore, invent and develop deep expertise in a wide variety of disciplines, as well as to target research to specific social needs. SSHRC programs also provide support for research training and research communication activities. Among research initiatives related to the oceans sector are the bioeconomic valuation of marine ecosystems in developing countries, the impacts of international trade and fisheries management on marine fisheries: an analysis of marine tourism effects on coastal ecosystems.

SSHRC, in partnership with the Department of Fisheries and Oceans, has supported the Ocean Management Research Network (OMRN) since 2001. The OMRN acts as a neutral broker to improve collaborative, integrative research on social science issues related to Canadian oceans. Currently, the OMRN is a network of 750 researchers, students and representatives of governments, industry and community groups, with the objective of providing capacity in integrated management analysis and socio-economic research complementing science-based DFO work.

In addition, SSHRC administers the Canada Research Chairs Program on behalf of NSERC, SSHRC and the Canadian Institutes of Health Research (CIHR). There are currently nine Canada Research Chairs doing research

related to the oceans sector, which spans a broad range of topics including:

- ocean law and governance
- environmental history
- sustainable shellfish aquaculture
- marine biogeochemistry and climate change studies
- climate, resources and global change
- seagoing physical oceanography
- boreal and cold ocean systems
- marine biogeochemistry
- deep ocean research

TRANSPORT CANADA (TC)

www.tc.gc.ca

Maritime transportation plays a vital part of Canada's economy. It moves 75 per cent of our trade and accounts for a substantial part of our Gross Domestic Product. Our way of life is dependant on our products reaching foreign markets and manufactured goods reaching ours. The cruise ship industry, for example, contributes significantly to Canada's economy. With 2.8 million recreational boats in Canada, the recreational boating industry also makes a substantial contribution. Finally, marine transportation encompasses the movement of some 62,000 vessels in Canada including some 20,000 fishing vessels.

TC works with industry and the public to regulate, promote and enforce safe, secure, efficient and sustainable marine practices. The Department oversees the safety, security and marine infrastructure of small vessels, large commercial vessels and pleasure craft; regulates the safe transport of dangerous goods by water; helps protect the marine environment; and fosters marine transportation efficiency through the establishment of a marine marketplace framework.

TC fulfills this role through the development and administration of a number of policies and programs aimed at the marine and oceans sector. These include:

Marine Marketplace Framework

TC encourages transportation efficiency by fostering a competitive and viable Canadian marine industry. It is responsible for developing policies and legislation, monitoring the Canadian marine industry and ports system, establishing the rules of governance for Canada port authorities, negotiating and adopting international conventions and agreements, establishing the economic regimes governing market entry to both the Canadian marine marketplace and Canadian international marine trade, representing the interests of Canada's marine sector in international forums such as the International Maritime Organization, and setting the marine transportation liability regime.

MARINE SAFETY

TC protects the life and health of Canadians by providing a safe and efficient marine transportation system. Using its authority in marine safety based in legislation *(the Canada Shipping Act 2001, the Navigable Waters Protection Act, the Safe Containers Convention Act, the Pilotage Act, the Coasting Trade Act and the Arctic Waters Pollution Prevention Act),* TC is responsible for a marine safety regulatory framework for domestic and foreign vessels and pleasure craft. TC enforces international conventions signed by Canada and protects the public right to navigation on Canada's waterways.

TC exercises its authority through a variety of programs. It manages and enforces regulations, guidelines and standards for safe ships, navigation and environmentally responsible marine operations, training for the certification of seafarers, operator competency for recreational boaters in Canada, and building pleasure craft and other small vessels.

TC also supports activities and programs related to the International Safety Management (ISM) code, safety management systems and marine occupational health and safety, seafarer's training for certification, and liaison between key pilotage stakeholders to ensure a safe, efficient and effective pilotage service in Canadian waters.

TC is also responsible for the administration and enforcement of various maritime labour conventions that affect the operation of vessels in Canada and Canadian vessels outside Canada.

MARINE SECURITY

TC is responsible for marine security policy, regulatory affairs, and security operations. It develops regulations and guidance materials to maintain and enhance the security of the marine components of the National Transportation System. TC represents Canada in discussions regarding inspection and operations of marine security initiatives at fora such as the International Maritime Organization and Canadian Maritime Advisory Council. TC helps industry comply with marine security legislation and regulations through awareness, certification, inspection and enforcement. The $115 million *Marine Security Contribution Program* assists ports, port and marine facilities, and domestic ferry vessel and terminal operators with required security enhancements. TC is also the lead department for the government of Canada in developing and coordinating marine security policy.

Marine Infrastructure

Transport Canada operates from a commercially based policy framework and supports Canadian trade by making marine assets available for commercial use. This program is delivered by methods such as providing stewardship of assets operated by third parties, providing direct public-sector delivery and managing contribution agreements. Specifically, Transport Canada acts as steward of Canada Port Authorities and the land they manage; operates and divests TC's public ports; acts as steward of and provides support to remote, regional and constitutionally mandated ferry services; and acts as steward of and provides support to, the Canadian portion of the St. Lawrence Seaway.

TRANSPORTATION SAFETY BOARD (TSB)

www.tsb.gc.ca

The TSB is an independent transportation accident investigation agency, reporting to Parliament through the Queen's Privy Council. Its objective is the advancement of transportation safety in the federally regulated elements of the marine, pipeline, rail and air transportation systems. TSB discharges its mandate to advance transportation safety by:

- conducting independent investigations and public inquiries into occurrences in order to make findings as to their causes and contributing factors
- identifying safety deficiencies
- making safety recommendations
- reporting publicly on its investigations and related findings

TSB jurisdiction includes all marine transportation occurrences that take place in or over Canada, including internal waters, territorial seas or waters above the continental shelf. Its jurisdiction extends to marine or pipeline occurrences related to activities concerning the exploration or exploitation of the continental shelf which fall under federal jurisdiction.

TSB may also represent Canadian interests in foreign investigations of transportation accidents involving Canadian registered, licensed or manufactured ships. TSB also carries out some of Canada's obligations related to transportation safety and accident investigations at the International Maritime Organization.

WESTERN ECONOMIC DIVERSIFICATION CANADA (WD)

www.wed.gc.ca

Western Economic Diversification Canada (WD) was established in 1987 to improve the economic competitiveness of the West. WD's mandate is to promote the development and diversification of the Western Canadian economy, coordinate federal economic activities in the West and reflect western Canadian interests in national decision making. WD programming advances the strategic outcomes of entrepreneurship and innovation, community economic development, and policy, advocacy and coordination.

A 2007 economic impact study, jointly supported by the federal and provincial governments, identified the economic value of marine-related activities in British Columbia at approximately $11 billion, approximately 8 per cent of the provincial GDP. In BC, WD supports projects, primarily with the non-profit sector, that span the full range of oceans activities. Oceans sectors in which WD has supported projects include oceans research and technology, oceans energy, oceans/port security, aquaculture, shipbuilding and refit, oceans tourism/recreation, and marine transportation infrastructure. WD also supports western Canadian small and medium-sized enterprises in their pursuit of global government procurement opportunities in the marine/oceans sector, including government of Canada major Crown projects.

In Manitoba, WD has partnered with the government of Manitoba to support the Port of Churchill Gateway Corporation, at a cost of $8 million under a 50-50 cost-sharing agreement. This will initiate a 5-year research and development project designed to continue the growth and product diversification of shipments through the Port of Churchill. Initial objectives include development of Russia-Canada trade, rebuilding the Nunavut resupply program and exploring the potential to develop container facilities and imports of heavy machinery, fertilizer and ores.

Appendix 1 – Roles of the Canadian Government in the Oceans Sector — Five themes

ROLE	DEPARTMENT – AGENCY – ORGANIZATION
Overall Lead Agency	*Department of Fisheries and Oceans (DFO)*
1. Sovereignty, Marine Security and Territorial Integrity	Canadian Border Service Agency (CBSA) Canadian Space Agency Department of Foreign Affairs and International Trade (DFAIT) Department of Fisheries and Oceans (DFO) Department of National Defence/ Canadian Forces (DND/CF) Department of Justice (DoJ) Royal Canadian Mounted Police (RCMP) Transport Canada (TC)
2. Economic Development, Trade and Overseas Development	Atlantic Canada Opportunities Agency (ACOA) Canadian Food Inspection Agency (CFIA) Canadian International Development Agency (CIDA) Department of Fisheries and Oceans (DFO) Department of Foreign Affairs and International Trade (DFAIT) Economic Development Agency of Canada for the Regions of Quebec (CED) Industry Canada (IC) International Development Research Council (IDRC) National Energy Board (NEB) Natural Resources Canada (NRCan) National Research Council (NRC) National Science and Engineering Research Council (NSERC) Social Science and Humanities Research Council (SSHRC) Western Economic Diversification (WD)
3. Health and Environment	Canadian Environmental Assessment Agency (CEAA) Canadian Food Inspection Agency (CFIA) Canadian Heritage (CH) Canadian Space Agency Department of Fisheries and Oceans (DFO) Environment Canada (EC) Health Canada (HC) Indian and Northern Affairs Canada (INAC) Parks Canada Agency (PCA)
4. Transportation	Canadian Transportation Agency (CTA) Department of Fisheries and Oceans (DFO) Transport Canada (TC) Transportation Safety Board (TSB)
5. Real Property and Supply Services	Department of National Defence and Canadian Forces (DND/CF) Public Works and Government Services Canada (PWGSC)

Appendix 2 – Key Federal Statutes Related to Oceans (62)

LEGISLATION	PURPOSE AS IT RELATES TO OCEANS PROGRAMS
Minister of Agriculture and Agri-Food	
Fish Inspection Act	Promotes and supports the value, wholesomeness and marketability of fish products produced or sold in Canada.
Food and Drugs Act	Ensures safe use of marine species for human consumption.
Health of Animals Act	Ensures protection of Canadian aquatic resources from infectious diseases that threaten market access and/or conservation of productivity.
Minister of Canadian Heritage	
Cultural Property Export and Import Act	Controls the export and import of objects, including those found on shipwrecks.
Minister of the Economic Development Agency for the Regions of Quebec	
Economic Development Agency of Canada for the Regions of Quebec Act	Provides for the establishment of Economic Development Canada and its activities.
Minister of the Environment	
Antarctic Environmental Protection Act	Protects the Antarctic environment, particularly by implementing the *Protocol on Environmental Protection to the Antarctic Treaty*. Canada has just ratified this Protocol (commonly called the Madrid Protocol after the city in which it was adopted). The *Act* provides the legislative basis that Canada requires to oversee Canadian activities in the Antarctic and otherwise fulfill the Protocol's obligations.
Canada National Marine Conservation Areas Act	Provides for the protection of natural, self-regulating marine ecosystems through the establishment of a system of marine conservation areas representative of the Atlantic, Arctic and Pacific Oceans and the Great Lakes.
Canada National Parks Act	Provides for the establishment of national parks; many parks include marine elements.
Canada Water Act	Provides for the management of the water resources of Canada, including research and the planning and implementation of programs relating to the conservation, development and use of water resources, including any federal waters. The *Canada Water Act* also gives the Minister authority to enter into agreements with provincial governments where there is a significant national interest in the management of a water resource, and to work with provinces in designing and implementing projects for the efficient conservation, development and use of those waters, and to establish joint commissions, boards or other bodies empowered to direct, supervise and coordinate those programs.

LEGISLATION	PURPOSE AS IT RELATES TO OCEANS PROGRAMS
Canada Wildlife Act	Authorizes wildlife conservation, research and interpretation, especially through partnerships and the establishment of protected marine areas for wildlife.
Canadian Environmental Assessment Act	Authorizes the integration of environmental factors into federal planning and decision-making.
Canadian Environmental Protection Act	Provides for establishment of national guidelines for monitoring dredged and excavated material at ocean disposal sites, interim marine and estuarine water quality guidelines, water quality guidelines for the protection of aquatic life, disposal at sea, and control of land-based sources of pollution, offshore oil and gas, and toxic substances.
Migratory Birds Convention Act	Authorizes measures to protect and conserve migratory birds.
Saguenay-St Lawrence Marine Park Act	Protects the ecosystems of a representative portion of the Saguenay River and the St. Lawrence estuary for conservation purposes, while encouraging its use for educational, recreational and scientific purposes.
Species at Risk Act	The purposes of this Act are to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened.
Minister of Fisheries and Oceans	
Canada Shipping Act	Provides for marine navigation, marine search and rescue, pleasure craft safety, marine ship-source pollution prevention and response, lighthouses, receiver of wrecks, and support to other federal departments and agencies.
Coastal Fisheries Protection Act	Allows monitoring, control and surveillance of coastal fisheries.
Fisheries Act	Provides for conservation and management of fisheries and habitats, licensing, enforcement, international fisheries agreements.
Fisheries Improvement Loans Act	Provides guarantees to lenders for loans made to fishermen for the purchase or construction of a fishing vessel or fishing equipment, the major repair or major overhaul of a fishing vessel or its hull, superstructure or engine, the purchase or construction of a shore installation, the purchase, construction, repair or alteration of or making of additions to any building used or to be used in carrying on a primary fishing enterprise, or any prescribed development or improvement of a primary fishing enterprise.
Fishing and Recreational Harbours Act	Regulates small craft harbours.
Oceans Act	Declares Canada's maritime zones in accordance with the provisions of the United Nations Convention on the Law of the Sea, provides for the development and implementation of a national oceans management strategy, provides for the consolidation and clarification of federal responsibilities for the management of Canada's oceans, provides for the establishment of marine environmental quality guidelines, objectives and criteria respecting estuaries, coastal waters and marine waters, and provides for Marine Protected Areas.

LEGISLATION	PURPOSE AS IT RELATES TO OCEANS PROGRAMS
Species at Risk Act	The Minister is jointly responsible with the Minister of the Environment for this Act.
Minister of Foreign Affairs	
Coasting Trade Act	Authorizes the Minister to consent to marine scientific research by foreign vessels in Canadian waters.
Department of Foreign Affairs and International Trade Act	Allows the Minister to conduct and manage international negotiations as they relate to Canada, including those pertaining to the law of the sea (i.e. maritime disputes and submissions to the United Nations).
International Development Research Centre Act	Provides for the establishment and activities of the IDRC.
Oceans Act	Provides authority to issue a certificate containing a statement that any geographic location specified in the certificate was in the internal waters of Canada, in the territorial sea of Canada, in the contiguous zone of Canada, in the exclusive economic zone of Canada, or in or above the continental shelf of Canada. Establishes Canadian maritime boundaries.
Minister of Health	
Food and Drugs Act	Ensures safe use of marine species for human consumption.
Minister of Indian Affairs and Northern Development	
Arctic Waters Pollution Prevention Act	Provides for the prevention of pollution of areas of Arctic waters adjacent to the mainland and islands of the Canadian Arctic.
Canada Oil and Gas Operations Act	Promotes, in respect of the exploration for and exploitation of oil and gas, safety, the protection of the environment, the conservation of oil and gas resources, and joint production arrangements.
Canada Petroleum Resources Act	Regulates interest in petroleum in relation to frontier lands.
Labrador Inuit Land Claims Agreement Act	Puts into effect a land claims agreement that includes marine components and activities.
Nisga'a Final Agreement Act	Puts into effect a land claims agreement, including the right to harvest fish or aquatic plants. A side agreement, the Harvest Agreement, provides for the harvest and distribution of salmon.
Nunavut Land Claims Agreement Act	Puts into effect a land claims agreement that includes marine components and activities.
Territorial Lands Act	Provides for a strip of land one hundred feet in width, measured from ordinary high water mark, to be reserved to the Crown out of every grant of territorial lands where the land extends to the sea or an inlet thereof. In addition, unless the grant contains a provision to the contrary, the bed, below ordinary high water mark, of a body of water is reserved to the Crown out of every grant of territorial lands where the lands border a body of water.

LEGISLATION	PURPOSE AS IT RELATES TO OCEANS PROGRAMS
Western Arctic (Inuvialuit) Claims Settlement Act	Puts into effect a land claims agreement which includes marine components and activities.
Minister of Industry	
Canadian Space Agency Act	Provides for the Canadian Space Agency and its activities.
Government Organization Act (1987), Atlantic Canada	Authorizes regional economic development measures in Atlantic Canada.
National Research Council Act	Establishes the NRC, which includes marine engineering, marine biology research, the *Institute for Ocean Technology* (ship and underwater vehicle dynamics, ice effects on marine systems, mooring and towed body simulation, wave current interaction and wave impact analysis), the *Institutes for Marine Biosciences* (aquatic animal health and nutrition, natural toxins, mass spectrometry and proteomics, and cell and molecular biology), and the *Canadian Hydraulics Centre* (develops and provides services for studying maritime structures, coastal processes, environmental hydraulics and cold regions engineering)
Natural Sciences and Engineering Research Council of Canada	Provides for the establishment of NSERC and its activities.
Social Sciences and Humanities Research Council of Canada	Provides for the establishment of SSHRC and its activities.
Telecommunications Act	Industry Canada issues licences pursuant to the *Act* for the construction and operation of international fibre optic submarine cables that fall under Canadian jurisdiction.
Minister of International Cooperation	
Official Development Assistance Accountability Act	Provides for the establishment of CIDA and its activities.
Minister of Justice	
Oceans Act	Allows some federal and provincial laws to be applied to areas of the sea to regulate activities that fall under Canadian jurisdiction (e.g. oil and gas exploration and exploitation).
Minister of Labour	
Merchant Seamen Compensation Act	Provides for compensation benefits to merchant seamen who are injured while their ship is on a "home-trade" or "foreign" voyage who are not eligible under any other federal or provincial act.
Minister of National Defence	
International Convention for the Safety of Life at Sea	Specifies minimum standards for the construction, equipment and operation of ships to ensure maritime safety. Search and Rescue
National Defence Act	Provides for the defence of Canada and North America, including maritime surveillance and control to ensure the integrity of Canada's territorial waters and maritime approaches, as well as Canadian military contributions to international security.

LEGISLATION	PURPOSE AS IT RELATES TO OCEANS PROGRAMS
Minister of Natural Resources	
Arctic Waters Pollution Prevention Act	Includes provisions concerning natural resources in areas of the Canadian Arctic for which the Minister has administrative responsibility.
Canada-Newfoundland Atlantic Accord Implementation Act	Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act
Canada Oil and Gas Operations Act	Authorizes regulation of exploration and exploitation of oil and gas.
Canada Petroleum Resources Act	Regulates interests in petroleum in relation to frontier lands.
International Boundary Commission Act	Establishes a boundary commission for Canada and the United States.
National Energy Board Act	Provides for the National Energy Board and its activities.
Minister of Public Safety	
Canada Border Services Agency Act	Authorizes the activities of the CBSA.
Coasting Trade Act	Provides for the regulation of the use of foreign ships and non-duty paid ships in the coasting trade by Public Safety Canada and Transport Canada.
Emergency Preparedness Act	Provides for emergency preparedness for emergencies of all types.
Minister of Public Works and Government Services	
Dry Docks Subsidies Act	Provides for subsidies to encourage the construction of dry docks.
Minister of Transport	
Arctic Waters Pollution Prevention Act	Provides for the prevention of pollution of areas of the Arctic waters adjacent to the mainland and islands of the Canadian Arctic.
Canada Marine Act	Provides for establishing port authorities and for the divesture of certain harbours and ports, for the commercialization of the St. Lawrence Seaway and ferry services and other matters related to maritime trade and transport. It also amends the *Pilotage Act* and amends and repeals other Acts.
Canada Shipping Act	The *Act's* objectives are to: • protect the health and well-being of individuals, including the crews of ships, who participate in marine transportation and commerce • promote safety in the marine transportation system • protect the marine environment from damage due to navigation and shipping activities • develop a regulatory scheme that encourages viable, effective and economical marine transportation and commerce • promote an efficient marine transportation system • ensure that Canada can meet its international obligations under bilateral and multilateral agreements with respect to navigation and shipping • encourage the harmonization of marine practices • provide an appropriate liability and compensation regime in relation to incidents involving ships • establish an effective inspection and enforcement program

LEGISLATION	PURPOSE AS IT RELATES TO OCEANS PROGRAMS
Canada Transportation Act	Provides for the Canadian Transportation Agency and its activities
Coasting Trade Act	Reserves coasting trade in Canadian waters to domestic ships and provides for temporary use of foreign ships when no suitable Canadian ship is available. The *Act* applies to the transportation of passenger and cargo and activities of a commercial nature.
Harbour Commissions Act	Provides for the establishment of a harbour commission for any harbour or port of Canada.
Marine Insurance Act	Provides for the regulation of marine insurance.
Marine Liability Act	Provides for the establishment of liability for maritime claims.
Marine Transportation Security Act	Provides for the security of marine transportation.
Navigable Waters Protection Act	Provides for the marine transportation integrity of navigable waters.
Northumberland Strait Crossing Act	Provides for the Minister to enter into agreements in respect of the Northumberland Strait crossing.
Pilotage Act	Regulates marine pilotage in certain waters of Canada.
Safe Containers Convention Act	Provides for the implementation of the International Convention for Safe Containers.
Shipping Conferences Exemption Act	Provides an exemption from Canadian competition law to national and international shipping lines to collectively set prices, terms and conditions for international marine transportation. The *Act* does not apply to domestic marine transportation.
Minister of Western Economic Diversification	
Western Economic Diversification Act	Provides for the establishment of Western Economic Diversification Canada and its activities.
President of the Queen's Privy Council	
Canadian Transportation Accident Investigation and Safety Board Act	Provides for the establishment of the Transportation Safety Board and its activities.