



2017-18 | Departmental Plan



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Minister's message

Our 2017–18 Departmental Plan provides parliamentarians and Canadians with information on what we do and the results we are trying to achieve during the upcoming year. To improve reporting to Canadians, we are introducing a new, simplified report to replace the Report on Plans and Priorities.

The title of the report has been changed to reflect its purpose: to communicate our annual performance goals and the financial and human resources forecast to deliver those results. The report has also been restructured to tell a clearer, more straightforward and balanced story of the actual results we are trying to achieve, while continuing to provide transparency on how tax payers' dollars will be spent. We describe our programs and services for Canadians, our priorities for 2017–18, and how our work will fulfill our departmental mandate commitments and the government's priorities.



It is with great pleasure that I present the 2017-18 Departmental Plan for Fisheries and Oceans Canada (DFO) and the Canadian Coast Guard, a Special Operating Agency of our Department. Working in more than 400 locations throughout Canada, DFO keeps our waters safe, secure and accessible while protecting our oceans, ecosystems, coasts, waterways and fisheries.

Canada has the world's longest coastline, abundant ocean and freshwater resources and an intricate web of aquatic life. Our ties to the water are numerous and strong. As Minister I am committed to the continued health of our oceans and waterways and the well-being of those who depend on them.

The Prime Minister mandated me to take specific actions that will benefit Canadians concerning our marine and aquatic resources now and into the future. These actions include increasing the proportion of Canada's marine and coastal areas designated as marine protected areas to five percent by 2017, and to ten percent by 2020. The mandate letter also calls on me to review changes that were made to the *Fisheries Act* and the *Navigable Waters Protection Act* in 2012-13 with an eye toward finding ways to restore lost protections and incorporate modern safeguards. Making our mandate letters public also underscores the Government of Canada's commitment to be open, transparent and accountable to Canadians.

Through sound science, forward-looking policy and operational and service excellence, we will work toward achieving our departmental goals by focusing on five organizational priorities in 2017-18:

- improved marine safety and ocean protection;
- a cleaner and sustainable environment;
- investments in science in support of evidence based decision making;
- reconciliation with Indigenous Peoples; and
- operational improvements to support priorities.

Serving as the Minister of Fisheries, Oceans and the Canadian Coast Guard is an honour, a privilege and a great responsibility. Owing to my roots in the Acadian coast of New Brunswick, I learned at a young age to respect those who make their living from and on the water. I am committed to working on behalf of all Canadians to protect our waters and coastlines for current and future generations.

The Honourable Dominic LeBlanc, P.C., Q.C., M.P.
Minister of Fisheries, Oceans and the Canadian Coast Guard

Plans at a glance

To deliver on the Government of Canada's mandate priorities, Fisheries and Oceans Canada (DFO), which includes the Canadian Coast Guard (CCG) as a Special Operating Agency, will continue to take action to improve safety on Canadian waters and protect aquatic resources and vulnerable ecosystems, while maximizing sustainable economic development and opportunities for Canadians.

Improved marine safety and ocean protection

In partnership with Transport Canada (TC) and Environment and Climate Change Canada (ECCC), Canada's **Oceans Protection Plan** will be implemented, subject to Parliamentary appropriation approval, to protect Canada's coasts and waterways, improve marine safety and engage Indigenous communities in the co-management and protection of our oceans. DFO and CCG will increase its capacity for emergency response, ship-source pollution response and vessel towing, icebreaking during the shoulder season and will increase its presence in the Arctic. DFO's Canadian Hydrographic Service (CHS) will deliver modern hydrography and charting in key areas across the country including high-traffic commercial ports and waterways. In collaboration with TC, action will be taken to address abandoned, derelict and wrecked vessels in Canadian waters, which can pose major environmental risks, in addition to economic and safety concerns. Search and rescue capacity will increase including the re-opening of the St. John's Maritime Rescue Sub-Centre. Scientific research will support the conservation and restoration of Canadian marine and coastal ecosystems that could be affected by marine shipping. Indigenous communities, scientific partners and other key marine stakeholders will be engaged in response planning.

DFO will continue with a new approach for how provinces, territories and Indigenous Peoples can better **co-manage our three oceans** through the development of a broader Oceans Strategy related to, but separate from, the Oceans Protection Plan.

Through 2017-18, as part of the **National Shipbuilding Strategy**, CCG will receive delivery of two search and rescue lifeboats and one offshore fisheries science vessel and transition seven medium-lift helicopters into service. CCG will also take action to meet towing and interim icebreaking needs. These actions, together with the maintaining of air, land and sea assets will provide safety and security for Canadians and support navigation in Canadian waters.

A cleaner and sustainable environment

In 2017, Canada will meet its **marine conservation targets** of protecting five percent of marine and coastal areas and will continue to build on initiatives to reach a ten percent target by 2020. Working with Parks Canada, provinces, territories, Indigenous Peoples and other stakeholders, marine protected areas and other effective area-based conservation measures, such as fisheries closures to protect sensitive sponge and coral habitats, will be established.

Progress will be made in implementing additional **recommendations from the Cohen Commission** on restoring salmon sockeye stocks to the Fraser River in consultation with ECCC, the Government of British Columbia and Indigenous groups and other stakeholders, including continued consultations on the Pacific Region's Wild Salmon Policy. In addition, consultations with Canadians on fish habitat will continue as part of the review of changes made to the *Fisheries Act*ⁱ in 2012-13. Proposed changes **to restore lost protections and incorporate modern safeguards** will be brought forward. Consultations will also be held to inform the development of a federal *Aquaculture Act*

aimed at providing economic sustainability to the industry while ensuring environmental protection and the creation of new jobs.

Investments in science in support of evidence based decision making

Building on new investments in science staff, technology, and partnerships, including renewed support for Canada's Experimental Lakes Area, new and expanded research activities will be undertaken to protect the health of fish stocks, better understand ecosystem stressors, and support sustainable aquaculture. The Department will continue to leverage collaborative efforts with universities, Indigenous groups, governments, environmental organizations and research networks through a partnership fund established in 2015-16.

Taken together, these investments will **increase scientific knowledge of Canada's oceans**, lakes and rivers to create a strong evidence base for decision making.

Efforts will continue on a national approach to prevent the introduction and spread of aquatic invasive species in Canada, which will help protect ecosystems and fish stocks. As a means to strengthen the use of the **precautionary principle in decision making**, implementation of a precautionary approach policy will be accelerated for key stocks. Fishing plans for major fisheries will be fully developed. As a means of **taking into account climate change in fisheries management decisions**, DFO will continue to advance work on how climate change considerations can be better incorporated into fish stock assessments and adaptation planning.

Reconciliation with Indigenous Peoples

Fisheries resources and aquatic habitats have profound social, cultural and economic significance for Indigenous Peoples. Addressing Aboriginal rights, interests and aspirations through fisheries-related economic opportunities and participation in collaborative management are a means to **strengthen our nation-to-nation relationships**. Treaties and collaborative management arrangements will support Indigenous Peoples' access to, and management of, aquatic resources and marine space. To increase economic self-sufficiency of Indigenous Peoples, a review of programs that support sustainable commercial enterprises, job creation and growth in fisheries, aquaculture and related sectors will be undertaken. CCG will work with Indigenous communities on area response planning and will launch new Indigenous Community Response teams.

Operational improvements to support priorities

In support of the Department's programs and service delivery, year two of the Budget 2016 Federal Infrastructure Initiative will be implemented, including the completion of 85 major capital construction projects on wharves, floats, shore protection and other assets at 78 core small craft harbours. The maintenance and development of this network of harbours for use by the Canadian commercial fishing industry contributes to sustainable fisheries management and to **growing the middle class**.

The Department will also reduce greenhouse gas emissions in its operations. For example, CCG will invest in "greener technology" in its Aids to Navigation program and Marine Communications and Traffic Services assets by using low-carbon technology and fossil fuel alternatives.

DFO will undertake a change-management strategy to improve targeted recruitment in understaffed fields, while ensuring efficient staffing processes. The Department will continue to support and invest in our Young Professionals Network and further position DFO as a top employer for young people in Canada, as exemplified by the special recognition the department received from Mediacorp Inc. as one of Canada's Top Employers for Young People in 2017. Furthermore, CCG will take into account gender-based analysis in developing a national strategy for hiring, training and retaining employees.

Experimenting with new approaches to resolving problems and measuring impacts

The Department will support the Government of Canada's commitment to experiment with new approaches to resolving problems and measuring the impacts of these approaches in order to instill a culture of measurement, evaluation and innovation in program and policy design and delivery. DFO programs, such as Biotechnology and Genomics, Compliance and Enforcement and Hydrographic Products and Services, have taken steps toward fulfilling this commitment and intends to do so in future planning. Further details are outlined in these programs' planning highlights.

Canada 150 Planned Events

In 2017, DFO and CCG will hold a variety of events and activities to celebrate Canada's and our Department's 150th anniversary. The following are just two of the many planned Canada 150 initiatives that will take place from the Pacific to the Arctic to the Atlantic.

BIO Expo

The Bedford Institute of Oceanography (BIO), in Dartmouth, Nova Scotia, will hold a five day BIO Expo in September 2017 for an expected 20,000 visitors to celebrate the 150th anniversary of our country and our Department, as well as the 175th anniversary of the Geological Survey of Canada. Through more than 70 interactive displays, the expo will showcase the BIO's history and innovative contributions to marine science, including research in the Atlantic and Arctic.

Canada C3 (Coast to Coast to Coast)

This signature Canada 150 initiative is an epic sailing expedition led by the Students on Ice Foundation. Over 150 days, the expedition will travel from Toronto to Victoria via the Northwest Passage. The goal is to explore the people and places that have shaped Canada's identity in the past and generate inspiring visions for Canada's future. The four themes of the C3 program (including reconciliation with Indigenous Peoples; diversity and inclusion; youth engagement; and healthy environment) are tied to the official Canada 150 vision and themes.

DFO and CCG will provide logistical support and assistance for this event, and departmental scientists will support the educational goals of this project.

For more information on Fisheries and Oceans Canada's plans, priorities and planned results, see the "Planned results" section of this report.

Raison d'être, mandate and role: who we are and what we do

Raison d'être

Fisheries and Oceans Canada (DFO) supports strong and sustainable economic growth in our marine and fisheries sectors and contributes to a prosperous economy through global commerce by supporting exports and advancing safe maritime trade. The Department supports the innovation needed for a knowledge-based economy through research in expanding sectors such as aquaculture and biotechnology. The Department contributes to a clean and healthy environment and sustainable aquatic ecosystems for Canadians through habitat protection, oceans management and ecosystems research.

The Canadian Coast Guard (CCG), as a Special Operating Agency within DFO, is responsible for services and programs that contribute to all three of the Department's strategic outcomes while also contributing significantly to the safety, security, and accessibility of Canada's waterways. The CCG also supports other government organizations by providing a civilian fleet and a broadly distributed shore-based infrastructure.

Mandate and role

DFO has the lead federal role in managing Canada's fisheries and safeguarding its waters.

OUR MISSION

Through sound science, forward-looking policy, and operational and service excellence, Fisheries and Oceans Canada employees work collaboratively toward the following strategic outcomes:

- Economically Prosperous Maritime Sectors and Fisheries;
- Sustainable Aquatic Ecosystems; and
- Safe and Secure Waters.

OUR VISION

To advance sustainable aquatic ecosystems and support safe and secure Canadian waters while fostering economic prosperity across maritime sectors and fisheries.

The Department's core work is guided by six key pieces of legislation:

- The *Fisheries Act*ⁱ provides broad powers to the Minister for the proper management and control of commercial, Aboriginal and recreational fisheries, as well as aquaculture operations. Through long-standing arrangements, the provinces have assumed administrative responsibility for the management of most inland fisheries.
- The *Oceans Act*ⁱⁱ authorizes to the Minister to lead the development and implementation of plans for the integrated management of activities affecting estuaries and coastal and marine waters, in addition to the coordination of oceans issues. The *Act* also establishes the Minister's responsibility for coast guard services, as well as responsibility for marine science services such as the Canadian Hydrographic Service's nautical charts and publications.
- While the Minister of Environment and Climate Change has primary responsibility for the administration of the *Species at Risk Act*ⁱⁱⁱ, the Minister of Fisheries, Oceans and the Canadian Coast Guard is responsible for aquatic species.
- The *Coastal Fisheries Protection Act*^{iv} regulates access by foreign fishing vessels to Canadian ports and Canadian fisheries waters. The *Act* gives the Minister the power to issue licences authorizing foreign fishing vessels to enter Canadian fisheries waters to engage in specified fisheries-related activities.
- The *Canada Shipping Act, 2001*^v (Transport Canada-led) sets out, as a part of the Minister's mandate for CCG, the responsibility for search and rescue and lighthouses, including lights, signal buoys and beacons.
- The *Fishing and Recreational Harbours Act*^{vi} provides authority to the Minister over the use, management and maintenance of harbours listed in Schedule I of the *Act*, including the power to undertake projects and to lease those harbours to any person.

For more general information about the department, see the "Supplementary information" section of this report. For more information on the department's organizational mandate letter commitments, see the Minister's mandate letter commitments on the [Prime Minister of Canada's website](#)^{vii}.

Operating context: conditions affecting our work

The overarching goal of Fisheries and Oceans Canada (DFO) and the Canadian Coast Guard (CCG) is to protect Canada's three oceans, coasts, waterways and fisheries and ensure that they remain healthy for future generations. Canada is uniquely blessed with an abundance of freshwater and marine and coastal areas that are ecologically diverse and economically significant.

DFO and CCG operate in a dynamic environment that is affected by a number of factors, including:

- increased northern development;
- expansion of navigable waters;
- environmental changes;
- climate change;
- severe weather events;
- demographics;
- technological advances;
- changing maritime safety and security demands; and
- global geopolitical and economic conditions.

DFO and CCG will continue to assess how they conduct business, provide services and deliver programs to clients and stakeholders, while helping to meet Canada's responsibility to the world to steward our resources with care.

Key risks: things that could affect our ability to achieve our plans and results

Key risks

Risks	Risk response strategy	Link to the department's Programs	Link to mandate letter commitments or to government-wide and departmental priorities
<p>Infrastructure (External) There is a risk that the Department may not be able to maintain its infrastructure to support the required levels of service delivery.</p> <p><i>(Includes: Fleet assets, small craft harbours, real property, shore-based assets, information technology assets and equipment, and other moveable assets including scientific equipment).</i></p>	<p>Treat Action Plans:</p> <ul style="list-style-type: none"> Advance the renewal of the fleet, extend the life of targeted vessels, support delivery of the National Shipbuilding Strategy and repair and refit existing vessels to increase reliability. Improve environmental sustainability of Fisheries and Oceans Canada's (DFO) program delivery by implementing the Department's National Environmental Management System for Operations and Assets. Specifically, undertake the Federal Contaminated Sites Action Plan and support the greening of government operations. Implement year two of the Budget 2016 Federal Infrastructure Initiative which will result in the construction of critical new infrastructure and the restoration of many facilities to good operating condition. Implement measures that will make the Small Craft Harbours program more sustainable over the long term, while meeting the needs of harbour users, in consideration of evolving fisheries and the Department's mandate to focus on core fishing harbours. Pursue opportunities to right-size the departmental real property footprint to gain efficiencies, ensure real property holdings meet current and future program demand and support the delivery of departmental 	<p>1.1 Integrated Fisheries Management</p> <p>1.5 Aquatic Animal Health</p> <p>1.6 Biotechnology and Genomics</p> <p>1.8 Marine Navigation</p> <p>1.9 Small Craft Harbours</p> <p>1.10 Territorial Delineation</p> <p>1.11 Climate Change Adaptation Program</p> <p>2.1 Compliance and Enforcement</p> <p>2.4 Environmental Response Services</p> <p>3.1 Search and Rescue Services</p> <p>3.2 Marine Communications and Traffic Services</p> <p>3.3 Maritime Security</p> <p>3.4 Fleet Operational Readiness</p> <p>3.5 Shore-based Asset Readiness</p> <p>3.6 Canadian Coast</p>	<p>This risk relates to the following five mandate letter commitments:</p> <ul style="list-style-type: none"> Work with the Minister of Public Services and Procurement to meet the commitments that were made for new CCG vessels as part of the National Shipbuilding Strategy; Work with the Minister of Transport and the Minister of Environment and Climate Change to improve marine safety; Re-open the Maritime Rescue Sub-centre in St. John's, Newfoundland and Labrador and the Kitsilano Coast Guard Base in Vancouver, British Columbia; Work with the provinces, territories, Indigenous Peoples, and other stakeholders to better co-manage our three oceans; Act on recommendations of the Cohen Commission on restoring sockeye salmon stocks in the Fraser River. <p>This risk relates to the following three departmental priorities:</p> <ul style="list-style-type: none"> Improved marine safety and ocean protection; Investments in science in support of evidence based decision making; and Operational improvements to support priorities.

Risks	Risk response strategy	Link to the department's Programs	Link to mandate letter commitments or to government-wide and departmental priorities
	<p>programs and services.</p> <ul style="list-style-type: none"> • Advance work to upgrade and renew salmon hatcheries and spawning channel infrastructure operated by the Salmonid Enhancement Program. 	<p>Guard College</p> <p>3.7 Hydrographic Products and Service</p> <p>3.8 Ocean Forecasting</p>	
<p>Information Technology (External) There is a risk that critical Information Technology (IT) assets supporting departmental business activities could be threatened, compromising their confidentiality, integrity, and availability.</p>	<p>Treat Action Plans:</p> <ul style="list-style-type: none"> • Protect web transactions to and from external-facing websites. • Pursue DFO IT Security Program initiatives and provide quarterly status reports. • Implement the Management Action Plan identified by the 2016 Internal IT Security Audit. • Provide cyber security awareness through various initiatives including email “phishing” scenarios. • Provide Communication Security Establishment Canada (CSEC) approved training to internal IT security practitioners. • Implement recruitment strategies to address human resource gaps in IT. 	<p>This risk relates to all programs, as the failure to treat risks to IT systems, data and infrastructure may affect DFO's ability to deliver on its mandate and priorities.</p>	<p>This risk relates to all of the mandate letter commitments and departmental priorities as the failure to treat risks to IT systems, data and infrastructure may affect DFO's ability to deliver on its mandate and priorities.</p>

DFO has identified two mission-critical corporate risks – infrastructure and information technology – as having the potential to significantly impact DFO’s operations and mandate. DFO will mitigate each risk with response strategies and corresponding action plans. The action plans will be implemented to minimize the impact and the likelihood of the risk occurring and to monitor efforts to reduce risk severity through the use of specific indicators. These action plans and indicators are a critical component of DFO’s proactive approach to managing corporate risk.

For infrastructure, the aging and the remaining operational life of the fleet and real property, climate change, severe weather events, and increased economic activity in the Arctic will increase the demands on infrastructure.

For information technology, external hacking, cyber-security attacks, natural disasters, and reliance on third parties pose a risk to IT systems and DFO’s ability to deliver programs in a timely manner.

These risks and their responses strategies represent the current understanding of DFO’s risk environment and will be updated as this understanding evolves.

Planned results: what we want to achieve this year and beyond

Programs

Program 1.1 – Integrated Fisheries Management

Description

The Integrated Fisheries Management program administers Canada’s fisheries in consultation with Aboriginal groups, federal departments, and other levels of government, private industry and non-governmental stakeholders. The program promotes sustainability, allocating harvestable resources amongst commercial harvesters, recreational anglers, and Aboriginal groups as well as aquaculture for seed, spat¹ and broodstock². It derives authority from the *Fisheries Act*ⁱ, the *Species at Risk Act*ⁱⁱⁱ and related regulations and relies on scientific assessments to develop tools such as Integrated Fisheries Management Plans and Rebuilding Strategies.

In 2017-18, the Integrated Fisheries Management program will be delivered through two sub-programs:

- 1.1.1 Commercial Fisheries
- 1.1.2 Recreational Fisheries

Planning highlights

The Integrated Fisheries Management program will pursue numerous activities to ensure that Canadians continue to benefit from marine and aquatic resources now and in the future. For 2017-18, the program will specifically advance the priority for evidence based decision making by ensuring that the precautionary approach is taken, that limit reference plans are developed for all key commercial fisheries and that the food, social and ceremonial, recreational by-catch, and commercial catches are incorporated in science assessments and management decisions for all key fisheries. The program will also ensure that the sustainable fisheries framework is advanced by developing policies and tools, while establishing new instruments and undertaking key initiatives such as the review of the Wild Atlantic Salmon Conservation Policy.

The Integrated Fisheries Management program is aligned directly with the Department’s priority of improving fisheries and aquaculture management and outcomes and enabling access to export markets for Canadian fish and seafood through policy and program changes informed by sound science and stakeholder and Indigenous engagement.

¹ The term ‘spat’ refers to an oyster or similar bivalve mollusk in the post-larval stage.

² The term ‘broodstock’ refers to a group of sexually mature individuals of a cultured species that is kept separate for breeding purposes.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Stocks are managed with a view to long-term sustainability	Percentage of major stocks ³ where harvest is within approved levels	100%	March 31, 2018	97%	97%	99%
Harvest decisions are guided by principles of conservation	Percentage of harvests directed by management or conservation plans	100%	March 31, 2018	n/a	n/a	n/a

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
147,811,981	147,811,981	148,750,789	149,599,563

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
927	1,021.8	1,024.7

Program 1.2 – Aboriginal Strategies and Governance

Description

The Aboriginal Strategies and Governance program serves to build and maintain strong and stable relations with Aboriginal groups and promotes fisheries-related economic opportunities for Aboriginal communities; both of which are instrumental to maintaining a stable fisheries management regime with common and transparent rules for all. The program does this by supporting the involvement of Aboriginal groups in the fishery; where Fisheries and Oceans Canada manages the fishery and where land claims agreements have not been concluded. This has three purposes: management of food, social and ceremonial fisheries; collaborative management, by building the capacity required to engage in fishery management processes; and, conservation, by supporting fisheries, monitoring and reporting. This work is achieved through: Aboriginal fisheries contribution agreements, treaty fisheries negotiations and mandate development, strategic advice for the ongoing management of Aboriginal rights, Aboriginal programs and policies renewal; allocation policies, frameworks for the implementation of treaties, and, fisheries-related consultation and engagement. This program uses funding from the following transfer payments: Aboriginal Fisheries Strategy, Aboriginal Aquatic Resource and Oceans Management program, Aboriginal Fund for Species at Risk program, Atlantic Integrated Commercial Fisheries Initiative, Pacific Integrated Commercial Fisheries Initiative and Treaty Related Measures.

³ Major fish stocks generally refers to, but is not limited to fish stocks with an annual landed value of greater than \$1 million or an annual landed weight of greater than 2,000 tonnes.

In 2017-18, the Aboriginal Strategies and Governance program will be delivered through three sub-programs:

- 1.2.1 Aboriginal Fisheries Strategy
- 1.2.2 Aboriginal Aquatic Resource and Oceans Management
- 1.2.3 Strategies and Governance

Planning highlights

The key activities in the delivery of this Aboriginal Strategies and Governance (ASG) program include:

- Aboriginal fisheries and oceans related contribution agreements;
- the development of treaty fisheries mandates;
- the negotiation and implementation of departmental obligations under agreements;
- providing strategic advice on addressing Aboriginal rights issues and interests;
- the development of Aboriginal fisheries access and allocation policies.

These key Aboriginal fisheries activities form the basis of relationship building and how the department addresses Aboriginal and treaty rights issues and interests.

The Government of Canada has committed to renewing the relationship with Indigenous Peoples and advancing reconciliation. However, the pace of negotiations, the growing emphasis on consultation and engagement on matters that may affect Aboriginal rights and current funding levels in this program will prove to be a challenge to the Department.

The ASG program aligns with the Minister's mandate letter commitments for a renewed, nation-to-nation relationship with Indigenous Peoples and to work with the provinces, territories, Indigenous Peoples and other stakeholders to better co-manage our three oceans.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Aboriginal communities participate in the management of an integrated fishery	Percentage of Aboriginal communities/groups involved in fisheries management	80%	March 31, 2018	n/a	n/a	97%

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
55,786,486	55,786,486	54,796,708	53,996,501

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
105.2	105.2	105.2

Program 1.3 – Sustainable Aquaculture Program

Description

The goal of the Sustainable Aquaculture Program is to contribute to an environmentally, economically and socially sustainable Canadian aquaculture sector. Canada's aquaculture sector operates under one of the most stringent regulatory frameworks in the world which is designed to ensure the sector's environmental sustainability. Fisheries and Oceans Canada's regulatory mandate for the program is derived from the *Fisheries Act*ⁱ and the *Oceans Act*ⁱⁱ. The Department has the lead regulatory role in British Columbia and Prince Edward Island. Fisheries and Oceans Canada implements the Sustainable Aquaculture Program in a horizontal and integrated way with other federal departments and agencies to create optimal conditions for science-based sustainable management of the sector. The Department works collaboratively with industry, provinces and territories, Aboriginal groups, and others to ensure the success and long-term sustainability of Canada's aquaculture sector.

In 2017-18, the Sustainable Aquaculture program will be delivered through three sub-programs:

- 1.3.1 Aquaculture Management
- 1.3.2 British Columbia Aquaculture Regulatory Program
- 1.3.3 Sustainable Aquaculture Science Program

Planning highlights

A key activity involved in the delivery of the Sustainable Aquaculture program (SAP) is the development of options on new federal legislation for aquaculture. Other activities that support the delivery of SAP, particularly through Aquaculture Management, include amendments to four *Fisheries Act*ⁱ regulations. Amendments to Section 56 of the Fishery (General) Regulations are expected to eliminate overlap in fish disease management responsibilities with the Canadian Food Inspection Agency. Amendments to three other regulations – the Maritime Provinces Fishery Regulations, the Atlantic Fishery Regulations and the Management of Contaminated Fisheries Regulations - are aimed at improving shellfish aquaculture regulatory management in the Atlantic Provinces.

These activities are intended to respond to the longstanding need for streamlined regulations for the aquaculture sector.

A number of science activities will support the regulatory reform activities. They include providing scientifically peer-reviewed risk assessments and advice for key aquaculture environment interactions including fish health; conducting targeted regulatory research in areas such as fish pest and pathogen interactions, characterizing the cumulative effects of aquaculture on the environment, ecosystem management and interactions with wild populations; providing scientific advice on the development of national standards; the development and implementation of indicators and area-based options for addressing overlapping management considerations; conducting collaborative research to enhance environmental performance and optimize cultured fish health; initiating long-term far-field environmental monitoring of aquaculture impacts; and initiating long-term ecosystem-based research on aquaculture environmental interactions.

SAP will focus on engagement through consultations with provinces and territories, Indigenous Peoples and other stakeholders, with a view to developing options on new sustainable aquaculture legislations. The full scope of this activity is expected to unfold gradually over the 2017-18 period.

The goal of SAP is aligned with the Minister's mandate letter commitments to restore funding to support responsible and sustainable aquaculture industries on Canada's coasts.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Environmentally, economically and socially sustainable Canadian aquaculture sector	Level of Canadian aquaculture production that provides economic opportunities and social benefits for Canadians while safeguarding the environment	> 172,000 tonnes (reported for 2013)	March 31, 2018	n/a	n/a	133,000 tonnes
	Percentage rate of compliance by the aquaculture sector with requirements relating to sustainable aquaculture under the regulations developed under the <i>Fisheries Act</i> ⁱ	90%	March 31, 2018	n/a	n/a	100%

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
30,475,056	30,475,056	21,509,476	21,163,051

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
204.1	195.1	195.1

Program 1.4 – Salmonid Enhancement Program

Description

The Salmonid Enhancement program (SEP) supports achievement of Departmental fisheries management objectives by producing salmon for harvest, stock assessment and conservation purposes. In addition, SEP engages communities, schools, Indigenous communities and the public broadly in salmon stewardship through education and community involvement activities, and through collaborative projects aimed at restoring and maintaining key salmon habitat in British Columbia and the Yukon. The program contributes to economically valuable salmon fisheries by producing fish that directly support Pacific Commercial and Recreational Fisheries. Through targeted enhancement efforts on key stocks, SEP helps Canada meet its enhancement obligations under the *Canada-United States Pacific Salmon Treaty* and supports secure international market access for Canadian salmon products. SEP works closely with the

Integrated Fisheries Management Program, the British Columbia Aquaculture Regulatory Program and the Aquatic Animal Health and Biotechnology and Genomics programs. In addition, components of SEP are coordinated with the Canadian Food Inspection Agency as well as provincial, territorial, and municipal governments.

In 2017-18, the Salmonid Enhancement program will be delivered through two sub-programs:

- 1.4.1 Salmonid Enhancement Operations
- 1.4.2 Salmonid Enhancement Contribution Programs

Planning highlights

Key Salmonid Enhancement program (SEP) activities include the renewal of water supply systems at SEP facilities across British Columbia and the comprehensive refit of SEP's Snootli Creek hatchery⁴ on British Columbia's central coast; drilling new wells; improving energy efficiency through building envelope, lighting and heating system upgrades; replacing inefficient water pumps; repairing and replacing water valves, pipes and water intake structures; and upgrading security monitoring systems. These activities will significantly improve the operational efficiency and security of SEP's fish production assets and reduce energy consumption and greenhouse gas emissions.

Efficient, safe and environmentally friendly fish production infrastructure supports SEP's objectives of delivering economic, social and cultural harvest opportunities, scientific assessment and vulnerable stock rebuilding activities. Properly maintained fish production facilities are essential to ensuring that SEP can consistently meet its publically reported performance targets and continue to successfully support departmental objectives.

Program highlight

Through ongoing efforts by SEP and Real Property Environmental Coordination in the Pacific Region, to "green" fish production infrastructure, SEP's total energy consumption from 2009-10 to 2015-16 has been reduced by 18%, with an associated reduction of 23% in greenhouse gas emissions for the same period. The reduction targets set for energy and greenhouse gas emissions for the period were both 20%.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Enhanced salmon populations provide economic, cultural and social harvest opportunities, stock assessment information and restored salmon populations	Percentage of enhanced salmon that directly supports the objectives of harvest, stock assessment and conservation	75%	March 31, 2018	n/a	n/a	52%

Note: n/a refers to a new indicator effective 2016-17.

⁴ *Key Snootli major refit milestones:

2015/16 –workshop (complete)

2016/17 –main building (on track for completion)

2017/18 – new wells and installation of circular tubs

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
29,195,310	29,195,310	29,195,310	29,195,310

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
199.1	199.1	199.1

Program 1.5 – Aquatic Animal Health

Description

In collaboration with the Canadian Food Inspection Agency, the Department co-delivers Canada's National Aquatic Animal Health Program (NAAHP). The objective of the program is to protect against the introduction or spread of serious infectious diseases of national and international importance, in both wild and cultured aquatic animals. This protection is critical to safeguarding the health of Canada's aquatic resources and both Canada's domestic and export markets for fish and seafood products. In doing so, NAAHP provides greater economic stability and potential for growth of the industries and regions that depend on these resources. The Department provides the scientific advice, diagnostic testing and research which inform the certification of aquatic animal health status and support the delivery of federal responsibilities under the *Health of Animals Act*^{viii} and the *Fisheries Act*ⁱ. The program also supports the delivery of other Fisheries and Oceans Canada programs, such as the Salmon Enhancement Program, Biotechnology and Genomics, and the Sustainable Aquaculture Science Program.

Planning highlights

Through the Aquatic Animal Health program, DFO provides scientific expertise and conducts diagnostic testing to meet international trade requirements to support a viable and growing Canadian fish industry. The scientific knowledge generated supports a regulatory system that works to reduce the risk of significant aquatic diseases being introduced or transferred within Canada's aquatic environment. In doing so, the program supports the Government of Canada's priority for Canada's economic growth and the protection of natural resources. This program is delivered in partnership with the Canadian Food Inspection Agency which is the responsible authority for delivering the National Aquatic Animal Health program (NAAHP).

Departmental performance results over the last five years have demonstrated insufficient diagnostic capacity to meet the program testing required by CFIA. To address the shortfall arising from the increased global demand for seafood production (fisheries and aquaculture), the Department plans to increase diagnostic testing for pathogens and diseases.

By April 2017, the program will have hired additional technical laboratory staff and purchased new state of the art diagnostic testing equipment. In addition, DFO's Pacific Biological Station will be renovated to increase laboratory space. The diagnostic testing capacity for NAAHP is expected to increase by 40% over current numbers by March 31, 2019. This increased capacity will help the Government of Canada to deliver NAAHP in support of the Canadian fish industry.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Decision makers have access to diagnostic test results for the regulation of aquatic animal health	Percentage of tests completed for submitted fish samples at Fisheries and Oceans Canada National Aquatic Animal Health Laboratory System laboratories within the agreed timeline	100%	March 31, 2018	82%	70%	82%
Decision makers have access to scientific knowledge and advice to support the regulation of aquatic animal health	Percentage of research project milestones completed as planned	90%	March 31, 2018	n/a	92%	91%

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
6,114,231	6,114,231	6,128,137	6,043,268

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
51	51	51

Program 1.6 – Biotechnology and Genomics

Description

The Department is responsible for developing the knowledge that is required for the regulation and risk assessment of fish products derived from innovations in biotechnology and genomics. Biotechnology and genomics can provide leading-edge techniques and strategies for the sustainable development of aquatic resources. The Department's use of these tools improves Canada's ability to protect species at risk, manage the opening and closing of fisheries, prosecute poachers, improve aquaculture practices, control disease outbreaks, and remediate contaminated sites.

Planning highlights

The Biotechnology and Genomics program is responsible for regulatory research in support of the Department's role as a scientific authority in the regulatory risk assessment of novel, or genetically modified, aquatic organisms under the [Canadian Environmental Protection Act](#)^{ix} (CEPA). The program also administers genomics research and development funding under the horizontal federal Genomics Research and Development Initiative (GRDI).

These activities allow DFO scientists to conduct research to inform environmental risk assessments needed to provide peer-reviewed scientific advice for decision making on the potential environmental impacts of novel aquatic organisms and to develop and apply genomic

research and tools to support sustainable fisheries management, assess new and emerging fish diseases and understand aquatic ecosystems.

An important risk to this program is the delay in the renewal of infrastructure at DFO's West Vancouver Laboratory including a second back-up well and generator to protect research investments in living aquatic organisms.

The Biotechnology and Genomics program is aligned with the Government of Canada's mandate to support innovation through research in expanding sectors, such as aquaculture and biotechnology, as well as to support economic growth in the fisheries sector and contribute to a clean and healthy environment and sustainable aquatic ecosystems through habitat protection, oceans management and ecosystems research. Genomics science supports evidence based decisions for the sustainable management and conservation of aquatic ecosystems and resources. This research supports other departmental programs such as Fisheries Management, Species at Risk, Aquatic Invasive Species, Oceans Management, Aquatic Animal Health and Aquaculture. In addition, this program is aligned with the Minister's mandate letter commitment to work with the Minister of Environment and Climate Change to ensure that decisions regarding novel fish products of biotechnology under CEPA are evidence based.

Key milestones in the delivery of the program include completion and implementation of the next five year (2017-22) work plan for regulatory research (April 2017); distribution of competitive funding to DFO scientists for genomics research and development (June 2017); development and implementation of the next ten year Biotechnology and Genomics Program Strategy (March 2018); renewal of the Memorandum of Understanding with Environment and Climate Change Canada (ECCC) and Health Canada (HC) that enables DFO to provide regulatory risk assessment for novel fish products under CEPA (March 2018); and providing science advice through the Canadian Science Advisory Secretariat on the framework for DFO's risk assessment of novel fish products of biotechnology (September 2017).

GRDI is a horizontal program that coordinates participating federal science departments and agencies in the field of genomics research, including the National Research Council (chair), Agriculture and Agri-food Canada, the Public Health Agency of Canada, the Canadian Food Inspection Agency, ECCC, Natural Resources Canada, DFO, and HC. In response to a GRDI program evaluation, expected to be finalized in March 2017, the GRDI working group will prepare a management response and action plan to respond to the recommendations in the evaluation. Under this initiative, DFO is participating in a five year shared priority project on "EcoBiomics", which was launched in April 2016.

The majority of funding from GRDI and Canadian Regulatory System for Biotechnology (CRSB) is dedicated to research on innovative, experimental approaches. For the GRDI, 100% of the funding is allocated to leading edge research on genomic approaches for the conservation and management of aquatic resources. Of the CRSB funds, 85% is directed to research on novel aquatic organisms, in particular on developing novel fish and assessing their potential effects on ecosystems, and evaluating the effectiveness of new approaches for biocontainment in order to mitigate any impacts of escapes of novel fish.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Fisheries and Oceans Canada and Environment and Climate Change Canada decision makers have access to biotechnology knowledge and advice for the regulation of fish products of biotechnology	Percentage of responses to requests for biotechnology knowledge and advice completed and provided to decision makers within the required timeline specified by the client	100%	March 31, 2018	100%	100%	100%
Fisheries and Oceans Canada decision makers have access to genomics knowledge and advice for the management of fisheries and oceans	Percentage of Genomics Research and Development Initiative projects that provided genomics knowledge and advice to decision makers	100% within three years following completion of a project	March 31, 2018	83%	88%	100%

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
3,192,457	3,192,457	3,192,457	2,472,457

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
22.7	22.7	22.7

Program 1.7 – International Engagement

Description

The International Engagement program ensures access for Canadians to fish resources managed internationally, promotes sustainable fisheries management and healthy global marine ecosystems, and contributes to a stable international trade regime for Canadian fish and seafood products. The program advances its goals via multilateral and bilateral engagements, and coordinated strategies with international partners.

Planning highlights

The key activities for delivering the International Engagement program over the next year include defending Canada's interests in the Northwest Atlantic Fisheries Organization (NAFO); supporting Canadian Arctic priorities through the Arctic Council and advancing the precautionary approach for fisheries in the high seas portion of the Arctic Ocean; renegotiating the Pacific Salmon Treaty with the United States for renewal in 2018; and representing Canadian interests at United Nations negotiations and assemblies, including those related to the Convention on the Law of the Sea, biodiversity and sustainable fisheries. The program will also

participate in key international fish and seafood trade shows to raise the profile of Canadian fish and seafood and communicate achievements in product quality and sustainability.

These activities will ensure that international organizations of which Canada is a member or agreements to which Canada is signatory, reflect our national interests, policy decisions and strategic objectives. The activities will also help boost competitiveness and improve Canadian industry access to global markets for fish and seafood products.

The International Engagement program is aligned directly with the Department's priority for improving fisheries and aquaculture management and outcomes, and enabling access to export markets for Canadian fish and seafood, through policy and program changes informed by sound science, and stakeholder and Indigenous engagement.

The program is also aligned with the Government of Canada's Agenda, Results and Communications Committee's priority of increased and diversified international trade and foreign direct investment.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
International fisheries management agreements and quota decisions reflect Canada's positions	Percentage of decisions that reflect overall Canadian goals and strategic intentions	100%	March 31, 2018	n/a	n/a	n/a
Fisheries and Oceans Canada's influence in relevant free trade agreements support access to international markets for Canadian fish and seafood products	Percentage of ongoing trade negotiations and/or newly completed free trade agreements that incorporate Fisheries and Oceans Canada's positions	100%	March 31, 2018	n/a	100%	100%

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
13,127,462	13,127,462	12,884,029	12,884,029

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
44.1	42.9	42.6

Program 1.8 – Marine Navigation

Description

The Canadian Coast Guard Marine Navigation program provides Canadian and international commercial marine transportation sectors, fishers, and pleasure craft operators with information and services to facilitate the safe, economical and efficient movement of ships.

Program services include providing survey and forecast information on commercial channels to identify water depth, restrictions, or hazards to navigation; dredging services; marine structures to maintain certain ship channel waterways; aids to navigation, for example short-range marine aids such as buoys, fixed aids to navigation, the Differential Global Positioning System, and information to mariners; assistance to vessels stuck in ice; maintaining tracks through ice-infested channels; breaking out ice in commercial and fishing harbours; providing ice routing advice and information and escorting ships in ice-covered waters; and monitoring and breaking up ice jams to prevent flooding on the St. Lawrence River. Program services also contribute to the development of the Arctic by transporting goods and supplies to northern communities and by maintaining a visible Canadian marine presence in the North. The program is delivered in coordination with the Coast Guard's Fleet Operational Readiness and Shore-based Asset Readiness programs, Canadian Hydrographic Services, Public Services and Procurement Canada, and Environment and Climate Change Canada. The program's legal basis derives from the *Constitution Act, 1867*^x; the *Oceans Act*ⁱⁱ; and the *Canada Shipping Act, 2001*^{xi}.

Planning highlights

Over the next year, the Marine Navigation program will develop a Navigational Warnings system that will accelerate the creation and issue of warnings to mariners. Additionally, the Four Season Lighted Buoy initiative, in its final development stages, will deploy four-season, lighted, severe-ice navigation buoys on the St. Lawrence shipping channel between Quebec City and Montreal. The delivery schedule will be implemented, and all 197 buoys will be deployed incrementally from 2017-18 to 2020-21.

Under the Oceans Protection Plan, subject to Parliamentary appropriation approval, the Canadian Coast Guard (CCG) will strengthen relationships, establish linkages and negotiate agreements to co-manage waterways in order to address the marine safety priorities of Indigenous groups in all regions.

CCG is also working toward developing Northern Marine Transportation Corridors, which will significantly enhance how departmental services, such as charting, navigational systems, and environmental response services, are delivered. The key risk to this program is aging assets and equipment to support, deliver and manage services.

Development and implementation of modern navigation systems through the E-navigation initiative and the Four Season Lighted Buoy initiative are aligned with the Department's, priorities and the Government of Canada's Agenda, Results and Communications Committee's priority, as well as the Minister's mandate letter commitments to improve marine safety and ocean protection, reconciliation with Indigenous Peoples and operational improvements to support priorities.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Contribute to safe and efficient Canadian marine transportation	Five year average of total annual international and domestic tonnage handled	Maintain or improve five year average of 453,100,000t (most recent available period - 2008-2012)	March 31, 2018	n/a	n/a	476,200,000t

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
46,011,571	46,011,571	41,068,969	39,822,564

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
247	228	228

Program 1.9 – Small Craft Harbours

Description

Under the authority of the *Fishing and Recreational Harbours Act*^{vi} and its regulations, the Small Craft Harbours program operates and maintains a national network of harbours in support of the principal and evolving needs of the commercial fishing industry and the broader interests of coastal communities. Investment in small craft harbour infrastructure supports the economic prosperity of Canada's fisheries and maritime sectors and contributes to public safety. The Small Craft Harbours program focuses its resources on keeping fishing harbours that are critical to the commercial fishing industry in good repair. The program is delivered in cooperation with Harbour Authorities, local not-for-profit organizations representing the interests of both commercial fish harvesters and the broader community, who manage the harbours under lease agreements with Fisheries and Oceans Canada. In line with the program's mandate to support the commercial fishing industry, low activity fishing harbours and recreational harbours are divested to third parties. The Small Craft Harbours program is funded through an annual appropriation which includes two transfer payment programs: the Small Craft Harbours Class Grant Program and the Small Craft Harbours Class Contribution Program.

Planning highlights

A key activity for the Small Craft Harbours (SCH) program is accelerating maintenance and repair projects at core commercial fishing harbours to address asset deterioration occurring at SCH fishing harbours. This is important for meeting the program's mandate of keeping fishing harbours that are essential to the commercial fishing industry open and in good repair.

In 2017-18, the implementation of the second year of the two year Federal Infrastructure Initiative will enable the completion of 85 major capital construction projects on wharves, floats, breakwaters, shore protection, and other assets at 78 core fishing harbours. These investments are in line with the Government of Canada's priority of providing greater safety and security to Canadians. The program's investments will also contribute to the Government's Agenda, Results and Communications Committee's priority of modern, sustainable, and resilient infrastructure that supports economic growth which will provide jobs in local communities and contribute to local and national economies.

The SCH program will also participate in Canada's Ocean Protection Plan strategy, subject to Parliamentary appropriation approval, to address the issue of abandoned, derelict and wrecked vessels. This will include working alongside other departments to support the clean-up of priority small abandoned, derelict and wrecked vessels that pose risks to local communities, including small craft harbours.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Network of safe and accessible harbours that contribute to the commercial fishing industry	Percentage of facilities at core fishing harbours in fair or better condition	80%	March 31, 2018	85%	83%	86%
Activities at small craft harbours result in economic benefits	Gross domestic product generated by Small Craft Harbours activities	\$80M	March 31, 2018	\$76M	\$82M	\$73M
Harbour Authorities operate and manage core fishing harbours	Percentage of core fishing harbours that are operated and managed by Harbour Authorities	>90%	March 31, 2018	94%	95%	96%

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
213,252,617	213,252,617	92,071,394	92,071,394

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
189	164	164

Program 1.10 – Territorial Delineation

Description

The definition and description of Canada's maritime boundaries is reliant on hydrographic data and nautical geodetic expertise. Fisheries and Oceans Canada's Canadian Hydrographic Service (CHS) is responsible for the provision of hydrographic and nautical data and nautical geodetic expertise. The program's technical experts define the geographic positions for all Canadian offshore maritime limits and boundaries and provide the nautical geodetic evidence to resolve boundary disputes (e.g., Beaufort Sea, Hans Island) and prosecutions related to the violation of international maritime law (e.g., foreign fishing) as well as other infractions in Canadian waters. Through the international recognition of these limits and boundaries, Canada is able to assert its sovereign rights to resources, and to secure its maritime boundaries. Canada ratified the *United Nations Convention on the Law of the Sea*^{xii} (UNCLOS) and in 2013 submitted evidence to the United Nations Commission on the Limits of the Continental Shelf (the Commission) in support of the establishment of the outer limits of Canada's continental shelf beyond the current 200 nautical mile Exclusive Economic Zone. Canada also submitted a preliminary report indicating that an Arctic submission would be forthcoming after further data collection. The Department works closely in this endeavour with Global Affairs Canada and Natural Resources Canada to prepare the second submission to present and defend Canada's evidence submission to the Commission.

Planning highlights

Over the next three years, a key initiative for the Territorial Delineation program will be to process, integrate and analyze bathymetric (depth) data collected in the Arctic to prepare, in collaboration with Natural Resources Canada, the scientific evidence required to support Canada's Arctic submission to the Commission on the Limits of the Continental Shelf (CLCS) under Article 76 of the *United Nations Convention on the Law of the Sea*^{xii}.

The program will also support Global Affairs Canada with the presentation, interpretation and defence of the scientific evidence included in Canada's Atlantic and Arctic submissions with the goal of securing international recognition of the outer limits of Canada's continental shelf, and in turn confirming the geographic extent of Canada's existing sovereign rights over the natural resources of the seabed and subsoil of the continental shelf beyond 200 nautical miles. With this recognition, the program will have contributed to its objectives to ensure the accurate representation of Canada's continental shelf, the area beyond the current Exclusive Economic Zone. The program will also contribute to the development of international standards for maritime limits and boundaries.

In addition to directly supporting Canadian sovereignty, the program also responds to the Minister's mandate letter commitment to work with the Ministers of Transport, Natural Resources and Environment and Climate Change to formalize the moratorium on crude oil tanker traffic on British Columbia's North Coast, including the Dixon Entrance, Hecate Strait, and Queen Charlotte Sound.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Canada's National and International maritime limits and boundaries are well defined and maintained in accordance with international standards for use in charts, UN submissions and legal applications	Percentage of total data requirements that are acquired and analysed for Canada's Arctic submission to the United Nations Commission on the Limits of the Continental Shelf	75%	March 31, 2018	n/a	n/a	90%
	Percentage of required data that is acquired and analyzed to update and maintain Canada's baselines that define Canada's national and international maritime limits and boundaries	75%	Annual	n/a	n/a	n/a
Nautical geodesy expertise, knowledge and evidentiary reports are available to decision makers and regulators	Percentage of advice, expert and evidentiary reports and testimonies accepted for defining or defending the geographic description of Canada's maritime limits and boundaries	100%	March 31, 2018	n/a	n/a	100%

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
1,182,400	1,182,400	785,318	785,318

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
10.4	10.4	10.4

Program 1.11 – Climate Change Adaptation Program

The funding for this program is set to expire in 2017-18. The future of the program will be determined by Budget 2017.

Description

Fisheries and Oceans Canada contributes to the growth and sustainability of numerous maritime sectors and has infrastructure assets in the billions of dollars. It needs to have the capacity to adjust its decisions and activities based on the impact of climate change. The Climate Change Adaptation program assesses risk, develops science knowledge and adaptation tools, which facilitate the integration of climate change considerations and adaptive management strategies into its decision making. Whether it is managing the fisheries resource, small craft harbours, or marine navigation, decision making must take into account climate change to ensure that Canada continues to benefit socially and economically from its oceans and inland waters. This program is one element of a much larger horizontal program which includes nine federal departments, including Environment and Climate Change Canada, Natural Resources Canada, and the Public Health Agency of Canada.

Planning highlights

Key activities under the Climate Change Adaption program include:

- ocean acidification - research to better understand the impacts of ocean acidification on priority species as well as on coastal and offshore waters;
- species and coastal infrastructure vulnerability - advance understanding of the vulnerability of commercial species and their prey to the impacts of climate change and develop a strategy to incorporate this knowledge into fisheries stock assessments and fisheries management decisions; and
- refinement of ocean models - improve predictions of changing ocean conditions in order to help fisheries managers understand movement of commercial fish species and species at risk.

A possible challenge to the program is that it will not have access to the highly specialized information management and information technology resources required to support its scientific activities (storage of large volumes of data, access to high performance computing systems and network capacity to enable data exchanges).

The program is aligned with the Minister's mandate letter commitments to use scientific evidence and the precautionary principle, as well as take into account climate change when making decisions affecting fish stocks and ecosystem management, and to work with the Minister of Environment and Climate Change and the Minister of Science to examine the implications of climate change on Arctic marine ecosystems.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Target audiences have access to information, expertise and tools to support adaptation measures	Program information, tools and research findings are available on the DFO website	Launch of new DFO Climate Change website	March 31, 2018	n/a	n/a	n/a
Adaptation measures have been identified by target stakeholders to address risks and opportunities arising from climate change	Develop methodology for including climate change considerations into stock assessments	Methodology is developed for considering climate change in stock assessments	March 31, 2018	n/a	n/a	n/a

Note: n/a refers to a new indicator effective 2017-18.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
2,385,497	2,385,497	-	-

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
8	-	-

Program 2.1 – Compliance and Enforcement

Description

The Compliance and Enforcement program ensures 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 regulatory management and enforcement approach, and uses a number of tools to achieve its goals, including promoting compliance with legislation, regulations and management measures through education and shared stewardship; monitoring, control, and surveillance activities; and the management of major cases and special investigations. The National Fisheries Intelligence Service and Program and Operational Readiness sub-programs support the carrying out of enforcement operations. The program works closely with the Ecosystems and Fisheries Management Sector, the Royal Canadian Mounted Police, various domestic and international partners including industry, to ensure peaceful and orderly fisheries. It makes a significant contribution, with the Canadian Coast Guard, to the protection of Canadian sovereignty and assists the Department of National Defence with identifying potential marine security threats. It also plays a key administrative role, along with Ecosystems and Fisheries Management, Environment and Climate Change Canada,

and the Canadian Food Inspection Agency, in the Canadian Shellfish Sanitation Program to help ensure that the public is protected from contaminated fisheries products.

In 2017-18, the Compliance and Enforcement program will be delivered through three sub-programs:

- 2.1.1 National Fisheries Intelligence Service
- 2.1.2 Enforcement Operations
- 2.1.3 Program and Operational Readiness

Planning highlights

Three National Conservation & Protection (C&P) Operational priorities that support the delivery of the Compliance and Enforcement (C&E) program are:

- intelligence-led enforcement operations;
- program excellence through people management; and
- modernization and national standards.

In advancing the intelligence-led enforcement operations priority, greater synergies in the work performed by front-line operational staff and intelligence personnel will be sought as quality and actionable information is generated. The active engagement of staff in key governance processes and program initiatives, will serve as a catalyst for the deployment of operational resources and assets and, as an organization, in fully implementing the National Fisheries Intelligence Service (NFIS) in all three zones (East, West and Central Canada). In order to deliver on this priority, a new and innovative “National Strategic Threat and Risk Assessment (NSTRA)” methodology is being developed by NFIS for use in identifying individuals posing the greatest risk and most likely to cause the greatest harm to our fisheries, waterways, aquatic resources and ecosystems. Over the next three years, it is expected that C&E will develop greater confidence in the assessment process and results and further its ability to allocate resources in areas of greatest need.

As part of the program excellence through people management priority, C&E works to advance the modernization of the program, expand on the strengths of C&P’s employees and support their personal and professional growth and development by responding to their needs, interests and career aspirations.

Under the modernization and national standards priority, key transformation initiatives will be advanced by C&E that will change how the program is delivered in the future, while maintaining greater national consistency across the country. As a result, a renewed recruitment and retention strategy for the C&P workforce of the future is being developed.

These activities provide a strong foundation for program delivery now and into the future and will contribute to the success of the C&E program in supporting the Government of Canada’s priorities of keeping Canadians safe, protecting the environment and growing the economy by strengthening and enhancing our capacity to deliver and achieve results. Success will be furthered by:

- transforming the program into a modern intelligence-led enforcement organization, resulting in increased protection of Canada’s fisheries and aquatic ecosystems from unlawful exploitation and interference;

- providing for the sustainable management of our freshwater and marine resources (protecting the environment);
- contributing to jobs and the economy; and
- continuing to ensure that necessary safeguards are in place to keep Canadian seafood products eligible for export to international markets.

The Government of Canada's Agenda, Results and Communications Committee's priority of greater safety and security for Canadians is also advanced through C&E's fisheries-based intelligence, surveillance and reconnaissance efforts as well as its contributions to enhanced understanding of vessel traffic and human activity in the oceans and marine environments.

In 2017-18, C&E plans to re-invest 10% of its overall budget into the new National Fisheries Intelligence Service and will dedicate a majority of C&E's discretionary funding (approx. \$5M) to advancing several innovative and experimental approaches to compliance and enforcement as it relates to:

- a new Strategic Threat Risk Assessment Methodology;
- developing a new standard for conducting and documenting compliance verification; and
- implementing C&E's national digital forensics capabilities.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Those that impact the resource comply with domestic, international and/or trade partner requirements and agreements that govern the resource	Maintain rate of compliance of the Fisheries and Oceans Canada's regulated community within 5% of baseline	At or above 90%	March 2018	n/a	n/a	n/a

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
102,351,038	102,351,038	102,351,038	102,351,038

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
737.9	742.6	741.3

Program 2.2 – Fisheries Protection

Description

The Fisheries Protection program exists to ensure that commercial, recreational and Aboriginal fisheries are productive and sustainable. As part of its core business, the Fisheries Protection Program is responsible for the administration of the fisheries protection provisions of the *Fisheries Act*ⁱ including the establishment of guidelines and regulations. The program undertakes

the review and authorization of proposed works, undertakings and activities that may affect fish and fish habitat and fulfills its legislative responsibilities in relation to federal environmental assessment regimes and addresses its Section 35 *Constitution Act, 1982*^{xiii} duty to consult relative to authorization decisions. The program also provides science-based advice to federal custodial departments to support contaminated site management through the Federal Contaminated Sites Action Plan. Sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries is best achieved when partners and stakeholders with a common interest work together to conserve and protect fish and fish habitat. The Fisheries Protection program has established partnering arrangements with some federal agencies and provinces which allow them to conduct initial reviews of projects, to determine if they require advice or review by the Fisheries Protection program under the *Fisheries Act*ⁱ. The Recreational Fisheries Conservation Partnerships program encourages a partnership-based approach through the provision of funding to recreational fisheries and conservation groups to undertake habitat restoration activities. Finally, the Fisheries Protection program helps to address the issue of aquatic invasive species through federal-provincial/territorial cooperation and the development of regulatory tools to prevent the introduction and spread of aquatic invasive species.

In 2017-18, the Fisheries Protection program will be delivered through three sub-programs:

- 2.2.1 Regulatory Reviews, Standards and Guidelines
- 2.2.2 Partnerships and Regulatory Arrangements
- 2.2.3 Aquatic Invasive Species

Planning highlights

This year, the Fisheries Protection program (FPP) will advance the Minister's mandate letter commitment to work with the Minister of Transport to review the previous government's changes to the *Fisheries*ⁱ and *Navigation Protection*^{xiv} acts and to restore lost protections and incorporate modern safeguards. The FPP will make informed legislative, regulatory and policy recommendations and decisions regarding the protection of Canada's oceans, waterways and fisheries.

The FPP is also advancing its monitoring modernization initiative to enhance the analysis and reporting of ongoing compliance and effectiveness monitoring. This includes developing standardized national procedures to track and analyze information provided by proponents and report semi-annually in support of the Government of Canada's commitment to incorporate modern safeguards.

The Minister's mandate letter also includes a commitment to work with the Minister of Environment and Climate Change, the Canadian Environment Assessment Agency and the Minister of Natural Resources to review Canada's environmental assessment processes. Work is continuing towards ensuring that:

- environmental processes are fair and jurisdictionally coordinated;
- decisions are evidence-based, participatory and serve the public interest; and modern technologies and approaches to project development contribute to natural resource development that is sustainable both now and for future generations.

The work of the FPP is aligned with the Government of Canada's Agenda, Results and Communications Committee's priority of improved relationships with and outcomes for

Indigenous Peoples; modern, sustainable and resilient infrastructure that supports economic growth; and improved quality, timeliness and efficiency of federal government service delivery.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Canadians receive regulatory advice from the Fisheries Protection Program in a consistent and timely manner in an effort to avoid, mitigate and offset impacts to fisheries	Percentage of applications that are deemed complete or incomplete as per the timelines set in regulation	100%	March 2018	n/a	n/a	n/a

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
71,359,349	71,359,349	61,560,927	53,483,136

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
434.3	433.3	434.8

Program 2.3 – Species at Risk

Description

The *Species at Risk Act*ⁱⁱⁱ is the federal legislative tool for protecting listed wildlife species at risk. It establishes a process for conducting scientific assessments of the status of wildlife species, by an arm's length organization, and for listing species assessed as extirpated, endangered, threatened and of special concern. The *Species at Risk Act*ⁱⁱⁱ also includes provisions for the protection, recovery and conservation of listed wildlife species and their critical habitats and residences. The Minister of Fisheries, Oceans and the Canadian Coast Guard is the competent Minister for all aquatic species at risk in Canada (except those in, or on federal lands administered by Parks Canada). The program is managed according to key principles in the *Act*ⁱⁱⁱ, such as stewardship, engagement, consultation, cooperation, compliance, and enforcement. The program is informed by scientific research, social and economic research, and stakeholder and community views. This information then supports the assessment and listing of species; the recovery and protection of listed species at risk through recovery strategies, action plans and management plans; the identification and protection of species' critical habitats; the implementation of recovery measures; and reporting on progress. The Species at Risk program helps improve the ecological integrity of aquatic ecosystems so that they remain healthy and productive for future generations of Canadians.

Planning highlights

The key activities involved in the delivery of the Species at Risk (SAR) program include consultation and outreach with other federal departments, provincial, territorial and municipal governments, Indigenous groups, environmental and other non-government organizations, industry associations, academic institutions and the Canadian public at all stages of the species at risk conservation cycle, from species assessment, protection, recovery planning and implementation of recovery measures to ongoing monitoring and evaluation. The SAR program plays a role in meeting international commitments under the Convention on Biological Diversity and national conservation target initiatives under the *Federal Sustainable Development Act*^{xv}.

These activities provide protection management and recovery of listed species at risk, thus contributing to ecosystem health and biodiversity.

The program's objectives are expected to remain stable over the next few years. However, the pace of decisions on listing and subsequent recovery documents for species at risk is expected to increase and become more complex as the program moves to more threat-based, ecosystem, or multi-species approaches.

The SAR program will partner with Environment and Climate Change Canada and Parks Canada Agency in addressing recommendations stemming from the 2016-17 tri-departmental Evaluation of the Programs and Activities in Support of the *Species at Risk Act*ⁱⁱⁱ. The evaluation will be finalized in 2017-18.

Program highlight

In the late 1960s, sustained fishing and poaching along with significant changes in certain habitats, led to the complete disappearance of striped bass from the St. Lawrence Estuary. Following a reintroduction program and intensive monitoring, this species is now being reported in areas throughout the St. Lawrence. This is a success for biodiversity in the St. Lawrence. More information can be found on the [DFO website](#)^{xvi}.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Government authorities, individuals and organizations have the necessary information and direction to make decisions and guide behaviour in relation to the conservation of listed aquatic species at risk and their critical habitat	Percentage of Proposed Recovery Strategies, Action Plans and Management Plans for listed aquatic species at risk posted on the <i>Species at Risk Act</i> ⁱⁱⁱ Registry in accordance with legislated deadlines	75%	March 31, 2018	n/a	n/a	n/a
	Percentage of listed aquatic species that have critical habitat identified either partially or completely	75%	March 31, 2018	54%	43%	43%

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
22,354,201	22,354,201	14,458,156	14,458,156

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
133.3	118.2	118.2

Program 2.4 – Environmental Response Services

Description

The Canadian Coast Guard is the lead federal agency for ensuring an appropriate response to all ship-source and unknown mystery pollution spills in Canadian waters and waters under international agreements. The Environmental Response Services program minimizes the environmental, economic, and public safety impacts of marine pollution incidents. Through the program, the Canadian Coast Guard establishes an appropriate and nationally consistent level of preparedness and response services in Canadian waters; monitors and investigates all reports of marine pollution in Canada in conjunction with other federal departments; and maintains communications with the program's partners, including Transport Canada and Environment and Climate Change Canada, to ensure a consistent coordinated approach to the response to marine pollution incidents. The Coast Guard's Fleet Operational Readiness program contributes to the delivery of this program. The program is delivered in coordination with other federal departments for surveillance information and scientific advice and with ship owners and commercial Response Organizations to support response efforts. The program's legal basis derives from the *Oceans Act*ⁱⁱ, the *Canada Shipping Act, 2001*^v, and the *Constitution Act, 1867*^x.

Planning highlights

The Canadian Coast Guard (CCG) will work towards ensuring that the newly-reopened Kitsilano Coast Guard Base will eventually include environmental response capacity and training for regional stakeholders and operators. It will be the first model of an integrated Search and Rescue and Environmental Response base moving CCG towards an all-hazard incident response system. Interdepartmental efforts will be undertaken to develop a legislative and regulatory framework, operational policies and procedures, and scientific studies to support informed decision-making on the use of alternative response measures. This will include continued scientific work on exploring and testing beyond traditional mechanical recovery.

Under the Oceans Protection Plan, subject to Parliamentary appropriation approval, CCG will start work towards:

- Establish 24/7 Regional Operation Centres (ROCs) in three regions (Atlantic, Western and Central and Arctic) as well as a National Coordination Centre. All centres will accommodate new staff to conduct 24/7 operations and incident management. A national training program for environmental response coordinators within the ROCs will be established. The [Search and Rescue Services program](#) also contributes to this key initiative.

- Augment on-water response capabilities on all three coasts by including new regional personnel, training and exercises into the Search and Rescue Services program. Some of the activities will consist of the recruitment of new seasonal students, identifying training requirements and enhancing exercise protocols.
- Purchase and deploy a full complement of environmental response equipment, providing significant enhancements to CCG's ability to respond to oil spills.
- Seek to expand the role of the CCG Auxiliary from search and rescue to include investigation, assessment and monitoring activities in response to reports of marine pollution.
- Purchase and deploy a number of mobile command posts to support the implementation of the integrated incident command structure and ensure a more robust ability to support incident management throughout the country.
- Address vessels of concern. CCG, in consultation with partners, has developed a comprehensive plan that focuses on prevention and removal, including a robust, polluter-pay approach to future vessel cleanup.
- Work to build Indigenous Community Response Teams to further enhance Indigenous marine emergency preparedness and response capacities.

CCG will also work collaboratively with key stakeholders to develop and implement tailored response plans in four areas that have the highest level of tanker traffic:

- Southern British Columbia (Straits of Georgia and Juan de Fuca);
- St. Lawrence: Montreal to Anticosti Island (Quebec);
- Port Hawkesbury and the Strait of Canso (Nova Scotia); and
- Saint John and the Bay of Fundy (New Brunswick).

The Environmental Response Services program is aligned with the departmental priorities and the Minister's mandate letter commitments related to improved marine safety and ocean protection, a cleaner and sustainable environment and reconciliation with Indigenous Peoples.

The program is also aligned with the Government of Canada's Agenda, Results and Communications Committee's priority to improve the quality, timeliness, and efficiency of federal government service delivery and improve relationships with, and outcomes for Indigenous Peoples.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Environmental, economic and public safety impacts of marine pollution events are mitigated	Percentage of reported cases in which the response was appropriate relative to the pollutant, threat and impact	100%	March 31, 2018	100%	100%	100%

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
34,918,463	34,918,463	13,157,510	13,157,510

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
93	93	93

Program 2.5 – Oceans Management

Description

The Oceans Management program takes an integrated and evidence-based approach to managing oceans issues and collaborates with other federal departments, other levels of government, Indigenous groups, and stakeholders. Building on a foundation of science, the program addresses a number of challenges facing Canada's oceans, such as oceans health, marine habitat loss, declining biodiversity and growing demands for access to ocean space and resources. The program gathers, disseminates and considers ecological, social and economic impacts to ensure the protection, conservation and sustainable use of Canada's oceans. The legal basis for the program derives from the *Oceans Act*ⁱⁱ along with Canada's Oceans Strategy which provides the Department with a framework for managing estuarine, coastal and marine ecosystems.

Planning highlights

A key activity involved in the delivery of the Oceans Management program is the development of a comprehensive plan for how provinces, territories and Indigenous Peoples can come together with their jurisdictions, resources, ideas and commitment to better manage Canada's Oceans. This plan will continue to be developed, pursuant to the Minister's mandate letter commitment to work with provinces, territories, Indigenous Peoples and other stakeholders to address how to better co-manage Canada's three oceans.

To facilitate engagement and consultations with Indigenous groups, academic institutions and other stakeholders, new Oceans Management grants and contributions programs will be introduced in 2017. This will enable DFO to enter into arrangements with external bodies that wish to be engaged and participate in oceans management activities.

Over the next three years, the Department will work to establish large marine protected areas (MPAs) in pristine offshore areas, to establish additional *Oceans Act*ⁱⁱ MPAs in areas under pressure from human activities and to advance other effective area-based conservation measures to achieve marine conservation targets.

In 2010, Canada adopted the commitment to conserve ten percent of its coastal and marine areas by 2020. This was further strengthened in the Minister's mandate letter commitment to increase the protection of Canada's marine and coastal areas to five percent by 2017 and ten percent by 2020. To achieve these targets, proposed legislative changes to the *Oceans Act*ⁱⁱ will be developed with implementation targeted for 2018. The program will also continue scientific assessments and consultations to identify areas of interest that will progress towards MPA designation.

The Oceans Management program is aligned with the Government of Canada's Agenda, Results and Communications Committee's priority of improved relationships with and outcomes for Indigenous Peoples.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Canada's estuarine, coastal and marine ecosystems are protected and conserved while fostering sustainable use	Percentage of coastal and marine territory conserved by <i>Oceans Act</i> ⁱⁱ Marine Protected Areas and other effective area-based conservation measures within Fisheries and Oceans Canada's mandate	Contributing to the national target of 5% by 2017 and 10% by 2020	December 31, 2017	n/a	1%	1%

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
54,268,898	54,268,898	52,350,069	50,829,167

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
336.1	337.6	331.6

Program 3.1 – Search and Rescue Services

Description

The Canadian Coast Guard's maritime Search and Rescue Services program leads, delivers, and maintains preparedness for the 5.3 million square kilometer maritime component of the federal search and rescue program, with the support of stakeholders and partners, including the Canadian Coast Guard Auxiliary and the Department of National Defence. Through communication, coordination, and the delivery of maritime search and rescue response and operational awareness, the program increases the chances of rescue for people caught in on-water distress situations. The Fleet Operational Readiness and Marine Communications and Traffic Services programs are integral contributors to the delivery of the program. The program's legal basis derives from the *Constitution Act, 1867*^x, the *Oceans Act*ⁱⁱ, and the *Canada Shipping Act, 2001*^v.

In 2017-18, the Search and Rescue Services program will be delivered through two sub-programs:

- 3.1.1 Search and Rescue Coordination and Response
- 3.1.2 Canadian Coast Guard Auxiliary

Planning highlights

Under the Oceans Protection Plan, subject to Parliamentary appropriation approval, Canadian Coast Guard (CCG) will:

- Establish 24/7 Regional Operation Centres (ROCs) in three regions (Atlantic, Western and Central and Arctic) as well as a National Coordination Centre in the National Capital Region. All centres will accommodate new staff to conduct 24/7 operations and incident management. A national training program for environmental response coordinators within the ROCs will be established.
- Support CCG's Auxiliary expansion in the Arctic. This project aims to enable communities to develop the internal maritime Search and Rescue (SAR) capacity required to safely service their own communities in the event of a local marine incident. Increasing federally funded maritime SAR resources in the Arctic will have a positive impact on local marine safety and the outcomes of marine incidents. Throughout 2017-18, it is anticipated that at least five new CCG Auxiliary units will be trained and operational in the Arctic. This process will also include the negotiation and drafting of a sixth contribution agreement for the new Arctic CCG Auxiliary region. CCG will extend the Indigenous Community boats volunteer pilot programs south of 60°. Over the four year pilot term, it is anticipated that approximately eight new Indigenous communities will participate in this program, thus becoming CCG Auxiliary units that are prepared to respond.
- Re-establish the capacity formerly provided by the Maritime Rescue Sub-Centre in St-John's, Newfoundland and Labrador including the hiring, training and certification of new officers.
- Build six additional SAR lifeboat stations: four along the West Coast and two in Newfoundland and Labrador. The existing CCG facility in St-Anthony, Newfoundland and Labrador, will be refurbished to a lifeboat station.
- Implement a seasonal inshore rescue boat station, consisting of trained local personnel in the Arctic to support increased inshore SAR operations. Some of the activities will include selecting the most appropriate station location and determining a crewing model to maximize Indigenous participation, recruitment and training.

The SAR Services program is aligned with departmental priorities, the Government of Canada's Agenda, Results and Communications Committee's priorities as well as the Minister's mandate letter commitments to improve marine safety and ocean protection and reconciliation with Indigenous Peoples.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Loss of life to mariners in distress is minimized	Percentage of lives saved relative to total reported lives at risk in the maritime environment	>90%	March 31, 2018	99%	99%	99%

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
33,890,834	33,890,834	33,890,833	33,890,833

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
150	150	150

Program 3.2 – Marine Communications and Traffic Services

Description

The Marine Communications and Traffic Services program is delivered by the Canadian Coast Guard. The safety of mariners and marine environmental protection in Canadian waters depend on the efficient and timely communication of information. The program ensures a reliable communication system is available 24 hours a day to contribute to the safety of life at sea, the protection of the marine environment, and the safe and efficient navigation in Canadian waterways. Services include marine distress and general radio communications, broadcasting maritime safety information, screening vessels entering Canadian waters, regulating vessel traffic in selected Canadian waters, providing marine information to other federal departments and agencies, and providing a public correspondence radiotelephone service in areas where mariners don't have access to public telephone systems. The Shore-Based Asset Readiness and Canadian Coast Guard College programs are integral contributors to this program. The legal basis for the program derives from the *Constitution Act, 1867*^x, the *Oceans Act*ⁱⁱ, and the *Canada Shipping Act, 2001*^v.

Planning highlights

Ventures are underway, under the Marine Communications and Traffic Services (MCTS), with various stakeholders such as Pilotage associations across Canada. E-navigation will provide pilots and mariners with real-time marine information improving the safety of Canadian waters. The program also contributes to commitments to better co-manage our three oceans with Indigenous Peoples. MCTS recently hired Indigenous candidates in the Prince Rupert area. Such initiatives could prove effective in improving relationships and ensuring successful outcomes.

Under the Oceans Protection Plan, subject to Parliamentary appropriation approval, the Canadian Coast Guard (CCG) will provide MCTS Centres with the appropriate staff levels to support the oversight of vessel traffic, while providing an accurate picture of vessel traffic in Canadian waters at all times to support decision making about ship safety.

The MCTS program is aligned with departmental priorities and the Government of Canada's Agenda, Results and Communications Committee's priorities, as well as the Minister's mandate letter commitments to improve marine safety and ocean protection, reconciliation with Indigenous Peoples, and operational improvements to support priorities.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Vessels have the marine communications and traffic services support they need to transit Canadian waters safely	Percentage of total number of collisions, strikings, and groundings out of the total vessel movements within vessel traffic system zones	<1%	March 31, 2018	0%	0%	0%

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
33,679,329	33,679,329	33,679,329	34,742,119

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
348	348	348

Program 3.3 – Maritime Security

Description

The Canadian Coast Guard's Maritime Security Program supports the work of federal departments and agencies with maritime and national security mandates, including the Royal Canadian Mounted Police, the Canadian Forces, the Canada Border Services Agency, Public Safety Canada, and Transport Canada, by sharing maritime expertise and information and lending vessel support. Fleet Operational Readiness, Marine Communications and Traffic Services as well as Shore-Based Asset Readiness programs, are integral contributors to the delivery of the Maritime Security Program. The program is delivered in coordination with the Department's Compliance and Enforcement program. The legal basis for the support of other federal departments or agencies is found primarily in the *Oceans Act*ⁱⁱ.

Planning highlights

Over the next year, work will begin to develop options for amendments to the *Oceans Act*ⁱⁱ that will provide an explicit mandate to support security organizations. The Canadian Coast Guard (CCG) will need to clarify its maritime security role with other stakeholders, while managing operational risks associated with operating alongside security and law enforcement partners.

The Maritime Security program will also work with partners to resolve longstanding program authority and information sharing issues within Marine Security Operations Centres. In addition, the program will provide support for the review of the electronic monitoring and communications capabilities in the Arctic, including critical interdepartmental engagement with partners that leverage CCG's capacity.

The program is aligned with the departmental priority to improve marine safety and ocean protection. The program is also aligned with the Government of Canada's Agenda, Results and Communications Committee's priority of greater safety and security for Canadians.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Federal enforcement and intelligence communities have adequate support and information to enhance their awareness of vessel movements and respond to marine activities	Percentage of requests for information that are actioned within 30 minutes	100%	March 31, 2018	100%	100%	100%
	Percentage of scheduled reports delivered on time	95%	March 31, 2018	98%	100%	100%
	Percentage of satisfaction in response to client needs	75%	March 31, 2018	n/a	89%	89%

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
8,415,573	8,415,573	8,415,573	8,415,573

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
60	60	60

Program 3.4 – Fleet Operational Readiness

Description

The Canadian Coast Guard's Fleet Operational Readiness program provides safe and reliable vessels, air cushion vehicles, helicopters, and small craft with professional crews ready to respond to on-water and maritime-related needs. This program involves fleet management and operations, fleet maintenance, and fleet asset procurement. The program ensures that the federal civilian fleet meets the current and emerging needs and priorities of Canadians and Canada. The program supports Coast Guard programs, the Department's science, fisheries, and aquaculture activities, and the activities of other federal departments that need on-water delivery to support their mandates. The Canadian Coast Guard College contributes to the delivery of this program. The legal basis for the program is found in the [Constitution Act, 1867](#)^x, and the [Oceans Act](#)ⁱⁱ.

In 2017-18, the Fleet Operational Readiness program will be delivered through three sub-programs:

- 3.4.1 Fleet Operational Capability
- 3.4.2 Fleet Maintenance
- 3.4.3 Fleet Procurement

Planning highlights

A key initiative over the next year is the development of an enhanced national training plan that, once fully implemented, will ensure the Canadian Coast Guard's (CCG) ship officers and crew have sufficient training to maintain certification, and allow vessels to sail with required crew complements.

Under the Oceans Protection Plan, subject to Parliamentary appropriation approval, CCG will augment towing capacity by:

- Adding towing kits to large CCG vessels on the East and West coasts, which includes vessels deployed to the Arctic. Activities will include the purchase and installation of towing kits and training in their usage.
- Leasing and operating two vessels, which will have the power and equipment required to effectively manoeuvre large disabled ships at risk of running aground or polluting.

Other initiatives include the delivery of a new vessel to the Kitsilano Coast Guard Base and the deployment of a new offshore fisheries science vessel to replace CCGS *W.E. Ricker*. Over the next three years, CCG will accept the delivery of five search and rescue lifeboats, seven medium-lift helicopters, two additional offshore fisheries science vessels and two channel survey and sounding vessels. The construction engineering for the polar icebreaker and shipbuilding for an offshore oceanographic science vessel will also begin.

The key risk to this program is aging assets and equipment to support, deliver, and manage services.

The program aligns with the departmental priorities to improve marine safety and ocean protection, a cleaner and sustainable environment, reconciliation with Indigenous Peoples and operational improvements to support priorities. The Fleet Operational Readiness program is also aligned with the Government of Canada's Agenda, Results and Communications Committee's priority of modern, sustainable and resilient infrastructure that supports economic growth.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
An operationally capable fleet that responds to the needs and requirements of the Government of Canada	Percentage of client mission completion against client-approved planned	90%	March 31, 2018	94%	93%	89%
	Percentage of operational days lost due to breakdowns	3%	March 31, 2018	2%	2%	4%
	Percentage of operational life remaining of the fleet of large vessels, the fleet of small vessels and the fleet of helicopters	50%	March 31, 2028	Large vessels 23%	Large vessels 27%	Large vessels 28%
				Small vessels 31%	Small vessels 26%	Small vessels 27%
				Helicopters -1%	Helicopters -3%	Helicopters 39%

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
730,802,589	730,802,589	572,560,411	424,546,089

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
2,823	2,823	2,823

Program 3.5 – Shore-Based Asset Readiness

Description

The Canadian Coast Guard Shore-Based Asset Readiness program ensures that the Canadian Coast Guard's non-fleet assets are available and reliable for delivery of Canadian Coast Guard programs. These non-fleet assets include both fixed and floating aids, such as visual aids (e.g. buoys); aural aids (e.g. fog horns); radar aids (e.g. reflectors and beacons); and long-range marine aids, such as the Differential Global Positioning System; as well as electronic communication, navigation systems, and over 300 radio towers. The Shore-Based Asset Readiness program ensures the availability and reliability of these assets through life cycle investment planning, engineering, acquisition, maintenance, and disposal services. The Canadian Coast Guard College is an important contributor to the delivery of this program in its provision of technical training. This program is delivered in coordination with Public Services and Procurement Canada. Activities associated with the life-cycle asset management of Canadian Coast Guard shore-based assets are legislated and guided by the *Financial Administration Act*^{xvii} and *Government Contract Regulations*^{xviii} as well as policies, directives, and guidelines provided by Treasury Board, Treasury Board Secretariat, Innovation, Science and Economic Development Canada, and Public Services and Procurement Canada. The legal basis for this program is found in the *Constitution Act, 1867*^x, and the *Oceans Act*ⁱⁱ.

Planning highlights

Under the Oceans Protection Plan, subject to Parliamentary appropriation approval, the Canadian Coast Guard (CCG) will add eight new radar sites (six in British Columbia, one in Newfoundland and Labrador, and one in Nova Scotia) in order to address gaps in radar coverage and ensure continuous communication coverage in these areas.

This program will also support the various Environmental Response and Search and Rescue Services initiatives through acquisition and lifecycle of maintenance activities for new program assets.

The Department will also reduce greenhouse gas emissions in its operations. For example, CCG will invest in "greener technology" in its Aids to Navigation program and Marine Communications and Traffic Services assets by using low-carbon technology and fossil fuel alternatives.

The key risk to this program is aging assets and equipment to support, deliver, and manage services.

The program aligns with the departmental priorities to improve marine safety and ocean protection, a cleaner and sustainable environment, reconciliation with Indigenous Peoples and operational improvements to support priorities. The program is also aligned with the Government of Canada's Agenda, Results and Communications Committee's priority of economic growth through innovation and clean technology by replacing old Aids to Navigation program infrastructure with low-carbon technology and fossil fuel alternative structures.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Reliable shore-based assets ready to respond to the operational needs and priorities of the Government of Canada	Condition rating ⁵ for Marine Communications and Traffic Services program assets (MCTS)	2	March 31, 2018	n/a	n/a	n/a
	Condition rating for long-range Aids to Navigation program assets	2	March 31, 2018	n/a	n/a	n/a
	Condition rating for short-range Aids to Navigation program assets	2	March 31, 2018	n/a	n/a	n/a

Note: n/a refers to a new indicator effective 2016-17.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
121,188,483	121,188,483	101,761,245	103,433,235

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
743	692	692

Program 3.6 – Canadian Coast Guard College

Description

The Canadian Coast Guard College, the Coast Guard's national, bilingual, degree-conferring training institution, educates the marine professionals necessary to deliver programs in support of Coast Guard's mission and mandate in marine safety, security, and environmental protection. Coast Guard's Fleet Operational Readiness, Shore-Based Asset Readiness, Marine Communications and Traffic Services, Search and Rescue, and Environmental Response programs are integral contributors to the delivery of this program. The legal basis for this program is found in the *Constitution Act, 1867*^x, and the *Oceans Act*ⁱⁱ.

⁵ Target is based on a rating scale of '1' to '4', with '1' being good and '4' being poor and a goal of replacement before reaching '4'. As assets should be replaced at a constant rate, the target is an average rating of '2'.

Planning highlights

Over the next year, the Canadian Coast Guard (CCG) College will manage the onboarding of cadets and increase client engagement to standardize aspects of required training. The college is undertaking plans to re-position training to support the professional maritime learning needs and certification of CCG personnel.

The college is examining ways to modernize the learning platform, increase simulation technology and update instruction techniques. Post-graduate performance effectiveness will be measured by introducing quality assurance into the training.

The college will be taking on additional recruitment activities and providing a much larger training capacity in order to meet the increasing needs of CCG in the coming years.

The program aligns with the departmental priorities of improved marine safety and ocean protection, a cleaner and sustainable environment, reconciliation with Indigenous Peoples, and operational improvements to support priorities.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Trained operational personnel are ready to respond to the operational needs and requirements of the Government of Canada	Percentage of Officer Training Program graduates to approved trainee intake	70%	March 31, 2018	76%	66%	70%
	Percentage of MCTS Officer graduates to approved trainee intake	90%	March 31, 2018	89%	100%	79%

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
12,946,128	12,946,128	12,946,128	12,946,128

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
290	290	290

Program 3.7 – Hydrographic Products and Services

Description

The safe use of Canadian waterways requires knowledge of the physical limitations to navigation. The Canadian Hydrographic Service contributes to safety on Canadian waterways by undertaking hydrographic surveys from primarily Canadian Coast Guard vessels to measure, describe, and chart the physical features of Canada's oceans and navigable inland waters. As Canada's hydrographic authority, the Canadian Hydrographic Service uses these data to produce up-to-date, timely and accurate nautical charts and publications in support of domestic and international marine transportation in accordance with the requirements of the *Canada Shipping Act, 2001*^v and the International Maritime Organization's Safety of Life At Sea

Convention. In addition to supporting Safe and Secure Waters strategic objectives, hydrographic information is used in a number of research and development applications in engineering, ocean research, maritime security, marine navigation, ocean management, ecosystem science and the renewable and non-renewable energy sectors.

Planning highlights

In 2017-18, the Hydrographic Products and Services (HPS) program will contribute to the Oceans Protection Plan subject to Parliamentary approval, by providing modern hydrography and charting in key areas of high traffic commercial ports and waterways and dynamic products (real-time tide and water-level information), which are both key components in supporting the development and implementation of a modern marine navigation system. To this end, the program will focus its efforts on southern Canadian waters and on identifying priority areas that require updated hydrographic surveys and charting. By the end of 2017-18, electronic navigational charts from previous surveys will also be completed.

The Department is also very active in the hydrographic community by supporting the development of modern electronic nautical chart standards and formats which are essential in a modern marine navigation system. Modern electronic nautical charts are the corner stone of such a navigation system and play a major role in increasing marine safety and efficiency, as well as in protecting the environment.

The HPS program supports the Government of Canada's priority for growth in Canada's economy as well as the Minister's mandate letter commitment for improved marine safety. The program supports these priorities through the provision of up-to-date products and services for safe navigation in Canadian waterways, in particular the North. The program will continue to lead and coordinate, via the International Hydrographic Organization, the implementation of a Marine Spatial Data Infrastructure contributing to the Federal Geospatial Platform and Open Government; Crowd-Sourced Bathymetry; and Satellite-Derived Bathymetry.

Transport Canada and the Canadian Coast Guard are also working with DFO's Canadian Hydrographic Service to develop Northern Marine Transportation Corridors, which will significantly enhance how departmental services, such as charting, navigational systems and environmental response services are delivered.

DFO's Canadian Hydrographic Service (CHS) program is working with the Canadian Space Agency to develop satellite-based technology to generate bathymetric measurements for improved nautical charts, especially in remote areas such as the Canadian Arctic. Between 2.5 and 4% of funds are dedicated to test the potential and limitations of this technology. In order to accelerate the rate of development in this technology, CHS is proposing to host the first international work shop on satellite-derived bathymetry, scheduled to be held at the end of 2017. Moreover, through the recent reinvestment in Science, CHS is now able to acquire Hydrographic Autonomous Survey Vehicles (HASV) for state of the art data collection to improve bathymetric surveys in areas that are difficult to access by DFO vessels.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Users of Canada's waterways have the products and services they need for safe navigation on Canada's waterways	Percentage of the planned chart production completed in national priority areas	90%	March 31, 2018	85%	63%	85%
	Percentage of Canadian Hydrographic Service's publicized levels of service that are met or near met	90%	March 31, 2018	78%	75%	80%

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
34,556,501	34,556,501	30,573,613	26,063,431

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
254.3	254.7	258.6

Program 3.8 – Ocean Forecasting

Description

As a maritime nation bordered by three oceans, Canada has an obligation to understand ocean processes and their influence on our environment, ecosystems, and coastal communities. To this end, the Department conducts research, long-term monitoring of key ocean parameters (temperature, sea level, nutrients, tides, salinity, etc.) and manages the resulting data to ensure integrity and accessibility. In turn, the generation of new knowledge allows the Department to provide advice, products and services that support ecosystem management decisions, adaptation to climatic change, emergency preparedness (e.g. tsunami warnings, storm surges), search and rescue, the mitigation of oil spills, and at-sea operations such as fisheries and offshore energy exploration. Clients of the program include the Canadian Coast Guard, other federal government departments and agencies (e.g., Environment and Climate Change Canada, Department of National Defence, Transport Canada, Public Safety Canada), various maritime industries (e.g., commercial shipping, off-shore energy exploration, commercial fishing), the Canadian and international marine science community and Canadians.

Planning highlights

The key science activities of the Ocean Forecasting program include:

- ocean observation and monitoring;
- research /analysis, modelling;
- management and stewardship of scientific data; and
- provision of advice, products and services.

These scientific activities give the Department tools to assess and forecast the state and health of Canada's oceans and the productivity of marine ecosystems; provide foundational scientific advice that can be used in regulatory decision making and to prepare and respond to emergencies. Science activities will be conducted in all DFO regions in support of the activities outlined above.

In response to all recommendations made in an internal evaluation, the program has recently developed an Ocean Sciences framework that describes how DFO is modernizing the delivery of its ocean science activities. This framework also speaks to the need for the program to take advantage of new data, knowledge, and technology to respond to changing ocean conditions, emerging priorities and evolving departmental needs.

Budget 2016 announced an investment over five years to increase ocean and freshwater scientific research and monitoring. As part of this investment, the Department has allocated additional resources to enhance ocean forecasting.

Planned results

Expected results	Performance indicators	Target	Date to achieve target	Actual results		
				2013-14	2014-15	2015-16
Canadians are informed on current and future physical and biochemical state of Canada's oceans and waterways	Percentage of approved requests for science advice on ocean forecasting that are completed within the required timeline	90%	March 31, 2018	No requests for advice	No requests for advice	No requests for advice
	Percentage of requests for scientific data completed in the time required	95%	March 31, 2018	97%	94%	100%

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
16,390,301	16,930,301	11,805,824	11,786,545

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
104.8	104.8	103.8

Internal Services

Description

Internal Services are groups of related activities and resources that are administered to support the needs of programs and other corporate obligations of an organization. These groups are: Management and Oversight Services; Communications Services; Legal Services; Human Resources Management Services; Financial Management Services; Information Management Services; Information Technology Services; Real Property Services; Materiel Services; Acquisition Services; and Other Administrative Services. Internal Services include only those activities and resources that apply across an organization and not to those provided specifically to a program.

Planning highlights

Human Resources and Corporate Services (HRCS) supports the Department's priority of advancing management and operational excellence to modernize and continue to improve the design and delivery of programs and services and Government of Canada (GC) objectives of growth for the middle class, a clean environment, and renewing nation-to-nation relationship between Canada and Indigenous Peoples.

The HRCS sector has established an enablers readiness office whose aim is to work closely with HRCS enabler groups and programs across the Department to understand program requirements and to develop holistic and innovative approaches that provide high quality results in support of program delivery. The Office will co-ordinate the timely and efficient recruitment and accommodation of qualified staff and the provision of real property and informatics special purpose services, across all Department programs in an environment of evolving program needs.

Human Resources (HR) will implement the Public Service Commission of Canada's new direction in staffing with new staffing flexibilities that are appropriate for the Department. Over the next three years, HR will lead a change-management strategy that includes staffing training courses to ensure that HR advisors, managers and employees understand these flexibilities and effectively manage the risks.

HR will carry out a departmental transition to the GC's new HR system (My GCHR) in 2017. Over the next year, DFO expects to complete its change-management, business transformation, communications and testing activities for the project. DFO's implementation of My GCHR closely follows lessons learned from more than 30 organizations that have already adopted this new system. To succeed, DFO will need to monitor enterprise-level risks associated with the Phoenix Pay System and Pay Centre issues and ensure that HR subject matter experts, managers and employees understand these issues and manage the risks effectively.

HR is implementing a new process to address DFO classification priorities to better support programs, encouraging the use of standardized organizations and jobs, while managing fewer vacant positions, deputy-directed decisions and unique job descriptions.

HR is also preparing for the transition to My GCHR by reviewing position data contained within the HR management system (PeopleSoft) for accuracy.

As the GC continues to move forward with its Information Technology Transformation Agenda, DFO will ensure the alignment of departmental Information Management/Information Technology (IM/IT) investments with GC IM/IT transformation initiatives through departmental IM/IT governance. These include initiatives, such as implementing the Directive on Open Government, preparing for the implementation of the GC's Electronic Document Records Management Enterprise Solution (GCDocs) in 2017-18, and streamlining and consolidating the Department's portfolio of applications. The Department's progress on many GC transformation initiatives depends, however, on Shared Services Canada service delivery which introduces an element of risk that is outside of the control of the Department.

The Chief Financial Officer sector is responsible for implementing the new Treasury Board *Policy on Results*. The new policy aims to improve the achievement of results across government and enhance the understanding of the results the GC seeks to achieve, along with the resources

used to achieve them. Strong engagement began last year, and the Department is well placed to succeed in implementing this new *Policy on Results*.

The Strategic Policy sector is responsible for providing leadership through policy and economic analysis, integration and a challenge function on policy issues that have critical or cross-cutting implications for the Department. The sector works across the Department, with central agencies and with other departments, to ensure an overall coherence in domestic and international policy positions and agenda. The sector also manages key relationships with central agencies, other departments, other jurisdictions and international agencies and governments, provides a single window to advance the Department's Cabinet documents, and ensures alignment with the priorities and directions of the GC.

The communications function is central to the GC's work and contributes directly to the Canadian public's trust in government. The Communications branch, as part of the Strategic Policy sector, provides leadership, support and advice to ensure that communications are integrated into all phases of policy and program planning, development, implementation, marketing and management. The 2016 *Policy on Communications and Federal Identity* places a strong emphasis on the use of digital media as a key means to reach Canadians and as the primary means if no other communications activities are planned. To ensure a digital-first approach for the Department, the Communications branch will strategically increase the Department's use of social media and digital communications, while continuing to enhance its web presence to ensure information about programs and policies is effectively shared through multiple platforms. In addition, the branch will work to increase collaboration with other departments to support key GC priorities.

The Strategic Policy sector has established a Results and Delivery unit (RDU), which is responsible for collaborating with sectors, regions and the Canadian Coast Guard (CCG) to develop outcomes, indicators and targets in support of the Minister's mandate letter commitments and of DFO's and CCG's contribution to the priorities of the Cabinet Committee on Agenda, Results, and Communications. The RDU will work with sectors to regularly report on progress, provide advice to the Deputy Minister and Minister on progress towards outcomes, and facilitate problem-solving to ensure delivery of planned outcomes.

Budgetary financial resources (dollars)

2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
375,300,172	375,300,172	310,108,912	288,735,244

Human resources (full-time equivalents or FTEs)

2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
1,791.2	1,767.7	1,768.4

Information on the Fisheries and Oceans Canada's lower-level programs is available on [DFO's website](#)^{xix} and in the [TBS Info Base](#)^{xx}.

Spending and human resources

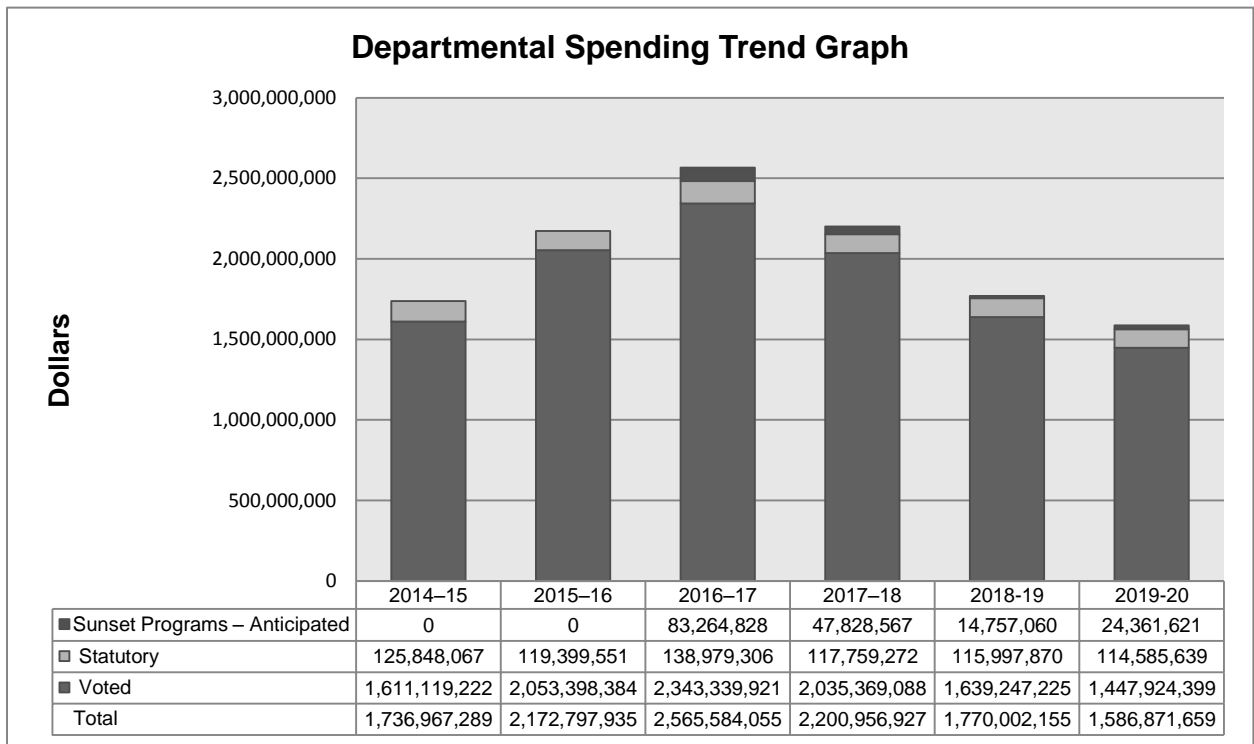
Planned spending

Budgetary planning summary for Programs and Internal Services (dollars)

Programs and Internal Services	2014-15 Expenditures	2015-16 Expenditures	2016-17 Forecast spending	2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
1.1 Integrated Fisheries Management	136,798,429	131,253,481	157,421,953	147,811,981	147,811,981	148,750,789	149,599,563
1.2 Aboriginal Strategies and Governance	88,845,466	86,077,797	90,947,419	55,786,486	55,786,486	54,796,708	53,996,501
1.3 Sustainable Aquaculture Program	24,747,548	23,961,078	28,449,653	30,475,056	30,475,056	21,509,476	21,163,051
1.4 Salmonid Enhancement Program	30,938,311	29,496,542	29,598,001	29,195,310	29,195,310	29,195,310	29,195,310
1.5 Aquatic Animal Health	6,108,151	5,764,048	6,826,057	6,114,231	6,114,231	6,128,137	6,043,268
1.6 Biotechnology and Genomics	3,676,552	3,778,332	3,397,035	3,192,457	3,192,457	3,192,457	2,472,457
1.7 International Engagement	14,848,021	14,210,564	13,386,802	13,127,462	13,127,462	12,884,029	12,884,029
1.8 Marine Navigation	50,624,156	43,632,492	56,288,327	46,011,571	46,011,571	41,068,969	39,822,564
1.9 Small Craft Harbours	104,489,712	217,947,740	311,123,396	213,252,617	213,252,617	92,071,394	92,071,394
1.10 Territorial Delineation	1,574,650	1,329,507	1,625,067	1,182,400	1,182,400	785,318	785,318
1.11 Climate Change Adaptation Program	2,081,064	2,208,729	2,417,800	2,385,497	2,385,497	-	-
2.1 Compliance and Enforcement	106,007,941	99,549,696	106,814,318	102,351,038	102,351,038	102,351,038	102,351,038
2.2 Fisheries Protection	60,892,985	61,653,577	76,390,414	71,359,349	71,359,349	61,560,927	53,483,136
2.3 Species at Risk Management	20,730,807	21,092,704	22,589,851	22,354,201	22,354,201	14,458,156	14,458,156
2.4 Environmental Response Services	18,887,268	17,819,882	39,039,626	34,918,463	34,918,463	13,157,510	13,157,510
2.5 Oceans Management	43,144,082	47,134,443	67,428,780	54,268,898	54,268,898	52,350,069	50,829,167
3.1 Search and Rescue Services	35,840,130	31,104,607	33,828,504	33,890,834	33,890,834	33,890,833	33,890,833
3.2 Marine Communications and Traffic Services	45,194,295	42,256,838	34,101,584	33,679,329	33,679,329	33,679,329	34,742,119
3.3 Maritime Security	7,320,573	7,111,947	8,491,010	8,415,573	8,415,573	8,415,573	8,415,573
3.4 Fleet Operational Readiness	474,005,854	778,918,291	835,532,968	730,802,589	730,802,589	572,560,411	424,546,089
3.5 Shore-based Asset Readiness	100,195,337	103,264,378	143,012,306	121,188,483	121,188,483	101,761,245	103,433,235
3.6 Canadian Coast Guard College	14,551,816	15,612,170	13,096,266	12,946,128	12,946,128	12,946,128	12,946,128

Programs and Internal Services	2014-15 Expenditures	2015-16 Expenditures	2016-17 Forecast spending	2017-18 Main Estimates	2017-18 Planned spending	2018-19 Planned spending	2019-20 Planned spending
3.7 Hydrographic Products and Services	30,287,492	28,200,785	39,418,250	34,556,501	34,556,501	30,573,613	26,063,431
3.8 Ocean Forecasting	17,201,935	15,077,397	8,829,294	16,390,301	16,390,301	11,805,824	11,786,545
Subtotal	1,438,992,575	1,828,457,025	2,130,054,681	1,825,656,755	1,825,656,755	1,459,893,243	1,298,136,415
Internal Services	297,974,714	344,340,910	435,529,374	375,300,172	375,300,172	310,108,912	288,735,244
Total	1,736,967,289	2,172,797,935	2,565,584,055	2,200,956,927	2,200,956,927	1,770,002,155	1,586,871,659

Departmental spending trend



The variance between the 2016-17 forecast spending and the 2017-18 through 2019-20 planned spending is mainly attributable to Supplementary Estimates and operating and capital budget carry forwards, which have been included in the 2016-17 forecast spending but are not yet known for the 2017-18 through 2019-20 fiscal years. The decreasing trend is also attributable to the sunsetting of various departmental initiatives.

Planned human resources

Human resources planning summary for Programs and Internal Services (full-time equivalents or FTEs)

Programs and Internal Services	2014-15 FTEs	2015-16 FTEs	2016-17 Forecast FTEs	2017-18 Planned FTEs	2018-19 Planned FTEs	2019-20 Planned FTEs
1.1 Integrated Fisheries Management	984.3	956.7	933.8	927	1,021.8	1,024.7
1.2 Aboriginal Strategies and Governance	105.3	107.1	119.9	105.2	105.2	105.2
1.3 Sustainable Aquaculture Program	222.3	188.8	198.1	204.1	195.1	195.1
1.4 Salmonid Enhancement Program	203.7	201.5	199.1	199.1	199.1	199.1
1.5 Aquatic Animal Health	47.5	48.2	53.5	51	51	51
1.6 Biotechnology and Genomics	18.1	26.3	23.3	22.7	22.7	22.7
1.7 International Engagement	45.1	52.7	45.7	44.1	42.9	42.6
1.8 Marine Navigation	222	220.6	261	247	228	228
1.9 Small Craft Harbours	161.8	173.4	180	189	164	164
1.10 Territorial Delineation	7.4	8	11.8	10.4	10.4	10.4
1.11 Climate Change Adaptation Program	15.3	12.9	8	8	-	-
2.1 Compliance and Enforcement	680.3	662.9	737.9	737.9	742.6	741.3
2.2 Fisheries Protection	365.5	388.1	406.7	434.3	433.3	434.8
2.3 Species at Risk Management	147.5	134.3	129.4	133.3	118.2	118.2
2.4 Environmental Response Services	74.7	83.5	112	93	93	93
2.5 Oceans Management	276.2	305.1	287.3	336.1	337.6	331.6
3.1 Search and Rescue Services	127.7	123.2	139	150	150	150
3.2 Marine Communications and Traffic Services	362	330.1	349	348	348	348
3.3 Maritime Security	48.1	45.5	66	60	60	60
3.4 Fleet Operational Readiness	2,788.8	2,740.2	2,749.5	2,823	2,823	2,823
3.5 Shore-based Asset Readiness	744.3	742.6	719	743	692	692
3.6 Canadian Coast Guard College	243.9	243.8	284	290	290	290
3.7 Hydrographic Products and Services	228.1	233.3	256	254.3	254.7	258.6
3.8 Ocean Forecasting	102	97.7	97.1	104.8	104.8	103.8
Subtotal	8,221.9	8,126.5	8,367.1	8,515	8,487.4	8,487.1
Internal Services	1,652.6	1,685.5	1,735.2	1,791.2	1,767.7	1,768.4
Total	9,874.5	9,812	10,102.3	10,306.5	10,255.1	10,255.5

Over two of the previous three years, DFO final FTE count was less than originally planned. In 2016-17 planned FTEs vs forecasted FTEs is slightly higher by eight. Given current Parliamentary approval, DFO is forecasting a modest net increase in year over year planned FTEs in 2017-18 of 2% (204 FTEs). This is mainly attributable to reinvestment in human resources due to the need

to hire additional staff to meet new operational requirements. To support the hiring of additional staff and program delivery, the HRCS sector has established an enablers readiness office.

Estimates by vote

For information on Fisheries and Oceans Canada's appropriations, consult the [2017-18 Main Estimates](#)^{xxi}.

Future-Oriented Condensed Statement of Operations

The Future-Oriented Condensed Statement of Operations provides a general overview of Fisheries and Oceans Canada's operations. The forecast of financial information on expenses and revenues is prepared on an accrual accounting basis to strengthen accountability and to improve transparency and financial management.

Because the Future-Oriented Condensed Statement of Operations is prepared on an accrual accounting basis, and the forecast and planned spending amounts presented in other sections of the Departmental Plan are prepared on an expenditure basis, amounts may differ.

A more detailed Future-Oriented Statement of Operations and associated notes, including a reconciliation of the net cost of operations to the requested authorities, are available on [Fisheries and Oceans Canada website](#)^{xxii}.

Future-Oriented Condensed Statement of Operations for the year ended March 31, 2018 (dollars)

Financial information	2016-17 Forecast results	2017-18 Planned results	Difference (2017-18 Planned results minus 2016-17 Forecast results)
Total expenses	2,026,537,182	1,823,133,753	-203,403,429
Total revenues	49,690,985	47,914,600	-1,776,385
Net cost of operations before government funding and transfers	1,976,846,197	1,775,219,153	-201,627,044

The financial numbers for 2017-18 planned results exclude announcement(s) subject to Parliamentary approval.

The net cost of operations in 2017-18 is projected to be \$1,775.2 million, a decrease of \$201.6 million compared to 2016-17, which is mainly attributed to an overall decrease in authorities available for spending (excluding capital vote) of \$209.6 million (\$1,449.2 million in 2017-18 compared to \$1,658.8 million in 2016-17). Authorities available for spending in 2017-18 do not include items such as supplementary estimates (\$200.8 million in 2016-17) and carry forwards (\$61 million in 2016-17).

Supplementary information

Corporate information

Organizational profile

Appropriate minister:

The Honourable Dominic LeBlanc

Institutional head:

Catherine Blewett, Deputy Minister

Ministerial portfolio:

Fisheries and Oceans Canada (DFO) and the Canadian Coast Guard (CCG)

Enabling instrument(s):

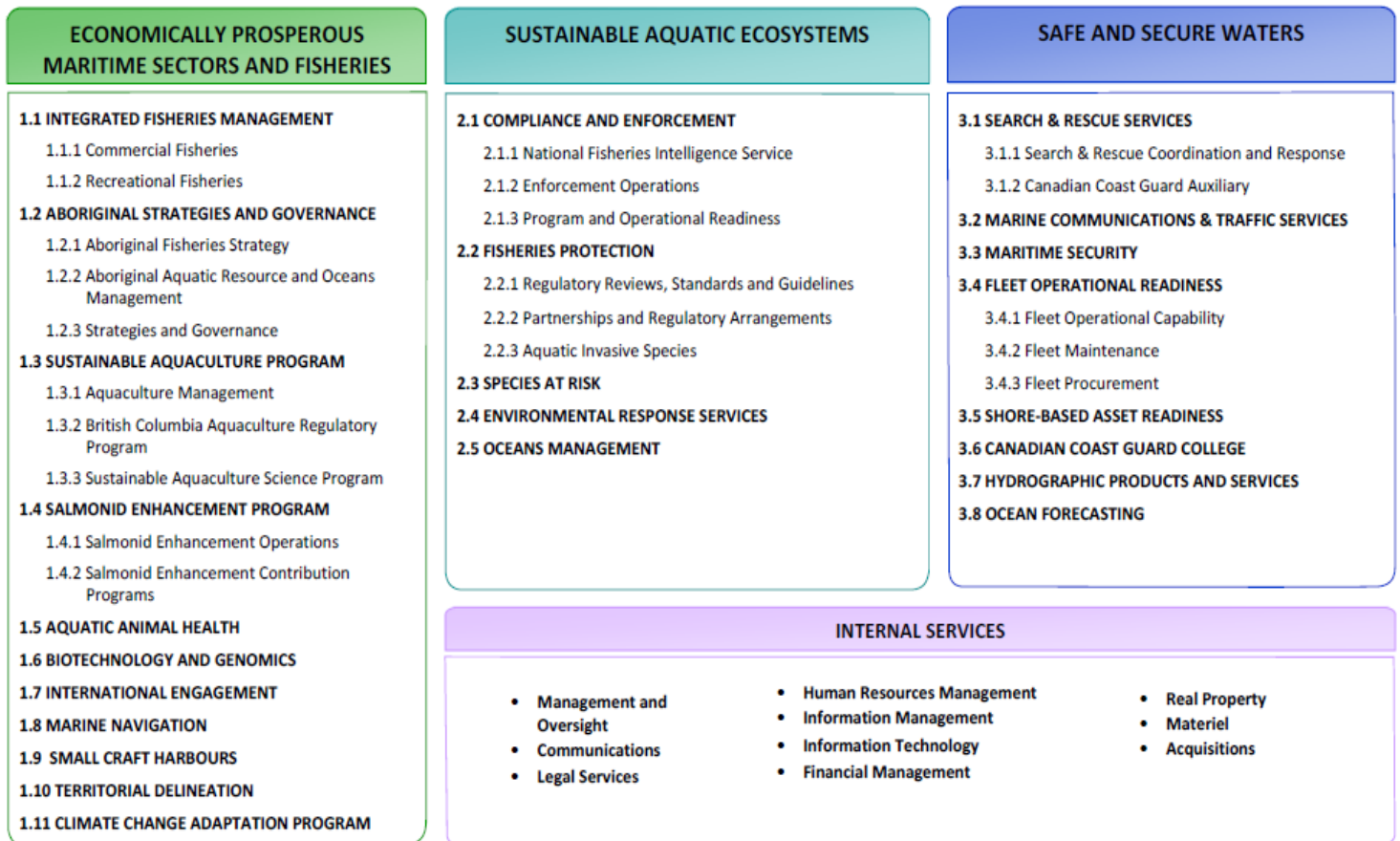
- *Fisheries Act*ⁱ;
- *Oceans Act*ⁱⁱ;
- *Species at Risk Act*ⁱⁱⁱ;
- *Coastal Fisheries Protection Act*^{iv};
- *Canada Shipping Act, 2001*^v (Transport Canada-led); and
- *Fishing and Recreational Harbours Act*^{vi}.

Year of incorporation / commencement:

1979

Reporting framework

Fisheries and Oceans Canada (DFO) and the Canadian Coast Guard (CCG) Strategic Outcomes and Program Alignment Architecture of record for 2017-18 are shown below:



Supporting information on lower-level programs

Supporting information on lower-level programs is available on the [Fisheries and Oceans Canada's website](#)^{xix} and in the [TBS InfoBase](#)^{xx}.

Supplementary information tables

The following supplementary information tables are available on the [Fisheries and Oceans Canada's website](#)^{xxiii}.

- Departmental Sustainable Development Strategy
- Details on transfer payment programs of \$5 million or more
- Disclosure of transfer payment programs under \$5 million
- Status report on transformational and major Crown projects
- Upcoming evaluations over the next five fiscal years
- Upcoming internal audits for the coming fiscal year
- Up-front multi-year funding

Federal tax expenditures

The tax system can be used to achieve public policy objectives through the application of special measures such as low tax rates, exemptions, deductions, deferrals and credits. The Department of Finance Canada publishes cost estimates and projections for these measures each year in the [Report on Federal Tax Expenditures](#)^{xxiv}. This report also provides detailed background information on tax expenditures, including descriptions, objectives, historical information and references to related federal spending programs. The tax measures presented in this report are the responsibility of the Minister of Finance.

Organizational contact information

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Communications Branch
200 Kent Street
13th Floor, Station 13E228
Ottawa, Ontario K1A 0E6

Telephone: 613-993-0999
Facsimile: 613-990-1866

TTY: 1-800-465-7735

Email: info@dfo-mpo.gc.ca

Appendix A: definitions

appropriation (crédit): Any authority of Parliament to pay money out of the Consolidated Revenue Fund.

budgetary expenditures (dépenses budgétaires): Operating and capital expenditures; transfer payments to other levels of government, organizations or individuals; and payments to Crown corporations.

Core Responsibility (responsabilité essentielle): An enduring function or role performed by a department. The intentions of the department with respect to a Core Responsibility are reflected in one or more related Departmental Results that the department seeks to contribute to or influence.

Departmental Plan (Plan ministériel): Provides information on the plans and expected performance of appropriated departments over a three year period. Departmental Plans are tabled in Parliament each spring.

Departmental Result (résultat ministériel): A Departmental Result represents the change or changes that the department seeks to influence. A Departmental Result is often outside departments' immediate control, but it should be influenced by program-level outcomes.

Departmental Result Indicator (indicateur de résultat ministériel): A factor or variable that provides a valid and reliable means to measure or describe progress on a Departmental Result.

Departmental Results Framework (cadre ministériel des résultats): Consists of the department's Core Responsibilities, Departmental Results and Departmental Result Indicators.

Departmental Results Report (Rapport sur les résultats ministériels): Provides information on the actual accomplishments against the plans, priorities and expected results set out in the corresponding Departmental Plan.

full-time equivalent (équivalent temps plein): A measure of the extent to which an employee represents a full person-year charge against a departmental budget. Full-time equivalents are calculated as a ratio of assigned hours of work to scheduled hours of work. Scheduled hours of work are set out in collective agreements.

government-wide priorities (priorités pangouvernementales): For the purpose of the 2017–18 Departmental Plan, government-wide priorities refers to those high-level themes outlining the government's agenda in the 2015 Speech from the Throne, namely: Growth for the Middle Class; Open and Transparent Government; A Clean Environment and a Strong Economy; Diversity is Canada's Strength; and Security and Opportunity.

horizontal initiatives (initiative horizontale): A horizontal initiative is one in which two or more federal organizations, through an approved funding agreement, work toward achieving clearly defined shared outcomes, and which has been designated (e.g. by Cabinet, a central agency, etc.) as a horizontal initiative for managing and reporting purposes.

Management, Resources and Results Structure (Structure de la gestion, des ressources et des résultats): A comprehensive framework that consists of an organization's inventory of programs, resources, results, performance indicators and governance information. Programs and results are depicted in their hierarchical relationship to each other and to the Strategic Outcome(s) to which they contribute. The Management, Resources and Results Structure is developed from the Program Alignment Architecture.

non-budgetary expenditures (dépenses non budgétaires): Net outlays and receipts related to loans, investments and advances, which change the composition of the financial assets of the Government of Canada.

performance (rendement): What an organization did with its resources to achieve its results, how well those results compare to what the organization intended to achieve, and how well lessons learned have been identified.

performance indicator (indicateur de rendement): A qualitative or quantitative means of measuring an output or outcome, with the intention of gauging the performance of an organization, program, policy or initiative respecting expected results.

performance reporting (production de rapports sur le rendement): The process of communicating evidence based performance information. Performance reporting supports decision making, accountability and transparency.

planned spending (dépenses prévues): For Departmental Plans and Departmental Results Reports, planned spending refers to those amounts that receive Treasury Board approval by February 1. Therefore, planned spending may include amounts incremental to planned expenditures presented in the Main Estimates.

A department is expected to be aware of the authorities that it has sought and received. The determination of planned spending is a departmental responsibility, and departments must be able to defend the expenditure and accrual numbers presented in their Departmental Plans and Departmental Results Reports.

plans (plan): The articulation of strategic choices, which provides information on how an organization intends to achieve its priorities and associated results. Generally a plan will explain the logic behind the strategies chosen and tend to focus on actions that lead up to the expected result.

priorities (priorité): Plans or projects that an organization has chosen to focus and report on during the planning period. Priorities represent the things that are most important or what must be done first to support the achievement of the desired Strategic Outcome(s).

program (programme): A group of related resource inputs and activities that are managed to meet specific needs and to achieve intended results and that are treated as a budgetary unit.

Program Alignment Architecture (architecture d'alignement des programmes): A structured inventory of an organization's programs depicting the hierarchical relationship between programs and the Strategic Outcome(s) to which they contribute.

results (résultats): An external consequence attributed, in part, to an organization, policy, program or initiative. Results are not within the control of a single organization, policy, program or initiative; instead they are within the area of the organization's influence.

statutory expenditures (dépenses législatives): Expenditures that Parliament has approved through legislation other than appropriation acts. The legislation sets out the purpose of the expenditures and the terms and conditions under which they may be made.

Strategic Outcome (résultat stratégique): A long-term and enduring benefit to Canadians that is linked to the organization's mandate, vision and core functions.

sunset program (programme temporisé): A time-limited program that does not have an ongoing funding and policy authority. When the program is set to expire, a decision must be made whether to continue the program. In the case of a renewal, the decision specifies the scope, funding level and duration.

target (cible): A measurable performance or success level that an organization, program or initiative plans to achieve within a specified time period. Targets can be either quantitative or qualitative.

voted expenditures (dépenses votées): Expenditures that Parliament approves annually through an Appropriation Act. The Vote wording becomes the governing conditions under which these expenditures may be made

Endnotes

- ⁱ *Fisheries Act*, <http://laws-lois.justice.gc.ca/eng/acts/f-14/>
- ⁱⁱ *Oceans Act*, <http://www.laws-lois.justice.gc.ca/eng/acts/O-2.4>
- ⁱⁱⁱ *Species at Risk Act*, <http://laws-lois.justice.gc.ca/eng/acts/S-15.3/>
- ^{iv} *Coastal Fisheries Protection Act*, <http://laws-lois.justice.gc.ca/eng/acts/C-33/>
- ^v *Canada Shipping Act, 2001*, <https://www.tc.gc.ca/eng/acts-regulations/acts-2001c26.htm>
- ^{vi} *Fishing and Recreational Harbours Act*, <http://laws-lois.justice.gc.ca/eng/acts/F-24/>
- ^{vii} Prime Minister of Canada's website, <http://pm.gc.ca/eng/minister/honourable-dominic-leblanc>
- ^{viii} *Health of Animals Act*, <http://laws-lois.justice.gc.ca/eng/acts/h-3.3/>
- ^{ix} *Canadian Environmental Protection Act*, <http://laws-lois.justice.gc.ca/eng/acts/c-15.31/>
- ^x *Constitution Act, 1867*, <http://laws-lois.justice.gc.ca/eng/const/page-1.html>
- ^{xi} *Canada Shipping Act, 2001*, <http://laws-lois.justice.gc.ca/eng/acts/c-10.15/>
- ^{xii} *United Nations Convention on the Law of the Sea* (article 76), <http://www.international.gc.ca/arctic-arctique/continental/limits-continental-limités.aspx?lang=eng>
- ^{xiii} *Constitution Act, 1982*, <http://laws-lois.justice.gc.ca/eng/Const/page-16.html>
- ^{xiv} *Navigation Protection Act*, <http://laws-lois.justice.gc.ca/eng/acts/n-22/FullText.html>
- ^{xv} *Federal Sustainable Development Act*, <http://laws-lois.justice.gc.ca/eng/acts/F-8.6/>
- ^{xvi} Striped Bass, <http://www.dfo-mpo.gc.ca/species-especes/profiles-profil/stripedbasslawrence-S-barrayestlaurent-eng.html>
- ^{xvii} *Financial Administration Act*, <http://laws-lois.justice.gc.ca/eng/acts/F-11/>
- ^{xviii} *Government Contracts Regulations*, <http://laws-lois.justice.gc.ca/eng/regulations/SOR-87-402/page-1.html>
- ^{xix} Lower-level programs, <http://www.dfo-mpo.gc.ca/rpp/2017-18/dp-eng.html#B8.2>
- ^{xx} TBS InfoBase, <https://www.tbs-sct.gc.ca/ems-sgd/edb-bdd/index-eng.html>
- ^{xxi} 2017-18 Main Estimates, <http://www.tbs-sct.gc.ca/hgw-cgf/finances/pgs-pdg/gepme-pdgbpd/index-eng.asp>
- ^{xxii} Future-Oriented Condensed Statement of Operations, <http://www.dfo-mpo.gc.ca/rpp/2017-18/dp-eng.html#B7.4>
- ^{xxiii} Supplementary Information Tables, <http://www.dfo-mpo.gc.ca/rpp/2017-18/dp-eng.html#B8.3>
- ^{xxiv} Report of Federal Tax Expenditures, <http://www.dfo-mpo.gc.ca/rpp/2017-18/dp-eng.html#B8.4>