



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada



Environment and Climate Change Canada

2017–18

Departmental Results Report

The Honourable Catherine McKenna, P.C., M.P.
Minister of Environment and Climate Change

Canada 

Departmental Results Report 2017–18

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Minister's message



As Minister of Environment and Climate Change, I am pleased to present the 2017-18 Departmental Results Report for Environment and Climate Change Canada (ECCC). This report provides an opportunity to highlight the many accomplishments of the department to protect the environment and grow the economy while moving forward on our commitment to reconciliation with Indigenous peoples.

Climate change is one of the most important issues of our time. That is why we developed the Pan-Canadian Framework on Clean Growth and Climate Change, Canada's ambitious plan to fight climate change, increase our resilience to the impacts of the changing climate, and drive clean economic growth. In the past year, we have continued to make progress on turning our commitments under the

Framework into action. In addition to playing a leadership role with our federal, provincial and territorial partners on this important and complex challenge, the department is delivering targeted measures to reduce greenhouse gas pollution. We have developed regulations to reduce emissions and air pollution from the electricity sector and heavy-duty vehicles, and methane emissions from the oil and gas sector, and are working to establish a pan-Canadian price on pollution by the start of 2019. ECCC is also delivering the nearly \$2 billion Low Carbon Economy Fund to support provinces, territories, municipalities, Indigenous communities, private and not-for-profit organizations in undertaking projects that will reduce greenhouse gas pollution, stimulate innovation, and create jobs and cleaner, healthier communities. All of these effective measures, and others under the Framework, are reducing Canada's emissions and moving Canada closer to its target. In fact, our latest projections of future greenhouse gas emissions show the biggest improvement in our outlook since reporting began.

We are already witnessing the impacts of climate change across the country in the form of wildfires, flooding, extreme weather, disappearing sea ice and thawing permafrost. The department has continued its efforts to help Canadians adapt, including the development of the Canadian Center for Climate Services to provide access to climate data, tools and information.

In support of reconciliation, ECCC has led the establishment of three distinct senior-level bilateral tables with each of the Assembly of First Nations, the Métis National Council and the Inuit Tapiriit Kanatami. These tables support action on climate change and the continued implementation of the Pan-Canadian Framework, ensuring that Indigenous peoples are full and effective partners in this regard.

ECCC continued to contribute to action on clean growth and climate change by acting internationally. For example, by co-creating, with the United Kingdom, the Powering Past Coal Alliance, and by paving the way towards a successful Canadian G7 presidency. In response to the plastic waste crisis affecting our environment and oceans, ECCC launched the development of a national plastic waste strategy and action plan.

The department has significantly reduced the backlog of species eligible for listing under the Species at Risk Act and has established a timeline for future listing decisions. Budget 2018 invested \$1.35 billion over five years in nature conservation. This historic investment provides a solid foundation for conserving 17% of Canada's land mass and inland waters and transforming how we protect species at risk. It also provides a foundation for collaborative work with Indigenous peoples and other partners to establish new and expand existing national wildlife areas. The investment includes the creation of a five-year, \$500 million Canada Nature Fund to enhance capacity to protect and recover species at risk while leveraging the contributions of our partners.

We have also collaborated with the Government of Alberta to renew our work on oil sands monitoring to better understand cumulative effects, and provided new funding to improve Great Lakes water quality with a focus on nearshore waters and the continued reduction of water pollution.

We continued to provide Canadians with timely and accurate information on air quality and 24/7 weather forecasts and warnings of severe weather, Air Quality Health Index information, flood potential information, and smoke dispersal information related to wildfires. In 2017, ECCC saw the successful installation of its first new weather radar that will give Canadians greater lead time to protect themselves from severe weather events. Our new state-of-the-art supercomputer will further advance the development of our capabilities to predict weather, climate and environmental conditions to protect the health and safety of Canadians.

You will find further details on these and other achievements in the following pages. I invite you to read the ECCC 2017–18 Departmental Results Report to learn more about the contributions ECCC is making to improve the environment, prosperity, and health of all Canadians.

The Honourable Catherine McKenna, P.C., M.P.
Minister of Environment and Climate Change

Results at a glance

Environment and Climate Change Canada (ECCC) delivered on federal commitments throughout 2017-18 by tackling pollution and waste in our air, water, and soil, protecting Canadians from threats posed by the environment, encouraging the transition to a clean growth economy, and protecting our unique biodiversity and wildlife. These efforts have been undertaken in support of reconciliation with Indigenous peoples, in partnership with provincial and territorial governments, and expressed through our leadership on the international stage.

On climate change, ECCC continues to tackle greenhouse gas (GHG) emissions, increase Canada's resilience to the impacts of climate change, and drive clean growth through the Pan-Canadian Framework on Clean Growth and Climate Change (the Pan-Canadian Framework). These mitigation measures, and others under the Pan-Canadian Framework, have contributed to reducing Canada's emissions. Canada's most recent report to the United Nations (December 2017) shows a widespread decline in projected greenhouse gas emissions across all economic sectors and the biggest improvement in our emissions outlook since reporting began.

- **Pricing pollution** is a key component of Canada's plan to address climate change, and will support our transition to a competitive and low-carbon economy. The department has prepared the legislative and regulatory framework for the federal carbon pollution pricing system to ensure it will be in place at the start of 2019.
- To complement the upcoming price on pollution, ECCC also developed a number of **mitigation measures** which will reduce greenhouse gas emissions and short-lived climate pollutants (SLCPs). These include proposed regulations to accelerate the phase out of heavily polluting traditional coal-fired power, strong standards for natural gas-fired power plants, limiting pollution from heavy-duty vehicles through regulations, and reducing emissions of methane from the oil and gas sector through regulations. ECCC is also developing a clean fuel standard to reduce greenhouse gas emissions through the increased use of lower carbon fuels, energy sources and technologies. These measures have the added benefit of helping Canadians to breathe easier with improved air quality.
- To support commitments by the provincial and territorial governments under the Pan-Canadian Framework, and encourage additional GHG reductions across Canada, ECCC launched the **\$1.4 billion Low Carbon Economy Leadership Fund**. This included the \$500 million Low Carbon Economy Challenge Fund, designed to support organizations and communities reduce their emissions.
- To **increase climate resilience**, ECCC is working to implement the Canadian Centre for Climate Services to provide tools and support that will help Canadians understand the climate-related risks they face, and make decisions to address those risks. ECCC also launched the Expert Panel on Climate Change Adaptation and Resilience Results to seek advice on measuring progress in adaptation.
- In recognition of the importance of **working collaboratively with Indigenous peoples** to address climate change priorities and pursue clean growth, ECCC led the establishment of three distinct senior-level bilateral tables with each of the Assembly of First Nations, the Métis National Council, and the Inuit Tapiriit Kanatami. These tables support action on climate change and the continued implementation of the Pan-Canadian Framework, ensuring that Indigenous peoples are full and effective partners in this regard.
- On protecting our **air and water, and supporting wildlife and biodiversity**, Budget 2018 launched an investment of \$1.35 billion in nature conservation and other collaborative work with Indigenous peoples and other partners to conserve national wildlife areas and migratory bird sanctuaries. This investment includes the creation of a five-year, \$500 million Canada Nature Fund to enhance our capacity to

protect and recover species at risk. ECCC also made significant progress on the latter by reducing the backlog of species eligible for listing under the Species at Risk Act, and the department is on track to eliminate the backlog by 2019–20. ECCC and the Government of Alberta, building on Indigenous knowledge and robust scientific data, established a renewed commitment to better monitor and understand the cumulative effects of oil sands activities on ecosystems, air and biodiversity in northeastern Alberta. In addition, new funding under the Great Lakes Protection Initiative targeted ecosystem health in nearshore waters.

- Taking action on **pollution and waste**, new regulations under the Environmental Enforcement Act (EEA) came into effect, which provide ECCC enforcement officers the authority to issue monetary penalties, and to direct the resulting monies to the Environmental Damages Fund. ECCC launched work with provinces and territories to develop a national plastic waste strategy, and led the endorsement of an international zero plastic waste charter at the June 2018 summit of G-7 leaders, which called for coordinated action to address the 150 million tonnes of plastic waste in the world’s oceans.
- On critical **services to Canadians**, the Department issued 480,000 weather forecasts, watches and warnings. ECCC saw the successful installation of its first new weather radar in Radisson, Saskatchewan, in 2017. A total of 32 radars are planned to be installed across the country by 2023. The department also completed onboarding of its high-performance computer in September 2017 that will provide more accurate and timely forecasting for Canadians over the coming years.
- In further support of our **collaboration with Indigenous peoples**, the Department also established a joint workplan with Inuit Tapiriit Kanatami to more effectively advance our shared priorities, as part of a renewed Inuit-Crown relationship. The Minister of Environment and Climate Change and her Alberta counterpart also brought together an Indigenous Circle of Experts to advise governments on achieving the ambitious target of conserving biodiversity through a connected network of at least 17% of Canada’s land and freshwater by 2020.
- Finally, the department continued to lead on major **international initiatives**. Canada hosted the first Ministerial Meeting on Climate Action in Montreal to advance international climate discussions, and played an instrumental role in encouraging countries to ratify the Kigali Amendment to the Montreal Protocol which will help phase down the use of hydrofluorocarbons. Canada also supported the launch of the Local Communities and Indigenous Peoples’ Platform, which serves as a global voice on climate change for the world’s Indigenous peoples. Canada co-created the Powering Past Coal Alliance with the United Kingdom.

<p>What funds were used?*</p> <p>(2017–18 actual spending)</p> <p>\$1,164,806,867</p>
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<p>Who was involved?*</p> <p>(2017–18 actual Full-Time Equivalents [FTEs])</p> <p>6,530</p>
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* Figures refer, as reported in the Public Accounts, to total 2017–18 departmental funds used (actual spending) and the actual FTEs and not strictly the selected achievements highlighted above.

For more information on the Department’s plans, priorities and results achieved, see the [“Results: what we achieved”](#) section of this report.

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

Raison d'être

Environment and Climate Change Canada is the lead federal department for a wide range of environmental issues. The department addresses these issues through various actions including the implementation of the Pan-Canadian Framework on Clean Growth and Climate Change; engaging with our strategic partners including provinces, territories and Indigenous peoples; monitoring; science-based research; policy and regulatory development; and, through the enforcement of environmental laws. The department's programs focus on minimizing threats to Canadians and their environment from pollution; equipping Canadians to make informed decisions on weather, water and climate conditions; and conserving and restoring Canada's natural environment.

The department's program focus reflects the interdependence between environmental sustainability and economic well-being.

Mandate and role

Under the Department of the Environment Act, the powers, duties and functions of the Minister of Environment and Climate Change extend to matters such as:

- the preservation and enhancement of the quality of the natural environment, including water, air and soil quality, and the coordination of the relevant policies and programs of the Government of Canada;
- renewable resources, including migratory birds and other non-domestic flora and fauna;
- meteorology; and
- the enforcement of rules and regulations.

The department delivers its mandate through other [acts and regulations](#)ⁱ, such as the Canadian Environmental Protection Act, 1999 (CEPA 1999), the pollution prevention provisions of the Fisheries Act, the Federal Sustainable Development Act, the Species at Risk Act, the Migratory Birds Convention Act, 1994, the Canada Wildlife Act, and the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act.

The department works closely with the Canadian Environmental Assessment Agency and Parks Canada – its ministerial portfolio partners – to achieve many common goals. In addition, the Minister of Environment and Climate Change has secondary or shared responsibility for delivering on other federal departments' mandates, including the Arctic Waters Pollution Prevention Act (Transport Canada, Crown-Indigenous Relations and Northern Affairs Canada, and Natural Resources Canada), the Canada Oil and Gas Operations Act (Natural Resources Canada), and the Emergency Management Act (Public Safety Canada).

For more general information about the department, see the "[Supplementary information](#)" section (page 47) of this report. For more information on the department's organizational mandate letter commitments, see the [Minister's mandate letter](#)ⁱⁱ.

Operating context and key risks

Operating context

Environmental issues have wide ranging implications for Canadians' society, economy, and health. The protection and conservation of the environment requires the commitment of not only Environment and Climate Change Canada (ECCC), but of all of its partners among federal, provincial, and territorial governments, Indigenous peoples, stakeholders and Canadians. Ensuring effective engagement helps to advance policies, regulations and services, and provides for a coordinated approach that considers all interests to achieve results. ECCC is also the authoritative source for science-based environmental information and services to support Canadians in making informed decisions relating to their health and safety.

There are few major environmental issues for which the causes or solutions lie solely within Canada's borders. For this reason, ECCC must engage both domestic and international partners to develop effective solutions to global environmental challenges. The department seeks to be flexible in order to respond to these challenges and changing circumstances.

Key risks

The risks and management challenges presented here are not those published in the 2017–18 Departmental Plan. In 2017–18, following completion of the Plan, ECCC completed a risk review and updated its corporate risks to better align them to its operating context. The original risks, however, are generally captured by the new risks.

The updated corporate risks and management challenges are linked to all of the department's programs and strategic outcomes:

Risks	Mitigating strategy and effectiveness
<p>Delivery of results in the short-term in areas of shared responsibility could be limited by partner efforts.</p>	<p>Effective partnership enhances the delivery of results. However, in the short term, external dependencies can limit ECCC's ability to deliver on its commitments, particularly in areas of shared responsibility, such as:</p> <ul style="list-style-type: none"> • the implementation of domestic and international actions under the Pan-Canadian Framework on Clean Growth and Climate Change, where ECCC continued to leverage its capacity for leadership and collaboration in working with other federal, provincial, territorial, regional and international partners to align commitments and actions through the PCF. Internationally, ECCC continued to work collaboratively under the United Nations Framework Convention and Climate Change, through key high level fora and bilateral partnerships and advanced work for an effective and transparent implementation of the Paris Climate Change Agreement. • the conservation of nature and the prevention and the management of pollution, where ECCC continued to develop ways to protect the environment while accommodating population, industrial and economic growth. ECCC also continued to work with its partners to promote the use of sound scientific evidence, promote compliance, and enforce regulations.
<p>Attainment of environmental and climate change objectives could be impacted by external factors beyond ECCC's control.</p>	<p>ECCC's domestic and international operations occur in a complex, ever-changing environment, such that the attainment of departmental objectives is always at risk of being impacted by external factors that are beyond ECCC's control. For example:</p> <ul style="list-style-type: none"> • The increasing frequency of severe weather events puts pressure on the department's infrastructure and its ability to monitor and predict weather and environmental conditions. • Cyber threats pose a risk to the department's ability to deliver many essential services, including monitoring environmental conditions and predicting severe weather. These threats may have a direct impact on the protection of the health and safety of Canadians. <p>The department seeks to be flexible in order to respond to these challenges and changing circumstances. ECCC continued to monitor them and develop appropriate mitigating actions. These included regular risk analyses to inform priority setting and decision making.</p>

In addition to these two risks, as with many other departments, ECCC has to manage ongoing operational issues. The department identified two specific management challenges that could have an impact on the attainment of its environmental objectives.

The first challenge concerns ECCC's ability to respond quickly to new priorities and expectations to deliver timely results. In order to respond to this challenge, ECCC continued actions to:

- Build a capable workforce, especially in the area of highly specialized staff to deliver its key scientific outcomes. One strategy was to maintain partnerships with academic institutions to recruit talented Canadians and ensure the departmental workforce has the knowledge, expertise and skills to meet current and future challenges.
- Instill a culture of experimentation and innovation to respond to new priorities. To this end, ECCC continued to implement experimentation initiatives which provide data and information to help find effective solutions in response to ECCC's complex environmental challenges.
- Strengthen its governance structure to support internal collaboration, build consensus and contribute to decision making in the department. ECCC's governance reflects the complex, diverse nature of the programs and challenges managed by the department.

The second challenge concerns the department's capacity to keep pace with technological advancements and meet departmental Information Management and Information Technology needs. To respond to this challenge and ensure risks associated with the delivery of its services were managed, the department continued to:

- Support Canada's Open Government Agenda by ensuring that strong systems are in place to gather, collect, communicate, and disseminate information to Canadians.
- Utilize its Strategic Emergency Management Plan as the framework for the Business Continuity Plan, which was disseminated to various operational areas, including branch, site (e.g., buildings) and critical services.
- Count on established channels, protocols and agreements (e.g., Memoranda of Understanding) within the department and with its key stakeholders such as Shared Services Canada to minimize risks to program and service delivery.

In 2017–18, risk management continued to be a key activity for the department that supports and informs departmental priority setting, business and resource planning, and decision making.

Results: what we achieved

Programs

Program 1.1: Biodiversity – Wildlife and Habitat

Program Description

This program aims to prevent biodiversity loss while enabling sustainable use by: protecting and recovering species at risk and their critical habitat; conserving and protecting healthy populations of migratory birds; and monitoring, conserving and restoring significant habitats by establishing and maintaining a network of protected areas, and developing and implementing stewardship programs. It also supports coordinated and coherent national assessment, research, planning and action to protect biodiversity, including viable, self-sustaining populations of species, healthy and diverse ecosystems, and genetic resources. The program forms strategic partnerships for integrated management of Canada's natural capital, including stewardship and the sustainable management of landscapes. This program has responsibilities under the Species at Risk Act, Migratory Birds Convention Act, 1994, Canada Wildlife Act, Canadian Environmental Assessment Act and Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act. International responsibilities include the United Nations Convention on Biological Diversity (1992), the Migratory Birds Convention, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Conservation of Arctic Flora and Fauna Working Group of the Arctic Council, and the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention).

Results

Migratory Bird Conservation

In 2017, ECCC celebrated the 100th anniversary of the Migratory Birds Convention Act, one of the first wildlife conservation laws to be adopted in the world. The Act protects 382 species of birds that migrate and nest in Canada, regulates migratory bird hunting and allows for the creation of sanctuaries that protect their habitat.

The department completed a full suite of migratory bird population surveys, including the 52nd annual North American Breeding Bird aerial and ground surveys of waterfowl, breeding surveys of shorebirds in the Arctic, and seabird colony surveys on the Atlantic and Pacific coasts. These surveys provide the foundation for assessing the status of Canada's migratory birds, and point to key conservation actions needed to maintain or restore healthy populations of all species and prevent them from becoming species at risk.

Protecting Species at Risk



An accurate list of species at risk is important to prevent wildlife species from becoming extinct. ECCC made significant progress in addressing the backlog of listing decisions to be made for 149 terrestrial species that were assessed as at-risk by the [Committee on the Status of Endangered Wildlife in Canada](#)ⁱⁱⁱ between 2009 and 2016. Final listing decisions were made for 58 species and proposed listing decisions were published for another 13 species. To further enhance the protection of Canada's endangered species, ECCC established a timeline for future listing decisions: 24 months for terrestrial species and 36 months for more complex aquatic species. With the new timelines, ECCC is on track to

achieve its commitment to eliminate the backlog by 2019–20.

Minister McKenna hosted a Round Table on the Species at Risk Act with members of a newly established Species at Risk Advisory Committee (including Indigenous, environmental, industry and agriculture representatives), which focused on collaboration on multi-sector, multi-species and place-based approaches to protect and recover species.

PROTECTING NATURE: by the numbers...

Completed recovery plans and strategies for species:

As of January 2018, ECCC had published recovery strategies and management plans for 315 of the 332 species for which recovery documents are due; since 2016 ECCC has reduced the backlog from 72 to 16.

Protected Areas set aside in Canada (as of 2018):

ECCC manages 54 National Wildlife Areas and 92 Migratory Bird Sanctuaries which, together, cover 12.4 million hectares, an area twice the size of Nova Scotia.

Celebrating Canada's 150th birthday

To contribute to Canada's birthday celebrations, ECCC offered free entry to Cap Tourmente, one of Canada's 54 National Wildlife Areas.

The department also installed commemorative plaques on 150 properties across Canada to celebrate the exceptional habitat and biodiversity benefits of the properties set aside by Canadians through sale, donation, or conservation agreement for long-term conservation. These lands were conserved with the support of Government of Canada funding or tax incentives.

The 2018 Budget announcement in March 2018 heralded the investment of \$1.35 billion over five years to reflect the Government of Canada's commitment to nature conservation. The investment includes creation of a five-year, \$500 million Canada Nature Fund to enhance capacity to protect and recover species at risk, and manage and expand national wildlife area and migratory bird sanctuaries.

In addition, ECCC, in collaboration with provinces and territories, Indigenous peoples, and other stakeholders, took action on several fronts to protect declining populations of boreal caribou and southern mountain caribou. The department:

- Released its five-year (2012–17) report on progress to implement the 2012 recovery strategy for the boreal caribou. With over 95% of habitat under provincial and territorial jurisdiction, the department continued to support and encourage completion of range plans by involved jurisdictions.
- Finalized an [Action Plan](#)^{iv} for recovery of the boreal caribou. Based on extensive consultation, the Plan outlines steps that the Government of Canada will take to protect this important species. Of importance, the Plan establishes a Boreal Caribou Knowledge Consortium where federal departments, provinces, Indigenous organizations and communities, industry, environmental organizations and academics will share knowledge and lessons learned and collaborate to address knowledge gaps to advance boreal caribou conservation.
- Collaborated with the Government of British Columbia to address the ongoing decline of the southern mountain caribou by creating a draft bilateral conservation agreement to recover population and habitat of particular importance to Indigenous peoples. The science-based agreement sets population objectives, with an initial focus on the Central Group of caribou (northeast British Columbia). The agreement will be expanded to other groups in British Columbia, in collaboration with directly affected First Nations, as well as communities and stakeholders.



ECCC, in collaboration with its federal partners (Fisheries and Oceans Canada, Parks Canada), and provinces and territories released a major Report on the assessments of nearly 30,000 species across Canada. [Wild Species 2015](#)^v identifies that most (80%) of the species assessed are secure, while 20% face some level of risk of extinction. Published every five years, the Report helps ensure species at risk are identified and protected through collective actions.

Biodiversity Conservation

In support of Canada's commitment to conserve, by 2020, at least 17% of Canada's land and freshwater through connected networks of protected and conserved areas, Minister McKenna and Minister Phillips (Government of Alberta) co-led a collaborative Pathway to Canada Target 1 initiative. They established a National Advisory Panel and an Indigenous Circle of Experts to advise governments on achieving the ambitious 17% target.

Building relationships with Indigenous Peoples

ECCC actively supported negotiations on conservation issues at modern treaty and Recognition of Indigenous Rights and Self-Determination tables across Canada by participating directly at the table, and when that was not possible, by assessing Indigenous proposals and preparing responses for use by the federal negotiation team. The department recognizes Indigenous governments' vested interests in sustainably managing wildlife harvesting in their traditional territories and that they are best placed to identify their specific conservation interests in treaty settlement areas. ECCC's investments in collaboration with Indigenous peoples contributed to effective delivery on the Minister's environmental priorities and the Government of Canada's commitment to renew Canada's relationship with Indigenous peoples.

The Department and Inuit Tapiriit Kanatami (ITK) committed to a joint workplan to advance shared priorities on environmental issues—including to explore new solutions, such as Indigenous Protected Areas, and to re-establish the Inuit Communications Group with ITK and the four regional Inuit organizations as a forum to discuss shared wildlife priorities.

ECCC continued to build a strong foundation of collaboration and global leadership in engaging Indigenous organizations in meaningful participation in international conservation negotiations under the Convention on Biological Diversity (CBD). The department hosted an event at the 2017 CBD meeting of the Subsidiary Body on Scientific, Technical and Technological Advice to showcase its new Ecosystem Services Toolkit, a technical guide to ecosystem services assessment and analysis to support decision making.

Highlights of other 2017–18 departmental results include:

- continued progress in designating the Scott Islands Marine National Wildlife Area (in collaboration with the Government of British Columbia, the Tlatlasikwaja First Nation, and Quatsino First Nation and stakeholders) and the Edézhie National Wildlife Area (in collaboration with the Government of Northwest Territories, the Dehcho First Nations, Tłı̨chǫ Government and others).
- ongoing international leadership in conserving nature, including through work at the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For the first time, a Canadian woman chaired the CITES Standing Committee.

Commitment to Experimentation: Integrated Conservation Action Approach

ECCC continued to test the use of an Integrated Conservation Action (ICA) approach in landscapes with high biodiversity value. ECCC worked with conservation partners to target and leverage resources, funding and action on shared conservation priorities in several focal areas across the country. In the Southwest Nova Scotia (SWNS) focal area, an experimental approach to ICA was pursued to collaboratively identify and implement key conservation actions for biodiversity using a multi-species, ecosystem-based approach. Through this integrated approach, all partners agreed to adopt a common overarching conservation framework, standard language and measures of success in order to foster synergies in actions, reduce overlap and gain efficiencies, and ultimately demonstrate greater collective impact for biodiversity conservation. As a result, a greater emphasis on Mi'kmaw perspectives has fundamentally strengthened ICA work through a 'two-eyed seeing approach' (Etuaptmunk) that integrates Indigenous knowledge with Western science. Lessons learned in this focal area included the importance of a common overarching framework, and consistent communications and messaging, as well the establishment of short-term objectives for coordinating action and of long-term objectives for conservation outcomes. The learning will continue to be applied to other ICA initiatives.

Results achieved

Expected Results	Performance Indicators	Targets	Date to achieve target	2017–18 Actual results	2016–17 Actual results	2015–16 Actual results
Populations of migratory birds are secure	Proportion of assessed migratory bird species in General Status Reports whose status is considered to be "secure"	81%	2020 General Status Report	n/a (the next report will be available in 2021)	79% in 2015	77% in 2010
Results for this indicator are derived from assessments of the status of species in Canada (General Status Reports) that are prepared every 5 years, as required by the Species at Risk Act.						

Expected Results	Performance Indicators	Targets	Date to achieve target	2017–18 Actual results	2016–17 Actual results	2015–16 Actual results
Status of listed species shows improvement upon reassessment	Proportion of federally listed species at risk for which Environment and Climate Change Canada is primarily responsible and for which recovery is feasible that exhibit, at the time of reassessment by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), population and distribution trends consistent with achieving the objectives of recovery strategies.	35%	March 2017	40% as of May 2017	35% as of May 2016	33% as of May 2015
Indicator results should not be interpreted as a measure of recovery success until sufficient time has passed to allow species to recover and to collect sufficient information to assess that recovery. In addition, observations of rare species are often difficult to collect.						

Budgetary Financial Resources (dollars)*

2017–18 Main Estimates	2017–18 Planned Spending	2017–18 Total Authorities Available for Use	2017–18 Actual Spending (authorities used)	2017–18 Difference (actual minus planned)
135,322,453	135,322,453	160,414,883	159,446,462	24,124,009

*All figures, throughout the document, are net of spendable revenues.

Human Resources (Full-Time Equivalents—FTEs)*

2017–18 Planned	2017–18 Actual	2017–18 Difference (actual minus planned)
546	635	89

*Totals may differ within and between tables due to the rounding of figures. The FTE numbers, throughout the document, include students.

Program 1.2: Water Resources

Program Description

This program addresses the risks to and impacts on water resources from industrial activities, agriculture, climate change and other factors. It aims to minimize threats to Canada's water resources and aquatic ecosystems and to maintain the sustainability of such resources. The program is delivered in collaboration with partners, specifically other federal departments, provinces and territories, and a range of non-governmental organizations. The program focuses on Environment and Climate Change Canada's contribution to monitoring water quality and conducting water-related research and analysis and its role in collaborating with other departments to determine priorities for water quality and quantity as well as aquatic ecosystem monitoring and research. It provides scientific information and advice to decision makers and supports implementation of the Canada Water Act, Canadian Environmental Protection Act, 1999, Fisheries Act, International Boundary Waters Treaty Act, and International River Improvements Act.

Results

ECCEC monitors, assesses and reports on Canada's water quality and quantity. To improve the public's access to water quality data, as recommended in a 2017 [evaluation of ECCEC's Water Quality and Aquatic Ecosystems Health Program](#)^{vi}, the department developed and started the implementation of a plan to make all raw data available within 30 days of its collection, and to improve the timeliness of the release of analyzed data.



ECCEC provided freshwater quantity monitoring data (such as river flow and water levels) to assist communities and other stakeholders with water management decisions, especially during periods of flooding, drought and other extreme weather events. For example, ECCEC deployed in

2017 a first-of-its-kind high-resolution experimental system to accurately predict high water levels along the shore of Lake Ontario. The system allows the department to provide advance warning of the magnitude of expected increases in water levels.

ECCEC worked with provincial authorities in Ontario to foresee risk and help manage water levels on Lake Ontario, and so helped protect Canadians and their property from weather disasters. By informing Canadians on time and with the best information available, this collaboration exemplified the department's ongoing provision of water information, data and expertise to international and domestic water boards under agreements with provinces, territories and the U.S. through the International Joint Commission (IJC).

Water Level Management

Throughout the spring and summer of 2017, ECCEC National Hydrological Services (NHS) transboundary engineers provided guidance and ran scenarios to provide input to the IJC's Lake Ontario St. Lawrence Board of Control to help make decisions around the management of water levels on Lake Ontario and within the St. Lawrence River. Documentation of the impacts was also carried out by NHS engineers in order to assess how the system was managed, prepare for the future, and employ adaptive management principles. ECCEC experts also supported the Ottawa River Regulation Board by providing enhanced technical and communications support during record Ottawa River flows.

ECCEC launched a study of the Ottawa River watershed—a resource that is vital to the ecological, economic, and cultural well-being of people in more than 200 municipalities and Indigenous communities living in or near this area. The study engaged Indigenous peoples, multiple levels of government, local watershed groups, non-governmental organizations, industry, academia, diverse identity groups youth, and the general public in issues affecting them and will provide recommendations regarding the future of the watershed.

WATER MONITORING: by the numbers...

ECCEC monitoring stations:

- ECCEC operates its stations in partnership with provinces, territories and others
- 2,800 hydrometric stations monitor water levels and flow, including data published by ECCEC from 700 third-party stations
- 375 stations measure water quality

Relative risk to water quality in rivers monitored:

- 22% – high
- 55% – medium
- 23% – low

ECCEC monitoring sites where water quality is rated as good or excellent:

- 43% in 2013–2015
- 45% in 2012–2014

ECCEC's new mobile-friendly site wateroffice.ca^{vi} received over 74 million hits, and 2.1 million unique visits in 2017–18.

Not a typical day at ECCC Water Survey

In May 2017, ECCC's Water Survey crews rescued a paddler who was capsized in the fast-moving and frigid waters of the Ottawa River, near Ottawa. ECCC employees went above and beyond the call of duty in saving the man's life.

Two crews worked together: one spotted the man in trouble and a second pulled him from the water. Once on land, paramedics took over to treat the paddler's hypothermia. Given harsh water conditions and cold temperatures, the actions of the two crews were instrumental in saving the man's life.

ECCC collaborated with the Government of Alberta to shape a renewed commitment to jointly monitor the environmental impacts of oil sands' development in Alberta. The new agreement promotes greater Indigenous involvement and will help to ensure that Indigenous knowledge, as well as robust and credible scientific data, contribute to evidence-based decisions. Funded by industry (up to \$50 million annually), monitoring will include the oil sands' impacts on air, water, wildlife and biodiversity, and will enhance understanding of the cumulative effects of activity in the oil sands area of northeastern Alberta.

Results achieved

Expected Results	Performance Indicators	Targets	Date to achieve target	2017–18 Actual results	2016–17 Actual results	2015–16 Actual results
Threats to Canada's water resources and aquatic ecosystems are minimized and the sustainability of the resource is maintained	Percentage of core national monitoring sites whose water quality is rated as good or excellent	50%	December 2016 ¹	40% for the period 2014–16	43% for the period 2013–15	45% for the period 2012–14
This indicator is designed to provide an overall measure of the ability of selected rivers across Canada to support aquatic life. Water quality changes slowly over time. The indicator is a snapshot in time, with overlapping years, of the water quality ratings for various sites (rivers) across Canada. The indicator reports on the status of water quality in select rivers. While the results may suggest a decline, this indicator cannot be used to assess trend. Trend in water quality can only be assessed at each testing station. This indicator will be discontinued in favour of a new suite of indicators that are expected to provide a more reliable picture of water quality trends over time.						

Budgetary Financial Resources (dollars)

2017–18 Main Estimates	2017–18 Planned Spending	2017–18 Total Authorities Available for Use	2017–18 Actual Spending (authorities used)	2017–18 Difference (actual minus planned)
69,722,840	69,722,840	83,401,908	81,868,848	12,146,008

Human Resources (FTEs)

2017–18 Planned	2017–18 Actual	2017–18 Difference (actual minus planned)
598	602	4

¹ Date to Achieve was identified as "In the 2014–16 data set" in the 2017–18 Departmental Plan. It has been updated in this document for greater clarity.

Program 1.3: Sustainable Ecosystems

Program Description

This program aims to sustain Canada's ecosystems over the long term by providing Canadians, their governments and the private sector with the environmental information and tools required to incorporate social, economic and environmental considerations into decision making and actions. Environmental assessments are a large part of this program. The ecosystem approach to environmental management focuses on maintaining the capacity of a whole system to produce ecological goods and services and genetic resources to support the economy, security, and health and well-being. This program focuses on: the development and implementation of Environment and Climate Change Canada's sustainability policies and strategies; provision of information to support integrated, ecosystem-scale planning; community engagement in remediation of sites; youth engagement; and research and reporting on environmental status and trends. The program facilitates interdisciplinary and cross-sectoral planning and information sharing among partners.

Results

Environment and Climate Change Canada made bold new investments to promote sustainable ecosystems, reinforced existing partnerships and extended opportunities for new and enhanced partnerships to broaden knowledge and increase strategic action in key areas.

The Great Lakes

"SUSTAINED ACTION ON GREAT LAKES RESTORATION IS KEY TO THE HEALTH AND ECONOMIC PROSPERITY OF CITIZENS IN THIS IMPORTANT REGION."

– THE HONOURABLE CATHERINE MCKENNA, MINISTER OF ENVIRONMENT AND CLIMATE CHANGE (DECEMBER 1, 2017)

ECCE continued to deliver on its commitments under the [Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health](#)^{ix} and the [Canada-U.S. Great Lakes Water Quality Agreement](#)^x. With close to \$45 million in new funding to the Great Lakes Protection Initiative, ECCE provided more opportunities for participation by Indigenous communities and governments, research bodies, environmental non-government organizations, local governments and agencies, and industry to take action on priorities, such as reducing toxic and nuisance algae and harmful pollutants, expanding knowledge of Great Lakes issues and restoring water quality and ecosystem health.

Too much phosphorous can cause harmful and nuisance algal blooms and zones of hypoxia that have negative impacts on human health, degrade fish and wildlife populations, and have economic costs as well, such as fouling beaches in this prime recreation area. In partnership with Indigenous peoples and stakeholders, ECCE and the Government of Ontario finalized the [Canada-Ontario Lake Erie Action Plan](#)^{xi} with the goal of reducing annual phosphorus loading into Lake Erie by 40% from the 2008 baseline to achieve Canada-U.S. phosphorus targets.

State of the Great Lakes

The [2017 State of the Great Lakes Report](#)^{viii}, released in June 2017 jointly by Canada and the U.S., reported on nine indicators assessing the condition of the Great Lakes ecosystem. More than 180 Great Lakes scientists and other experts worked to assemble the supporting data and to agree on what the indicators were saying. Overall, the report shows the lakes are in "Fair and Unchanging" condition. Findings highlight that progress has been made in reducing toxic chemicals, while challenges remain, including invasive species and nutrient levels.

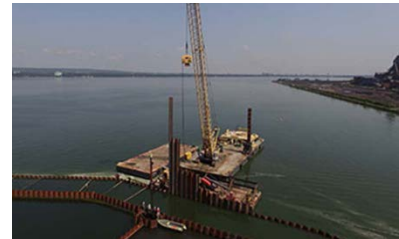
2017 marks the 45th anniversary of the signing of the Great Lakes Water Quality Agreement by Canada and the U.S., a major vehicle for engaging provincial/state governments, Indigenous peoples and a multitude of other partners and stakeholders in actions to protect this invaluable resource.

Science at Work

ECCC scientists are working with other departmental partners to use earth observation data collected by drones, satellites and other sources to help assess and manage conditions in the Great Lakes coastal wetlands through the Great Lakes Protection Initiative.

The department continued to restore Great Lakes sites so that Canadians have cleaner drinking water and can enjoy waters where they can fish and swim. This work was conducted across all Canadian and binational [Great Lakes Areas of Concern](#)^{xii} with the involvement of the department's collaboration network of community partners. This widespread action involves extensive partnerships with other governments, First Nations, Métis, watershed management agencies, other local public agencies, and community members.

In the Hamilton Harbour Area of Concern in Lake Ontario, ECCC launched the second of three phases of the [Randle Reef](#)^{xiii} clean up, which will see contaminated sediments from the harbour floor dredged and contained within a six hectare, double walled containment facility. Preparations for dredging began in the Fall of 2017 and once completed, the surface area will be developed and operated as a marine terminal. This massive multi-year initiative remains on budget and on time, to be completed by 2022. Part of a larger initiative to restore water quality in the Great Lakes, ECCC is working with the Government of Ontario, the City of Hamilton, the City of Burlington, the Regional Municipality of Halton, Hamilton Port Authority, and Stelco on the Randle Reef clean up. It is the largest sediment remediation project ever undertaken in Canada.



Lake Winnipeg

Acting on the recommendations of the 2017 [evaluation of the Lake Winnipeg Basin Initiative](#)^{xiv}, the department continued to take actions to fill scientific gaps, to apply a more strategic and targeted approach to reduce nutrient contamination, promote knowledge sharing among stakeholders, and increase Indigenous engagement. New funding of \$25.7 million to the Lake Winnipeg Basin Program will support the delivery of ECCC's Lake Winnipeg Science Plan, promote stakeholder-driven nutrient reduction actions, strengthen collaborative governance, and increase Indigenous engagement on Lake Winnipeg water quality issues. These efforts will improve the health of this major freshwater resource for economic and recreational opportunities.

St. Lawrence River Basin



ECCC continued to work with the Government of Québec on the conservation and enhancement of the St. Lawrence River Basin, including joint investments to improve water quality, conserve biodiversity and ensure its sustainable use. The department, in collaboration with the Government of Québec, announced investments of over \$57 million as part of the 2016–2021 five-year plan to protect and enhance the river under the Canada-Quebec Agreement on the St. Lawrence 2011–2026 (St. Lawrence Action Plan). These funds will support 38 projects to conserve biodiversity, improve water quality, promote the river's sustainable use and enable advances in research to preserve this vital ecosystem.

Other key accomplishments in 2017–18 include:

- Directing \$1.27 million from the [Environmental Damages Fund](#)^{xv} to support eleven new projects aimed at restoring damaged ecosystems in the Atlantic provinces and Québec. The Fund operates on the "polluter pay" principle to direct financial penalties to activities that restore and improve the environment, and to educate Canadians and undertake research.
- Publishing early results for short-term milestones under the 2017 Federal Sustainable Development Strategy Update, including over 700 actions reported by 26 departments. To provide even greater transparency and accountability, Minister McKenna proposed (June 2017) legislative amendments that will triple the number of federal departments and agencies reporting progress on federal sustainable development goals.

- Collaborating with employers across Canada to create over 1000 green internships in the science, technology, engineering and mathematics fields through the [Science Horizons Youth Internship Program](#)^{xvi}.

Results achieved

Expected Results	Performance Indicators	Targets	Date to achieve target	2017–18 Actual results	2016–17 Actual results	2015–16 Actual results
The health of selected ecosystems in Canada is closely monitored	Average score on a 100-point scale based on expert ratings of status and trends of key indicators of the health of selected ecosystems in Canada	52%	December 2020	63%	n/a	n/a
<p>The result is based on Great Lakes data from 1968 to 2015 and St. Lawrence River data from 2002 to 2012. Some of the component indicators used for calculating the score, depending on the ecosystem, include phosphorus and nitrogen levels, toxic contamination in sediments, and contaminants in waterbirds, among others. The indicator value is calculated by averaging the scores of the four Canadian Great Lakes and the St. Lawrence River. Great Lakes indicators are updated every 3 years and the St. Lawrence indicators are updated every 5 years (next update due in 2019–20).</p>						

Budgetary Financial Resources (dollars)

2017–18 Main Estimates	2017–18 Planned Spending	2017–18 Total Authorities Available for Use	2017–18 Actual Spending (authorities used)	2017–18 Difference (actual minus planned)
84,520,845	84,520,845	110,739,990	103,586,093	19,065,248

Human Resources (FTEs)

2017–18 Planned	2017–18 Actual	2017–18 Difference (actual minus planned)
422	432	10

Program 1.4: Compliance Promotion and Enforcement – Wildlife

Program Description

This program works to conserve and protect the natural environment through compliance promotion and enforcement of the Species at Risk Act, Migratory Birds Convention Act, 1994, Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act, Antarctic Environmental Protection Act and Canada Wildlife Act. The program promotes compliance through the communication of information, education, and consultation with parties affected by these statutes. It maintains a contingent of enforcement officers whose activities consist of verifying compliance with acts, regulations and permits pertaining to wildlife and Environment and Climate Change Canada protected areas, gathering intelligence, conducting inspections and pursuing investigations regarding alleged offenders. The program also works with INTERPOL as well as the United States and Mexico under the auspices of the Commission for Environmental Cooperation to strengthen wildlife enforcement. These actions aim to reduce damage and threats to biodiversity for the benefit of Canadians and the international community.

Results

(See also Program 3.3 Compliance Promotion and Enforcement – Pollution)

ECCC continued to conduct inspections and take enforcement measures to protect Canada’s wildlife and habitats, and to support the recovery of endangered species.

Following guilty verdicts, courts issue fines and direct penalties to organizations and individuals that fail to comply with wildlife laws, including those under the Species at Risk Act and the Wild Animal and Plant Protection and Regulations of International Interprovincial Trade Act (WAPPRIITA). For example, a company found to be noncompliant with wildlife regulations for depositing a substance harmful to migratory birds was ordered by a judge to pay a penalty of \$235,000 to environmental organizations and the [Environmental Damages Fund](#)^{xvii} while another part of the amount was directed to environmental organizations to support specific projects.

ENFORCING WILDLIFE MEASURES: by the numbers...

In 2017–18, ECCC:

- Conducted 4,955 inspections and initiated 114 investigations to gather evidence and take appropriate enforcement measures against alleged offenders.
- Based on findings of inspections and investigations, undertook 414 enforcement measures, including prosecutions, compliance orders, contraventions and warnings that collectively resulted in 92 convictions and a total of \$342,576 in penalties.



ECCC enforcement officers prioritized efforts to monitor Barn Swallow breeding colonies on McNabs Island in Halifax Harbour, to help reduce the serious decline of more than 75% of this threatened species since the 1970s. Departmental biologists continued to work to identify the reasons for this major decline.

ECCC continued its work with provincial and territorial governments and several Inuit communities to identify and track legal polar bear hides once they enter trade in order to support legally-harvested markets.

To protect wildlife in Canada and globally, ECCC continued its international work, including with INTERPOL and other international organizations, to promote compliance with and enforce domestic wildlife laws.

Protecting Salamanders

To protect biodiversity, Canada implemented temporary restrictions on the import of salamanders. The restrictions were set to protect Canada’s native salamander species from a deadly fungal disease that has affected salamanders in other parts of the world. Scientific data on the disease and early and ongoing collaboration with partners, including the pet trade industry, led to the restrictions as the best course of action.

ECCC was recognized by the Community of Federal Regulators with the [Excellence in Collaborative Approaches and Shared Solutions](#)^{xviii} award for its work to protect Canadian salamanders.

Results achieved

Expected Results	Performance Indicator	Target	Date to achieve target	2017-18 Actual results	2016-17 Actual results	2015-16 Actual results
Targeted regulatees are penalized when non-compliant with wildlife laws and regulations administered by Environment and Climate Change Canada	Percentage of prosecutions that result in convictions	95%	March 2018	99%	97%	95%
	This indicator is a measure of the effectiveness of the program in achieving convictions in cases of suspected non-compliance. The reported percentage is based on the total number of prosecutions that resulted in convictions, over the total number of prosecutions.					

Budgetary Financial Resources (dollars)

2017-18 Main Estimates	2017-18 Planned Spending	2017-18 Total Authorities Available for Use	2017-18 Actual Spending (authorities used)	2017-18 Difference (actual minus planned)
16,297,080	16,297,080	18,866,900	18,680,551	2,383,471

Human Resources (FTEs)

2017-18 Planned	2017-18 Actual	2017-18 Difference (actual minus planned)
128	133	5

Program 2.1: Weather and Environmental Services for Canadians

Program Description

This program provides reliable, accurate and timely forecasts and warnings, as well as weather and environmental intelligence to anticipate, manage and adapt to the risks and opportunities of changing weather, water, air quality and climate conditions. It involves monitoring, research, prediction and service delivery based on sound science to help Canadians make informed decisions in order to protect their health, safety, security and economic prosperity. Because a global effort is needed to monitor, understand and predict constantly changing weather, water, air quality, sea ice, and climate conditions, the program works with various collaborators around the world. Global collaborators include other national meteorological services, such as the U.S. National Oceanic and Atmospheric Administration and Météo France, as well as international organizations such as the United Nations World Meteorological Organization and the Intergovernmental Panel on Climate Change. At the national level, collaborators include the media, academia and all levels of government in Canada. The program meets the department's responsibilities under the department of the Environment Act, Weather Modification Information Act, Emergency Management Act (2007), Convention of the World Meteorological Organization, and memoranda of agreement with other national meteorological and space agencies. The program provides forecasts and information in the event of environmental emergencies associated with the release of toxic and radioactive material in the atmosphere.

Results

ECCC continued to provide weather and environmental services for Canadians on a 24/7 basis. For example, the [Canadian Hurricane Centre](#)^{xxiii} along with our other 7 Storm Prediction Centres (SPCs) prepared Canadians for the 2017 severe weather and hurricane season, by issuing more than 2,100 weather alerts and warnings. The SPCs and the Canadian Hurricane Centre also provided accurate and timely weather-sensitive information to businesses and the public about storms and hurricanes to help them make decisions about their safety. In addition, ECCC continued to promote safety through the Government of Canada's [Get Prepared](#)^{xxiv} website, with advice on how to prepare for and take action in a variety of weather-related emergencies, including extreme heat and cold, tornadoes and storms.

The department continued to support the management of wildfires, including during the summer of 2017 in British Columbia. With around-the-clock weather information, local smoke-dispersion forecasts and weather forecasts, ECCC deployed staff and a high-resolution weather model over the Williams Lake area to provide detailed forecast information. The added resources supplemented ongoing wildfire smoke and air quality forecasts, updated twice daily, as well as hourly air quality condition reports under the [Air Quality Health Index](#)^{xxv} (AQHI).

The AQHI is maintained by ECCC and Health Canada to provide local conditions, forecasts, health risks, pollutants weather and educational tool kits. AQHI information readings for 117 locations across Canada are available on line and through the AQHI Canada [mobile app](#)^{xxvi}.

WEATHER FOR CANADIANS: by the numbers...

In 2017–18, ECCC:

- provided weather information to Canadians 24 hours a day, seven days a week
- issued 480,000 weather forecasts, watches and warnings
- received at [weather.gc.ca](#)^{xxix} more than 550 million visits (averaging 1.5 million a day)— more than any other page on the Canada.ca website
- received more than 30 million requests (for radar images, precipitation and temperature observations, weather forecasts, special bulletins, warnings and alerts) from 640,000 users a day through its [Datamart](#)^{xxx}
- received over 2,000,000 requests a day for weather data, from 100,000 users a day through [GeoMet](#)^{xxi*}
- had 17,400 subscribers (public emergency officials and media) to its email weather alert service, [EC Alert me](#)^{xxii}
- had 175,000 twitter followers, with accounts for over 830 communities
- reached over 28.2 million Canadians in 10 provinces and 3 territories at 117 locations with information about local air quality through its AQHI

* DataMart enables users to receive large volumes of ECCC weather observations and forecast data.

** GeoMet gives users access to ECCC's raw numerical weather prediction model data that they can download into their own tools and in interactive climate maps.

Improving accuracy, timeliness and access to weather information



As part of a multi-year initiative to modernize Canada's weather radar network, ECCC installed and began operating a new weather radar in Radisson, Saskatchewan. The state-of-the-art facility provides better, more timely severe weather warnings, including to agricultural operations to help plan for the growing season. It also gives communities greater lead time to plan for severe

weather events, such as tornadoes and blizzards. ECCC began installation of an additional four weather radars, with a total of 32 to be installed across the country by 2023.

The department completed onboarding of its high-performance computer in September 2017, following several months of sustained effort with experts at Shared Services Canada. This major update, which provides computing capacity comparable to that of other leading global meteorological sites, will enable the [Canadian Centre for Meteorological and Environmental Prediction](#)^{xxvii} to provide more accurate and timely forecasting for Canadians over the coming years. Other departments also benefit from the output of the supercomputer, including Public Safety Canada for environmental emergency prevention and response, Agriculture and Agri-Food Canada for pest control and management, Health Canada for the nuclear emergency response and air quality policy issues, Natural Resources Canada's Canadian Forest Services for fire weather and forest fire smoke dispersion services, Department of National Defence for weather information and forecasts, Fisheries and Oceans for oil spills response, fish management strategy and ocean modelling for emergency management, and Provinces for flood forecasts and natural resources management.

Year of Polar Prediction

ECCC began a major contribution to a World Meteorological Organization initiative to respond to rapid polar climate change at both the north and south poles.

The Year of Polar Prediction (YOPP) combines scientific information and forecasts from 21 countries to observe, model and improve forecasts of weather and climate systems in the Arctic and Antarctic. The YOPP (mid-2017 to mid-2019) will lead to better forecasts of weather and sea-ice conditions to improve environmental safety at both poles.

ECCC calibrated its national alert system to reflect data and information from multiple tracking systems. This extensive behind-the-scenes work will result in more accurate and timely ECCC alerts for weather and environmental hazards, and support alerts within affected areas before and as hazards occur, including tracking of lightning and hurricanes. The modalities used to communicate alerts will also be expanded from television and radio to include cell phones as well. Investments in weather infrastructure and system upgrades led to improved timeliness and accuracy of warnings (94% in 2017, up from 81% in 2016).

Work to create the department's mobile weather app progressed in 2017–18. The new app will become Canada's authoritative mobile source of weather information. The app is integrated with upgrades to weather information on the ECCC website and responds to an overall increase in the use of social media to provide Canadians with 24/7 accurate weather.

Science is the foundation of ECCC's weather and environmental services. Some key scientific activities carried out over the year included:

- Advances in Canada's Numerical Environmental and Weather Prediction System, which has improved accuracy of predictions with forecast skills now beyond 7 days, with over 13.5 million observations brought into the system each day.
- High-profile publications on climate research, including a study outlining how increases in average global temperature, aligned with targets under the Paris Agreement, could impact Arctic sea ice.

Commitment to Experimentation: Leveraging social media networks

ECCC continued to experiment with using social media networks so that Canadians can directly receive pertinent weather and climate information, including weather alerts. A key learning to date is that the redistribution of messages on social media is a powerful source of engagement.

In a trial using Twitter to provide supplementary, value-added information related to its weather alerts and forecasts in Québec and British Columbia, results show that in 2017 the experimental Twitter accounts had a combined 16,000 followers and meteorologists issued close to 2,300 tweets.

With respect to trials with severe weather warnings, tracking use shows that automated Twitter accounts used to pass along warnings continue to see a modest growth in followers: at 175,000 in 2017 compared to 113,000 in 2016 and 67,000 in 2015.

On another front, ECCC experimented with messaging through posting weather- and climate-related videos on its Facebook account. Results show that this approach does not support publishing of alerts in real time—a factor important to their effectiveness, given the speed with which weather situations can change.

Results achieved

Expected Results	Performance Indicator	Target	Date to achieve target	2017–18 Actual results	2016–17 Actual results	2015–16 Actual results
Canadians use Environment and Climate Change Canada's weather and environmental services	Public component of the Weather Warning Index (a weighted index of weather warning timeliness and accuracy)	7.9	December 2017	8.1 in 2015 to 2017	8.1 in 2014 to 2016	8.3 in 2013 to 2015 ²
	The Public Warning Index provides Canadians with an overview of the state of Environment and Climate Change Canada's severe weather warning program. The value of this indicator has exhibited minor fluctuations over the last three reporting years, but has continually exceeded the target. The index is calculated based on timeliness and accuracy information for five warning types that are representative of Canada's climate: rainfall, snowfall, freezing rain, wind, and severe thunderstorm. It ranges from zero (poor performance) to ten (perfect performance).					
	Percentage of the population of a warned area who report having seen or heard a recent weather warning and who took actions in response	30%	July 2018	53% as of January 2018	N/A	45% as of January 2016
	The population of a warned area indicator is being used to illustrate that Canadians are using Environment and Climate Change Canada's weather and environmental services, specifically its weather warnings. The most recent value reported in 2017–18 exceeded the target of 30% and shows an improvement in results over the last reporting period.					

Budgetary Financial Resources (dollars)

2017–18 Main Estimates	2017–18 Planned Spending	2017–18 Total Authorities Available for Use	2017–18 Actual Spending (authorities used)	2017–18 Difference (actual minus planned)
194,578,410	194,578,410	206,354,069	190,036,449	-4,541,961

Human Resources (FTEs)

2017–18 Planned	2017–18 Actual	2017–18 Difference (actual minus planned)
1,072	1,085	13

² This result was reported as 8.4 in the 2016–17 Departmental Results Report, and was updated to 8.3 in the 2017–18 Departmental Plan to improve the consistency of the index components used for the indicator.

Program 2.2: Weather and Environmental Services for Targeted Users

Program Description

Environment and Climate Change Canada provides specific predictions and services for targeted, weather-sensitive sectors through formal arrangements and revenue contracts. Building on the core capabilities offered under Program 2.1, this program provides reliable, accurate and timely weather, climate and ice observations, predictions and services to support the specific decision making needs of the aviation and marine transportation sectors and the Canadian military. It delivers services through various collaborations within Canada (including with other government departments), and internationally with the World Meteorological Organization, as well as with other countries and international bodies such as the International Civil Aviation Organization, the International Maritime Organization, and the International Convention for the Safety of Life at Sea (SOLAS). This program supports the department in meeting obligations and responsibilities conferred by the department of the Environment Act and the Convention of the World Meteorological Organization. It also helps other government departments meet their obligations under the Aeronautics Act and the treaty in support of International Civil Aviation, the Oceans Act and the Fisheries Act, and supports memoranda of agreement with the Department of Fisheries and Oceans/Canadian Coast Guard, the Department of National Defence, and various provincial and territorial agencies.

Results

ECCC continued to deliver tailored weather services on a 24/7 basis to targeted users that rely on the department's information and services to support business operations. Users include NAVCANADA, Transport Canada, the Canadian Coast Guard and the Department of National Defence (DND).

In 2017–18, the department:

- Supported Transport Canada in detecting oil spills and oil dumping by using satellite imagery to provide an around-the-clock survey of 90,000 km² of Canada's coastal waters, regardless of weather and light conditions. ECCC worked with Transport Canada's [National Aerial Support Program](#)^{xxix} and the ISTOP program ([Integrated Satellite Tracking of Polluters](#)^{xxx}) of the Canadian Space Agency to identify the location, extent and length of a spill or dump, as well as nearby ship positions.
- Delivered tailored weather information to directly support the decision making process in Air Traffic Flow Management
- Provided tactical support to DND, regardless of the location of its operations.
- Established a new long-term agreement with the Canadian Coast Guard to provide weather and ice information.

WEATHER SERVICES FOR TARGETED USERS: by the numbers...

In 2017–18, ECCC:

- Issued 530,000 aviation-related forecasts, warnings and other aviation products through its Canadian Meteorological Aviation Centre
- Issued 11,197 [ice products](#)^{xxviii} for mariners and other users

Results achieved

Expected Results	Performance Indicators	Targets	Date to achieve target	2017–18 Actual results	2016–17 Actual results	2015–16 Actual results
Targeted sectors have the meteorological and environmental information and services they need to operate efficiently and safely	Combined level of satisfaction of the main clients of the Meteorological Service of Canada (MSC) in terms of accessibility, timeliness and accuracy of products and services	7.5 (on a scale of 0 – 10)	March 2018	8.5	8.6	8.4
The indicator measures the combined level of satisfaction in terms of accessibility, timeliness and accuracy of products and services provided by the Meteorological Service of Canada (MSC) to its three main clients: DND, NAV CANADA, and the Canadian Coast Guard. Data for this indicator was collected through client surveys.						

Budgetary Financial Resources (dollars)

2017-18 Main Estimates	2017-18 Planned Spending	2017-18 Total Authorities Available for Use	2017-18 Actual Spending (authorities used)	2017-18 Difference (actual minus planned)
18,728,707	18,728,707	26,808,606	18,913,509	184,802

Human Resources (FTEs)

2017-18 Planned	2017-18 Actual	2017-18 Difference (actual minus planned)
371	336	-35

Program 3.1: Substances and Waste Management

Program Description

Activities in this program reduce threats to human health and the environment posed by pollution and waste from human activities. The program assesses risks to the environment from substances that are already in commercial use (existing substances) and substances proposed for use in Canada (new substances). It also develops and implements measures to prevent or manage the risks from these substances and waste.

Results

Protecting oceans and freshwater

As part of Canada's \$1.5 billion [Oceans Protection Plan](#)^{xxxii}, the department strengthened its environmental response capacity across Canada, by adding environmental emergency officers in coastal regions. ECCC also completed the groundwork for the launch of its Marine Weather Information System Demonstration project by identifying the High Risk Marine Areas for which enhanced forecast information will be prepared, and selecting the locations for new weather buoys to support the initiative.

Demonstrating its ongoing commitment to international leadership in protecting the world's oceans, the Government of Canada put plastic waste on the agenda for the June 2018 G7 leaders summit by championing a zero plastic waste charter. At home, ECCC launched the development of a national plastic waste strategy and action plan which will be completed by mid-2019.

Through the amended Metal and Diamond Mine Effluent Regulations, the department strengthened effluent quality standards for metal mines and added requirements for diamond mine effluent. Some of these amendments came into force in 2018, with the remainder in force by 2021.

Calling G7 Youth to Help Solve Ocean Challenges: #myoceans2050

ECCC launched a [global Oceans Youth Innovation Challenge](#)^{xxxiii}, in partnership with Fisheries and Oceans Canada, and Natural Resources Canada. The challenge invites youth aged 18 to 25 from G7 countries to share through video their visions and innovative solutions for healthy and productive oceans by 2050. Winners will be invited to show their videos to a G7 ministerial meeting on oceans.



Protecting Canadians and the environment from harmful substances



To help protect Canada's freshwater ecosystems, regulations published under the Canadian Environmental Protection Act, 1999 (CEPA 1999) in June 2017 prohibit the manufacture, sale, or import of toiletries that contain microbeads.

ECCC and Health Canada published proposed regulations to prohibit the import, sale and use of asbestos and asbestos-containing products. The final regulations are expected to be published by the end of 2018.

The department continued to deliver the Chemicals Management Plan, in collaboration with Health Canada. In 2017–18, 423 existing substances were assessed, with action taken as required to reduce risks to human health and the environment. In addition, assessments of all 424 new substance notifications were completed.

MANAGING SUBSTANCES AND WASTE IN 2017–18: by the numbers...

Moving hazardous waste...

ECCC processed 1,826 regulatory permits for imports, exports or transit through Canada, covering close to 32,000 individual shipments of hazardous waste and hazardous recyclable materials.

Influencing global action on environmental pollution

ECCC participated extensively in and contributed vital expertise to international processes to address pollution. For example:

- ECCC chaired the scientific and compliance sessions at the 2017 London Protocol meetings on ocean disposal, and chaired the financial assistance sessions at the 2017 Minamata Convention (on mercury) meeting.
- The department contributed to the Conferences of the Parties (COP) to the Basel, Rotterdam and Stockholm Conventions in April 2017 by:
 - co-chairing the contact group on technical matters, whose work led to the adoption of six technical guidelines under the Basel convention;
 - participating in technical and legal working groups to the Basel convention (on hazardous waste);
 - advocating for the listing of chrysotile asbestos to the Rotterdam Convention; and
 - supporting the successful listing of two new substances to the Stockholm Convention (decaBDE; SCCPs) and chairing the committee responsible for the first evaluation of the effectiveness of the Convention.
- The department supported Canada’s input into the Global Environment Facility’s seventh replenishment period, advising on how Canada’s financial assistance to developing countries can achieve global environmental benefits by addressing climate change, biodiversity loss, land degradation, persistent organic pollutants, mercury emissions, and threats to international waters and oceans.

In April 2017, Canada ratified the Minamata Convention on Mercury, a global agreement to reduce anthropogenic mercury emissions and releases to the environment in Canada and abroad. Canada will be one of the main beneficiaries of this agreement as over 95% of anthropogenic mercury deposited in Canada comes from foreign sources.

Results achieved

Expected Results	Performance Indicator	Target	Date to achieve target	2017–18 Actual results	2016–17 Actual results	2015–16 Actual results
Threats to Canadians and impacts on the environment posed by harmful substances and waste are reduced	Percentage of drainage regions where Federal Environmental Quality Guidelines (FEQG) are not exceeded for selected substances in sediment, water and/or biota	Polybrominated diphenyl ethers (PBDE) in sediments and in fish: 80% Perfluorooctane Sulfonate (PFOS) in water and in fish: 80%	PBDEs: September 2022 PFOS: September 2023	N/A	PBDEs Sediments: 30% of drainage regions sampled did not exceed the FEQG in the period 2007 to 2015. Fish: 20% of drainage regions sampled did not exceed the FEQG in the period 2013–15.	PFOS Surface water: 100% of drainage regions sampled in the period 2011 to 2015 were found not to exceed FEQG for PFOS concentrations in surface water. Fish tissue: 100% of drainage regions sampled in the period 2011 to 2014 were found not to exceed FEQG for PFOS concentrations for fish health.

	<p>The 2017–18 result will be available later in the fall of 2018, following the publication of this report. This is due to the time required to analyze and validate the data.</p> <p>Two substances, PBDEs and PFOS, measured in alternate years, are used to indicate a potential threat to the environment.</p> <p>PFOS is a synthetic chemical that may enter into the environment through treated or untreated municipal / industrial wastewater. It takes a very long time to break down in the environment and can build up in certain living organisms.</p> <p>PBDEs are a group of chemicals used in flame retardants. They build up in living organisms, and remain in the environment for long periods after their release. The occurrence of PBDE concentrations above FEQGs in fish tissue and sediment can pose a risk to aquatic life, and indicates that further evaluation may be required.</p> <p>Only pentaPBDE results are reported in this table as it is the PBDE of highest concern.</p>
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Budgetary Financial Resources (dollars)

2017–18 Main Estimates	2017–18 Planned Spending	2017–18 Total Authorities Available for Use	2017–18 Actual Spending (authorities used)	2017–18 Difference (actual minus planned)
84,357,041	84,357,041	97,006,879	91,591,830	7,234,789

Human Resources (FTEs)

2017–18 Planned	2017–18 Actual	2017–18 Difference (actual minus planned)
629	642	13

Program 3.2: Climate Change and Clean Air

Program Description

This program aims to protect the health of Canadians, the environment and Canada's economy from the harmful effects of air pollutants and the impacts of greenhouse gas (GHG) emissions through the development and implementation of regulations and other control measures. Actions are based on sound scientific work, economic and policy analysis, and emissions monitoring and reporting. Work under this program includes: continued collaboration with other governments and stakeholders; delivery of sound scientific results, expert environmental science and technology advice, assessment, and program management in support of technology investment decisions, policy making and regulations; and cooperation with the United States to align GHG regulations as appropriate, reduce transboundary air pollution and advance the development of clean technologies. It also involves participation and negotiation in, and contributions to, international fora, in order to address climate change and transboundary air pollution, and bilateral and multilateral processes in order to support Canada's positions and objectives.

Results

Climate change and clean growth



ECCC put in place key measures to implement the [Pan-Canadian Framework on Clean Growth and Climate Change](#) (PCF)^{xxxiv} including actions to reduce greenhouse gas (GHG) emissions as well as short-lived climate pollutants (SLCPs):

Carbon pollution pricing

Most Canadian provinces have or are working toward pricing carbon pollution. ECCC provided ongoing guidance to support the development of provincial and territorial systems and worked with territories and Indigenous peoples to find solutions that met their unique needs. The department also developed legislation for the federal carbon pollution pricing system for provinces and territories that do not have a pricing system.

The Government of Canada's [Low Carbon Economy Fund](#)^{xxxv} includes two separate funds: the \$1.4 billion Low Carbon Economy Leadership Fund to help provinces and territories deliver on their commitments to reduce carbon pollution under the PCF and the \$500 million Low Carbon Economy Challenge to support ambitious projects from organizations, Indigenous governments, municipal and provincial governments, businesses and not-for profit organizations. In 2017-18, under the Low Carbon Economy Leadership Fund, ECCC announced over \$1 billion over five years for projects that reduce carbon pollution and spur clean growth in six provinces (British Columbia, Alberta, Ontario, Québec, New Brunswick and Nova Scotia). The [Low Carbon Economy Challenge](#)^{xxxvi}, launched in March 2018, is designed to ensure that organizations of all sizes, including small communities and community organizations, as well as Indigenous organizations, have access to funds aimed at reducing GHGs.

Establishing permanent, distinction-based partnerships with Indigenous peoples is core to ECCC's ongoing work to implement the PCF. In October 2017, the Government of Canada and the Assembly of First Nations co-hosted the first senior-level bilateral meeting of the Joint Committee on Climate Change. Similarly, in December 2017, the Government of Canada held senior-level bilateral meetings with leadership of the Inuit Tapiriit Kanatami and the Métis National Council, respectively. These processes are ongoing, and are meant to inform joint action in the spirit of partnership and reconciliation.

One year in: progress on implementing the Pan-Canadian Framework

One year after Canada's federal, provincial and territorial leaders adopted a pan-Canadian plan to address climate change, early results are in and documented in the [PCF First Annual Synthesis Report on the Status of Implementation](#)^{xxxviii} (December 2017).

The report identifies that steps taken by governments across Canada to implement the plan are on track to meet first year milestones under the PCF. These actions include drafting and consulting on regulations to cut GHGs and other emissions, and the creation of policies and programs to build climate resilience and support clean technology.

Regulations to reduce GHGs

The department proposed regulations to accelerate the phase-out of traditional coal-fired power in Canada by 2030, and to develop performance standards for natural gas-fired power plants. The phase-out of coal-fired electricity will cut carbon pollution by 16 million tonnes in 2030 (equivalent to one year of emissions from four million cars), thus improving air quality for Canadians.

Science at Work

ECCC developed new methods to use observations from the National Aeronautics and Space Administration (NASA) Orbiting Carbon Observatory 2 satellite and published daily carbon dioxide emissions from individual coal-fired power plants for the first time. This demonstrated the potential for satellite data to quantify releases of GHGs from individual sources.

The natural gas regulations are designed to encourage some facilities to switch from coal to natural gas electricity and to provide regulatory certainty for new investments in clean electricity generation. Canada's new [Task Force on the Just Transition for Canadian Coal-Power Workers and Communities](#)^{xxxvii}, established in February 2018, will recommend ways to support fairness in the transition away from coal.

Final amendments were made to the Heavy-Duty Vehicle and Engine Greenhouse Gas Emission Regulations, which were published in the spring of 2018. These set stringent GHG emission standards for on-road heavy-duty vehicles and engines, beginning with the 2021 model year.



ECCC published a Regulatory Framework on the Clean Fuel Standard (December 2017) and established a multi-stakeholder consultation committee and technical working group on the regulatory design of the clean fuel standard.

The department also published final regulations to reduce methane emissions and volatile organic compounds from the upstream oil and gas sector. The regulations will reduce GHG emissions by about 20 megatonnes per year starting in 2023.

The Regulations Amending the Ozone-depleting Substances and Halocarbon Alternatives Regulations, which put in place a phase-down of hydrofluorocarbon (HFC) consumption, came into force on April 16, 2018. The Regulations ensure that Canada will meet its obligations under the Kigali Amendment to phase down HFCs under the Montreal Protocol.

ECCC published (July 2017) a [Strategy on Short-Lived Climate Pollutants](#)^{xxxviii}, which describes how Canada will reduce emissions of these pollutants (black carbon, methane, ground-level ozone and HFCs) from all key sources to achieve climate and air quality benefits.

Montreal Protocol turns 30

Canada was one of the first countries to ratify the Montreal Protocol in 1987, a historic international agreement that has eliminated over 99% of substances that were thinning the earth's protective ozone layer.

The Kigali Amendment, which Canada ratified in November 2017, will see a gradual phase-down of HFCs, powerful GHGs. The phase-down is an important move to reduce the future impacts of HFCs on the climate and will contribute to efforts to avoid warming the planet by one half degree Celsius by the end of this century. Canada played a key role in encouraging other countries to ratify the Kigali Amendment helping to ensure that it will come into force in January 2019.

Commitment to Experimentation

ECCC continued to apply design thinking to approaches for leveraging innovative data visualization and reporting tools that combine qualitative data with real-world quantifiable data that is meaningful for Canadians. To that end, ECCC appointed a Chief Data Officer whose responsibilities include: 1. Developing an ECCC Data Agenda/Strategy and supporting its implementation; 2. Supporting data experimentation; and 3. Enabling and supporting a data culture at ECCC.

Climate resilience and adaptation

Science, maps and storytelling bring climate alive

ECCC supported the development of Canada's first-ever [Climate Atlas](#)^{xxix}, an interactive resource that brings together climate science, maps and storytelling to inspire Canadians to take action to support climate resilience. It includes documentary videos developed with local and Indigenous knowledge holders and experts, and is the only tool in the world to integrate climatology, cinema and cartography in an easy-to-use, compelling format.

ECCC continued groundwork to establish the Canadian Centre for Climate Services (CCCS), set to launch in the fall of 2018. As an important component of the PCF, the CCCS will help to increase climate resilience across Canada by providing access to reliable climate information, data and tools as well as training and a support desk, to help users to plan for possible future climate scenarios. The CCCS will support broad needs including those of community planners, transportation engineers, forest managers, Indigenous communities and farmers, as well as individual Canadians.

Minister McKenna launched (August 2017) an Expert Panel on Climate Change Adaptation and Resilience Results to provide advice to the Government of Canada on measuring progress on adaptation and climate resilience. The Panel included members

from academia, Indigenous organizations and governments, the private sector, municipalities, youth and non-governmental organizations. Its final report, [Measuring Progress on Adaptation and Climate Resilience: Recommendations to the Government of Canada](#)^{xl}, was released in June 2018. It also proposes indicators and advice on implementing a sustainable approach to monitoring and evaluation.

Efforts mentioned above helped respond to a recommendation of the 2017 [evaluation of the Clean Air Agenda Adaptation Theme](#)^{xli} to increase stakeholder engagement and awareness of information, products and tools related to climate change adaptation (through the CCCS). They also addressed a recommendation of the evaluation to improve measurement and reporting of results (through the work of the Expert Panel).

International action on climate change

Internationally, Canada established and maintained environmental agreements with countries and organizations committed to advancing action on climate change and clean growth. To maintain momentum on climate action, Canada and its partners emphasized that the Paris Agreement is irreversible, and that Canada is committed to its full and effective implementation. ECCC delegates to the 23rd Conference of the Parties (COP23) to the United Nations Framework Convention on Climate Change (UNFCCC) advanced negotiations under the Paris Work Programme, with a view to finalizing robust implementation guidelines for the Paris Agreement by the end of 2018.

Canada also continued to act on its commitment to pursue a progressive trade agenda that reflects environmental and climate change considerations, among others. For example, Canada committed to cooperating with the Parties of the [Comprehensive and Progressive Agreement for Trans-Pacific Partnership](#)^{xlii} (CPTPP) to address climate change and other global environmental challenges. Canada also committed to work with New Zealand and Chile to uphold our respective commitments for an ambitious and effective implementation of the Paris Agreement, as part of the [CPTPP Declaration on Progressive and Inclusive Trade](#)^{xliii}.

Keeping Canadians Informed

ECCC monitors and reports on Canada's international environmental commitments under 94 multilateral and bilateral agreements and other instruments in the [Compendium of Canada's Engagement in International Environmental Agreements](#)^{xliv}.

At the 2017 G7 Environment Ministers' meeting (Italy), Minister McKenna showcased Canada's climate plan and its collaborative approach that includes provinces and territories, Indigenous peoples, cities and businesses. Canada assumed the G7 presidency for 2018, with the Leaders' Summit held in Québec (June 2018). Accelerating action to support sustainable finance is an important part of Canada's G7 presidency: Canada established an Expert Panel on Sustainable Finance, which launched its work with the finance industry to address challenges and promote opportunities in the transition to a low carbon economy.

To advance the Canadian clean technology industry, Minister McKenna led 16 companies on a trade mission to China, and promoted clean technologies during international visits, including in the U.S., Germany, and Mexico. Parliamentary Secretary Wilkinson also led a delegation of 18 companies to the Cleantech Forum in San Francisco, California.

Furthermore, Minister McKenna and United Kingdom Minister of State for Energy and Clean Growth, Claire Perry, jointly launched the Powering Past Coal Alliance, gaining support from 27 national, provincial, state and city governments to phase out traditional coal-fired electricity globally. As of December 2017, the Alliance has grown to almost 60 members.

Other highlights of ECCC's extensive international action on climate change in 2017–18 included:

- Hosting the first Ministerial Meeting on Climate Action in Montreal (September 2017), under which Canada, China and the European Union brought together 34 countries to advance discussions on implementing the Paris Agreement.
- Announcing a North American Climate Leadership Dialogue with Mexico and the U.S. Climate Alliance, a bipartisan coalition of 17 U.S. governors committed to reducing GHGs in support of the Paris Agreement.
- Launching the Declaration on Carbon Pricing in the Americas with Mexico, Colombia, Chile, Costa Rica and seven subnational governments, a vehicle to collaborate on pricing carbon pollution throughout the Americas.
- Maintaining and strengthening bilateral cooperation with Chile, Mexico, China, France and the United Kingdom to reinforce cooperation on the environment, clean energy, clean growth and climate change.

The department committed to protecting oceans and advance global climate action by building the resilience of coastal communities, including Small Island Developing States. Canada's pledge of \$2.65 billion by 2020 aims to help developing countries transition to low-carbon, climate-resilient economies through contributions to multilateral development banks, and direct support to developing countries to reduce emissions and adapt to the effects of climate change. Initiatives and expected results are updated on [Canada's climate finance webpage](#)^{xlv}.

Canada's leadership on gender equality and Indigenous peoples' participation

Canada took a leadership role at COP23 (UNFCCC), advancing two historic decisions to make international climate action more inclusive:

1. the Gender Action Plan will support women's participation in decision-making and gender-responsive policy development.
2. the Local Communities and Indigenous Peoples' Platform will help strengthen the knowledge, technologies practices and efforts of Indigenous peoples in addressing and responding to climate change, as well as their engagement in the UNFCCC process.

Air quality

Science at work

ECCC science activities and results have been key to the department delivering on international commitments, such as the Canada-United States Air Quality Agreement. ECCC's research informed the joint Canada-U.S. State of the Great Lakes 2017 assessment, the Arctic Monitoring and Assessment Programme's chemicals of emerging Arctic concern assessment, and the first effectiveness evaluation of the Stockholm Convention on Persistent Organic Pollutants (2017).

At home, ECCC scientific evidence supported clean air policies and regulations. For example, science underpins a renewed memorandum of understanding, expected to be signed in spring 2019, for the National Air Pollutant Surveillance monitoring network to continue measuring air quality across Canada. In addition, ECCC's research informed the United Nations Educational, Scientific and Cultural Organization (UNESCO) review of Wood Buffalo National Park, which contributed to ECCC's action plan for the Park, and the government response to the environmental assessment of the Teck Frontier Project in the oil sands region of Alberta.

ECCC, in collaboration with provinces and territories under the Canadian Council of Ministers of the Environment (CCME), released a new [State of the Air Report](#)^{xlvi} (see [highlights on YouTube](#)^{xlvii}), which reports on the current status of air quality across the country, as well as progress in reducing smog. Minister McKenna took the reins of the CCME and will chair its 2018 Ministers' meeting.

The department worked closely with provinces and territories to implement Canada's [Air Quality Management System](#)^{xlviii} (AQMS), in collaboration with the CCME. Under the AQMS, ECCC established two new Canadian Ambient Air Quality Standards³ (CAAQS) in 2017: one for sulphur dioxide and one for nitrogen dioxide.

ECCC also finalized measures to prevent air pollutants from several industrial sectors, including a code of practice for particulate matter 2.5 emissions in the potash sector, and guidelines for nitrogen oxide emissions from natural gas fuelled stationary combustion

turbines. Performance agreements concerning several air pollutants from the aluminum and alumina sector, the iron ore pellet sector and the base metal mining sector, all came into effect in 2017–18. In May 2017, the Department also published proposed regulations to reduce the release of volatile organic compounds by the petroleum sector.

Canada ratified the Gothenburg Protocol and its 2012 amendments under the United Nations Economic Commission for Europe Convention on Long-Range Transboundary Air Pollution (November 2017). The Protocol addresses air pollutants such as sulphur dioxide, nitrogen oxides, ammonia, volatile organic compounds and particulate matter that contribute to the formation of acid rain and smog, and the degradation of water bodies.

ECCC scientists make important contributions to understanding how forests benefit air quality. Their research, published in *Nature Communications* in 2017, identified the role of forests in lowering ground-level ozone levels by up to 50%. Ground-level ozone, along with nitrogen dioxide and fine particulate matter, are the key common air pollutants tracked through ECCC's Air Quality Health Index forecast.

³ CAAQS are health and environmental objectives for outdoor concentrations of air pollutants.

Results achieved

Expected Results	Performance Indicators	Targets	Date to achieve target	2017–18 Actual results	2016–17 Actual results	2015–16 Actual results
Threats to Canadians, their health and their environment from greenhouse gas emissions are minimized	Canadian emissions of greenhouse gases (carbon dioxide equivalents) in megatonnes	Canada's national target is a 30% reduction from 2005 levels by 2030, as per Canada's Nationally Determined Contribution	2030	704 Mt in 2016 Representing 4.6% decrease from 2005 level	714 Mt in 2015 Representing 3.3% decrease from 2005 level	716 Mt in 2014 Representing 3.0% decrease from 2005 level
	<p>Emissions of 704 Mt in 2016 represent a 4.6% decrease from 2005 level (reduction of 34 Mt from the baseline of 738 Mt in 2005).</p> <p>The values are based on data from Canada's 2018 National Inventory Report submitted to the United Nations Framework Convention on Climate Change. They are a sum of greenhouse gas emissions from the following sectors: transportation, electricity, oil and gas, heavy industry, buildings, agriculture, and waste and others (includes coal production, light manufacturing, construction and forest resources).</p> <p>The annual emissions are recalculated at each new inventory update. Hence previous year's estimates have been updated in this report.</p>					
Improved air quality in Canada	Percentage of the Canadian population living in areas where the 24-hour and the annual Canadian Ambient Air Quality Standard (CAAQS) for fine particulate matter (PM _{2.5}) of 28 µg/m ³ and 10 µg/m ³ are achieved	Percentage increase over time	March 2018	91% of monitoring stations for the period 2014 to 2016	92% of monitoring stations for the period 2013 to 2015	96% of monitoring stations for the period 2012 to 2014
	<p>Indicator methodology is under development. In the interim, a proxy indicator is used: the percentage of monitoring stations of the National Air Pollution Surveillance program where measured outdoor concentrations of fine particulate matter are below the 24-hour and the annual CAAQS for 2015.</p> <p>Fine particulate matter is a major component of smog and has been linked to adverse effects on human health and the environment. The indicator result is affected by weather conditions, local and transboundary emissions of air pollutants, as well as changes in natural events such as forest fires. As these factors change between years, so may the result.</p>					
	Percentage of the Canadian population living in areas where the 8-hour Canadian Ambient Air Quality Standard (CAAQS) for ground-level ozone of 63 parts per billion (ppb) is achieved	Percentage increase over time	March 2018	88% of monitoring stations for the period 2014–2016	88% of monitoring stations for the period 2013–2015	82% of monitoring stations for the period 2012–2014
<p>Indicator methodology is under development. In the interim, a proxy indicator is used: the percentage of monitoring stations of the National Air Pollution Surveillance program where measured outdoor concentrations of ground-level ozone are below the 8-hour CAAQS for 2015. Ground level ozone is a highly irritating gas and is a major component of smog. It has been linked to adverse effects on human health and the environment.</p>						

Budgetary Financial Resources (dollars)

2017-18 Main Estimates	2017-18 Planned Spending	2017-18 Total Authorities Available for Use	2017-18 Actual Spending (authorities used)	2017-18 Difference (actual minus planned)
147,118,686	147,118,686	339,538,691	228,206,537	81,087,851

Human Resources (FTEs)

2017-18 Planned	2017-18 Actual	2017-18 Difference (actual minus planned)
813	849	36

Program 3.3: Compliance Promotion and Enforcement – Pollution

Program Description

This program contributes to minimizing damage and threats to the natural environment and biodiversity through the promotion and enforcement of legislation administered by Environment and Climate Change Canada. Activities focus on pollution, including the release of toxic substances to air, water or land, and the import and export of hazardous waste that presents a risk to the environment and/or human health. The program maintains a contingent of compliance promotion and enforcement officers. Compliance promotion officers deliver activities to increase regulatees' awareness, understanding and compliance with regulations and other risk management instruments under the Canadian Environmental Protection Act, 1999 and the Fisheries Act, with the goal of increasing effectiveness in achieving desired environmental results. They also provide information on risk management instrument requirements, the benefits of compliance and the potential penalties of non-compliance, when applicable. Enforcement officers, on the other hand, conduct inspections to verify compliance with laws and regulations, gather intelligence, take enforcement action to bring offenders back into compliance, and pursue investigations where necessary. This program collaborates with international and domestic partners to strengthen transboundary environmental enforcement. Officers are provided training and are often supported by scientific analyses and expertise, including science advice to support enforcement actions. In addition, the program is supported by scientific analysis and expertise for the development and implementation of new and updated regulations.

Results

(See also Program 1.4 Compliance Promotion and Enforcement – Wildlife)



ECCE conducted inspections and took enforcement measures under the Canadian Environmental Protection Act, 1999 (CEPA 1999) and the Fisheries Act, and promoted compliance with pollution-related regulations and other risk management tools, such as codes of practice and guidelines.

As part of an initiative to modernize and strengthen enforcement provisions, new regulations under the

Environmental Enforcement Act (EEA) came into effect. The Administrative Monetary Penalties (AMPs) Regulations provide ECCE enforcement officers the authority to issue monetary penalties, with resulting monies directed to the [Environmental Damages Fund](#)^{xlix}.

To better deter violators and strengthen environmental protection, minimum and maximum penalties for environmental infractions were also increased through changes to the EEA. Among the largest fines in 2017–2018 were a [\\$3.5 million fine](#)ⁱ for releasing millions of litres of contaminated water into the Apetowun and Plante Creeks, and a [\\$2.5 million fine](#)ⁱⁱ for violations under the Fisheries Act and CEPA 1999.

The department's enforcement capacity was strengthened to support increasingly complex environmental crime investigations through the creation of the Investigative Support Team. The team's success was recognized with an award for Contribution to Innovation in a Regulatory Field by the Community of Federal Regulators.

A five-year (2013–14 to 2017–18) review of compliance with regulations, as determined through targeted inspections, showed that rates of non-compliance with CEPA 1999 regulations and Fisheries Act regulations averaged 25% and 15%, respectively. Since 2013–14, rates of non-compliance have increased by 2 percentage points for CEPA 1999 regulations and by 6 percentage points for Fisheries Act regulations.

PROMOTING COMPLIANCE WITH AND ENFORCING POLLUTION MEASURES: by the numbers...

In 2017–18, ECCE:

- Promoted compliance with 14 pollution-related instruments reaching nearly 30,000 members of the communities subject to the instruments.
- Conducted 3600 inspections and 400 investigations to verify compliance with pollution regulations.
- Inspections and investigations resulted in some 600 enforcement measures (such as tickets, directions, warnings and environmental protection compliance orders) for over 3,000 violations.
- Successfully prosecuted 21 infractions under CEPA 1999 totalling \$2 million in 2017-18; and 11 under the Fisheries Act, totalling over \$8.25 million (in penalties, fines, and contributions) to the Environmental Damages Fund.

Commitment to Experimentation: Standardizing Sentencing Recommendations

ECCC continued its initiative to standardize sentencing recommendations with the view to increasing penalties under the Canadian Environmental Protection Act 1999 (CEPA 1999), and the Fisheries Act. While the initiative will continue for another year, preliminary results have shown excellent progress. In 2017–18, the total fine amount was \$10.47 million—up 132% over annual averages in the previous five years. The median fine amount was \$35,000 in 2017–18—up 8% over the median fine average over the previous five years. However, given the variability in case severity and conclusions from year to year, and since the initiative is still in progress and constantly evolving, these results could differ in the next fiscal year. Creative sentencing and court orders is also on the rise, compelling companies to make investments and change processes to decrease or stop harmful releases into the environment. Due to this initiative, sentencing recommendations are better articulated based on case law.

Results achieved

Expected Results	Performance Indicator	Target	Date to achieve target	2017–18 Actual results	2016–17 Actual results	2015–16 Actual results
Compliance with pollution laws and regulations administered by Environment and Climate Change Canada	Percentage increase in compliance with pollution-related sections of selected laws and regulations in response to targeted enforcement or compliance promotion efforts	10% increase in compliance (Chlorinated water releases from drinking water treatment plants)	March 2019	Chlorinated Water Releases from Water Treatment Plants: verified that 93% of regulatees were either compliant or not subject to the Act *	Wastewater Systems Effluent Regulations: 12% (increase from 2014–15 baseline of 59% to 71% in 2016–17)	Dry-cleaning Regulations: 12% (increase from 2012–13 baseline of 51% to 63% in 2015–16)
<p>This indicator measures compliance with pollution laws in Canada by focusing on different pollution-related regulations in different reporting years. This approach provides Canadians with information on a variety of sectors focusing on those with higher risk of non-compliance. While only a few regulations are the subject of comprehensive compliance rate evaluation, ECCC collects compliance information for all regulations on a regular basis.</p> <p>* The first phase of the project found that 93% of municipalities inspected were either compliant or not subject to the pollution prevention provisions of the Fisheries Act. Since the baseline compliance value exceeded 90%, it was deemed prudent to re-direct enforcement resources to higher risk areas. Remaining cases of non-compliance will be addressed, as required, with use of compliance promotion and/or enforcement measures. As a result of this project, the Compliance Promotion and Enforcement - Pollution Program has gathered valuable intelligence on this sector and will apply the lessons learned to enhance future project development and implementation.</p>						

Budgetary Financial Resources (dollars)

2017–18 Main Estimates	2017–18 Planned Spending	2017–18 Total Authorities Available for Use	2017–18 Actual Spending (authorities used)	2017–18 Difference (actual minus planned)
41,696,948	41,696,948	45,341,572	44,627,307	2,930,359

Human Resources (FTEs)

2017–18 Planned	2017–18 Actual	2017–18 Difference (actual minus planned)
353	342	-11

Information on the Environment and Climate Change Canada's lower-level programs is available in the GC's [InfoBase](#)ⁱⁱⁱ.

Internal Services

Description

Internal Services are those groups of related activities and resources that the federal government considers to be services in support of programs and/or required to meet corporate obligations of an organization. Internal services refers to activities and resources of the 10 distinct service categories that support program delivery in the organization, regardless of the Internal Services delivery model in a department. The 10 service categories are: Management and Oversight Services; Communications Services; Legal Services; Human Resources Management Services; Financial Management Services; Information Management Services; Information Management Services; Information Technology Services; Real Property Services; Material Services; and Acquisition Services.

Results

ECCC's internal services continued to focus on delivering results on departmental priorities while aligning with government-wide system changes and improvements.

The department strengthened its capacity for financial forecasting, including improved accuracy of forecasts, and the ability to provide real-time information to decisions makers across the department.

The department developed a five-year plan for investment that identifies ECCC's targeted investments in strategic priorities, including in real property, transportation to support the Government of Canada's Greening Government Strategy, and Information Management in support of Canada's [Open Government](#)^{liii} Agenda.

The department's communication services supported both development and testing of ECCC's first-ever mobile weather app. Beta testing continued throughout the year.

In support of a healthy workplace and a strong and committed workforce, the department continued to strengthen its mental health and diversity efforts. Human resource services developed a new ECCC mental health strategy to support employees, and the department adopted [Not Myself Today](#)^{liv}, an evidence-based workplace mental health initiative. In addition, ECCC continued to address the needs of employees experiencing the effects of the government-wide pay transformation.

Considering the Impacts of Gender, plus...

To further the Government of Canada's commitment to more fully consider the impacts of federal actions on people of different sex and gender identities, ages, abilities, cultures and other identities, ECCC began to apply GBA+ (gender-based analysis plus) to assess how diverse groups may be impacted by policies, programs and initiatives.

To accelerate implementation of GBA+ initiatives within the department, ECCC established a GBA+ Advisory Network, and a GBA+ Centre of Expertise, and set clear strategic goals for planning and reporting on progress, training and building capacity, enhancing accountability, and increasing awareness—all of which is aimed at promoting GBA+ at all levels of decision making at ECCC and building a culture of inclusivity.

Budgetary Financial Resources (dollars)

2017–18 Main Estimates	2017–18 Planned Spending	2017–18 Total Authorities Available for Use	2017–18 Actual Spending (authorities used)	2017–18 Difference (actual minus planned)
194,931,405	194,931,405	228,469,302	227,849,281	32,917,876

Human Resources (FTEs)

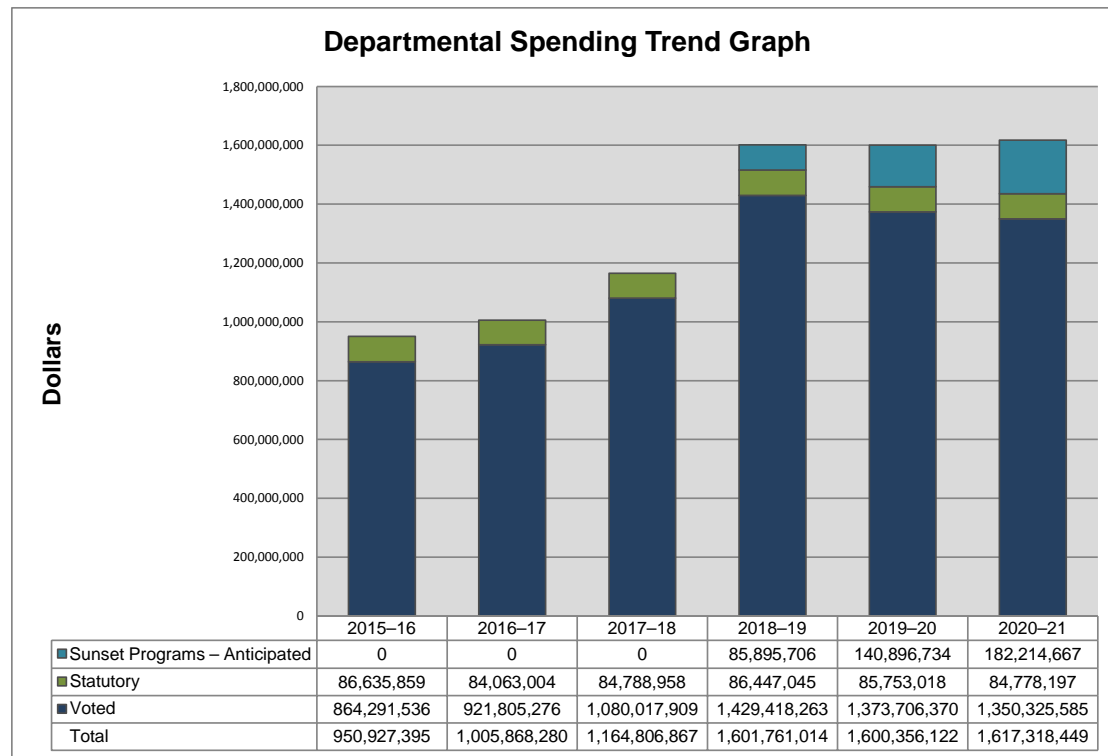
2017–18 Planned	2017–18 Actual	2017–18 Difference (actual minus planned)
1,443	1,476	33

Analysis of trends in spending and human resources

Actual expenditures

Departmental spending trend graph

The following chart depicts the departmental spending trend over a six-year period. For fiscal years 2015–16, 2016–17 and 2017–18, the amounts shown represent the actual expenditures as reported in the Public Accounts. For fiscal year 2018–19, 2019–20 and 2020–21, the planned spending represents the planned budgetary and statutory expenditures as presented in the 2018–19 Departmental Plan.



Environment and Climate Change Canada's actual spending for 2017–18 was \$1,164.8 million, a year-over-year increase of \$158.9 million (15.8%) from the 2016–17 actual spending. This increase is mainly due to the increase of salary payments to employees following the ratification and signing of some collective agreements in 2017–18 and temporary initiatives such as: the Green Municipal Fund, activities related to Clean Growth and Climate Change, the Revitalization of Canada's Weather Radar Network, the Low Carbon Economy Fund, the Great Lakes and Lake Winnipeg Basin program and the Contaminated Sediment Remediation Projects.

See the [2016–17 Departmental Results Report^{iv}](#) (DRR) for additional details on year-over-year actual spending variances between 2015–16 and 2016–17.

For 2018–19 to 2020–21, the figures represent total planned spending for the fiscal year, which reflects approved funding by Treasury Board, at the time of the 2018–19 Departmental Plan, to support the departmental strategic outcomes. Planned spending in Voted authorities from 2018–19 to 2020–21 is declining, mainly as a result of reduced funding profile for major initiatives and sunseting program, including the following:

Major initiatives sunsetting in 2018–19:

- National Conservation Plan;
- Youth Employment Strategy (incremental funding); and
- Contaminated Sediment Remediation Projects.

Major initiatives sunsetting in 2019–20:

- Federal Contaminated Sites Action Plan; and
- Major Projects Management Office

Statutory authorities from 2018–19 to 2020–21 are fairly stable from one year to the other.

The Sunset Programs – Anticipated for 2018–19 to 2020–21 mostly reflect announcements in Budget 2017 and Budget 2018 that are not yet reflected in voted reference levels for those years, such as Nature Legacy for Canada, but are provided to give a more complete picture of the planned spending of the department.

See the [2018–19 Departmental Plan](#)^{vi} (DP) for additional details on year-over-year planned spending variances between 2018–19 and 2020–21.

Budgetary performance summary for Programs and Internal Services (dollars)

Strategic Outcomes	Programs and Internal Services	2017–18 Main Estimates	2017–18 Planned Spending	2018–19 Planned Spending ⁴	2019–20 Planned Spending ⁴	2017–18 Total Authorities Available for Use	2017–18 Actual Spending (authorities used)	2016–17 Actual Spending (authorities used)	2015–16 Actual Spending (authorities used)
SO 1: Canada's natural environment is conserved and restored for present and future generations	1.1 Biodiversity - Wildlife and Habitat	135,322,453	135,322,453	N/A	N/A	160,414,883	159,446,462	153,035,992	150,399,093
	1.2 Water Resources	69,722,840	69,722,840	N/A	N/A	83,401,908	81,868,848	70,732,520	81,784,289
	1.3 Sustainable Ecosystems	84,520,845	84,520,845	N/A	N/A	110,739,990	103,586,093	98,446,872	78,790,925
	1.4 Compliance Promotion and Enforcement - Wildlife	16,297,080	16,297,080	N/A	N/A	18,866,900	18,680,551	17,511,301	19,971,764
SO 2: Canadians are equipped to make informed decisions on changing weather, water and climate conditions	2.1 Weather and Environmental Services for Canadians	194,578,410	194,578,410	N/A	N/A	206,354,069	190,036,449	180,123,302	181,347,768
	2.2 Weather and Environmental Services for Targeted Users	18,728,707	18,728,707	N/A	N/A	26,808,606	18,913,509	15,643,525	15,321,848
SO 3: Threats to Canadians and their environment from pollution are minimized	3.1 Substances and Waste Management	84,357,041	84,357,041	N/A	N/A	97,006,879	91,591,830	87,801,448	83,529,612
	3.2 Climate Change and Clean Air	147,118,686	147,118,686	N/A	N/A	339,538,691	228,206,537	149,504,223	119,607,526
	3.3 Compliance Promotion and Enforcement - Pollution	41,696,948	41,696,948	N/A	N/A	45,341,572	44,627,307	40,339,332	40,634,373
Subtotal		792,343,010	792,343,010	1,318,871,110	1,263,642,077	1,088,473,498	936,957,586	813,138,515	771,387,198
Internal Services		194,931,405	194,931,405	196,994,198	195,817,311	228,469,302	227,849,281	192,729,765	179,540,197
Total		987,274,415	987,274,415	1,515,865,308	1,459,459,388	1,316,942,800	1,164,806,867	1,005,868,280	950,927,395

⁴ As of 2018–19, ECCC will no longer report using the Program Alignment Architecture (PAA) due to its conversion to the Departmental Results Framework (DRF). Therefore a breakdown of planned spending amounts by PAA is not available

The 2017–18 planned spending figures in the Departmental Results Report (DRR) reflect those that had been published in the 2017–18 DP. It was tabled in Parliament prior to Budget 2017 and therefore, does not reflect new funding announced in the Budget. The 2018–19 and 2019–20 planned spending figures could not be provided in the DRR by program due to the conversion to the Departmental Results Framework in 2018–19.

The 2017–18 Total authorities available for use includes all items approved through the Estimates processes for fiscal year 2017–18. The overall variance of \$329.6 million between the 2017–18 Total authorities available for use (\$1,316.9 million) and the 2017–18 planned spending (\$987.3 million) is mainly attributed to an increase in authorities due to compensation allocations for the signature of the collective agreements, the Operating and Capital Budget Carry Forwards, as well as the Budget 2016 and 2017 announcements related to the following initiatives:

- Low Carbon Economy Fund;
- Green Municipal Fund;
- Oceans Protection Plan;
- Youth Employment Strategy; and
- Great Lakes and Lake Winnipeg Basin program.

The overall \$152.1 million variance between the 2017–18 Total authorities available for use (\$1,316.9 million) and 2017–18 Actual spending (\$1,164.8 million) is mostly explained by the following:

- The Low Carbon Economy Fund, as the Provinces and Territories have been delayed in submitting proposals to access the funding notionally allocated to them. Therefore, less spending than anticipated occurred in 2017–18;
- Funding being moved into future years for the Contaminated Sediment Remediation Projects and the Revitalization of Canada's Weather Services;
- Unspent funds in the Operating vote being carried forward to 2018–19 to provide the department with additional flexibility it requires to fund pressures and address strategic investments; and
- Unspent funds in the Capital vote being carried forward to 2018–19 to continue implementing activities mainly related to the Revitalization of Canada's Weather Services, World Class Oil Spill Regime and Addressing Air Pollution.

The overall \$158.9 million increase between the 2016–17 Actual spending of \$1,005.9 million and the 2017–18 Actual spending of \$1,164.8 million is mainly due to the following variances in funding:

- Strategic Outcome 1: The actual spending for 2017–18 is higher than the actual spending for 2016–17 mainly due to the increase of salary payments to employees following the ratification and signing of some collective agreements in 2017–18, as well as additional spending related to the Great Lakes and Lake Winnipeg Basin program, the Contaminated Sediment Remediation projects and Youth Employment Strategy. These increases have been offset by the completion of the Lake Simcoe initiative.
- Strategic Outcome 2: The actual spending for 2017–18 is higher than the actual spending for 2016–17 mainly due to the increase of salary payments to employees following the ratification and signing of some collective agreements in 2017–18, as well as additional spending related to the Revitalization of Canada's Weather Radar Network and activities related to Clean Growth and Climate Change. These increases have been offset by a decrease for the Federal Infrastructure initiative.
- Strategic Outcome 3: The actual spending for 2017–18 is higher than the actual spending for 2016–17 mainly due to an increase in permanent salary expenditures due to the signing of collective agreements, as well as additional spending related to the Green Municipal Fund, activities related to Clean Growth and Climate Change, the Low Carbon Economy Fund and Oceans Protection Plan. These increases are offset by a decrease due to the transfer of responsibilities of the Canada Foundation for Sustainable Development Technology to Innovation, Science and Economic Development Canada.
- Internal Services: The actual spending for 2017–18 is higher than the actual spending for 2016–17 mainly due to the increase of salary payments to employees following the ratification and signing of some collective agreements, as well as an increase in rent payments made for the Pacific Environmental Centre in West Vancouver.

Actual human resources

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

Strategic Outcomes	Programs and Internal Services	2015–16 Actual	2016–17 Actual	2017–18 Planned	2017–18 Actual	2018–19 Planned ⁵	2019–20 Planned ⁵
SO 1: Canada's natural environment is conserved and restored for present and future generations	1.1 Biodiversity - Wildlife and Habitat	600	614	546	635	N/A	N/A
	1.2 Water Resources	694	602	598	602	N/A	N/A
	1.3 Sustainable Ecosystems	371	416	422	432	N/A	N/A
	1.4 Compliance Promotion and Enforcement - Wildlife	131	139	128	133	N/A	N/A
SO 2: Canadians are equipped to make informed decisions on changing weather, water and climate conditions	2.1 Weather and Environmental Services for Canadians	1,108	1,097	1,072	1,085	N/A	N/A
	2.2 Weather and Environmental Services for Targeted Users	351	332	371	336	N/A	N/A
SO 3: Threats to Canadians and their environment from pollution are minimized	3.1 Substances and Waste Management	632	625	629	642	N/A	N/A
	3.2 Climate Change and Clean Air	670	727	813	849	N/A	N/A
	3.3 Compliance Promotion and Enforcement - Pollution	336	340	353	342	N/A	N/A
Subtotal		4,893	4,892	4,932	5,055	4,880	4,763
Internal Services		1,429	1,433	1,443	1,476	1,388	1,363
Total		6,322	6,325	6,375	6,530	6,268	6,126

The variance between actual and planned full-time equivalents (FTE) for 2017–18 is mainly due to an increase in salary authorities during the fiscal year related to Oceans Protection Plan, Great Lakes and Lake Winnipeg Basin program and Low Carbon Economy Fund.

⁵ As of 2018–19, ECCC will no longer report using the Program Alignment Architecture (PAA) due to its conversion to the Departmental Results Framework (DRF). Therefore a breakdown of planned human resources by PAA is not available.

Expenditures by vote

For information on Environment and Climate Change Canada's organizational votes and statutory expenditures, please consult the [Public Accounts of Canada^{lvii}](#).

Government of Canada spending and activities

Information on the alignment of Environment and Climate Change Canada's spending with the Government of Canada's spending and activities is available in the [GC InfoBase^{lviii}](#).

Financial statements and financial statements highlights

Financial statements

The Environment and Climate Change Canada's financial Statements unaudited for the year ended March 31, 2018, are available on the departmental [website^{lix}](#).

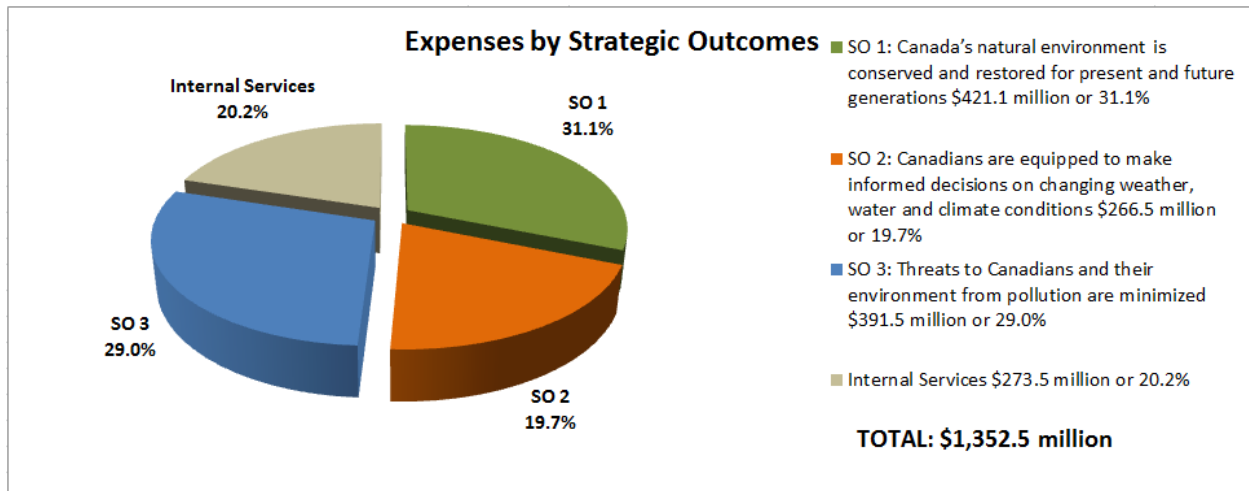
Financial statements highlights

Condensed Statement of Operations (unaudited) For the Year Ended March 31, 2018 (dollars)					
Financial Information	2017-18 Planned Results	2017-18 Actual	2016-17 Actual	Difference (2017-18 actual minus 2017-18 planned)	Difference (2017-18 actual minus 2016-17 actual)
Total expenses	1,140,529,784	1,352,539,567	1,189,506,240	212,009,783	163,033,327
Total revenues	79,531,146	92,400,385	85,404,035	12,869,239	6,996,350
Net cost of operations before government funding and transfers	1,060,998,638	1,260,139,182	1,104,102,205	199,140,544	156,036,977

Expenses by Strategic Outcomes

Total departmental expenses by Strategic Outcomes amounted to \$1,352.5 million for 2017–18 (\$1,189.5 million for 2016–17). The increase of \$163.0 million or 13.7 percent in Environment and Climate Change Canada's expenses is mainly attributable to:

- an increase in salary expenditures mostly due to the signing of collective agreements in 2017-18;
- an increase in expenditures related to the adjustment to the liabilities for vacation pay and compensatory leave. This is due to the numerous collective agreements being signed in 2017-18 and the increase in number of Environment and Climate Change Canada (ECCC) employees;
- an increase in spending for temporary initiatives such as the Green Municipal Fund, the Clean Growth and Climate Change, the Low Carbon Economy Fund, the Great Lakes and Lake Winnipeg basin program, the Contaminated Sediment Remediation projects, the Oceans Protection Plan and the Youth Employment Strategy;
- an increase in rental expenses at the Pacific Environmental Centre.
- The increase is offset by a decrease in spending for temporary initiatives such as the Canada Foundation for Sustainable Development Technology, the Federal Infrastructure Initiative and the Lake Simcoe.



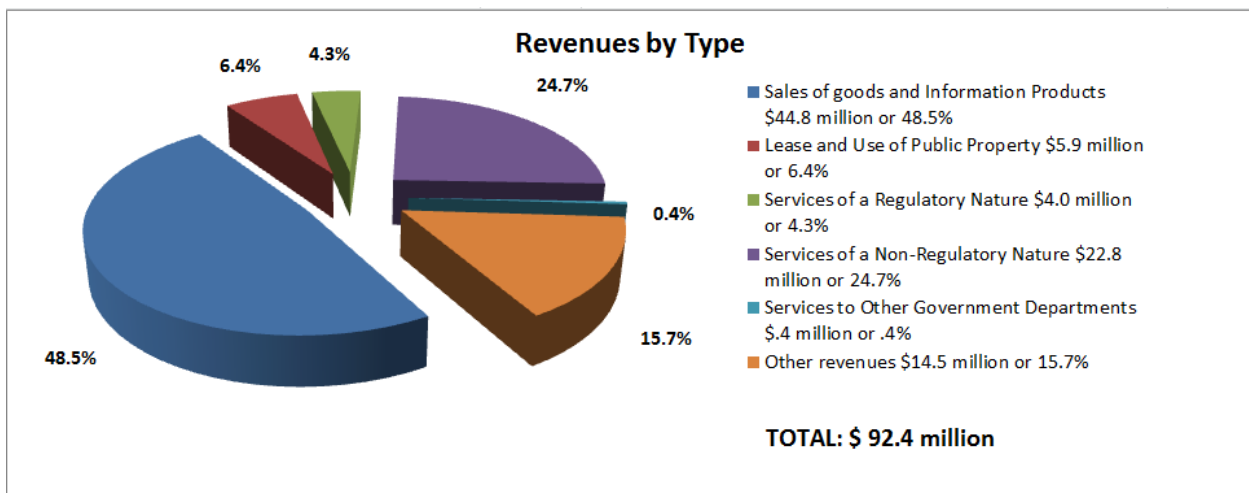
See Note 16 of the Departmental Financial Statements for further breakdown of expenditures – Segmented information by Standard Objects and Strategic Outcomes.

Revenues by Type

Total revenues amounted to \$92.4 million for 2017–18 (\$85.4 million for 2016–17). This amount excludes \$10.3 million earned on behalf of Government. The majority of the revenue in 2017–18 is derived from ECCC's sales of goods and information products and services of a non-regulatory nature. Major revenue items include, for example: oil sands monitoring activities, ocean disposal permit applications, hydrometric services, ocean disposal monitoring fees and weather and environmental services.

The increase in ECCC's revenues is mainly attributable to:

- an increase in the amount invoiced to the Government of Alberta for the oil sands monitoring activities;
- an increase in projects for the Environmental Damages Fund.



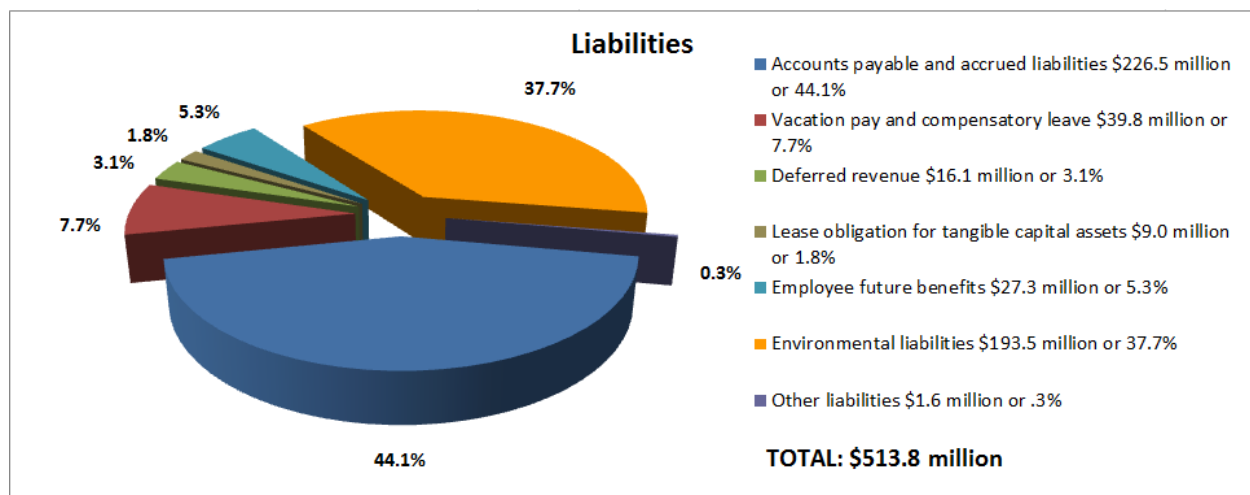
Condensed Statement of Financial Position (unaudited) as at March 31, 2018 (dollars)			
Financial Information	2017–18	2016–17	Difference (2017–18 minus 2016–17)
Total net liabilities	513,809,542	402,133,081	111,676,461
Total net financial assets	246,673,020	158,494,632	88,178,388
Departmental net debt	267,136,522	243,638,449	23,498,073
Total non-financial assets	418,805,976	412,783,493	6,022,483
Departmental net financial position	151,669,454	169,145,044	(17,475,590)

Liabilities by Type

Total liabilities were \$513.8 million at the end of 2017–18. This represents an increase of \$111.7 million or 27.8 percent from the previous year's total liabilities of \$402.1 million. The accounts payable and accrued liabilities (\$226.5 million) and the environmental liabilities (\$193.5 million) are the largest components of liabilities in 2017–18 and represent 81.8 percent of the total liabilities.

The increase in ECCC's total net liabilities valuation is mainly attributable to:

- the increase in accounts payable and accrued liabilities following the payment of \$62.5M in April to the Federation of Canadian Municipalities for the Green Municipal Fund as well as a Payable at year-end of \$7.3M to the Government of British Columbia for the Low Carbon Economy Fund,
- the increase in vacation pay and compensatory leave due to the numerous collective agreements signed in 2017–18 and the increase in the number of ECCC employees; and
- the increase in deferred revenues attributable to more financial activities for Randle Reef Remediation Project.



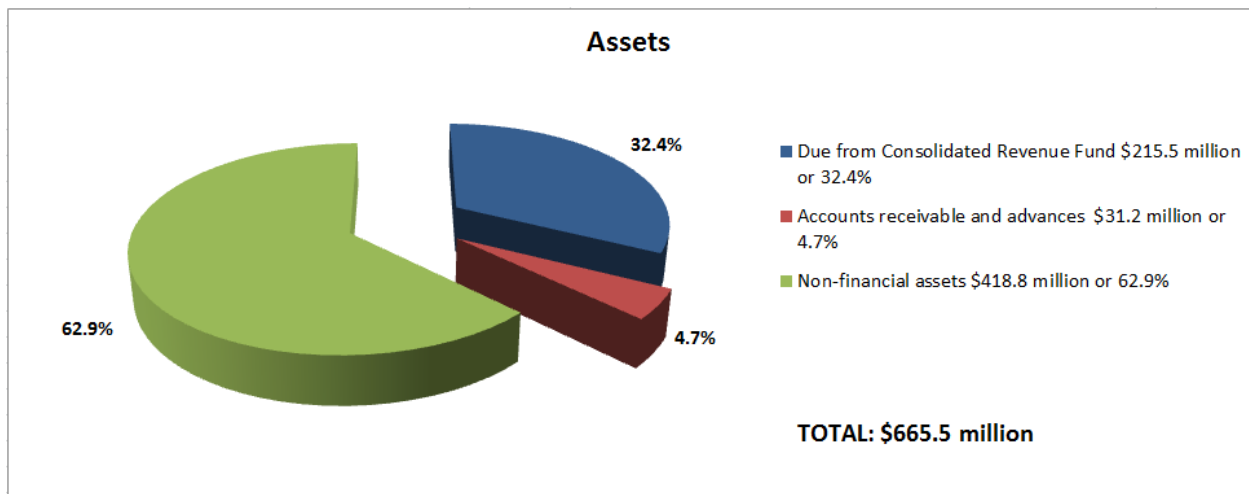
See Notes 4 to 8 and Notes 12 and 13 of the Departmental Financial Statements for more details – Accounts payable and accrued liabilities; Environmental liabilities; Deferred revenue; Lease obligation for tangible capital assets; Employee future benefits; Contractual obligations and contractual rights; Contingent liabilities and contingent assets.

Assets by Type

Total net financial assets (\$246.7 million) and non-financial assets (\$418.8 million), together valued at \$665.5 million, have increased by \$94.2 million or 16.5 percent in 2017–18. The tangible capital assets continue to represent the largest component of assets at \$391.8 million (58.9 percent of total assets) in 2017–18.

The increase in ECCC’s total net assets valuation is mainly attributable to:

- the increase in financial assets due from the Consolidated Revenue Fund which include the payment to the Federation of Canadian Municipalities of \$62.5M for the Green Municipal Fund and a payable at year-end of \$7.3M to the Government of British Columbia for the Low Carbon Economy Fund;
- the increase in accounts receivable resulting from the salary overpayment in Phoenix; and
- the increase in tangible capital assets for the Revitalization of Canada’s Weather Radar Network.



See Notes 9 to 11 of the Departmental Financial Statements for more details – Accounts receivable and advances; Inventory; Tangible Capital Assets.

Supplementary information

Corporate information

Organizational profile

Appropriate minister:	The Honourable Catherine McKenna, P.C., M.P.
Institutional head:	Dr. Stephen Lucas
Ministerial portfolio:	Environment and Climate Change Canada
Enabling instruments:	<ul style="list-style-type: none"> • Department of the Environment Act^{lx} • Canadian Environmental Protection Act, 1999^{lxi} • Species at Risk Act^{lxii} • International River Improvements Act^{lxiii} • Canada Water Act^{lxiv} • The Lake of the Woods Control Board Act, 1921^{lxv} • Fisheries Act^{lxvi} (administration and enforcement of the Pollution Prevention Provisions) • Antarctic Environmental Protection Act^{lxvii} • Migratory Birds Convention Act, 1994^{lxviii} • Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act^{lxix} • Canada Wildlife Act^{lxx} • Federal Sustainable Development Act^{lxxi} • Canadian Environmental Assessment Act, 2012^{lxxii} • Environmental Violations Administrative Monetary Penalties Act^{lxxiii} • National Wildlife Week Act^{lxxiv} • Canadian Environmental Week Act^{lxxv}
Year of incorporation/commencement:	1971

Reporting framework

The Environment and Climate Change Canada's Strategic Outcomes and Program Alignment Architecture of record for 2017–18 are shown below.

1. **Strategic Outcome:** Canada's natural environment is conserved and restored for present and future generations
 - 1.1 **Program:** Biodiversity – Wildlife and Habitat
 - 1.1.1 **Sub-Program:** Biodiversity Policy and Priorities
 - 1.1.2 **Sub-Program:** Species at Risk
 - 1.1.3 **Sub-Program:** Migratory Birds
 - 1.1.4 **Sub-Program:** Habitat Conservation Partnerships
 - 1.1.5 **Sub-Program:** Protected Areas
 - 1.2 **Program:** Water Resources
 - 1.2.1 **Sub-Program:** Water Quality and Aquatic Ecosystems Health
 - 1.2.2 **Sub-Program:** Water Resource Management and Use
 - 1.2.3 **Sub-Program:** Hydrometric Services
 - 1.3 **Program:** Sustainable Ecosystems
 - 1.3.1 **Sub-Program:** Sustainability Reporting and Indicators
 - 1.3.2 **Sub-Program:** Ecosystem and Environmental Assessments and Monitoring
 - 1.3.3 **Sub-Program:** Community Engagement
 - 1.3.3.1 **Sub-Sub-Program:** EcoAction Community Funding
 - 1.3.3.2 **Sub-Sub-Program:** Environmental Damages Fund
 - 1.3.3.3 **Sub-Sub-Program:** Environmental Youth Employment
 - 1.3.4 **Sub-Program:** Great Lakes
 - 1.3.5 **Sub-Program:** St. Lawrence
 - 1.3.6 **Sub-Program:** Lake Simcoe/South-eastern Georgian Bay
 - 1.3.7 **Sub-Program:** Lake Winnipeg
 - 1.3.8 **Sub-Program:** Ecosystems Partnerships
 - 1.4 **Program:** Compliance Promotion and Enforcement – Wildlife
2. **Strategic Outcome:** Canadians are equipped to make informed decisions on changing weather, water and climate conditions
 - 2.1 **Program:** Weather and Environmental Services for Canadians
 - 2.1.1 **Sub-Program:** Weather and Environmental Observations, Forecasts and Warnings
 - 2.1.2 **Sub-Program:** Health-related Meteorological Information
 - 2.1.3 **Sub-Program:** Climate Information, Predictions and Tools
 - 2.2 **Program:** Weather and Environmental Services for Targeted Users
 - 2.2.1 **Sub-Program:** Meteorological Services in Support of Air Navigation
 - 2.2.2 **Sub-Program:** Meteorological and Ice Services in Support of Marine Navigation
 - 2.2.3 **Sub-Program:** Meteorological Services in Support of Military Operations
3. **Strategic Outcome:** Threats to Canadians and their environment from pollution are minimized.
 - 3.1 **Program:** Substances and Waste Management
 - 3.1.1 **Sub-Program:** Substances Management
 - 3.1.2 **Sub-Program:** Effluent Management
 - 3.1.3 **Sub-Program:** Marine Pollution
 - 3.1.4 **Sub-Program:** Environmental Emergencies
 - 3.1.5 **Sub-Program:** Contaminated Sites

3.2 Program: Climate Change and Clean Air

3.2.1 Sub-Program: Climate Change and Clean Air Regulatory Program

3.2.1.1 Sub-Sub-Program: Industrial Sector Emissions

3.2.1.2 Sub-Sub-Program: Transportation Sector Emissions

3.2.2 Sub-Program: International Climate Change and Clean Air Partnerships

3.2.3 Sub-Program: Environmental Technology

3.3 Program: Compliance Promotion and Enforcement – Pollution

Internal Services

Supporting information on lower-level programs

Supporting information on lower-level programs is available on the [GC InfoBase](#)^{lxxvi}.

Supplementary information tables

The following supplementary information tables are available on Environment and Climate Change Canada's [website](#)^{lxxvii}.

- Departmental Sustainable Development Strategy;
- Details on Transfer Payment Programs of \$5 million or more;
- Evaluations
- Fees
- Horizontal Initiatives;
- Internal Audits;
- Response to Parliamentary Committees and External Audits;
- Status Report on Transformational and Major Crown Projects; and
- 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 Tax Expenditures](#)^{lxxviii}. This report also provides detailed background information 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

Environment and Climate Change Canada
Inquiry Centre
Tel.: 1-800-668-6767 (in Canada only) or 819-997-2800
Fax: 819-994-1412
Email: ec.enviroinfo.ec@canada.ca

Appendix: 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.

Evaluation (évaluation)

In the Government of Canada, the systematic and neutral collection and analysis of evidence to judge merit, worth or value. Evaluation informs decision making, improvements, innovation and accountability. Evaluations typically focus on programs, policies and priorities and examine questions related to relevance, effectiveness and efficiency. Depending on user needs, however, evaluations can also examine other units, themes and issues, including alternatives to existing interventions. Evaluations generally employ social science research methods.

experimentation (expérimentation)

Activities that seek to explore, test and compare the effects and impacts of policies, interventions and approaches, to inform evidence-based decision-making, by learning what works and what does not.

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.

gender-based analysis plus (GBA+) (analyse comparative entre les sexes plus [ACS+])

An analytical approach used to assess how diverse groups of women, men and gender-diverse people may experience policies, programs and initiatives. The "plus" in GBA+ acknowledges that the gender-based analysis goes beyond biological (sex) and socio-cultural (gender) differences. We all have multiple identity factors that intersect to make us who we are; GBA+ considers many other identity factors, such as race, ethnicity, religion, age, and mental or physical disability. Examples of GBA+ processes include using

data disaggregated by sex, gender and other intersecting identity factors in performance analysis, and identifying any impacts of the program on diverse groups of people, with a view to adjusting these initiatives to make them more inclusive.

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)

An initiative where two or more departments are given funding to pursue a shared outcome, often linked to a government priority.

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 (plans)

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 (résultat)

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 Acts and regulations: www.ec.gc.ca/default.asp?lang=En&n=48D356C1-1
- ⁱⁱ Minister's mandate letter: pm.gc.ca/eng/minister-environment-and-climate-change-mandate-letter
- ⁱⁱⁱ Committee on the Status of Endangered Wildlife in Canada: www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html
- ^{iv} Action Plan: www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=93311150-1
- ^v Wild Species 2015: www.registrelep-sararegistry.gc.ca/document/default_e.cfm?documentID=3174
- ^{vi} wateroffice.ca: wateroffice.ec.gc.ca/
- ^{vii} Evaluation of ECCC's Water Quality and Aquatic Ecosystems Health Program: www.canada.ca/en/environment-climate-change/corporate/transparency/corporate-management-reporting/evaluations/evaluation-water-quality-aquatic-ecosystems-health-program.html
- ^{viii} 2017 State of the Great Lakes Report: binational.net/wp-content/uploads/2017/06/SOGL_17-EN.pdf
- ^{ix} Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health: ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=B903EE0D-1&wbdisable=true
- ^x Canada-U.S. Great Lakes Water Quality Agreement: www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-countries-regions/north-america/great-lakes-water-quality-agreement.html
- ^{xi} Canada-Ontario Lake Erie Action Plan: www.canada.ca/en/environment-climate-change/services/great-lakes-protection/action-plan-reduce-phosphorus-lake-erie.html
- ^{xii} Great Lakes Areas of Concern: www.canada.ca/en/environment-climate-change/services/great-lakes-protection/areas-concern.html
- ^{xiii} Randle Reef: www.randlereef.ca/
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- ^{xv} Environmental Damages Fund: www.canada.ca/en/environment-climate-change/services/environmental-funding/damages-fund.html
- ^{xvi} Science Horizons Youth Internship Program: www.canada.ca/en/environment-climate-change/services/science-technology/managing/horizons-youth-internship-program.html
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- ^{xviii} Excellence in Collaborative Approaches and Shared Solutions: twitter.com/CFR_CRF/status/1006602102125285376
- ^{xix} Weather.gc.ca: weather.gc.ca/
- ^{xx} Datamart: dd.weather.gc.ca/about_dd_apropos.txt
- ^{xxi} GeoMet: www.canada.ca/en/environment-climate-change/services/weather-general-tools-resources/weather-tools-specialized-data/geospatial-web-services.html
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- ^{xxiii} Canadian Hurricane Centre: www.canada.ca/en/environment-climate-change/services/hurricane-forecasts-facts/canadian-centre.html
- ^{xxiv} Get Prepared: www.getprepared.gc.ca/index-eng.aspx
- ^{xxv} Air Quality Health Index: www.canada.ca/en/environment-climate-change/services/air-quality-health-index.html
- ^{xxvi} Mobile app: open.alberta.ca/interact/aqhi-canada
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- xliv Compendium of Canada's Engagement in International Environmental Agreements: www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/participation-international-environmental-agreements.html
- xlv Canada's climate finance webpage: climate-change.canada.ca/finance/Default.aspx?GoCTemplateCulture=en-CA
- xlvi State of the Air Report: airquality-qualitedelair.ccme.ca/en/
- xlvii highlights on YouTube: www.youtube.com/watch?v=xjW-iezfK0c
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- lv Not Myself Today: www.notmyselftoday.ca/
- lv 2016–17 Departmental Results Report: www.canada.ca/en/environment-climate-change/corporate/transparency/corporate-management-reporting/departmental-results-report/2016-2017/analysis-trends-spending-hr.html
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- lix Departmental website: www.ec.gc.ca/default.asp?lang=En&n=31D9FF32-1
- lx Department of the Environment Act: laws-lois.justice.gc.ca/eng/acts/E-10/index.html
- lxi Canadian Environmental Protection Act, 1999: laws.justice.gc.ca/eng/acts/C-15.31/
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- lxxvii Environment and Climate Change Canada's website: ec.gc.ca/default.asp?lang=En&n=31D9FF32-1
- lxxviii Report on Tax Expenditures: www.fin.gc.ca/purl/taxexp-eng.asp

www.ec.gc.ca

Additional information can be obtained at:

Environment and Climate Change Canada

Public Inquiries Centre

7th floor, Fontaine Building

200, Sacré-Coeur boul.

Gatineau, Québec

K1A 0H3

ec.enviroinfo.ec@canada.ca

Telephone: Toll free: 800-668-6767 (in Canada only) or local 819-997-2800
