



Government  
of Canada

Gouvernement  
du Canada

PLANNING FOR A

# SUSTAINABLE FUTURE

A FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY FOR CANADA  
**2016–2019**



CONSULTATION DRAFT

Canada

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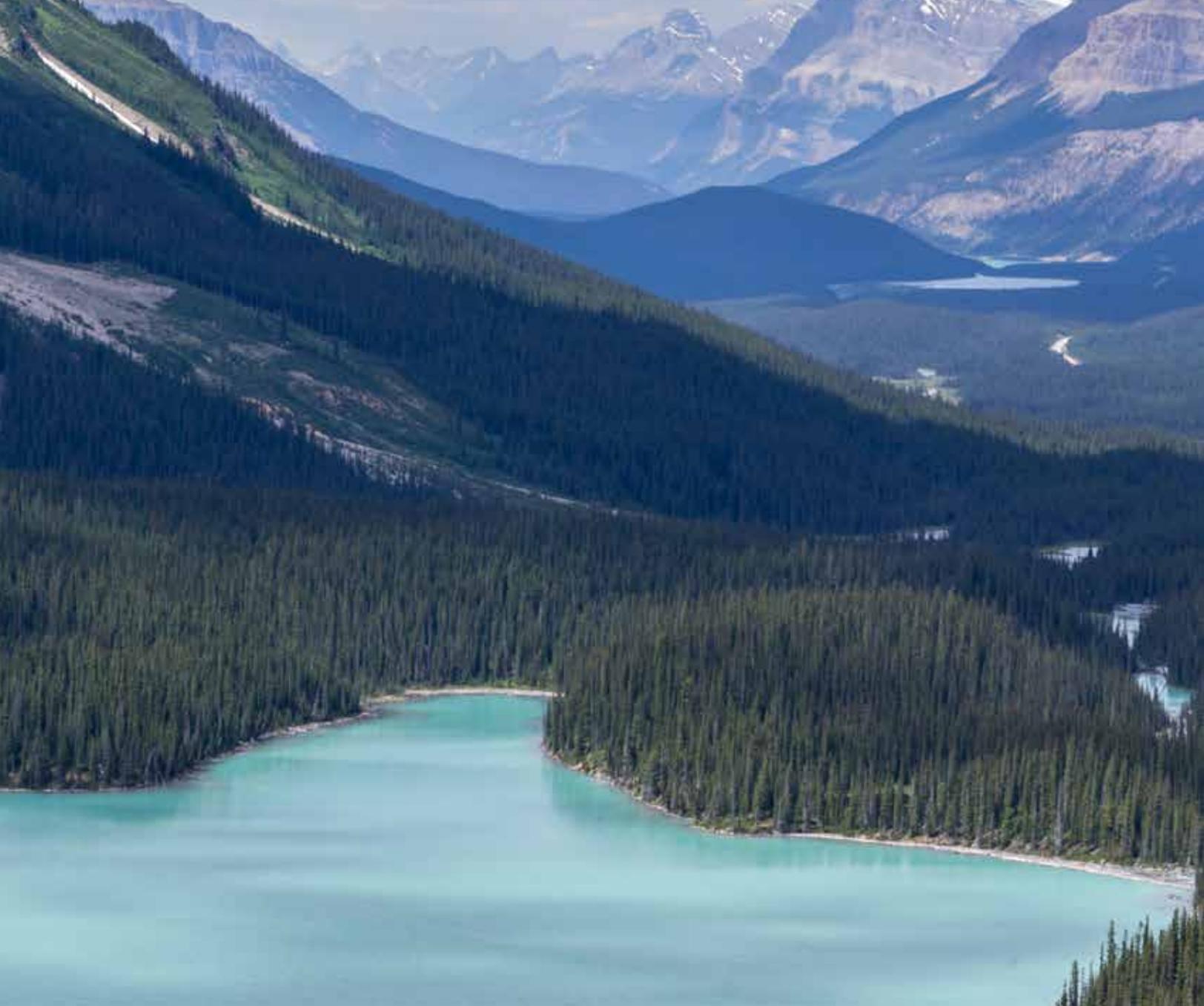
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# TABLE OF CONTENTS

- Message from the Minister** ..... 1
- Executive summary** ..... 3
- Talking with Canadians about a new approach** ..... 4
  - Articulating a sustainable development vision for Canada ..... 5
  - Increasing transparency and accountability by improving our targets and indicators ..... 5
  - Acknowledging the role of the 2030 Agenda’s Sustainable Development Goals ..... 5
  - Recognizing the contribution of our partners ..... 8
- Goal 1: Taking Action on Climate Change** ..... 11
- Goal 2: Clean Technology, Jobs and Innovation** ..... 19
- Goal 3: National Parks, Protected Areas and Ecosystems** ..... 29
- Goal 4: Freshwater and Oceans** ..... 39
- Goal 5: Human Health, Well-being and Quality of Life** ..... 49
- Annex 1: About the Federal Sustainable Development Strategy** ..... 58
  - Legislative basis ..... 58
  - The role of public consultation ..... 58
  - The structure of the strategy ..... 58
  - The FSDS and integrated decision making ..... 59
- Annex 2: Performance measurement** ..... 60
  - FSDS progress reports ..... 60
  - Departmental sustainable development strategies ..... 60
  - Canadian Environmental Sustainability Indicators ..... 60
- Annex 3: Responsibility for greening government operations targets by department/agency** .. 61
- Annex 4: List of departments and agencies and their abbreviations** ..... 62
- Annex 5: List of abbreviations** ..... 63
- References** ..... 64



# MESSAGE FROM THE MINISTER



Since becoming Minister of Environment and Climate Change in November, I have met with Canadians from across the country. I'm humbled at the confidence you have placed in me, as well as your dedication to our environment and a more sustainable future.

We are committed to engaging Canadians as we move forward to deliver on our priorities. The successful Paris Climate Agreement was an example of our approach of working collaboratively. I was proud to lead a delegation that included provinces, municipalities, environmental non-governmental organizations, Indigenous leaders, and youth. Together with countries from around the world, we were able to agree on an ambitious plan to tackle climate change.

This is the same approach that is necessary to develop a shared vision for sustainable development in Canada.

Every three years, the Government of Canada is required to review and update its Federal Sustainable Development Strategy. The strategy is intended to provide Canadians with a whole-of-government view of federal environmental priorities.

For the first time, we are aligning with the 2030 Agenda's Sustainable Development Goals. We believe that it is critical to link our government's sustainable development priorities with those of the international community. In particular, we are focusing on five goals related to federal government action on the environment and sustainable development. These are:

- ◆ Taking Action on Climate Change;
- ◆ Clean Technology, Jobs and Innovation;
- ◆ National Parks, Protected Areas and Ecosystems;
- ◆ Freshwater and Oceans; and
- ◆ Human Health, Well-being and Quality of Life.

But we need your help. Please take a look at the draft and help us improve it. What can the federal government do to ensure a more sustainable future? What environmental sustainability targets should we aim for? How can we best measure and report on them? And what are you doing to meet our sustainable development challenges?

Over the next four months, provide your thoughts and ideas online, through our [e-Strategy](#) or on [Facebook](#) and [Twitter](#). And if you want to learn more about our strategy or share your expertise, join our webinars.

With your help, we will have a stronger plan. Your feedback will ensure that our plan reflects the knowledge and perspectives of Canadians. Your input will help to shape the final strategy and guide future improvements.

This is the beginning of a conversation—a conversation that together will help us ensure a sustainable future for all Canadians.

The Honourable Catherine McKenna  
*Minister of Environment and Climate Change*  
@ec\_minister



# EXECUTIVE SUMMARY

The draft 2016–2019 Federal Sustainable Development Strategy outlines federal government action to create a sustainable economy, protect the environment and enhance Canadians’ well-being for the next three years.

Its main intent is to support engaging Canadians on their views about what a sustainable Canada looks like, what environmental sustainability targets we should aim for, and how we can best measure and report on them.

But it is only a starting place for discussion.

The *Federal Sustainable Development Act* focuses on transparency and accountability. The draft 2016–2019 strategy highlights key considerations for stakeholders in the areas of:

- ♦ Articulating a sustainable development vision for Canada;
- ♦ Increasing transparency and accountability by improving our targets and indicators;
- ♦ Acknowledging the role of the 2030 Agenda’s Sustainable Development Goals; and
- ♦ Recognizing the contribution of our partners.

The draft 2016–2019 strategy is organized around five goals:

- ♦ Taking Action on Climate Change;
- ♦ Clean Technology, Jobs and Innovation;
- ♦ National Parks, Protected Areas and Ecosystems;
- ♦ Freshwater and Oceans; and
- ♦ Human Health, Well-being and Quality of Life.

New targets for 2016–2019 address clean technology and green infrastructure, sustainable mineral resource development, sustainable energy, protecting and restoring coastal ecosystems, and connecting Canadians with nature. Other goals and targets have been updated to reflect new priorities.

The draft strategy sets out implementation strategies, or actions the government is proposing to achieve the goals and targets. These include working with partners to advance shared priorities, providing Canadians with the information they need to safeguard their health and adopt more sustainable lifestyles, and enforcing laws and regulations to protect the environment.

The draft strategy also highlights a number of underlying priorities—ensuring robust and thorough environmental assessments, respecting the government’s obligations to Aboriginal peoples, and implementing strong environmental legislation will support progress in all areas of the strategy.

We acknowledge that we cannot achieve sustainable development alone. Partners such as provinces and territories, Indigenous peoples, businesses, non-governmental organizations, and Canadian citizens will all play an essential role in helping us meet our objectives.

# TALKING WITH CANADIANS ABOUT A NEW APPROACH

The Government of Canada is developing a new Federal Sustainable Development Strategy for 2016–2019, and we want you to be a part of it.

The strategy will set the federal government's environmental sustainability agenda for the next three years—our vision for a more sustainable Canada, the goals and targets we will strive to meet, and our plans to achieve them. As we work toward a final strategy, your ideas, knowledge and perspectives will help us define where we need to go and how to get there. With your help, we will develop high-level aspirational sustainable development goals, clear and measurable targets and concrete plans for achieving those targets. Ensuring that we report using robust indicators will be a key priority.

A 120-day public consultation period on this draft has been launched. Over the four months of public consultation on this draft strategy, we want to hear from a broad range of Canadians from coast to coast to coast. Share your input with us:

- ◆ Submit your comments directly online using the [e-Strategy](#) comment boxes.
- ◆ Use social media to comment on [Facebook](#) posts and tweet with hashtag #sustainability.
- ◆ Email your comments to [ec.bdd-sdo.ec@canada.ca](mailto:ec.bdd-sdo.ec@canada.ca).

- ◆ Write to us at the Sustainable Development Office, 200 Sacré-Coeur Boulevard, Box 12-3, Gatineau, Quebec, K1A 0H3.
- ◆ Visit our [Let's Talk Sustainability](#) discussion space to join in on the conversation about sustainability.
- ◆ Share your expertise with us in webinars or technical briefings on indicators, measurable targets and a sustainable development vision for Canada.

We will draw on your input as we develop the final version of the strategy, which will be released later in 2016. And we commit to reporting back to you on an overview of the input we receive and its impact on the final strategy.

This is only a starting place, and the conversation will not end here. Over the next three years, we will continue to engage in a dialogue with Canadians on sustainable development, how we can develop a vision, and the means by which to be accountable for achieving it.



**WHAT'S YOUR VISION FOR A SUSTAINABLE CANADA?**

**WHAT ASPECTS OF YOUR VISION ARE MOST IMPORTANT TO YOU?**

**HOW CAN THE NEXT FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY HELP ACHIEVE YOUR VISION?**

**WHAT DO YOU SEE AS CANADA'S MOST PRESSING SUSTAINABILITY CHALLENGES?**

**HOW CAN THE NEXT FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY BEST ADDRESS THEM?**

**SHOULD THE STRATEGY BE BROAD AND COMPREHENSIVE, OR FOCUSED ON A FEW KEY PRIORITIES?**



WHAT IMPROVEMENTS TO OUR MEASUREMENT AND PROGRESS REPORTING WOULD BETTER SUPPORT TRANSPARENCY AND ACCOUNTABILITY?

WHICH TARGETS SHOULD WE FOCUS ON FOR 2016–2019?

DO WE HAVE THE RIGHT MEASURES OR INDICATORS?

### Articulating a sustainable development vision for Canada

Our vision for a sustainable Canada includes a strong and growing economy, healthy ecosystems that are protected from pollution and degradation, and an excellent quality of life for Canadians.

The draft 2016–2019 Federal Sustainable Development Strategy reflects this vision, proposing five long-term, aspirational goals:

- ◆ Taking Action on Climate Change;
- ◆ Clean Technology, Jobs and Innovation;
- ◆ National Parks, Protected Areas and Ecosystems;
- ◆ Freshwater and Oceans; and
- ◆ Human Health, Well-being and Quality of Life.

To support each goal, the Federal Sustainable Development Strategy sets out medium-term targets as well as implementation strategies, or actions to achieve the targets (see Figure 1).

For example, in 2016–2019, the government will work toward an updated goal on climate change to reflect our focus on leading national efforts to reduce greenhouse gas emissions, as well as new goals on creating clean jobs and a more sustainable economy and promoting human health, well-being and quality of life.

New targets for 2016–2019 address clean technology and green infrastructure, sustainable energy, sustainable mineral resource development, protecting and restoring Canada’s coastal ecosystems, and connecting Canadians with nature.

### Increasing transparency and accountability by improving our targets and indicators

The Government of Canada has made measuring results an important priority across all ministries. The commitment to building concrete plans, measuring performance, and achieving results and transparency are key overall features of the government.

Clear and measurable targets, high-quality indicators, concrete plans, and reporting are important for making progress on tackling environmental issues, which requires leadership, strong management and a commitment to openness and transparency.

The *Federal Sustainable Development Act* is about transparency and accountability—letting Canadians know which environmental sustainability objectives the federal government is working toward, what we are doing to achieve them, and how quickly we are making progress.

This means doing things differently. We want to be clear in our objectives and make sure we are accountable for our actions. But it is also about letting Canadians have a say in how we get there and how we know where we are.

While the draft strategy lays out whole-of-government objectives, the [2015 Progress Report on the Federal Sustainable Development Strategy](#) is based on a foundation of information with our [Canadian Environmental Sustainability Indicators](#) program. The draft 2016–2019 strategy is presented in a new online format that also makes it more interactive and accessible, letting Canadians find, learn about, and comment on the issues that matter most to them.



## Acknowledging the role of the 2030 Agenda's Sustainable Development Goals



The [2030 Agenda for Sustainable Development](#), adopted by UN member states in September 2015, provides the global framework for sustainable development for the next decade and a half. It integrates the social, economic and environmental dimensions of sustainable development as well as peace, governance and justice elements.

The 2030 Agenda includes [17](#) Sustainable Development Goals ([SDGs](#)) and 169 targets that touch on a broad array of issues considered fundamental to sustainable development.

The Federal Sustainable Development Strategy could represent a part of Canada's response to the 2030 Agenda. The draft 2016–2019 strategy reflects many of the same issues, with several of the strategy's goals, targets and implementation strategies aligned to the SDGs related to environmental sustainability.

Countries and organizations around the world are developing plans to implement the 2030 Agenda. UN member states are working to develop a follow-up and review process, including indicators to measure the SDGs and targets. Canada will work with the international community to implement this plan, and we will also actively contribute to the Inter-Agency Expert Group on SDG indicators that is making an important contribution to developing technically sound, evidence-based indicators to effectively measure contributions to the SDGs.

WHICH OF THE SUSTAINABLE DEVELOPMENT GOALS IS MOST IMPORTANT TO YOU?

WHAT ROLE SHOULD THE FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY PLAY IN CANADA'S DOMESTIC RESPONSE TO THE SUSTAINABLE DEVELOPMENT GOALS?

ON WHICH ASPECTS SHOULD CANADA FOCUS ITS MEASUREMENT EFFORTS?

## CROSS-CUTTING PRIORITIES

A number of priorities underlie and support multiple FSDS goals and targets. Ensuring robust and thorough environmental assessments, respecting the government's obligations to Aboriginal peoples, and implementing strong environmental legislation will support progress in all areas of the strategy.

In 2016, the government will launch a review of Canada's environmental assessment processes to regain public trust and get resources to market. The government will work to enhance the engagement and participatory capacity of First Nations, Inuit and Métis peoples to ensure that consultation is integrated into environmental assessments and that potentially impacted Aboriginal peoples are accommodated where appropriate.

Finally, the government will review recent changes to environmental laws, including the *Fisheries Act* and the *Canadian Environmental Assessment Act, 2012*, to ensure they provide strong environmental protection and modern safeguards. First Nations, Inuit and Métis peoples will be involved in reshaping federal environmental laws and policies to ensure that the rights of Aboriginal peoples are reflected in the development of federal legislation and regulations.

**SHOULD WE HIGHLIGHT STAKEHOLDER ACTIVITIES IN THE FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY THAT CONTRIBUTE TO ENVIRONMENTAL SUSTAINABILITY?**

**IF SO, WHICH STAKEHOLDERS SHOULD BE HIGHLIGHTED (INDUSTRY, ACADEMIA, PROVINCIAL, TERRITORIAL OR MUNICIPAL GOVERNMENTS, OTHER GROUPS)?**

**WHAT ARE YOU DOING TO PROTECT THE ENVIRONMENT AND CONTRIBUTE TO SUSTAINABLE DEVELOPMENT?**

## Recognizing the contribution of our partners

We recognize that we cannot achieve sustainable development alone. Our partners, including provincial and territorial governments, Indigenous peoples, businesses, non-governmental organizations and individual Canadians, make significant contributions.

Provinces and territories share responsibility for the environment with the federal government and are active in many areas, from air and water quality to species and habitat protection. They also play a key role in national efforts to combat climate change. In 2016–2019, provinces and territories will continue to develop and implement their own climate change policies within a pan-Canadian framework that will include national greenhouse gas emission reduction targets.

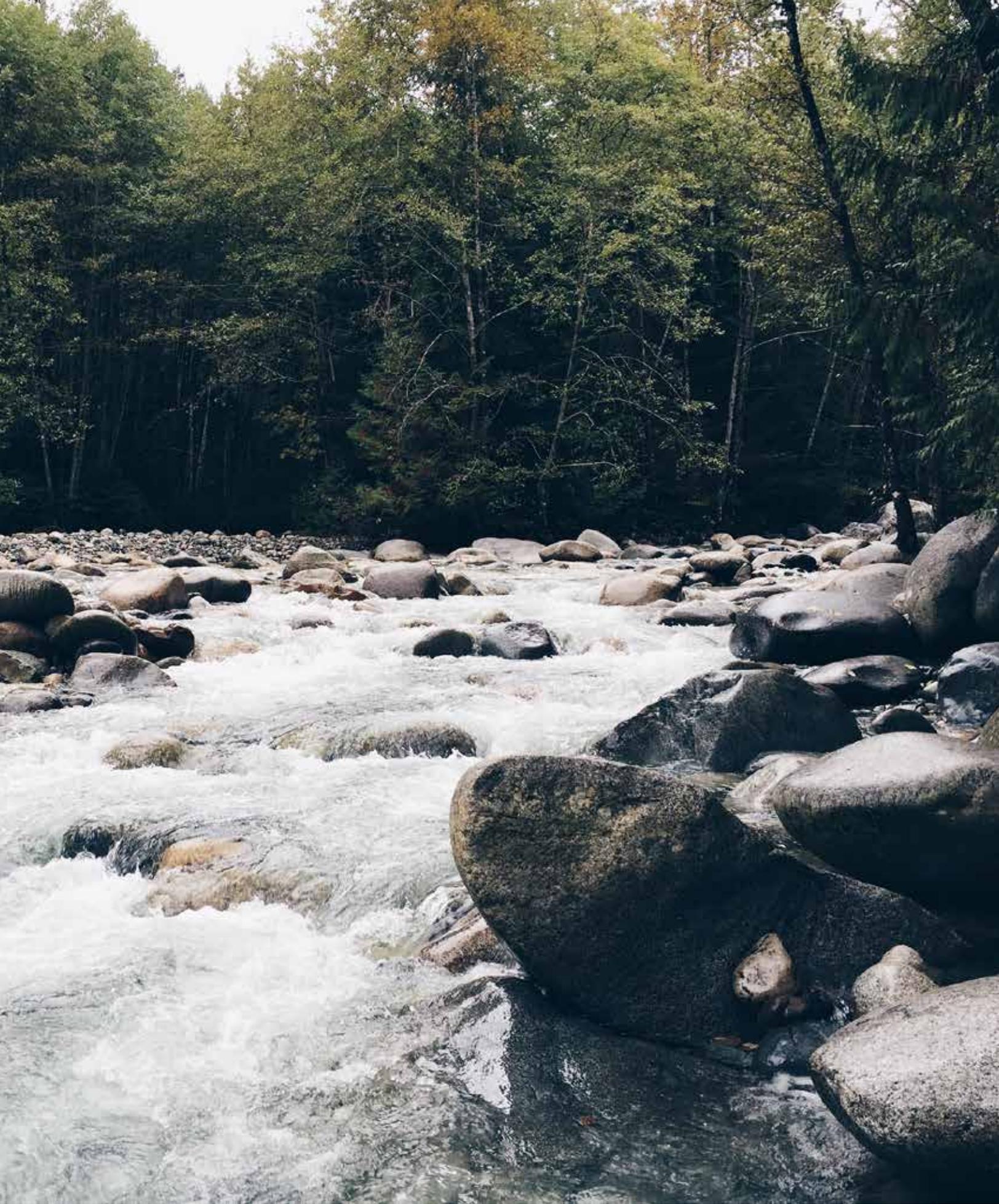
Clean technology producers, provinces and territories, and colleges and universities are leading the way in making Canada's economy more environmentally sustainable and creating green jobs.

Indigenous people have a unique understanding of and connection to Canada's lands and waters, and their involvement in environmental policy development and decision-making is essential. Their contributions include, among others, supporting the recovery of species at risk and working with the federal government to manage national parks and protected areas. Indigenous governments are also taking action to manage natural resources and protect the environment on their lands, including by establishing environmental protection legislation.

Individual Canadians can support environmental sustainability through measures such as choosing energy-efficient appliances, cycling or using public transit more often, and doing their part to prevent invasive alien species from becoming established in Canada.

**Figure 1 – FSDS goals, targets and responsible federal ministers**

Goals	Targets	Minister Responsible
<b>GOAL 1:</b> Taking Action on Climate Change	Target 1.1: National Leadership on Climate Change	Environment and Climate Change Canada (ECCC)
	Target 1.2: Resilience to Climate Change	ECCC
	Target 1.3: Sustainable Energy	Natural Resources Canada (NRCan)
	Target 1.4: Reduce Greenhouse Gas Emissions from Federal Government Operations	All ministers
	Target 1.5: Real Property Environmental Performance	All ministers
<b>GOAL 2:</b> Clean Technology, Jobs and Innovation	Target 2.1: Clean Technology and Green Infrastructure	Innovation, Science and Economic Development Canada and NRCan
	Target 2.2: Sustainable Workplace Operations	All ministers
	Target 2.3: Water Management from Federal Government Operations	All ministers
	Target 2.4: Sustainable Fisheries	Fisheries and Oceans Canada (DFO)
	Target 2.5: Sustainable Aquaculture	DFO
	Target 2.6: Sustainable Forest Management	NRCan
	Target 2.7: Sustainable Agriculture	Agriculture and Agri-Food Canada
	Target 2.8: Sustainable Mineral Resource Development	NRCan
<b>GOAL 3:</b> National Parks, Protected Areas and Ecosystems	Target 3.1: Species at Risk	ECCC
	Target 3.2: Migratory Birds	ECCC
	Target 3.3: Terrestrial Ecosystems and Habitat Conservation	ECCC
	Target 3.4: Health of National Parks	ECCC
	Target 3.5: Marine Ecosystems	DFO
	Target 3.6: Invasive Alien Species	ECCC
	Target 3.7: Connecting Canadians with Nature	ECCC
<b>GOAL 4:</b> Freshwater and Oceans	Target 4.1: Great Lakes – Canadian Areas of Concern	ECCC
	Target 4.2: Great Lakes	ECCC
	Target 4.3: St. Lawrence River	ECCC
	Target 4.4: Lake Simcoe and South-eastern Georgian Bay	ECCC
	Target 4.5: Lake Winnipeg Basin	ECCC
	Target 4.6: Marine Pollution – Release of Harmful Pollutants	Transport Canada
	Target 4.7: Marine Pollution – Disposal at Sea	ECCC
	Target 4.8: Protect and Conserve Coastal Ecosystems	ECCC
	Target 4.9: Wastewater and Industrial Effluent	ECCC
	Target 4.10: Water Resource Management	ECCC
<b>GOAL 5:</b> Human Health, Well-being and Quality of Life	Target 5.1: Outdoor Air Pollutants	ECCC
	Target 5.2: Indoor Air Quality	Health Canada (HC)
	Target 5.3: On-reserve First Nations Drinking Water and Wastewater Systems	Indigenous and Northern Affairs Canada
	Target 5.4: Drinking Water Quality	HC
	Target 5.5: Environmental Emergencies	Public Safety Canada and ECCC
	Target 5.6: Chemicals Management	ECCC and HC



# GOAL 1: Taking Action on Climate Change

*In order to mitigate the effects of climate change, reduce GHG emissions levels and build resilience to climate change.*

**INDICATOR:** National greenhouse gas emissions

Climate change is happening and it is affecting Canadians' health, safety and economic well-being. Canada must do its part to combat this global problem domestically and internationally. Reducing GHG emissions is critical for slowing climate change and reducing costs over the long term, while adaptation can help us become more resilient to unavoidable climate change impacts.

Targets that contribute to this goal focus on meeting Canada's international commitment to reduce GHG emissions; helping other jurisdictions, communities and individual Canadians become more resilient to climate change impacts; working with provinces and territories to advance the Canadian Energy Strategy; and increasing the use of clean technologies in federal government operations.

The 2030 Agenda for Sustainable Development is a plan of action for people, planet and prosperity that aims to eradicate poverty and shift the world onto a sustainable and resilient path. This FSDS goal supports the 2030 Agenda's call for urgent action on climate change. It also supports the SDGs, including:



## TARGET 1.1: NATIONAL LEADERSHIP ON CLIMATE CHANGE

Relative to 2005 emission levels, reduce Canada's total GHG emissions 17% by 2020 and 30% by 2030.

A Pan-Canadian framework for climate change which will include national GHG emissions reduction targets.  
(Minister of Environment and Climate Change)

**INDICATOR:** Expected impact of actions to meet the reduction target.

### KEY DEPARTMENTS:

Agriculture and Agri-Food Canada, Correctional Service Canada, Department of Finance Canada, Environment and Climate Change Canada, Global Affairs Canada, Health Canada, Natural Resources Canada, Transport Canada

Climate change is a global problem that requires sustained action by all, and Canada must play a positive role in addressing it. That means significantly reducing our emissions of GHGs and other climate-warming pollutants such as black carbon.

In December 2015, 195 countries, including Canada, adopted the Paris Agreement under the United Nations Framework Convention on Climate Change. In doing so, they agreed to limit global average temperature rise to well below 2 degrees Celsius, and to pursue efforts to limit the increase to 1.5 degrees. Among other effects, the agreement will commit countries to:

- ◆ Establish, communicate and regularly update national GHG emissions reduction targets;
- ◆ Take action to reduce GHG emissions and meet their targets;
- ◆ Engage in adaptation planning and implement actions that support adaptation; and
- ◆ Help developing countries reduce their GHG emissions and adapt to climate change.

Fulfilling Canada's obligations under the Paris Agreement will require action by all levels of government, and the federal government is committed to playing a leadership role in these efforts.

As a first step, the federal government will work with provinces and territories to develop a pan-Canadian climate change framework, which will include national GHG emissions reduction targets based on the best economic and scientific analysis.

While targets are essential, they are not enough: success will also require effective policies and programs to reduce emissions. Rather than imposing a single solution, the government will ensure that provinces and territories have the tools they need to design climate change policies that reflect their unique circumstances, including carbon pricing policies. The government will provide targeted funding to help provinces and territories achieve their goals.

The government will also implement climate policies at the federal level—for example:

- ◆ Fulfilling Canada's G20 commitment to phase out subsidies for the fossil fuel industry;
- ◆ Developing proposals to allow a Canadian Exploration Expenses tax deduction only in cases of unsuccessful exploration and using any savings to invest in new and clean technologies;
- ◆ Creating a new Low Carbon Economy Trust to help fund projects that materially reduce carbon emissions;
- ◆ Investing in green infrastructure and clean technologies that benefit Canada's economy while reducing GHG emissions (see Target 2.1); and
- ◆ Providing assistance to countries that are vulnerable to the destabilizing effects of climate change, including through climate finance.

Many stakeholders across Canada are working to reduce GHG emissions, including provinces, territories, municipalities, businesses, and individual Canadians, and these efforts represent an invaluable foundation for future action. Examples include:

- ◆ British Columbia's carbon tax;
- ◆ Alberta's Climate Leadership Plan, which will include pricing carbon, phasing out pollution from coal-fired power plants, and limiting GHG emissions from the oil sands;
- ◆ Cap-and-trade initiatives in Quebec, Ontario and Manitoba; and
- ◆ Nova Scotia's absolute cap on emissions from electricity.

## Implementation Strategies:

### Policy research and analysis on climate change

Conduct policy research and analysis and develop strategies to address climate change. Identifying, assessing and evaluating policy options allows the government to decide on a course of action to achieve its objectives, assess results and adjust its approach over time.

### Voluntary sustainable development actions to reduce GHG emissions

Encourage businesses and Canadians to take voluntary action to reduce GHG emissions. Voluntary approaches such as incentives, providing information, and developing standards and codes of practice can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation.

### Scientific research and analysis on climate change

Conduct scientific research and analysis to build knowledge of climate change and its effects and track Canada's GHG emissions, and provide information to support policy development and help Canadians monitor progress on emissions reduction. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

### Regulations to limit GHG emissions

Develop and implement regulations to limit GHG emissions, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

### International agreements and initiatives on climate change

Ensure Canada plays a leading role in international efforts to combat climate change. Negotiate on behalf of the Canadian government, represent the government's interests in international fora such as the United Nations Framework Convention on Climate Change, the Climate and Clean Air Coalition and the Arctic Council, and implement international agreements. Participating in negotiations allows Canada to help shape international agreements and initiatives which in turn provide a framework for domestic action.

## TARGET 1.2:

### RESILIENCE TO CLIMATE CHANGE

Facilitate reduced vulnerability and improved resilience of economic sectors, regions, communities and of individuals, to the impacts of climate change through the development and provision of information and tools for decision making.

(Minister of Environment and Climate Change)

**INDICATOR:** Efforts continue to identify target level indicator(s) for adaptation outcomes. Indicators which assist in measuring the contribution of the federal government's actions will continue to be reported.

#### KEY DEPARTMENTS:

Environment and Climate Change Canada, Fisheries and Oceans Canada, Health Canada, Indigenous and Northern Affairs Canada, Natural Resources Canada, Public Health Agency of Canada

The [Intergovernmental Panel on Climate Change](#) defines resilience as "the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity of self-organization, and the capacity to adapt to stress and change." We can become more resilient by adjusting our decisions, activities and ways of thinking in response to climate change.

Resilience complements efforts to reduce greenhouse gas emissions—while mitigation can reduce climate risk over the long term, increasing our resilience can help us manage the risks we face now and address emerging risks over time.

Canada's climate is changing and further changes are inevitable. Between 1950 and 2010 the annual average surface air temperature over the Canadian land mass warmed by 1.5°C, with the fastest warming seen in many areas of northern Canada.

Climate change is already affecting Canada's environment, economy and the health and well-being of Canadians. Canadians are facing new challenges including:

- ◆ Greater vulnerability to natural hazards such as storms, floods and wildfires;
- ◆ Damage to northern infrastructure such as roads and buildings as permafrost thaws;
- ◆ Expansion of climate-sensitive disease vectors such as ticks and mosquitoes;
- ◆ Changes to the distribution and abundance of plant and animal species; and
- ◆ Changes to ocean conditions including ocean acidification and sea level rise.

Further impacts are expected as warming continues.

All levels of governments are taking action to increase resilience to climate change, along with community groups, industry, non-governmental organizations and individuals. In 2016–2019, priorities for the federal government will include:

- ◆ Investing in infrastructure to help protect communities from climate change impacts; (see Target 2.1);
- ◆ Working with provinces, territories, Indigenous governments, and municipalities to develop a comprehensive action plan that will help Canada predict, prepare for, and respond to weather-related emergencies; and
- ◆ Establishing the Canadian Armed Forces as world-class leaders in responding to weather-related emergencies.

The government will also work to improve understanding of climate change impacts and provide credible, scientifically-sound information to support adaptation planning and decision making.

Other governments are already taking action. For example, many provinces and territories have established climate change adaptation strategies or incorporated resilience into broader climate change strategies. Meanwhile, municipalities have taken steps such as implementing heat alert and response systems and are planning flood defences to address projected sea level rises.

## **Implementation Strategies:**

### **Scientific research and analysis to support resilience to climate change**

Conduct scientific research and analysis to build knowledge of climate change and its effects, and provide information to support adaptation planning and decision-making. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

### **Voluntary sustainable development actions to increase climate resilience**

Encourage businesses and Canadians to take voluntary action to increase resilience to climate change. Voluntary approaches such as providing information and incentives, and developing standards and codes of practice, can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation.

### **Domestic and international collaboration on climate change adaptation**

Provide opportunities for collaboration and participate in joint adaptation initiatives with domestic and international partners. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

### **In-kind support and funding for climate resilience**

Provide funding and in-kind support for projects and activities that strengthen resilience to climate change. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

### TARGET 1.3: SUSTAINABLE ENERGY

Work closely with the provinces and territories to advance a Canadian Energy Strategy to protect Canada's energy security, encourage energy conservation, and bring cleaner, renewable energy onto the electricity grid.

(Minister of Natural Resources)

**INDICATOR:** TBD

#### **KEY DEPARTMENTS, AGENCIES AND ORGANIZATIONS:**

Atlantic Canada Opportunities Agency,  
Department of Finance Canada,  
Natural Resources Canada, Sustainable  
Development Technology Canada

Canadians use energy for transportation, to heat and cool their homes, in manufacturing processes, and in many other applications. Our extreme climate and widely dispersed population make Canada one of the world's highest per capita energy consumers. Canada is also a major energy producer, with natural resources that include oil, natural gas and uranium.

Using energy sustainably means adopting renewable energy and other energy technologies with environmental benefits. It also means using energy more efficiently—increasing energy efficiency reduces energy costs as well as GHG and air pollutant emissions.

Renewable energy comes from naturally regenerating resources like the sun, wind and water. Substituting these energy sources for fossil fuels generally reduces the impact of energy production and use on air quality and climate; however, environmental stewardship remains an important consideration in developing renewable energy projects.

Nearly two thirds of Canada's electricity already comes from renewable sources—the highest in the G7. The federal government will take action in 2016–2019 to further increase renewable energy generation and to encourage energy efficiency. For example, the government will:

- ◆ Work with provinces and territories to advance a Canadian Energy Strategy that will protect Canada's energy security, encourage conservation, and bring renewable energy onto a smarter electricity grid;
- ◆ Work with the US and Mexico to establish an ambitious North American clean energy and environment agreement;

- ◆ Promote innovation and clean technology in the energy sector, in collaboration with the private sector, other governments, and research institutions; and
- ◆ Invest in clean energy infrastructure and technology development (see Target 2.1).

Provinces and territories are also taking action to support a more sustainable energy system. For example, in 2014 Ontario became the first jurisdiction in North America to completely eliminate coal as a source of electricity generation, while [Quebec's Residual Materials Management Policy](#) highlights the potential to produce energy from organic waste, resulting in both economic and environmental benefits.

#### **Implementation Strategies:**

##### **Investment in clean energy technologies**

Support the development, demonstration and deployment of clean energy technologies. Technology development and dissemination can support economic growth and improved quality of life for Canadians, and provide environmental benefits.

##### **Domestic collaboration to promote clean energy**

Collaborate with provinces, territories and other stakeholders to promote clean and renewable energy. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

##### **Voluntary sustainable development action to reduce GHG and air pollutant emissions**

Encourage businesses to adopt clean energy technologies. Voluntary approaches such as providing information and incentives, and developing standards and codes of practice, can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation.

## TARGET 1.4: REDUCE GREENHOUSE GAS EMISSIONS FROM FEDERAL GOVERNMENT OPERATIONS

The Government of Canada will reduce energy-related greenhouse gas emissions from its facilities and fleets by 17% below 2005 levels by 2020 and 30% by 2030.

Set a target to align the national GHG emissions reduction targets in the Pan-Canadian framework for climate change.

**INDICATORS:** Percentage change in energy-related GHG emissions from facilities and fleets relative to fiscal year 2005–2006; Amount and percentage of electricity that is either purchased or generated on site from renewable sources.

### KEY DEPARTMENTS AND AGENCIES:

All departments and agencies

The federal government consumes a significant amount of energy to:

- ◆ Heat and cool facilities;
- ◆ Provide light and power to workplaces; and
- ◆ Fuel vehicles and equipment.

This energy consumption is the primary source of GHG emissions from federal government operations. Reducing these emissions is a key component of overall efforts to shrink the government's environmental footprint.

In 2016–2019, the government will take steps to decrease GHG emissions from its real property and fleet operations by increasing its energy efficiency and use of clean technology. For example, the government will:

- ◆ Perform energy-efficient upgrades and retrofits to federal facilities;
- ◆ Rapidly add hybrid, plug-in hybrid electric, and electric vehicles to the federal fleet as appropriate; and
- ◆ Serve as a “test-bed” for emerging clean technologies.

Departments and agencies will also track and report their GHG emissions and the proportion of the electricity they use that is purchased or generated on-site from low-impact renewable sources such as solar, wind, water, biomass and biogas.

The US and the UK governments also have targets in place to reduce energy from their facilities and fleets. As in Canada, the emphasis is on implementing energy efficiency measures to:

- ◆ Reduce the energy intensity of facilities;
- ◆ Reduce the fuel consumption of their fleets; and
- ◆ Increase the use of renewable energy.

Provinces and territories are also showing leadership in reducing emissions through initiatives such as implementing energy efficiency standards for their facilities and procuring more efficient products, vehicles, and equipment.

## Implementation Strategies:

### Policy research and analysis for departmental GHG implementation plans

Conduct policy research and analysis to support renewal of departmental GHG implementation plans. Identifying, assessing and evaluating policy options allows the government to decide on a course of action to achieve its objectives, assess results and adjust its approach over time.

### Scientific research and analysis on departmental GHG emissions

Conduct technical research and analysis to track departmental GHG emissions and consumption of renewable electricity, and report annually on emissions. Understanding and tracking GHG emissions from federal facilities and fleets is an essential first step toward effective action to reduce them.

### Leading by example on GHG emission reduction

Demonstrate leadership by taking action to reduce federal GHG emissions. Managing federal facilities and equipment sustainably can result in environmental benefits as well as cost savings. As the federal government owns or manages a substantial portfolio of facilities and fleets, reducing its environmental footprint can have a significant impact.

## TARGET 1.5:

### REAL PROPERTY ENVIRONMENTAL PERFORMANCE

Effective fiscal year 2017–2018, departments will reduce the environmental impact of their real property portfolio.

**INDICATORS:** Number, percentage and associated floor space (m<sup>2</sup>) of applicable real property projects (over 1000 m<sup>2</sup>) that achieved an industry-recognized level of high environmental performance; Total number and associated floor space (m<sup>2</sup>) of applicable existing facilities (over 1000 m<sup>2</sup>) that have been assessed for environmental performance using an industry recognized assessment tool; Percentage of applicable Crown-owned floor space (over 1000 m<sup>2</sup>) benchmarked for energy use intensity; Total number of applicable real property projects and existing facilities achieving a high level of environmental performance.

### KEY DEPARTMENTS AND AGENCIES:

All departments and agencies

Energy consumption in federal facilities generates approximately 90% of total GHG emissions tracked in the Government of Canada's FSDS inventory. Making the government's real property portfolio more sustainable is the largest opportunity to reduce GHG emissions from federal government operations, improve energy and resource efficiency, and save on operations and maintenance costs.



FSDS custodial departments that are responsible for reducing the environmental impact of their Crown-owned facilities have identified a wide range of measures to reduce energy consumption and improve energy efficiency. These include:

- ◆ Energy audits;
- ◆ Energy efficiency upgrades; and
- ◆ Facility retrofits.

For example, departments and agencies are assessing the performance of existing facilities and implementing environmental performance standards for new construction.

Government organizations in other jurisdictions, including the UK and US, are also improving the sustainability of their real property portfolios. Similar to the Canadian government's approach, they require new facilities to meet sustainability performance standards and are seeking to understand and improve the performance of their existing facilities. Many countries have also implemented environmental certification programs for new and existing facilities.

## **Implementation Strategies:**

### **Technical analysis on the environmental impacts of federal facilities**

Conduct technical analysis to assess and benchmark the environmental impact of federal facilities. Understanding the environmental performance of real property is an essential first step toward effective action to improve it.

### **Leading by example on reducing the environmental footprint of facilities**

Demonstrate leadership by reducing the environmental footprint of federal facilities. Managing facilities sustainably can result in environmental benefits as well as cost savings. As the federal government owns or manages a substantial portfolio of facilities, reducing its environmental footprint can have a significant impact.





## GOAL 2: Clean Technology, Jobs and Innovation

*Create clean jobs by investing in green infrastructure and clean technology, promoting innovation in natural resource sectors, and leading by example.*

**INDICATORS:** Status of major fish stocks; Changes in land-use; Percentage change in government-wide energy-related GHG emissions from facilities and fleets relative to fiscal year 2005-2006.

Creating clean jobs and promoting sustainable economic development is a priority for the Government of Canada. Investing in clean energy and climate-resilient infrastructure (for example, flood mitigation systems), supporting the development and adoption of clean technologies, and promoting innovation in natural resource sectors can help create jobs while making Canada's economy more environmentally sustainable.

Targets that contribute to this goal focus on supporting clean technology producers and investing in infrastructure with environmental and economic benefits; reducing the environmental footprint of federal government operations by, for example, incorporating environmental considerations into procurement processes; and enhancing the environmental and economic sustainability of key natural resource sectors—fisheries, aquaculture, forestry, agriculture and mining.

The 2030 Agenda for Sustainable Development calls for action to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and environmental (including technological) progress occurs in harmony with nature. This FSDS goal, contributes to the vision and objectives of the 2030 Agenda by promoting economic growth while advancing environmental priorities. It also supports the SDGs, including:



## TARGET 2.1: CLEAN TECHNOLOGY AND GREEN INFRASTRUCTURE

Make strategic investments in developing and manufacturing clean and sustainable technology, support companies seeking to export those technologies, and support the development of a 10-year plan to deliver significant new funding to provinces, territories and municipalities to ensure increased investments in green infrastructure. (Minister of Innovation, Science and Economic Development and Minister of Natural Resources)

**INDICATOR:** TBD

### KEY DEPARTMENTS, AGENCIES AND ORGANIZATIONS:

Atlantic Canada Opportunities Agency, Canada Economic Development for Quebec Regions, Standards Council of Canada, Environment and Climate Change Canada, Federal Economic Development Agency for Southern Ontario, Health Canada, Natural Resources Canada, Sustainable Development Technology Canada, Transport Canada, Western Economic Diversification Canada

Supporting clean technology and investing in green infrastructure can help Canada address environmental challenges such as climate change and air pollution while growing our economy.

Clean technology—which improves business performance while using resources more sustainably and reduces or eliminates negative environmental impact—is an important part of Canada’s economy, directly employing approximately 50 000 Canadians and generating \$12 billion in revenue each year [[Sustainable Development Technology Canada \(SDTC\) 2015](#)].

In addition to creating clean jobs, Canada’s clean technology sector is producing real benefits for the environment. For example, completed projects funded by SDTC reduced GHG emissions by approximately 4.5 megatonnes carbon dioxide equivalent in 2014 ([SDTC 2014](#)).

Infrastructure investment also helps create the conditions for economic growth while protecting the environment and human health. For example, investing in water and wastewater facilities protects water quality and ensures access to clean drinking water, while developing clean energy infrastructure can reduce GHG and air pollutant emissions. And, as the climate warms, infrastructure that protects Canadians from climate impacts will become increasingly important.

The federal government is committed to encouraging the growth of Canada’s clean technology sector, supporting clean technology producers, and significantly increasing federal investment in green infrastructure. Priorities for 2016–2019 will include:

- ◆ Developing and implementing a 10-year plan to deliver significant new funding to provinces, territories and municipalities to support infrastructure investment;
- ◆ Developing an ambitious clean innovation agenda that will include, for example, making strategic investments in Canada’s clean technology sector, establishing new research chairs in sustainable technologies, and promoting innovation and clean technology in natural resource sectors (see Targets 1.3 and 2.4–2.8); and
- ◆ Participating in Mission Innovation, a global partnership under which partner countries will double government investments over five years in clean technologies. This will catalyze the private sector to provide patient risk capital into new, early-stage technologies, enabling the commercialization of clean energy breakthroughs and transforming the global energy economy. This acceleration of the development of clean energy technologies will help Canada advance our commitment to a clean environment, a strong economy, and clean jobs.

Clean technology producers, academic institutions, provinces and territories play an important role in advancing Canada’s clean technology sector. For example, Ontario supports the Ontario Centres of Excellence, a not-for-profit program that helps commercialize academic research and invests in early-stage projects with commercial potential. Meanwhile, municipalities, provinces and territories own the majority of Canada’s public infrastructure, including green infrastructure.

## Implementation Strategies:

### **Investment in green infrastructure and technologies to reduce GHG and air pollutant emissions**

Invest in green infrastructure and support the development, demonstration and deployment of technologies that reduce greenhouse gas and air pollutant emissions. Technology development and dissemination can support economic growth and improved quality of life for Canadians, and provide environmental benefits.

### **Voluntary sustainable development actions to reduce GHG and air pollutant emissions**

Encourage businesses and Canadians to take voluntary action to reduce greenhouse gas and air pollutant emissions. Voluntary approaches such as providing information and incentives, and developing standards and codes of practice, can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation.

### **Domestic collaboration to reduce GHG emissions**

Provide opportunities for collaboration and work with provinces, territories and other stakeholders to implement shared approaches to reducing greenhouse gas emissions and improving air quality. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

## TARGET 2.2:

### SUSTAINABLE WORKPLACE OPERATIONS

Effective fiscal year 2017–2018, departments will reduce the environmental impact of material and services by implementing modernized, green procurement and sustainable workplace practices.

**INDICATORS:** Number of functional specialists trained on green procurement; Amount and percentage of office floor space that aligns with the Government of Canada Workplace 2.0 space allocation standards; Percentage change in energy use intensity of benchmarked crown-owned office facilities relative to fiscal year 2014–2015; Amount of surplus electrical and electronic equipment reused or recycled; Number of goods and services categories with a green procurement plan in place.

#### **KEY DEPARTMENTS AND AGENCIES:**

All departments and agencies

The government is a significant purchaser of goods and services, spending billions annually to provide services to Canadians. Making workplace operations more sustainable helps reduce GHG emissions, material usage and water consumption from a government-wide perspective. Engaging all FSDS departments and employees in taking action in their day-to-day activities will reduce the environmental impact of government operations.

Green procurement is one way in which the government can reduce its environmental footprint and increase domestic demand for clean technologies and other environmentally preferable goods and services. In 2016–2019, departments and agencies will integrate environmental considerations, including GHG emissions, into procurement decision-making processes and work toward green procurement targets.

The government will continue to reuse electronic and electrical equipment, or, where re-use is not possible, recycle it according to the principle of environmentally sound management, in order to ensure that federal e-waste does not contribute to the global issue of improper e-waste disposal and the associated negative impacts on human health, the environment and the effective management of information security.

Many departments and agencies have also set objectives to reduce business travel, optimize space utilization and reduce energy used by office equipment.

Other governments are also taking action to reduce the environmental impact of workplace operations. For example, provincial and municipal governments are implementing sustainable procurement. National governments in other countries are reforming their public procurement systems by implementing green procurement programs or by passing legislation.

Other governments are also working to reduce the energy consumption of their electronic equipment and minimize the environmental impact of materiel at the end of its useful life. Both the US and the UK have also implemented measures to reduce the environmental impact of employee business travel.

### Implementation Strategies:

#### Policy research and analysis on sustainable workplace operations

Conduct policy research and analysis to support the development of additional departmental targets to reduce the environmental impact of federal workplace operations. Identifying, assessing and evaluating policy options allows the government to decide on a course of action to achieve its objectives, assess results and adjust its approach over time.

#### Leading by example on sustainable workplace operations

Demonstrate leadership by taking action to reduce the environmental impact of materiel and services. Improving the sustainability of workplace operations can result in environmental benefits as well as cost savings. As the federal government owns or manages a substantial portfolio of facilities and purchases a large variety of goods and services, reducing its environmental footprint can have a significant impact.

## TARGET 2.3: WATER MANAGEMENT IN FEDERAL GOVERNMENT OPERATIONS

Effective fiscal year 2017–2018, departments will manage water in a sustainable manner in their Crown-owned real property.

**INDICATORS:** Percentage of applicable Crown-owned facilities (over 1000 m<sup>2</sup>) with water consumption metering in place; Percentage of metered Crown-owned facilities (over 1000 m<sup>2</sup>) benchmarked for water use intensity; Percentage change in water use intensity of benchmarked applicable Crown-owned facilities relative to fiscal year 2017–2018.

**KEY DEPARTMENTS AND AGENCIES:**  
All departments and agencies

The federal government's numerous facilities consume water for uses such as:

- ♦ Heating and cooling;
- ♦ Landscaping;
- ♦ Kitchens; and
- ♦ Bathrooms. They also produce runoff that can carry pollutants.

Water conservation not only benefits the environment, but is also a sound business practice. In many cases, application of simple, common sense conservation techniques can yield short term payback periods.

Understanding water use is the first step towards conservation. Identifying water usage patterns helps departments make decisions and enables government-wide actions to improve water management in government real property. Departments are taking action to:

- ♦ Meter water use at the facility level;
- ♦ Conduct audits; and
- ♦ Analyze usage to help to identify inefficiencies such as leaks.

Departments are also implementing water conservation measures such as installing water-efficient fixtures. These actions form a framework for achieving greater water efficiency now and into the future.

Other governments are also increasing their understanding of water usage patterns and taking action to reduce consumption and runoff. For example, with higher water costs and greater scarcity, the US government is undertaking comprehensive water efficiency reviews of federal facilities and implementing water conservation measures such as reducing water use in landscaping and installing water-efficient fixtures. In the UK, the government is taking action to reduce its water consumption and report on office water use against best practice benchmarks.

An increasing number of Canadian municipalities are also prioritizing water conservation to decrease the need for additional water infrastructure in new projects and major renovations.

### **Implementation Strategies:**

#### **Technical analysis on water consumption in federal facilities**

Conduct technical analysis to track and benchmark water consumption in federal facilities. Understanding water consumption is an essential first step toward effective action to reduce it.

#### **Leading by example on water management**

Demonstrate leadership by taking action to conserve water and manage run-off. Managing federal facilities sustainably can result in environmental benefits as well as cost savings. As the federal government owns or manages a substantial portfolio of facilities, reducing its environmental footprint can have a significant impact.

## **TARGET 2.4:** **SUSTAINABLE FISHERIES**

By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches. (Minister of Fisheries, Oceans and the Canadian Coast Guard)

**INDICATORS:** Sustainable fish harvest; Recover plans and measures in place for depleted species.

**KEY DEPARTMENT:** Fisheries and Oceans Canada

Fish are a renewable resource, but they are vulnerable to overfishing, illegal fishing and other unsustainable practices. Globally, the demand for fish is exceeding the ocean's resources and capacity: 70% of the world's fisheries are now either fully exploited or depleted.

While an increasing number of major Canadian fish stocks are being harvested at sustainable levels, only 48% were classified as "healthy" in 2013.

Canada's wild fisheries provide social and economic benefits including recreation, employment and access to traditional foods. Approximately 80 000 Canadians were employed in fishing and related activities in 2014, while recreational fishing contributes about \$8.3 billion each year to local economies.

### *Did You Know...*

This target is one of the [2020 biodiversity goals and targets for Canada](#), developed collaboratively by federal, provincial and territorial governments in response to the United Nations Convention on Biological Diversity's 2011–2020 Strategic Plan.

To ensure that Canada's fisheries provide benefits for the long term, the federal government is committed to managing them using a precautionary and ecosystem-based approach supported by scientific evidence. Going forward, the federal government will ensure that climate change is considered when making decisions that affect fish stocks.

The federal government will act on recommendations of the Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River (the Cohen Commission) to restore sockeye salmon stocks in the Fraser River.

The government will also work with the private sector, other governments and research institutions to promote innovation and clean technology in the fisheries sector.

The federal government works with the US and the international community, provinces and territories, and others to ensure that fisheries are managed sustainably. In particular, Indigenous people participate in fisheries management in accordance with treaties and land claims agreements and in recognition of Aboriginal rights to fish for food, social and ceremonial purposes.

### Implementation Strategies:

#### Scientific research and analysis to support sustainable fisheries

Conduct scientific research and analysis to increase knowledge of marine ecosystems and fisheries resources, and provide information to support sustainable fisheries management. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

#### Legislation and regulations for sustainable fisheries

Implement laws and regulations to ensure fish harvest is sustainable, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

## TARGET 2.5: SUSTAINABLE AQUACULTURE

By 2020, all aquaculture in Canada is managed under a science-based regime that promotes the sustainable use of aquatic resources (including marine, freshwater, and land based) in ways that conserve biodiversity.  
(Minister of Fisheries, Oceans and the Canadian Coast Guard)

**INDICATOR:** Level of compliance with *Fisheries Act* regulations.

**KEY DEPARTMENT:** Fisheries and Oceans Canada

Aquaculture is practiced in every province in Canada and in Yukon, with production almost equally divided between east and west coasts. On a commercial scale, Canada's aquaculture sector cultures 45 different species of finfish, shellfish and marine algae with many other species in development.

Aquaculture contributes about \$2 billion annually to the Canadian economy and provides employment for approximately 14 000 people, many of whom live in remote coastal or rural communities. Aquaculture has revitalized communities from coast to coast, enabling young people to develop meaningful careers and offering stable, year-round employment to workers displaced from the forestry or capture fisheries sectors.

### *Did You Know...*

This target is one of the [2020 biodiversity goals and targets for Canada](#), developed collaboratively by federal, provincial and territorial governments in response to the United Nations Convention on Biological Diversity's 2011–2020 Strategic Plan.

Indigenous communities are in a unique position to benefit from aquaculture due to their aquatic resources, rights, and access to development sites. Approximately 50 Indigenous groups across Canada have developed aquaculture business ventures and partnerships, resulting in job creation, skills development, and increased wealth and prosperity. Aquaculture has also enabled young Indigenous men and women to stay in their communities and remain connected to their heritage.

The federal government, provinces and territories share jurisdiction for the environmental regulation of aquaculture. Under the *Fisheries Act*, the federal government has jurisdiction over fisheries and fish habitat protection across the country. The Act and its regulations set conditions for improving the environmental performance of Canada's aquaculture sector. Increased funding for federal ocean science and monitoring programs in 2016–2019 will also support an environmentally sustainable, responsible and economically successful aquaculture sector.

Under the *Fisheries Act*, Fisheries and Oceans Canada issues aquaculture licences in British Columbia and issues licences and leases in Prince Edward Island using a co-management model with the province. Provinces and Yukon issue licences and administer Crown leases elsewhere in the country.

### Implementation Strategies:

#### Scientific research and analysis to support sustainable aquaculture

Conduct scientific research and analysis, and provide information to support sustainable aquaculture and help Canadians monitor the environmental effects of Canada's aquaculture sector. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

#### Legislation and regulations for sustainable aquaculture

Develop and implement laws and regulations to advance aquaculture sustainability, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

## TARGET 2.6: SUSTAINABLE FOREST MANAGEMENT

Contribute to the national target that by 2020, continued progress is made on the sustainable management of Canada's forests.  
(Minister of Natural Resources)

**INDICATOR:** Annual harvest of timber relative to the level of harvest deemed to be sustainable (Allowable Annual Cut).

#### KEY DEPARTMENTS, AGENCIES AND ORGANIZATIONS:

Atlantic Canada Opportunities Agency, Canada Economic Development for Quebec Regions, Natural Resources Canada, Sustainable Development Technology Canada

Canada has 348 million hectares of forest land representing 9% of the world's forests. Canada's forests provide habitat for wildlife, moderate the climate, and filter air and water. They also support recreation, promote health and well-being, and are fundamental to the cultural and spiritual values of Indigenous people ([Canadian Council of Forest Ministers, 2015](#)).

Forests contribute to Canada's economy. The forest sector directly and indirectly employed 290,734 Canadians and added \$29 billion (directly and indirectly) to Canada's GDP in 2014.

Natural disturbances like fires and insect outbreaks can compromise the benefits that forests provide. Climate change is also affecting Canada's forests. Impacts seen to date include:

- ♦ The major mountain pine beetle infestation in British Columbia;
- ♦ More fire activity in the western boreal forest; and
- ♦ More aspen dieback in the Prairies.

#### Did You Know...

This target is based on one of the [2020 biodiversity goals and targets for Canada](#), developed collaboratively by federal, provincial and territorial governments in response to the United Nations Convention on Biological Diversity's 2011–2020 Strategic Plan.

Canada has developed a forest management system known as sustainable forest management (SFM), which aims to maintain a vibrant forest economy while protecting the health of forested lands and maximizing their environmental and social benefits. The federal government supports SFM by developing and sharing knowledge about Canada's forest ecosystems.

The federal government also helps to support innovation in Canada's forest industry and increase economic benefits for Canadians, including Indigenous people. In 2016–2019, the government will work with the private sector, other governments and research institutions to promote innovation and clean technology in the forest sector.

As the order of government responsible for natural resources, provinces and territories develop and enforce legislation, set standards and implement programs to ensure their forest resources are managed sustainably. First Nations also control and manage a growing portion of Canada's forest land. Forest companies are improving their sustainable forest management practices by participating in third-party certification programs, which provide assurance that a company is operating legally, sustainably and in compliance with globally recognized standards.

### Implementation Strategies:

#### Scientific research and analysis on forest ecosystems

Conduct scientific research and analysis to build knowledge of Canada's forest ecosystems, and provide information to support stakeholder decision making. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

#### In-kind support and funding for forest projects

Provide funding and in-kind support for projects and activities that increase forestry's benefits for Canadians, including Indigenous people. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

## TARGET 2.7: SUSTAINABLE AGRICULTURE

Support the agriculture sector in improving the sustainable management of agricultural working landscapes in a manner that contributes to national targets:

- Agri-Environmental Performance Metrics achieve a value between 81–100 on each of the Water Quality and Soil Quality Agri-Environmental Performance Metrics by March 31, 2030.
- By 2020, agricultural working landscapes provide a stable or improved level of biodiversity and habitat capacity. (Minister of Agriculture and Agri-Food)

**INDICATORS:** Environmental Sustainability of Canadian Agriculture: Agri-Environmental Indicator Report Series; Wildlife Habitat Capacity on Farmland; Water Quality and Soil Quality Agri-Environmental Performance Metrics; Environmental farm planning on agricultural land.

**KEY DEPARTMENTS AND ORGANIZATIONS:** Agriculture and Agri-Food Canada, Sustainable Development Technology Canada

Agriculture is a major contributor to Canada's economy. In 2014, the agri-food sector accounted for 6.6% of Canada's GDP and employed about 2.1 million Canadians. Agriculture is also closely connected to the environment. Land resources and ecosystems provide natural functions necessary for farming, such as nutrient cycling, soil formation, water purification, and pollination. In turn, farm landscapes support biodiversity by providing habitat for wildlife.

In recent decades, agricultural land use intensity in Canada has increased in response to higher market demand. For example, cropland now makes up a larger proportion of total farmland and the number of livestock on Canadian farms has increased. Higher intensity can change agriculture's relationship with the environment.

- ♦ Increased fertilizer use may pollute water bodies and cause nuisance and toxic algae growth;
- ♦ Excessive tilling and removing natural vegetation erodes soil and releases carbon dioxide into the atmosphere; and
- ♦ Converting natural areas into cropland reduces the amount of habitat available for wildlife.

### *Did You Know...*

This target supports the 2020 biodiversity goals and targets for Canada, developed collaboratively by federal, provincial and territorial governments in response to the United Nations Convention on Biological Diversity's 2011-2020 Strategic Plan.

To address these issues, agricultural producers across Canada are adopting practices that reduce impacts on water and soil and increase biodiversity and habitat capacity. These include:

- ♦ Tilling the soil less often;
- ♦ Optimizing the timing and application of fertilizer to prevent water pollution; and
- ♦ Planting rows of trees that reduce soil erosion and provide wildlife habitat.

The federal government supports these improvements through research and development. Additionally, in 2016–2019, the government will take further actions to enhance the environmental performance and economic benefits of agriculture, including:

- ♦ Working with the private sector, other governments and research institutions to promote innovation and clean technology in the agriculture sector; and
- ♦ Working with provinces, territories and other partners to help the agriculture sector adjust to climate change and better address water and soil conservation and development issues.

Provinces and territories share jurisdiction over agriculture with the federal government, and programs to support sustainable farm management often rely on intergovernmental partnerships. For example, federal funding enables provinces and territories to deliver programs that promote farm-level stewardship action.

## **Implementation Strategies:**

### **Scientific research and analysis to support sustainable agriculture**

Conduct scientific research and analysis to build knowledge of the effects of environment on the agriculture, and provide information to support decision making and help Canadians monitor progress toward sustainable agriculture. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

### **In-kind support and funding for sustainable agriculture**

Provide funding for provinces and territories to deliver sustainable agriculture programming. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

### **Investment in sustainable agriculture technologies**

Support the development, demonstration and deployment of technologies that enable sustainable agriculture. Technology development and dissemination can support economic growth and improved quality of life for Canadians, and provide environmental benefits.

## TARGET 2.8: SUSTAINABLE MINERAL RESOURCE DEVELOPMENT

Help reduce the environmental footprint of mining by promoting the development and uptake of green mining technologies and practices.

(Minister of Natural Resources)

**INDICATOR:** Increased collaboration between partners in the area of green mining, including by conducting joint projects, sharing best practices and investing in research and development.

**KEY DEPARTMENTS:** Natural Resources Canada, Western Economic Diversification Canada

Canada's mining and exploration sector is recognized as a global leader and is an important component of the Canadian economy. In 2014, the sector accounted for nearly 20% of exports and 3.6% of the country's gross domestic product and, together, the Toronto Stock Exchange and the TSX-Venture Exchange were home to almost 60% of the world's publicly listed mining and exploration companies. The sector also provided employment to nearly 380 000 Canadians, produced over 60 commodities and is the largest private employer of Indigenous people.

For its part, the Government of Canada can support sustainable mineral resource development by fostering innovation, enhancing environmental performance, engaging communities and maximizing economic benefits in a responsible way.

The federal government invests in research and development into sustainable mining practices and supports the development and commercialization of new technologies with the potential to improve productivity and environmental performance. In 2016–2019, the government will expand this role by working with the private sector, other governments and research institutions to promote innovation and clean technology in the mining sector.

The Government of Canada also helps set the conditions for sustainable mineral resource development by exercising its regulatory authority, facilitating partnerships, and contributing its own knowledge and expertise.

The federal government cannot act alone. In order to truly support sustainable mineral resource development, collaboration between the federal, provincial and territorial levels of government, industry and other stakeholders is essential.

### Implementation Strategies

#### **Investment in sustainable mineral resource development technologies**

Support the development, demonstration and deployment of technologies with the potential to improve productivity and strengthen environmental performance in the mining sector. Technology development and dissemination can support economic growth and improved quality of life for Canadians, and provide environmental benefits.

#### **Domestic collaboration to support sustainable mineral resource development**

Provide opportunities for collaboration and work with other governments, industry and stakeholders to support sustainable mineral resource development. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

# GOAL 3: National Parks, Protected Areas and Ecosystems

**Create resilient ecosystems with healthy wildlife populations that also enable Canadians to enjoy benefits from national parks, resources and ecosystem services for generations to come.**

**INDICATORS:** General status of species in Canada.

National parks and other protected areas benefit human health and provide shelter and food to thousands of species. Restricting development in protected areas and managing them for ecological integrity will help conserve them and the species they support for the present and the future.

Targets that contribute to this goal focus on helping species at risk recover; protecting migratory birds; managing and expanding Canada's network of protected areas; meeting Canada's international commitment to protect marine and coastal areas; understanding how invasive alien species spread and preventing them from becoming established in Canada; and providing more opportunities for Canadians to experience and connect with nature.

The 2030 Agenda calls for action to protect the planet from degradation. This FSDS goal contributes to the vision and objectives of the 2030 Agenda by helping to ensure that economic development does not negatively affect the land, water, plants and animals that Canadians value, or compromise the ecosystem services that support our communities and industries. It also supports the SDGs, including:



## *Did You Know...*

In February 2015, Canada adopted the 2020 biodiversity goals and targets. These national objectives were developed collaboratively by the federal, provincial and territorial governments, with input from Indigenous organizations and stakeholders. They will help guide collective action on biodiversity conservation in Canada between now and 2020, and support progress towards Canada's international commitments under the United Nations Convention on Biological Diversity.

Implementing Canada's 2020 biodiversity goals and targets will rely on meaningful, full and effective participation of Indigenous people. In this respect, Indigenous traditional knowledge and customary use of biological resources are relevant for implementing all of these goals and targets, including related FSDS targets ([Biodivcanada.ca](http://Biodivcanada.ca), 2015).



### TARGET 3.1: SPECIES AT RISK

By 2020, species that are secure remain secure, and populations of species at risk listed under federal law exhibit trends that are consistent with recovery strategies and management plans. (Minister of Environment and Climate Change)

**INDICATORS:** Species at risk population trends (i.e. trends in populations of species at risk compared to federal recovery strategy objectives); Changes in wildlife species disappearance risks.

**KEY DEPARTMENTS AND AGENCIES:**

Environment and Climate Change Canada, Fisheries and Oceans Canada, National Defence, Parks Canada

Ecosystem processes and functions, and the plants, animals and microorganisms that contribute to them, support Canadians' health, well-being and security, and Canada's economic prosperity. Protecting species and their habitats preserves biodiversity, which in turn helps ecosystems provide valuable ecosystem services such as flood control and pollination.

As of February 2015, 521 plant and animal species were classified as endangered, threatened, or of special concern under the *Species at Risk Act* (SARA). Species can be put at risk due to factors such as habitat loss, competition from invasive alien species, and climate change impacts.

#### *Did You Know...*

This target is one of the [2020 biodiversity goals and targets for Canada](#), developed collaboratively by federal, provincial and territorial governments in response to the United Nations Convention on Biological Diversity's 2011–2020 Strategic Plan.

SARA is one of the federal government's main tools for protecting species at risk. It establishes:

- ♦ A process for assessing the status of wildlife species;
- ♦ A mechanism for listing species at risk in the legislation; and
- ♦ Provisions for protecting and managing listed species and their habitat.

SARA requires the government to prepare recovery strategies and action plans for species at risk and management plans for species of special concern. They identify what needs to be done to reverse a species' decline and help it recover, or prevent it from becoming threatened.

The government will enhance SARA implementation, including by responding more quickly to scientific advice on listing species, completing robust recovery strategies and action plans, and meeting legislated timelines. Meanwhile, federal funding programs will continue to engage Indigenous people and other Canadians in protecting species at risk and the habitat they need to survive and recover.

All Canadian jurisdictions share responsibility for conserving species at risk. Provinces and territories are responsible for protecting species at risk on provincial, territorial and private land.

Many provinces and territories have also established biodiversity strategies and policies, as well as other initiatives that support biodiversity and wildlife species, such as:

- ♦ Wetland conservation policies;
- ♦ Protected area strategies; and
- ♦ Initiatives to control invasive alien species.

## Implementation Strategies:

### **Legislation and regulations to protect species at risk**

Develop and implement laws and regulations to protect species at risk, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

### **In-kind support and funding for species at risk**

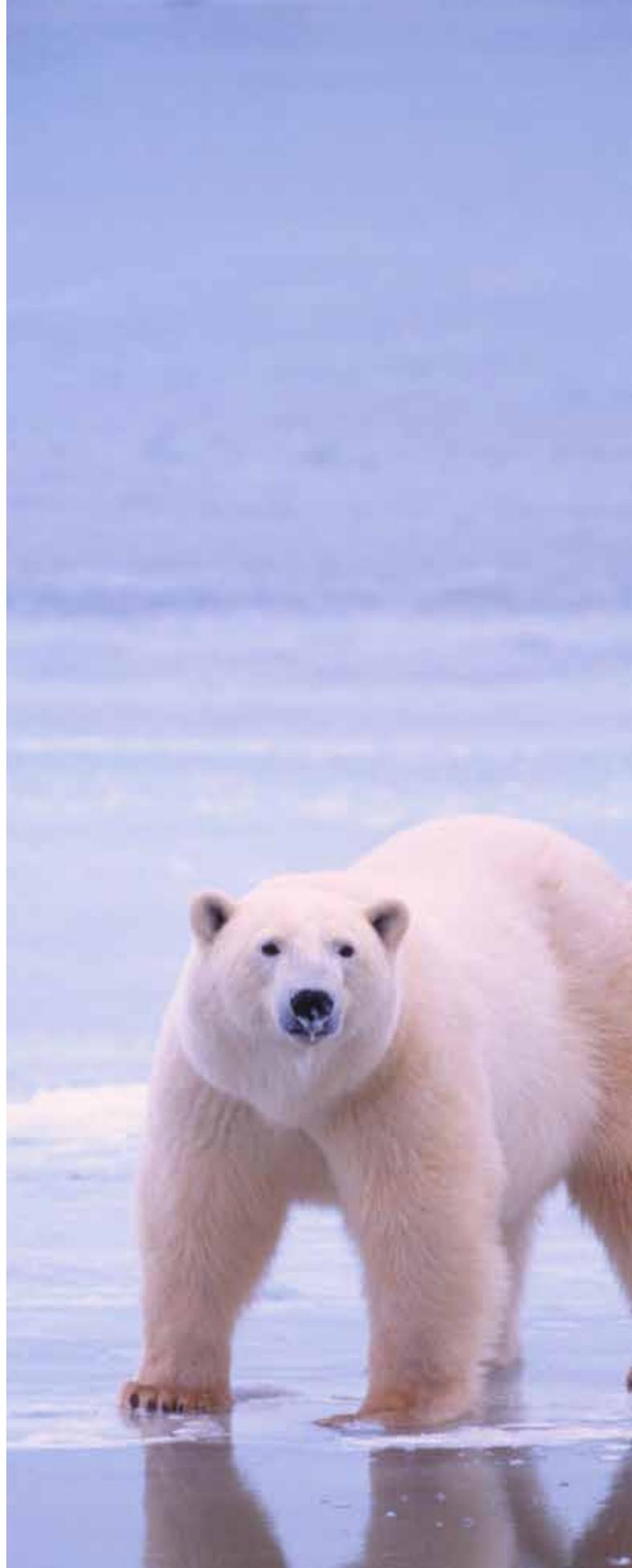
Provide funding and in-kind support for projects and activities that help conserve and restore species and their habitats. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

### **Protection of habitat for species at risk**

Protect natural habitat and landscapes, manage protected areas, and provide opportunities for Canadians to connect with nature. Protecting natural environments helps to conserve them for the benefit of present and future generations of Canadians. Delivering programs and services in protected areas can foster tourism and economic opportunities for neighbouring communities, and support the visitor experience.

### **Domestic and international collaboration to protect species at risk**

Provide opportunities for collaboration and participate in joint initiatives with domestic and international partners to protect species at risk. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.



## TARGET 3.2: MIGRATORY BIRDS

Improve the proportion of migratory bird species that are within acceptable bounds of their population goals.  
(Minister of Environment and Climate Change)

**INDICATOR:** Proportion of species that are within acceptable bounds of their population goals.

**KEY DEPARTMENT:**  
Environment and Climate Change Canada

Approximately 450 native bird species found in Canada are considered migratory, which means that they make Canada their home for part of each year. They include, for example, ducks, geese, swallows, herons and gulls.

Migratory birds provide ecosystem services such as insect control, plant pollination and seed dispersal, which benefit agriculture, forestry, and Canadians generally. They are also integral to activities such as bird watching, hunting and tourism, are a source of food, and many are considered to be culturally important for both Indigenous and non-Indigenous Canadians.

Human activities have harmed Canada's bird populations—43% of managed migratory bird species in Canada have populations outside the acceptable range. Birds face threats that include:

- ◆ Habitat loss due to development pressure;
- ◆ Pollutants such as pesticides and industrial chemicals;
- ◆ Predation by cats; and
- ◆ Climate change impacts such as severe storms and rising sea levels.

The federal government helps increase the proportion of migratory bird species with acceptable populations by carrying out monitoring and research activities, protecting important bird habitat, and enforcing the *Migratory Birds Convention Act, 1994* (MBCA). The government will strengthen protection of migratory birds by expanding migratory bird sanctuaries.

Canada shares responsibility for conserving migratory birds with other countries the birds visit. For example, Canada partners with the US and Mexico to implement the North American Waterfowl Management Plan and the North American Bird Conservation Initiative.

In Canada, federal, provincial and territorial governments share responsibility for conserving migratory birds, and provincial legislation protects a number of bird species not covered by the MBCA. Provinces, territories, Indigenous people, conservation organizations and others also contribute to domestic and international conservation initiatives.

### Implementation Strategy:

#### Legislation and regulations to protect migratory birds

Develop and implement laws and regulations to conserve migratory birds, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.



### TARGET 3.3: TERRESTRIAL ECOSYSTEMS AND HABITAT CONSERVATION

Contribute to the national target that by 2020, at least 17% of terrestrial areas and inland water are conserved through networks of protected areas and other effective area-based conservation measures.  
(Minister of Environment and Climate Change)

**INDICATOR:** Percentage of total terrestrial territory (including inland water) conserved in protected areas and other effective area-based conservation measures.

**KEY DEPARTMENTS AND AGENCIES:**

Department of Finance Canada, Environment and Climate Change Canada, Innovation, Science and Economic Development Canada Statistics Canada, Parks Canada

Natural spaces, including forests, wetlands, prairies and tundra, contribute to the quality of Canada's environment as well as the economy and Canadians' well-being. They provide habitat that wildlife populations need to survive and recover, and perform ecosystem services that include, among many others:

- ♦ Filtering water;
- ♦ Enriching the soil;
- ♦ Sequestering and storing greenhouse gases; and
- ♦ Regulating flooding.

Canadians also have a profound attachment to wilderness.

#### *Did You Know...*

This target is one of the [2020 biodiversity goals and targets for Canada](#), developed collaboratively by federal, provincial and territorial governments in response to the United Nations Convention on Biological Diversity's 2011–2020 Strategic Plan.

The federal government helps conserve natural spaces by establishing and managing [protected areas](#) such as national parks, national wildlife areas and migratory bird sanctuaries, and by supporting conservation efforts by others.

In 2016–2019, the federal government will manage and expand the national parks system, national wildlife areas and migratory bird sanctuaries in order to meet Canada's international commitment to conserve 17% of our land and inland waters by 2020. The government will also safeguard ecosystems by restricting development in national parks.

Provinces, territories, municipalities, Indigenous peoples, non-governmental organizations, the private sector and individual landowners also help conserve natural spaces. For example:

- ♦ Provinces and territories establish and manage provincial and territorial parks, and support voluntary conservation by providing information, assistance and incentives to individuals and businesses interested in protecting private land.
- ♦ Non-governmental organizations help landowners and businesses implement conservation on private lands through conservation easements, covenants and other measures.

#### **Implementation Strategies:**

##### **Protection and management of natural spaces**

Protect natural habitat and landscapes, manage protected areas, and provide opportunities for Canadians to connect with nature. Protecting natural environments helps to conserve them for the benefit of present and future generations of Canadians. Delivering programs and services in protected areas can foster tourism and economic opportunities for neighbouring communities, and support the visitor experience.

##### **Voluntary sustainable development actions to conserve natural spaces**

Encourage businesses and Canadians to take voluntary action to conserve natural spaces. Voluntary approaches such as providing information and incentives, and developing standards and codes of practice, can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation.

### **Scientific research and analysis on protected areas**

Conduct scientific and other technical research and analysis to better understand protected areas and assess the value of natural spaces, and provide information to support decision-making. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

### **Domestic and international collaboration to conserve natural spaces**

Provide opportunities for collaboration and participate in joint initiatives with domestic and international partners to conserve natural spaces. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

### **Legislation and regulations to protect species at risk in protected areas**

Enforce laws and regulations to protect species at risk in protected areas. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

### **International agreements and initiatives on protected areas**

Negotiate on behalf of the Canadian government, represent the government's interests in international fora, and implement international agreements such as the United Nations Convention on Biological Diversity. Participating in negotiations allows Canada to help shape international agreements and initiatives which in turn provide a framework for domestic action.

## **TARGET 3.4:** **HEALTH OF NATIONAL PARKS**

The condition of 90% of ecological integrity indicators in national park monitoring plans, as assessed annually between 2016 and 2019, will be maintained or improved.  
(Minister of Environment and Climate Change)

**INDICATOR:** Ecological integrity of Canada's national parks.

**KEY AGENCY:** Parks Canada

Canada's national parks system reflects the country's diverse natural regions and landscapes. It includes 46 national parks and protects approximately 328 400 km<sup>2</sup> of land. Canada's national parks provide a wide spectrum of ecosystem services that are important to the health and well-being of visitors and adjacent communities.

Parks Canada has a legislated responsibility to manage national parks with the goal of maintaining or restoring their ecological integrity while providing opportunities for Canadians to experience them for their education and enjoyment.

An ecosystem has ecological integrity when its natural components are likely to persist, including:

- ♦ Physical elements like water and rocks;
- ♦ Diversity of species and habitats; and
- ♦ Ecological processes like fire, flooding and predation.

Parks Canada assesses ecological integrity by regularly monitoring key park ecosystems such as forests, grasslands, freshwater and wetlands. Ecological monitoring and conservation science help identify issues affecting park ecosystems and determine priorities for conservation actions.

To achieve tangible conservation gains, Parks Canada will collaborate with a range of organizations and individuals that contribute to improving the health of national parks, including Indigenous groups, local communities, neighbouring landowners, other federal departments and levels of government, and industry partners. Park visitors also contribute to conservation efforts by participating in citizen science initiatives.

## Implementation Strategies:

### Protection and management of national parks

Protect natural habitat and landscapes, manage protected areas, and provide opportunities for Canadians to connect with nature. Protecting natural environments helps to conserve them for the benefit of present and future generations of Canadians. Delivering programs and services in protected areas can foster tourism and economic opportunities for neighbouring communities, and support the visitor experience.

### TARGET 3.5: MARINE ECOSYSTEMS

By 2017, 5% and by 2020, 10% of coastal and marine areas are conserved through networks of protected areas and other effective area-based conservation measures.

(Minister of Fisheries, Oceans and the Canadian Coast Guard)

**INDICATOR:** Percentage of total coastal and marine territory conserved in marine protected areas and other effective area-based conservation measures.

#### KEY DEPARTMENTS AND AGENCIES:

Fisheries and Oceans Canada, Environment and Climate Change Canada, Parks Canada

Canada's marine and coastal areas support diverse and abundant marine life, contribute to the economy, and are a part of Canada's cultural and social fabric. Indigenous people and coastal communities also have longstanding ties to the oceans.

However, demands on oceans and marine resources from industries such as marine shipping, fishing, and tourism are growing. Marine ecosystems have a limited capacity to adjust to these increasing stresses.

#### *Did You Know...*

This target supports the [2020 biodiversity goals and targets for Canada](#), developed collaboratively by federal, provincial and territorial governments in response to the United Nations Convention on Biological Diversity's 2011–2020 Strategic Plan.

To prevent human use from harming overall ocean health, federal, provincial and territorial governments are establishing marine protected areas (MPAs) and MPA networks. MPAs are recognized, dedicated and managed to conserve nature for the long term. Their benefits include:

- ♦ Protecting rare and threatened species and their habitats;
- ♦ Protecting ecosystems that capture and store carbon and protect communities from extreme weather events;
- ♦ Sustaining commercial, recreational and Indigenous fisheries;
- ♦ Providing opportunities for recreation; and
- ♦ Helping Canadians connect with nature.

The federal government is committed to increasing the percentage of Canada's marine and coastal area that is conserved from 1.3 % to 5% by 2017 and to 10% by 2020.

Science supports the development of Canada's MPA network and underpins effective ocean management. Accordingly, the government will increase funding for federal ocean science and monitoring programs in 2016–2019, and will examine the implications of climate change for Arctic marine ecosystems.

The government will also strengthen co-management of Canada's oceans, providing more opportunities for work with the provinces, territories, Indigenous peoples and other stakeholders. These partners and stakeholders play an important role in ocean management, including by working with the federal government to develop MPA networks and by participating in the establishment, management and monitoring of MPAs

## Implementation Strategies:

### Protection and management of marine and coastal areas

Establish and manage marine protected areas and develop marine protected area networks, and provide opportunities for Canadians to connect with nature. Protecting natural environments helps to conserve them for the benefit of present and future generations of Canadians. Delivering programs and services in protected areas can foster tourism and economic opportunities for neighboring communities, and support the visitor experience.

### Scientific research and analysis on marine protected areas

Conduct scientific research and analysis to better understand marine protected areas, and provide information to support decision making and monitoring. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

## TARGET 3.6: INVASIVE ALIEN SPECIES

By 2020, pathways of invasive alien species introductions are identified, and risk-based intervention or management plans are in place for priority pathways and species.  
(Minister of Environment and Climate Change)

**INDICATORS:** Number of known new invasive alien species in Canada, by Federal Regulatory Status; Percent of federally regulated foreign invasive alien species not established in Canada.

### KEY DEPARTMENTS AND AGENCIES:

Canada Border Services Agency, Canadian Food Inspection Agency, Environment and Climate Change Canada, Fisheries and Oceans Canada, Natural Resources Canada, Transport Canada

Invasive alien species are land-based or aquatic plants, animals and micro-organisms that have been moved to environments outside their natural distribution and whose spread threatens the environment, the economy, or society. They are introduced into new environments as a result of human activity—for example, in ships' ballast water or on imported goods such as fruit. Extreme natural events such as tsunamis can also contribute to their spread.

Since many invasive alien species have no natural enemies in their new environments, their populations can often grow unchecked, harming native species and ecosystems and impacting the sectors and people who depend on them.



### *Did You Know...*

This target is one of the [2020 biodiversity goals and targets for Canada](#), developed collaboratively by federal, provincial and territorial governments in response to the United Nations Convention on Biological Diversity's 2011–2020 Strategic Plan.

Not all alien species become invasive, but those that do can cause enormous damage. According to one conservative estimate, the impact of only 16 invasive alien species on the Canadian economy is between \$13.3 and \$34.5 billion each year [Culautti et al, 2006](#). They lower the productivity and yields of agriculture, aquaculture, forestry and fisheries, and damage infrastructure. They can also harm recreational areas and cultural resources and, in some cases, threaten human health ([Canadian Council on Invasive Species, 2015](#)).

The federal government works closely with provinces and territories to understand how species are entering Canada, prevent their introduction, and reduce their impact if they do become established—for example, through regulation, monitoring, and public education and outreach.

Multi-stakeholder invasive alien species councils have been established in 11 provinces and territories and together form the Canadian Council on Invasive Species. They develop regional priorities and support local actions to address invasive alien species. Their members include representatives from federal and provincial governments, Indigenous groups, municipalities, non-governmental organizations, academia, industry and others.

Individuals can help stop invasive alien species from spreading by learning more about the ways they can spread and reporting any suspected sightings to federal and provincial governments and invasive species councils.

## **Implementation Strategies:**

### **Policy research and analysis on invasive alien species**

Conduct policy research and analysis and develop strategies to address invasive alien species. Identifying, assessing and evaluating policy options allows the government to decide on a course of action to achieve its objectives, assess results and adjust its approach over time.

### **Scientific research and analysis on invasive alien species**

Conduct scientific research and analysis to better understand invasive alien species and their pathways, and provide information to support decision-making. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

### **Legislation and regulations to manage invasive alien species**

Develop and implement laws and regulations to prevent the introduction of invasive alien species, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

### **Domestic and international collaboration on invasive alien species**

Provide opportunities for collaboration and work with domestic and international partners to manage invasive alien species. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.



### TARGET 3.7: CONNECTING CANADIANS WITH NATURE

By 2020, more Canadians get out into nature and participate in biodiversity conservation activities. (Minister of Environment and Climate Change)

**INDICATORS:** Number of visits at Parks Canada natural heritage places; Number of visits to selected National Wildlife Areas; Trends in percentage of Canadians who report that they visited parks or public greenspaces; Percentage of Canadians who report that they take definite action to protect the environment.

**KEY DEPARTMENTS AND AGENCIES:**  
Environment and Climate Change Canada,  
Parks Canada

Spending time in nature is a favourite pastime for many Canadians. The [2012 Canadian Nature Survey](#) found that 89% of Canadians participated in nature-based activities such as relaxing in nature, hiking, horseback riding, or gardening.

Connecting with nature helps individuals thrive, and benefits their communities and the environment. For example, it can improve physical and mental health, support children's development, and encourage Canadians to take part in conservation efforts. Nature-based tourism also provides economic benefits for Canada by:

- ♦ Creating jobs in sectors such as transportation, accommodations, retail and guiding;
- ♦ Generating tax revenue locally, provincially and nationally; and
- ♦ Strengthening local and regional economies and the national economy as a whole ([Canadian Parks Council, 2014](#)).

#### *Did You Know...*

This target is one of the [2020 biodiversity goals and targets for Canada](#), developed collaboratively by federal, provincial and territorial governments in response to the United Nations Convention on Biological Diversity's 2011–2020 Strategic Plan.

National parks and other protected areas provide opportunities to discover, experience, enjoy and develop a sense of personal connection to nature. The federal government will expand these opportunities through actions that include:

- ♦ Developing and promoting experiences that meet the needs of visitors such as offering unique camping experiences, developing programs for children and families and expanding the Learn to Camp Program;
- ♦ Completing the land assembly for Rouge National Urban Park, Canada's first national urban park located in the Greater Toronto Area; and
- ♦ Working with communities located near national parks, national marine conservation areas and other protected areas to stimulate economic development.

Provincial, territorial and municipal governments, as well as Indigenous and non-governmental organizations also help get Canadians into nature and involved in conservation. For example:

- ♦ Provincial and territorial parks provide opportunities for activities like camping, hiking, and viewing wildlife;
- ♦ Indigenous peoples work with federal, provincial and territorial governments to manage protected areas;
- ♦ Municipal parks and green spaces help urban Canadians benefit from time in nature; and
- ♦ Non-governmental organizations and educational institutions are engaging Canadians in citizen science initiatives to track changes to the environment and biodiversity.

#### **Implementation Strategies:**

##### **Protection and management of natural spaces**

Protect lands and waters, manage protected areas, and provide opportunities for Canadians to connect with nature. Protecting natural environments helps to conserve them for the benefit of present and future generations of Canadians. Delivering programs and services in protected areas can foster tourism and economic opportunities for neighbouring communities, and support the visitor experience.

##### **In-kind support and funding for conservation activities**

Provide funding and in-kind support for projects and activities that help conserve and restore species and their habitats. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

# GOAL 4: Freshwater and Oceans

**Protect and enhance water quality and water quantity so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.**

**INDICATORS:** Freshwater quality in Canadian rivers; Water quantity in Canadian rivers.

Canada's marine, coastal and aquatic ecosystems provide ecosystem services that are essential for Canada's economic prosperity and social well-being. However, these ecosystems continue to be stressed by the effects of human activity.

Targets that contribute to this goal focus on protecting and restoring aquatic ecosystems like the Great Lakes and the St. Lawrence River; preventing water pollution from ships, industrial facilities and other sources; and working with partners to manage Canada's water resources.

This FSDS goal supports the 2030 Agenda's call for action to protect the planet by helping to ensure clean water and the sustainable management of Canada's water resources. It also supports the SDGs, including:



This goal and many of its associated targets also complement Target 10 under Canada's 2020 biodiversity goals and targets: "By 2020, pollution levels in Canadian waters, including pollution from excess nutrients, are reduced or maintained at levels that support healthy aquatic ecosystems."



## TARGET 4.1: GREAT LAKES – CANADIAN AREAS OF CONCERN

Take federal actions to restore beneficial uses for delisting five Canadian Areas of Concern and to reduce the number of impaired beneficial uses in the remaining Areas of Concern by 25% by 2019. (Minister of Environment and Climate Change)

### INDICATOR:

Restoring the Great Lakes Areas of Concern.

### KEY DEPARTMENTS:

Fisheries and Oceans Canada, Environment and Climate Change Canada

## TARGET 4.2: GREAT LAKES

### PART I: PHOSPHORUS LOADS

Reduce phosphorus loading into the Great Lakes to achieve the binational (Canada-US) phosphorus concentration targets.

### PART II: PHOSPHORUS CONCENTRATIONS

Achieve the bi-national (Canada-US) total phosphorus concentrations targets for the Great Lakes. (Minister of Environment and Climate Change)

**INDICATOR:** Phosphorus Levels in the Great Lakes.

### KEY DEPARTMENTS:

Fisheries and Oceans Canada, Environment and Climate Change Canada

The Great Lakes—Superior, Huron, Michigan, Erie and Ontario—are a unique ecosystem that sustains a rich variety of plants and animals. They also supply drinking water to millions of Canadians; provide opportunities for swimming, boating, and fishing; and support economic activities such as tourism, agriculture, shipping, forestry, mining and manufacturing.

High levels of urban development, industry and agriculture in the Great Lakes region are harming Great Lakes ecosystems, with consequences for the environment, human health and the economy. For example, phosphorus in urban, industrial and agricultural runoff can cause excess algae growth that kills fish and other animals and can harm human health.

Other environmental issues affecting the Great Lakes include invasive alien species, chemical contaminants, and the effects of climate change.

Areas of Concern (AOCs) are sites identified in the Canada-US Great Lakes Water Quality Agreement (GLWQA) where human activity has severely degraded water quality and ecosystem health, resulting in beneficial use impairments such as habitat loss, restrictions on use of drinking water, and beach closures. Restoring AOCs can lead to benefits such as healthy fish populations and increased tourism. The GLWQA requires that each AOC have a Remedial Action Plan (RAP) in place to guide restoration and protection efforts.

The federal government works with Ontario, the United States and other partners to improve water quality and restore ecosystems in the Great Lakes—for example, by:

- ◆ Conducting scientific research;
- ◆ Implementing RAPs and Lakewide Management Plans under the GLWQA; and
- ◆ Working with partners to establish binational phosphorus reduction targets for Lake Erie, and for the other Great Lakes as required.

In Canada, Ontario and the federal government share jurisdiction over the Great Lakes. Actions under the Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health—for example, addressing algal blooms and preventing invasive alien species from entering the lakes—support Canada's GLWQA commitments as well as Ontario's Great Lakes Strategy.

### Implementation Strategies:

#### Domestic and international collaboration on the Great Lakes

Work with Ontario, the US and other partners to improve water quality and restore ecosystems in the Great Lakes. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

#### Scientific research and analysis on the Great Lakes

Conduct scientific research and analysis to monitor water quality and ecosystem health in the Great Lakes, and report on results to Canadians. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

## TARGET 4.3: ST. LAWRENCE RIVER

Take federal actions so that 85% of the indicators of the Overview of the State of the St. Lawrence, including phosphorus and nitrogen, achieve a result considered intermediate or better to improve water quality, conserve biodiversity and ensure sustainable use of the river by 2019. (Minister of Environment and Climate Change)

**INDICATORS:** State of the River's Ecosystem presented in the Overview of the State of the St. Lawrence every five years; Phosphorus and nitrogen levels in the St. Lawrence River.

**KEY DEPARTMENT:**  
Environment and Climate Change Canada

Human activity harmed the St. Lawrence River during the twentieth century and the ecosystem remains stressed today. Issues include elevated phosphorus and nitrogen levels from agricultural runoff and other sources; harmful substances from urban areas and industry; the introduction and spread of invasive alien species; and climate change impacts.

These environmental problems have weakened recreational, commercial, industrial and public uses and other benefits from ecosystem services related to the St. Lawrence. They have also affected riverside residents' quality of life.

The federal government collaborates with the Government of Quebec to conserve and enhance the St. Lawrence. Under the current St. Lawrence Action Plan 2011–2026, Canada and Quebec are undertaking joint projects in three priority areas:

- ◆ Protecting biodiversity in the St. Lawrence ecosystem;
- ◆ Ensuring the sustainable use of the St. Lawrence and its resources; and
- ◆ Improving water quality by controlling point-source and non-point-source (for example, agricultural) pollution.

The St. Lawrence Action Plan 2011–2026 also includes:

- ◆ A funding program that supports community projects to improve the ecosystem;
- ◆ An environmental prediction program that simulates the evolution of the state of the river;

- ◆ A program to monitor the state of the St. Lawrence, under which Canada and Quebec produce the Overview of the State of the St. Lawrence Report every five years; and
- ◆ Regional Round Tables and an annual Forum on the St. Lawrence that enable different actors with an interest in the St. Lawrence ecosystem—including First Nations, municipal governments and civil society—to set priorities and coordinate activities.

### Implementation Strategies:

#### **Domestic collaboration on the St. Lawrence River**

Collaborate with the Government of Quebec to conserve and enhance the St. Lawrence under the St. Lawrence Action Plan 2011–2026. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

#### **In-kind support and funding for projects on the St. Lawrence River**

Provide funding and in-kind support for projects and activities that improve the St. Lawrence ecosystem. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

#### **Scientific research and analysis on the St. Lawrence River**

Conduct scientific research and analysis to better understand the St. Lawrence ecosystem and monitor its health, and provide information to support stakeholder decision making and help Canadians monitor the state of the St. Lawrence. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

## TARGET 4.4: LAKE SIMCOE AND SOUTH-EASTERN GEORGIAN BAY

Reduce phosphorus loadings by an additional 2000 kg to Lake Simcoe, which will support the Province of Ontario's target to reduce phosphorus inputs into Lake Simcoe to 44 000 kg/year by 2045. Reduce an estimated 2000 kg of phosphorus loadings to south-eastern Georgian Bay watershed by 2017.  
(Minister of Environment and Climate Change)

**INDICATORS:** Phosphorus load reductions to Lake Simcoe; Phosphorus load reductions to Georgian Bay.

**KEY DEPARTMENT:**  
Environment and Climate Change Canada

Lake Simcoe and South-eastern Georgian Bay are located in Southern Ontario. Tourists, cottagers, fishers, farmers and others benefit from the ecosystem services these watersheds provide; however, human activities are harming the ecosystem. Phosphorus from urban runoff, septic systems, and sewage treatment plants are causing damaging algae growth that can harm fish and plant life. Other concerns include:

- ♦ Invasive species;
- ♦ Shoreline development that fragments, or separates, habitats for plants and animals; and
- ♦ Climate change.

These issues have environmental, social and economic impacts. For instance, climate change may be shortening the ice-fishing season on Lake Simcoe ([Government of Ontario, 2009](#)). This could potentially decrease tourism, which generates about \$200 million each year for the local economy.

Reducing annual phosphorus inputs into Lake Simcoe and South-eastern Georgian Bay supports Ontario's phosphorus reduction target and Canada's obligations under the Canada-US GLWQA. To achieve the target, the government supports community-based projects to reduce phosphorus inputs, restore fish and aquatic life habitat and populations, and address algae growth.

Ontario issued its Lake Simcoe Protection Plan in 2009. The plan sets out a wide-ranging approach to protect and restore the ecological health of Lake Simcoe and its watershed. It was developed with input from First Nations, scientists, municipalities and others.

Other governments and organizations are also working to clean up the water and ecosystems in the Lake Simcoe and South-eastern Georgian Bay watersheds, including Indigenous communities, municipal governments, environmental non-governmental organizations, farmers, and developers and private industry ([Government of Ontario, 2009](#)).

### Implementation Strategy:

#### **In-kind support and funding for Lake Simcoe and South-eastern Georgian Bay projects**

Provide funding and in-kind support for projects and activities that improve water quality and help restore ecosystems in Lake Simcoe and South-eastern Georgian Bay. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

## TARGET 4.5: LAKE WINNIPEG BASIN

By 2017, reduce phosphorus inputs to water bodies in the Lake Winnipeg Basin, in support of the Province of Manitoba's overall plan to reduce phosphorus in Lake Winnipeg by 50% to pre-1990 levels.

(Minister of Environment and Climate Change)

**INDICATORS:** Nitrogen and Phosphorus levels in Lake Winnipeg; Phosphorus load reductions to Lake Winnipeg.

**KEY DEPARTMENT:**

Environment and Climate Change Canada

Lake Winnipeg is one of the biggest lakes in Canada. At nearly one million square kilometres, its drainage basin is the country's second largest. Human activities are affecting the lake—high phosphorus and nitrogen levels are causing more frequent and larger nuisance and toxic algae blooms. Both threaten water quality, fisheries, tourism and human quality of life.

Many factors contribute to these problems, including agriculture, urban development, and the loss of wetlands that once cleaned the water before it entered the lake. Lake Winnipeg's drainage basin covers parts of four Canadian provinces and four US states. This means that activities over a broad area affect the lake. It also means that many organizations and groups need to work together to solve the challenges.

The federal government supports Manitoba's plan to reduce phosphorus in Lake Winnipeg by:

- ◆ Supporting community-driven nutrient reduction projects;
- ◆ Conducting scientific research and monitoring; and
- ◆ Collaborating with other governments, Indigenous groups and regional stakeholders

Manitoba is taking extensive action to limit nutrient loading from different sectors, including implementing the *Save Lake Winnipeg Act*. The province has invested more than \$100 million over the past decade to improve the health of the lake. They are also coordinating stakeholder action through the Lake Friendly Stewards Alliance and the Lake Friendly Accord.

Many other organizations and governments are taking steps that support this target. For example, municipal governments and First Nations are investing in wastewater system upgrades to reduce nutrient loading. US federal and state governments work with the Government of Canada and provinces through forums such as the International Joint Commission.

### Implementation Strategies:

#### **Domestic collaboration on Lake Winnipeg**

Collaborate with other governments, Indigenous peoples and regional stakeholders to reduce phosphorus in Lake Winnipeg. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

#### **In-kind support and funding for Lake Winnipeg**

Provide funding and in-kind support for projects and activities that help reduce nutrient inputs to Lake Winnipeg. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

## **TARGET 4.6:** MARINE POLLUTION – RELEASE OF HARMFUL POLLUTANTS

Protect the marine environment by an annual 5% reduction in the number of releases and volume of harmful pollutants in the marine environment by vessels identified during pollution patrol from 2016–2019. (Minister of Transport)

**INDICATORS:** Number of marine pollution spills from identified vessels; volume of marine pollutants spills.

**KEY DEPARTMENT:**  
Canadian Coast Guard, Environment and Climate Change Canada, Transport Canada

Marine shipping provides economic benefits and supports the growth of international trade. However, it also carries environmental risks. For example, ships may deliberately or accidentally release pollutants such as oil into the marine environment, harming ocean creatures and damaging biodiversity and marine resources. Canada's ports are also becoming busier: the volume of cargo loaded and unloaded in Canada increased 43% between 1993 and 2011.

In 2016–2019, the government will take action to protect marine ecosystems from threats posed by marine shipping, including formalizing the moratorium on crude oil tanker traffic on British Columbia's North Coast. The government will also continue to enforce regulations that prohibit the release of harmful pollutants from ships.

Marine pollution is a global issue and is managed internationally as well as domestically. The International Maritime Organization (IMO) is the United Nations specialized agency responsible for the safety and security of shipping and the prevention of marine pollution by ships. As one of the IMO's 171 member states, Canada contributes to the development of international standards related to marine shipping, which in turn provide a framework for domestic programs.

Within Canada, in addition to the federal government, the shipping industry has specific responsibilities with regard to preventing and managing marine pollution. The government will continue to hold industry accountable for organizing and funding a response to a spill.

Canada Port Authorities, which operate at arm's length from the federal government, are also taking action to prevent marine pollution.

### **Implementation Strategy:**

#### **Legislation and regulations to control marine pollution**

Develop and implement laws and regulations to control marine pollution, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

## TARGET 4.7: MARINE POLLUTION – DISPOSAL AT SEA

Reduce and prevent marine pollution by ensuring the sustainability of Disposal at Sea sites such that

- 100% of monitored sites are assessed and classified as sustainable, or needing ecological restoration or remediation from 2016–2019; and
- 100% of sites needing ecological restoration or remediation are maintained by implementing management plans, including necessary adaptations to any assessment procedures.

(Minister of Environment and Climate Change)

**INDICATORS:** Percentage of monitored sites assessed as sustainable or needing ecological restoration or remediation; Percentage of sites identified as needing ecological restoration or remediation that have a management plan implemented.

**KEY DEPARTMENT:**

Environment and Climate Change Canada

Uncontrolled disposal at sea can pollute the marine environment and reduce oxygen levels in ocean water. The 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the London Convention) was the first international agreement to control ocean dumping. The 1996 London Protocol updates the Convention and makes it more stringent.

Canada's system for regulating disposal at sea reflects the requirements of the London Convention and Protocol. Disposal at sea can only be done in accordance with a permit issued by Environment and Climate Change Canada under the *Canadian Environmental Protection Act, 1999* (CEPA).

Two to three million tonnes of material are disposed of at sea each year under the CEPA permit system. Most is sediment moved to keep shipping channels and harbours clear for navigation.

Environment and Climate Change Canada considers permit applications on a case-by-case basis, ensuring that:

- ♦ Disposal at sea is the environmentally preferable option for managing the waste;
- ♦ Pollution is prevented; and
- ♦ The interests of other users of the sea are considered and protected.

When issued, permits impose conditions to protect the marine environment and human health.

Each year, Environment and Climate Change Canada monitors a number of representative disposal sites to determine whether they are being used sustainably. If monitoring data show that waste is harming the marine environment, Environment and Climate Change Canada will consider changes to how the disposal site can be used or even close it altogether.

Environment and Climate Change Canada consults other federal departments, provincial authorities, Indigenous groups and stakeholders when assessing permit applications. Consultation helps to ensure that decisions reflect local circumstances and that interested parties' views are taken into account.

### Implementation Strategy:

#### Legislation and regulations on disposal at sea

Continue to implement laws and regulations to reduce marine pollution from disposal at sea, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

## TARGET 4.8: PROTECT AND CONSERVE COASTAL ECOSYSTEMS

Facilitate collaborative research, development and sharing knowledge, or actions on priorities to improve water quality and conserve biodiversity, that enable the sustainability and health of use of natural resources in Canada's coastal ecosystems by 2019.

(Minister of Environment and Climate Change)

**INDICATORS:** TBC

**KEY DEPARTMENTS:**

Canadian Coast Guard,  
Environment and Climate Change Canada

Canada's coastal ecosystems include intertidal zones, estuaries, salt marshes, mud flats, seagrass meadows, beaches, cliffs, banks, dunes, open water, coastal islands and dykelands. They support diverse marine and terrestrial species including 1100 species of fish and numerous marine mammals, birds, plants, and invertebrates ([Federal, Provincial and Territorial Governments of Canada, 2010](#)).

Coastal ecosystems have broad environmental, social and economic value—for example, as globally significant flyways and habitats for many bird species, habitat for endangered marine mammals, and habitat or nursery grounds for commercial shellfish and fish species. They also provide erosion control and flood protection, filter wastes from water, and act as a carbon sink.

Coastal ecosystems support commercial fisheries, tourism, agriculture, and electricity generation. They also hold historical and archaeological value, cultural and ceremonial value for Indigenous people, and support recreation, well-being and quality of life.

Human activities are putting pressure on these ecosystems and causing them to deteriorate. Many coastal ecosystems are also highly sensitive to sea-level rise and other climate change impacts.

The federal government funds projects to better understand, monitor, conserve and restore important coastal ecosystems. Other federal actions that benefit coastal ecosystems include monitoring water quality in shellfish-growing areas, regulating wastewater and industrial effluent, and preventing marine pollution.

The government works with Canadian and US partners to protect and restore coastal ecosystems, For example, through the Gulf of Maine Council on the Marine Environment, the government works with provinces, US federal and state governments, non-governmental organizations and the private sector to maintain and enhance environmental quality in the Gulf of Maine.

### Implementation Strategies:

#### **Domestic and international collaboration on coastal ecosystems**

Provide opportunities for collaboration and work with domestic and international partners to protect and restore coastal ecosystems. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

#### **Scientific research and analysis on coastal ecosystems**

Conduct scientific research and analysis to increase knowledge of potential impacts of marine accidents on the environment in the Arctic. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

## TARGET 4.9: WASTEWATER AND INDUSTRIAL EFFLUENT

Reduce risks associated with effluent from wastewater (sewage) and industrial sectors by 2020. (Minister of Environment and Climate Change)

### INDICATORS:

*Wastewater Effluent Quality* – Percentage of wastewater systems whose releases are within regulatory limits;  
*Wastewater Effluent Loading* – Loading of carbonaceous biochemical oxygen demand (BOD) matter and suspended solids;  
*Metal Mining Effluent Quality* – Percentage of facilities whose releases are within regulatory limits;  
*Pulp and Paper Effluent Quality* – Percentage of facilities whose releases are within regulatory limits.

### KEY DEPARTMENT:

Environment and Climate Change Canada

Each year, over 150 billion litres of untreated and undertreated wastewater (sewage) is dumped into Canadian waterways. Wastewater contains pollutants that can harm aquatic ecosystems and human health, including disease-causing microorganisms, nutrients, metals, pharmaceuticals and personal care products. Treating wastewater before it is discharged reduces the risk it poses to human and environmental health.

Without proper treatment, industrial effluent can also affect water quality and aquatic life. For example:

- ♦ Effluent from metal mines can be acidic and may contain leached metal and chemicals used in processing ore; and
- ♦ Pulp and paper mill effluent can harm fish, damage fish spawning areas, and deplete oxygen in water.

To reduce risks from wastewater and industrial effluent, the federal government administers regulations under the *Fisheries Act* that set effluent quality standards and require monitoring and reporting, record-keeping, and toxicity testing. These include the *Metal Mining Effluent Regulations*, *Pulp and Paper Effluent Regulations* and *Wastewater Systems Effluent Regulations*.

In 2016–2019, the government will invest in wastewater treatment infrastructure to further reduce risks to water quality posed by sewage (see Target 2.1). It will also conduct a review of the *Fisheries Act* to ensure that federal environmental laws effectively protect Canada's freshwater resources. First Nations, Inuit, and Métis peoples will be included in the review process to ensure respect of rights and to reflect Indigenous values in federal legislation and regulations.

### Implementation Strategies:

#### Legislation and regulations to reduce risks from wastewater and industrial effluent

Develop and implement laws and regulations to reduce risks from wastewater and industrial effluent, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

#### Domestic collaboration on wastewater effluent

Work with provinces and territories to develop minimum effluent quality standards for wastewater in the North. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

## TARGET 4.10: WATER RESOURCE MANAGEMENT

Improve the ability of Canadians and their institutions to maintain the sustainability and security of Canada's surface water and groundwater resources by collecting and interpreting water resources data for 60% of the Canadian landscape by 2021, from a baseline of 44% in 2011 and by monitoring water quality at 95% of the federal freshwater quality network sites by 2019.

(Minister of Environment and Climate Change)

**INDICATORS:** Percentage of Canadian landscape units for which water resources are adequately characterized; Percentage of federal freshwater quality network sites at which risks of water quality impairment are adequately monitored.

### KEY DEPARTMENTS AND AGENCIES:

Environment and Climate Change Canada, Federal Economic Development Agency for Southern Ontario, Natural Resources Canada, Statistics Canada, Western Economic Diversification Canada

Conservation, protection and sustainable use of water resources are critical to Canada's economic, social and ecological well-being. As pressures on our water resources increase, Canadian governments are adopting integrated ecosystem and watershed management approaches that draw on sustainable development principles. These approaches minimize risks to and impacts on water resources from industrial activities, agriculture, climate change and other factors, while maintaining the integrity of the resource now and into the future.

Water resource management in Canada has evolved as a cooperative endeavour, and today the federal government works with provinces, territories and other partners to gather and disseminate both surface water and groundwater data from across the country.

To provide timely, accurate and science-based information on water quantity and quality the federal government works with partners to:

- ◆ Collect, interpret and disseminate national surface water quantity data;
- ◆ Provide scientifically-robust water quality data and analysis; and
- ◆ Conduct groundwater mapping and assessment activities for key aquifers.

The government will further support sustainable water management in 2016–2019 by increasing federal funding for freshwater research and making new investments in Canada's IISD Experimental Lakes Area.

Other governments and stakeholders also contribute to sustainable water management. For example, US federal and state governments work with Canada to address transboundary water issues through the International Joint Commission and its boards, committees and task forces, while universities and businesses conduct research and development activities that address water issues and concerns.

### Implementation Strategies:

#### Scientific research and analysis to support water resource management

Conduct scientific research and analysis, and provide information on water quality and water quantity to support decision making and help Canadians monitor water issues. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

#### Domestic and international collaboration on water resources

Work with domestic and international partners to gather, analyze and disseminate water information and manage water resources sustainably. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

#### Investment in water technologies

Invest in green infrastructure and support the development, demonstration and deployment of water technologies. Technology development and dissemination can support economic growth and improved quality of life for Canadians, and provide environmental benefits.

# GOAL 5: Human Health, Well-being and Quality of Life



**Protect the health and well-being of Canadians by ensuring clean air and drinking water, and decrease risks posed by harmful substances and environmental emergencies.**

**INDICATORS:** Ambient levels of air pollutants (ground-level ozone, fine particulate matter (PM<sub>2.5</sub>), nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), and volatile organic compounds (VOCs)); Drinking water advisories to identify the main causes of their issuance; Level of exposure to substances of concern.

Air quality, water quality and availability of ecosystem services all influence human health and well-being, and actions to protect and restore the environment can also have health benefits.

Targets that contribute to this goal focus on reducing emissions of outdoor air pollutants such as fine particulate matter; helping Canadians reduce their exposure to harmful air contaminants like radon; ensuring Canadians—including Indigenous people—have access to clean drinking water; preventing and managing environmental disasters, incidents and emergencies; and managing environmental and health risks associated with harmful substances.

The 2030 Agenda for Sustainable Development calls for action to ensure that all human beings benefit from a healthy environment. This FSDS goal contributes to the vision and objectives of the 2030 Agenda by shielding Canadians from the harmful effects of pollution and by ensuring they have the information they need to protect their health. They also support the SDGs, including:



## TARGET 5.1: OUTDOOR AIR POLLUTANTS

Improve outdoor air quality by ensuring compliance with new or amended regulated emission limits by 2020 and by implementing the Air Quality Management System, thus reducing emissions of air pollutants.  
(Minister of Environment and Climate Change)

**INDICATORS:** Air pollutant emissions of sulphur oxides, nitrogen oxides, volatile organic compounds, fine particulate matter, carbon monoxide and ammonia; Air Health Indicator — trends in air quality related health outcomes.

### KEY DEPARTMENTS AND AGENCIES:

Agriculture and Agri-Food Canada, Atlantic Canada Opportunities Agency, Department of Finance Canada, Environment and Climate Change Canada, Health Canada, Transport Canada, Western Economic Diversification Canada

Outdoor air pollutants are substances emitted into the air that can compromise its quality. Exposure to air pollution is dangerous to human health, especially for children, elderly people, and those with respiratory and cardiovascular illnesses such as asthma, congestive heart failure and chronic obstructive pulmonary disease. Air pollutant emissions can come from natural sources such as forest fires, or from human activities including:

- ◆ Driving cars, trucks and off-road vehicles;
- ◆ Burning fossil fuels to generate heat and electricity;
- ◆ Burning firewood;
- ◆ Using products such as paints and solvents;
- ◆ Agricultural activities; and
- ◆ Industrial activities such as mining and smelting.

Air pollution has been linked to health risks such as breathing difficulty, increased illness, development of chronic lung disease, heart attacks, strokes, and shortened lives. Health effects from outdoor air pollution impose economic costs from lost productivity, increased need for medical care, decreased quality of life, and premature death.

### *Did You Know...*

In 2008, the Canadian Medical Association estimated economic costs of illness due to air pollution at more than \$8 billion, and projected they would rise to more than \$250 billion by 2031.

Air pollution also causes ecological damage. “Acid rain”, or acid deposition, corrodes infrastructure and monuments, reduces forest productivity, affects lakes and rivers, and harms fish stocks. Ground-level ozone harms forests and reduces crop yields.

The federal government is taking a range of actions to reduce outdoor air pollution, including conducting scientific research, monitoring and reporting on air pollutant emissions, and working with the US to address transboundary air pollution.

The government is also working with provinces, territories and stakeholders to implement the Air Quality Management System (AQMS), which provides a consistent national approach to reducing outdoor air pollution. In 2016–2019, the federal government will work with provinces and territories to set stronger air quality standards, including new Canadian Ambient Air Quality Standards under the AQMS.

Provincial and territorial governments are also taking steps to implement the AQMS, such as establishing air zones within their boundaries and reporting on air quality in order to ensure air pollutant levels do not exceed air quality standards.

### IMPLEMENTATION STRATEGIES:

#### **Scientific research and analysis on outdoor air pollutants**

Conduct scientific research and analysis to better understand outdoor air pollutants, their sources and effects, and provide information to help Canadians monitor air pollutant emissions, understand air quality in their area, and take action to reduce their exposure. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

### **Regulations to limit outdoor air pollutant emissions**

Develop and implement regulations to limit air pollutant emissions, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

### **Voluntary sustainable development actions to reduce outdoor air pollutant emissions**

Encourage businesses and Canadians to take voluntary action to reduce air pollutant emissions. Voluntary approaches such as providing information and incentives, and developing standards and codes of practice, can promote environmental sustainability while maintaining flexibility and supplementing or reducing the need for regulation.

### **Domestic and international collaboration on outdoor air quality**

Provide opportunities for collaboration and work with provinces, territories and other stakeholders to implement shared approaches to improving air quality. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

### **In-kind support and funding to reduce outdoor air pollutants**

Provide funding and in-kind support for projects and activities that help reduce outdoor air pollutants. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

### **Investments to improve outdoor air quality**

Support the development and commercialization of technologies that will improve air quality by reducing outdoor air pollutants. Technology development and dissemination can support economic growth and improve quality of life for Canadians, and provide environmental benefits.

## **TARGET 5.2:** INDOOR AIR QUALITY

Help protect the health of Canadians by providing health-based guidance and tools to support actions to better manage indoor air quality.  
(Minister of Health)

**INDICATOR:** Actions to manage indoor air quality that incorporate health-based guidance.

### **KEY DEPARTMENTS AND AGENCIES:**

Health Canada, National Research Council Canada, Statistics Canada

Canadians spend approximately 90% of their time indoors. Air quality in homes, schools, workplaces and other buildings can have a significant influence on health. Some indoor air pollutants can have serious health effects.

- ◆ Radon, a colourless, odourless, and tasteless radioactive gas that is present naturally in the environment, is the second leading cause of lung cancer overall and the leading cause among non-smokers.
- ◆ Carbon monoxide, which is also colourless, odourless and tasteless, is formed when fuels such as oil or wood are burned and is also present in tobacco smoke. It can cause convulsions, coma and death at very high levels.
- ◆ Mould, which can grow in moist indoor environments, is associated with eye, nose and throat irritation; coughing and phlegm build-up; wheezing and shortness of breath; and worsening of asthma symptoms.

Reducing exposure to indoor air pollutants protects human health and supports sustainable lifestyles, buildings and products.

Federal government action to help improve indoor air quality includes, for example, conducting scientific research and providing information to provincial and territorial governments, public health professionals and Canadians.

Through a Federal-Provincial-Territorial Working Group on indoor air quality, other levels of government work closely with Health Canada to address health risks from indoor air contaminants. Some provinces and territories have also established residential indoor air quality programs that provide information on indoor air pollutants.

Individuals can improve the air quality in their homes—for example, by improving ventilation and maintaining furnaces and wood stoves. Testing radon levels and taking action if required can help homeowners minimize risks from radon. Individual Canadians, architects and contractors can take advantage of renovations and new construction to create healthier indoor environments. Manufacturers of building materials are also developing low-emission products that help reduce exposure to chemical pollutants.

### Implementation Strategy:

#### Scientific research and analysis on indoor air pollutants

Conduct scientific research and analysis to better understand indoor air pollutants, their sources and effects, and provide information to help Canadians and other partners take action to improve indoor air quality. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

### TARGET 5.3: ON-RESERVE FIRST NATIONS DRINKING WATER AND WASTEWATER SYSTEMS

Increase the percentage of on-reserve First Nations drinking water systems with low risk ratings from 44% in 2014 to 54% by 2019.  
Increase the percentage of on-reserve First Nations wastewater systems with low risk ratings from 52% in 2014 to 65% by 2019.  
(Minister of Indigenous and Northern Affairs)

**INDICATOR:** Risk rating for on-reserve First Nations Water and Wastewater Systems Management.

**KEY DEPARTMENTS:**  
Health Canada, Indigenous and Northern Affairs Canada

Effective water and wastewater treatment is essential for health, safety and the environment. Polluted drinking water can pose health risks due to bacteria, viruses and other contaminants. Without proper treatment, wastewater can spread disease and pollute surface water and groundwater.

Access to safe drinking water continues to be a challenge in on-reserve First Nation communities. Fewer than half of drinking water systems in these communities were considered low-risk in 2014, and as of August 31, 2015, Drinking Water Advisories were in effect in 96 First Nation communities across Canada (excluding British Columbia).

The federal government and First Nation share responsibility for providing water and wastewater services in First Nation communities. First Nations build, own, manage and operate on-reserve drinking water and wastewater systems, while federal responsibilities include:

- ◆ Providing financial assistance and guidance for drinking water and wastewater services and infrastructure;
- ◆ Establishing standards and protocols for system design, construction, operation, maintenance, and monitoring; and
- ◆ Ensuring that drinking water monitoring programs are in place in First Nation communities south of 60 degrees latitude.

The federal government will work with First Nation communities in 2016–2019 to help improve drinking water and wastewater services on-reserve, with a view to eliminating long-term Drinking Water Advisories on federally funded systems in First Nations communities within five years. This would include providing guidance, supporting capacity-building, and delivering wastewater programming in First Nation communities

### Implementation Strategy:

#### In-kind support and funding for water and wastewater services

Provide funding and in-kind support for the delivery of drinking water and wastewater services in First Nation communities. Transfer payments and other forms of support can help further the government's broad policy objectives and priorities while engaging a wide diversity of skills and resources outside the federal government.

## TARGET 5.4: DRINKING WATER QUALITY

Help protect the health of Canadians by developing up to 15 drinking water quality guidelines/guidance documents by 2019. (Minister of Health)

**INDICATORS:** Drinking water quality guidelines/guidance documents; Drinking water advisories to identify the main causes of their issuance.

**KEY DEPARTMENT:** Health Canada, Public Health Agency of Canada

Safe drinking water is essential to the life and health of every Canadian every day. Drinking water in Canada is among the safest in the world.

While drinking water is primarily an area of provincial and territorial jurisdiction, Health Canada plays a central role in helping Canadian jurisdictions ensure the safety of drinking water supplies from coast to coast by working in close collaboration with all provinces and territories to establish the Guidelines for Canadian Drinking Water Quality (GCDWQ). These guidelines are developed to protect public health. They are based on robust science and take into consideration the ability to measure and treat the contaminant in drinking water.

The guidelines are developed for specific drinking water contaminants through the Federal-Provincial-Territorial Committee on Drinking Water. They are intended to apply to all drinking water supplies in Canada, whether public or private, from surface or groundwater sources.

As science evolves, the guidelines are reviewed and updated based on priorities established in collaboration with the provinces and territories.

The GCDWQ are used as a reference in federal legislation to ensure the safety of drinking water in areas of federal jurisdiction.

Provinces and territories also use them to establish their own requirements for drinking water quality, and implement them in accordance with their priorities for protecting public health.

## Implementation Strategies:

### **Domestic collaboration on drinking water quality**

Work with provinces and territories to develop and update drinking water quality guidelines/guidance documents. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

### **Regulations to improve water quality**

Develop and implement regulations to protect health and safety of Canadians by ensuring safe and clean drinking water is available to them. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting.)

## TARGET 5.5: ENVIRONMENTAL EMERGENCIES

Environmental emergencies are prevented or their impacts mitigated.  
(Minister of Public Safety and Emergency Preparedness and Minister of Environment and Climate Change)

**INDICATORS:** Percentage of federal institutions evaluated that have assessed and taken actions in their emergency management plan to address risks related to their area of responsibility; Percentage of federal institutions that have addressed prevention/mitigation in their emergency management plans (Target: to be determined).

### KEY DEPARTMENTS AND AGENCIES:

Agriculture and Agri-Food Canada, Canadian Coast Guard, Correctional Service Canada, Environment and Climate Change Canada, Fisheries and Oceans Canada, Health Canada, Indigenous and Northern Affairs Canada, Natural Resources Canada, Parks Canada, Public Health Agency of Canada, Public Safety Canada, Public Services and Procurement Canada, Transport Canada

Environmental disasters, incidents and emergencies endanger the environment or human health. They often have economic costs for individuals, communities, business and industry (including the insurance industry), and governments. These events can be human-caused, for example, oil and chemical spills or nuclear releases. They also include natural events such as:

- ◆ Forest fires;
- ◆ Earthquakes;
- ◆ Floods; or
- ◆ Hurricanes.

The Federal Emergency Response Plan (FERP) provides a framework for how the federal government responds to environmental disasters, incidents and emergencies. Departments and agencies have established their own emergency response plans that support the FERP. Other plans, such as the Federal Nuclear Emergency Plan, supplement FERP by setting out roles, responsibilities and measures for responding to specific event types.

The government continues to implement, test and improve federal emergency plans and take other actions to prevent and prepare for emergencies. In 2016–2019, the government will also:

- ◆ Invest in infrastructure to make communities more resilient to disasters, incidents and emergencies (see Target 2.1);
- ◆ Restore funding for Canada’s four heavy urban search and rescue teams;
- ◆ Re-open the Maritime Rescue Sub-centre in St. John’s and the Kitsilano Coast Guard Base in Vancouver; and
- ◆ Propose measures to reinforce railway safety.

The federal government requires industry and others to proactively manage environmental emergencies. For example, when certain criteria and thresholds are met under the *Environmental Emergency Regulations*, companies are required to prepare environmental emergency plans for the possibility of uncontrolled, unplanned, or accidental releases of hazardous substances listed in the regulations and report emergency releases that occur.

Other orders of government are instrumental in responding to environmental disasters, incidents and emergencies. Local police, firefighters and medical professionals are generally the first to respond to an emergency. Provinces and territories assist local authorities and may seek help from the federal government if they need more resources to cope with the event.



### **Implementation Strategies:**

#### **Federal leadership on environmental emergencies**

Demonstrate leadership by ensuring the federal government is prepared to respond to environmental disasters, incidents and emergencies.

#### **Regulations to manage environmental emergencies**

Implement regulations to proactively manage environmental emergencies, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

#### **Scientific research and analysis on environmental emergencies**

Provide information to help prevent environmental disasters, incidents and emergencies, and to support a response if they do occur. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

#### **Domestic collaboration on environmental emergencies**

Collaborate with provinces, territories and other partners to prevent and respond to environmental emergencies. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

## TARGET 5.6: CHEMICALS MANAGEMENT

Reduce the risk to Canadians and impacts on the environment and human health posed by harmful substances.  
(Minister of Environment and Climate Change and Minister of Health)

### INDICATORS:

Release of harmful substances (mercury, cadmium, and lead) to the environment; Concentrations of selected harmful substances (PBDE, PFOS, BPA) in selected media (water, sediment, fish) and in selected drainage regions relative to Canadian or Federal Environmental Quality Guidelines; Levels of human exposure to harmful substances; Regulatory compliance with risk management instruments and approaches have been put in place to address risks identified in a screening assessment report.

### KEY DEPARTMENTS AND AGENCIES:

Agriculture and Agri-Food Canada, Correctional Service Canada, Environment and Climate Change Canada, Fisheries and Oceans Canada, Health Canada, Indigenous and Northern Affairs Canada, National Defence, Natural Resources Canada, Parks Canada, Public Services and Procurement Canada, Transport Canada

While chemicals are part of our everyday life and provide many benefits, they can be harmful if not properly managed. Some can cause serious illnesses such as cancer with exposure to high levels over a long period of time.

CEPA requires every new chemical substance introduced since 1994 to be assessed for health and environmental risks. However, as in other countries, some chemicals that were introduced into Canada before comprehensive environmental legislation was in place have not yet been examined to determine if they pose a risk.

Originally launched in 2006, the Chemicals Management Plan enables the Government of Canada to protect human health and the environment by addressing substances of concern in Canada. It is a science-based approach that includes:

- ◆ Setting priorities and government-imposed timelines for risk assessment and risk management of chemicals and other substances of concern;
- ◆ Research, monitoring and surveillance;
- ◆ Increasing industry stewardship and responsibilities for substances;

- ◆ Collaborating internationally on chemicals assessment and management;
- ◆ Communicating to Canadians the potential risks of chemical and other substances; and
- ◆ Engaging industry to inform risk assessment and risk management action while also enhancing trust in the program.

Certain sites have also become contaminated with harmful chemical substances such as metals or petroleum products. Some are on land owned or leased by the federal government, or where the government has accepted responsibility for the contamination. While current policies and legislation will prevent future contamination from occurring, thousands of known or suspected federal contaminated sites remain, including:

- ◆ Abandoned mines on Crown land in the North;
- ◆ Airports;
- ◆ Lighthouse stations; and
- ◆ Military bases.

Managing chemical substances and cleaning up federal contaminated sites helps protect human health and the environment and can also have economic benefits—for example, by helping to avoid future costs for water treatment and treating illnesses related to chemical exposure.

Federal actions to reduce environmental and health impacts of harmful chemical substances include carrying out remediation and risk management activities for federal contaminated sites as well as assessing the environmental and health risks posed by chemical substances introduced before 1994 and taking action on those found to be harmful.

Provinces, territories and municipalities also help protect against risks from chemical substances. For example, provinces and territories establish legislation and regulations that prohibit pollution and set requirements and standards for remediating contaminated sites outside federal lands.

## Implementation Strategies:

### **Scientific research and analysis on chemical substances**

Conduct scientific research and analysis to assess substances for health and environmental risk and track harmful substances in the environment, and provide information to support decision-making and help Canadians reduce their exposure. Science helps the government monitor environmental change and identify activities that could harm ecosystems or people. It supports policy development, helps the government identify and address emerging environmental challenges, and helps Canadians make decisions to protect their health and safety.

### **Legislation and regulations on harmful substances**

Develop and implement laws and regulations to reduce risks posed by harmful substances, promote compliance, and carry out enforcement activities. Regulation is a key policy instrument that the government uses to protect the environment and human health. Laws and regulations can authorize or restrict certain activities, set standards for environmental performance, or create requirements such as monitoring and reporting on emissions.

### **Federal leadership on assessing and remediating contaminated sites**

Demonstrate leadership by assessing and remediating federal contaminated sites. Cleaning up contaminated sites can reduce environmental liabilities and promote economic development.

### **Domestic and international collaboration on chemicals management**

Provide opportunities for collaboration and participate in joint initiatives to manage risks posed by harmful substances with domestic and international partners. Sharing information and working with others to address sustainable development issues can help coordinate activities, reduce duplication, and produce solutions and approaches that reflect diverse perspectives.

### **International agreements and initiatives on chemicals management**

Negotiate on behalf of the Canadian government, represent the government's interests in international fora, and implement international agreements such as the Basel, Rotterdam, Stockholm and Vienna Conventions. Participating in negotiations allows Canada to help shape international agreements and initiatives which in turn provide a framework for domestic action.



# ANNEX 1: ABOUT THE FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY

The Federal Sustainable Development Strategy (FSDS) is the government's primary vehicle for sustainable development planning and reporting. It sets out federal environmental sustainability priorities, establishes goals and targets, and identifies actions to achieve them.

## Legislative basis

The 2008 *Federal Sustainable Development Act* (the Act) establishes the requirement to table the FSDS. Its purpose is to provide the legal framework for developing and implementing an FSDS that will make environmental decision making more transparent and accountable to Parliament.

The Act requires the Minister of Environment and Climate Change to table a whole-of-government FSDS every three years. Agencies named in the Act's Schedule and departments named in Schedule I to the *Financial Administration Act* are responsible for preparing sustainable development strategies that comply with and contribute to the FSDS.

Federal and departmental strategies developed under the Act reflect two guiding principles:

- ♦ The precautionary principle—that is, the principle that where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation; and
- ♦ The principle that sustainable development is based on an ecologically efficient use of natural, social and economic resources.

## The role of public consultation

Public consultation is an important part of FSDS development under the Act. Each draft FSDS must undergo a public consultation period of at least 120 days before it is finalized.

As part of public consultation, the Minister of Environment and Climate Change provides the draft FSDS to the Commissioner of the Environment and Sustainable Development, the Sustainable Development Advisory Council (a multi-stakeholder advisory body consisting of at least one representative from each province and territory and three representatives from each of the following: Indigenous peoples, environmental non-governmental organizations, organizations

representative of business, and organizations representative of labour), the appropriate committee of each House of Parliament, and the public.

Consultation results inform the final FSDS and are summarized in a publicly available synthesis report.

## The structure of the strategy

The draft 2016–2019 FSDS includes five goals: Taking Action on Climate Change; Clean Technology, Jobs and Innovation; National Parks, Protected Areas and Ecosystems; Freshwater and Oceans; and Human Health, Well-being and Quality of Life.

FSDS goals:

- ♦ Are aspirational;
- ♦ Take a long-term view;
- ♦ Address important challenges and problems;
- ♦ Remain attuned to environmental information, data and indicators;
- ♦ Encourage flexibility in the choice of strategies for achievement; and
- ♦ Reflect domestic and international priorities and commitments.

One or more targets contribute to each goal. To the extent possible, targets are intended to:

- ♦ Meet the SMART criteria:
  - » Specific – Clearly articulated, well-defined and focused;
  - » Measurable – Able to determine the degree to which there is completion or attainment;
  - » Achievable – Realistic and practical; attainable within operational constraints dependent on resource availability, knowledge and timeframe;
  - » Relevant – Tied to government priorities and mandate; contributes to a desired outcome in Canadian society, economy or environment; and
  - » Time-bound – Expresses clear deadlines;

- ◆ Take a medium-term view;
- ◆ Fall within federal jurisdiction and departmental mandates;
- ◆ Remain informed by environmental baseline data and indicators;
- ◆ Be consistent with Government of Canada priorities; and
- ◆ Reflect the precautionary principle.

Implementation strategies are actions that enable the government to achieve FSDS targets. They may be directly or indirectly linked to environmental sustainability outcomes.

While provinces and territories, Indigenous peoples, businesses, non-governmental organizations and Canadian citizens contribute to achieving environmental outcomes, only federal actions are included in the FSDS as implementation strategies.

### The FSDS and integrated decision making

In the Act, the Government of Canada acknowledges the need to integrate environmental, economic and social factors in the making of all decisions by government. The FSDS supports integrated decision making—for example, through strategic environmental assessment (SEA) and green procurement.

The federal government uses SEA to evaluate the potential environmental effects of proposed policies, plans and programs. Ministers expect departments and agencies to conduct an SEA for every proposal submitted to an individual minister or Cabinet for approval, if it is expected to result in important environmental effects. Departments and agencies must consider the potential impact of their proposals on FSDS goals and targets when conducting SEAs.

Departments and agencies are also required to prepare a public statement of environmental effects when a detailed assessment has been conducted through SEA.

The federal government also takes into account environmental considerations such as climate impact when purchasing goods and services. The Policy on Green Procurement seeks to reduce the government's environmental footprint by integrating environmental performance considerations into federal procurement decision making processes.



## ANNEX 2: PERFORMANCE MEASUREMENT

Performance measurement is an essential part of the federal government's sustainable development approach. Three key vehicles support performance measurement for the Federal Sustainable Development Strategy (FSDS):

1. FSDS progress reports;
2. Departmental Sustainable Development Strategies (DSDSs); and
3. The Canadian Environmental Sustainability Indicators (CESI).

### FSDS progress reports

The *Federal Sustainable Development Act* (the Act) requires the government to prepare an FSDS progress report at least once every three years. Progress reports include information on how the federal government is implementing the FSDS, including progress toward its goals and targets.

The 2015 FSDS Progress Report presents results achieved under the 2013–2016 FSDS using environmental sustainability indicators. It also provides links to the CESI website and to detailed performance information on departmental websites.

While FSDS progress reports provide important information on environmental outcomes, it is important to note that responsibility for the environment is shared, and the federal government supports environmental sustainability within the constraints of its jurisdiction and authorities. As a result, it can be difficult to directly link federal actions to environmental outcomes.

### Departmental sustainable development strategies

Departments and agencies named in the Act are required to develop DSDSs that comply with and contribute to the FSDS. DSDSs are linked with core departmental planning and reporting processes. They provide detailed descriptions of departmental contributions towards the FSDS, including:

- ♦ The department's sustainable development vision;
- ♦ Information on departmental decision-making and sustainable development practices;
- ♦ Information on departmental activities that contribute to FSDS goals and targets; and

- ♦ Performance indicators that complement environmental sustainability indicators by clarifying departments' contributions to environmental outcomes.

Departments and agencies bound by the Act contribute differently to FSDS goals and targets depending on their mandate; however, all are responsible for leading by example. As a result, DSDSs report on common performance measures for Targets related to greening government operations.

### Canadian Environmental Sustainability Indicators

Environmental sustainability indicators are used to measure progress on FSDS goals and targets. These indicators are largely drawn from the CESI program. Indicators are selected according to the following criteria:

- ♦ Policy relevance (represents the FSDS goals and targets);
- ♦ Utility (meets the needs of decision makers and the public);
- ♦ Soundness (provides consistent and solid methodology; comparable over time); and
- ♦ Data availability and integrity (uses existing high-quality data with adequate coverage).

CESI is considered an authoritative source for state of the environment indicators and data. It provides:

- ♦ National-level information;
- ♦ A rigorous methodology that standardizes data and makes it comparable over time; and
- ♦ Linkages to related social and economic issues and information.

CESI indicators are produced by Environment and Climate Change Canada with the support of other federal departments including Health Canada, Statistics Canada, Natural Resources Canada, Parks Canada, Transport Canada and Fisheries and Oceans Canada, along with provincial and territorial governments.

Further information on CESI, including indicator methodologies and indicator data for download, is available through the [CESI website](#) and the government's [Open Data Portal](#).

## ANNEX 3: RESPONSIBILITY FOR GREENING GOVERNMENT OPERATIONS TARGETS BY DEPARTMENT/AGENCY

Departments and Agencies	TARGET 1.4 GHG Emissions Reduction		TARGET 1.5 Real Property Environmental Performance	TARGET 2.2 Sustainable Workplace Operations	TARGET 2.3 Water Management
	<i>Buildings and Fleets</i>	<i>Fleets Only</i>			
Agriculture and Agri-Food Canada	Yes	No	Yes	Yes	Yes
Atlantic Canada Opportunities Agency	No	No	No	Yes	No
Canada Border Services Agency	Yes	No	Yes	Yes	Yes
Canada Economic Development for Quebec Regions	No	No	No	Yes	No
Canadian Heritage	No	No	Yes	Yes	Yes
Canada Revenue Agency	No	Yes	No	Yes	No
Department of Finance Canada	No	No	No	Yes	No
Department of Justice Canada	No	No	No	Yes	No
Employment and Social Development Canada	No	Yes	No	Yes	No
Environment and Climate Change Canada	Yes	No	Yes	Yes	Yes
Fisheries and Oceans Canada	Yes	No	Yes	Yes	Yes
Global Affairs Canada	No	No	No	Yes	No
Health Canada	No	Yes	Yes	Yes	Yes
Immigration, Refugees and Citizenship Canada	No	Yes	No	Yes	No
Indigenous and Northern Affairs Canada	No	Yes	Yes	Yes	Yes
Innovation, Science and Economic Development Canada	No	Yes	Yes	Yes	Yes
National Defence	Yes	No	Yes	Yes	Yes
Natural Resources Canada	Yes	No	Yes	Yes	Yes
Parks Canada	Yes	No	Yes	Yes	Yes
Public Health Agency of Canada	No	No	Yes	Yes	Yes
Public Safety Canada	No	No	No	Yes	No
Public Services and Procurement Canada	Yes	No	Yes	Yes	Yes
Transport Canada	Yes	No	Yes	Yes	Yes
Treasury Board of Canada Secretariat	No	No	No	Yes	No
Veterans Affairs Canada	No	No	No	Yes	No
Western Economic Diversification Canada	No	No	No	Yes	No
<b>TOTAL APPLICABLE</b>	<b>9</b>	<b>6</b>	<b>14</b>	<b>26</b>	<b>14</b>

## ANNEX 4: LIST OF DEPARTMENTS AND AGENCIES AND THEIR ABBREVIATIONS

The following departments and agencies are required to table sustainable development strategies under the *Federal Sustainable Development Act* (the Act):

1. Agriculture and Agri-Food Canada (AAFC)
2. Atlantic Canada Opportunities Agency (ACOA)
3. Canada Border Services Agency (CBSA)
4. Canada Economic Development for Quebec Regions (CED)
5. Canada Revenue Agency (CRA)
6. Canadian Heritage (PCH)
7. Department of Finance Canada (FIN)
8. Department of Justice Canada (JUS)
9. Employment and Social Development Canada (ESDC)
10. Environment and Climate Change Canada (ECCC)
11. Fisheries and Oceans Canada (DFO)
12. Global Affairs Canada (GAC)
13. Health Canada (HC)
14. Immigration, Refugees and Citizenship Canada (IRCC)
15. Indigenous and Northern Affairs Canada (INAC)
16. Innovation, Science and Economic Development Canada (ISED)
17. National Defence (DND)
18. Natural Resources Canada (NRCan)
19. Parks Canada (PC)
20. Public Health Agency of Canada (PHAC)
21. Public Safety Canada (PS)
22. Public Services and Procurement Canada (PSPC)
23. Transport Canada (TC)
24. Treasury Board of Canada Secretariat (TBS)
25. Veterans Affairs Canada (VAC)
26. Western Economic Diversification Canada (WD)

While not bound by the Act, the following organizations have contributed to the draft 2016–2019 Federal Sustainable Development Strategy:

1. Canadian Coast Guard (CCG)
2. Canadian Environmental Assessment Agency (CEAA)
3. Canadian Food Inspection Agency (CFIA)
4. Correctional Service Canada (CSC)
5. Federal Economic Development Agency for Southern Ontario (FedDev Ontario)
6. Federal Economic Development Initiative for Northern Ontario (FedNor)<sup>1</sup>
7. National Research Council Canada (NRC)
8. Royal Canadian Mounted Police (RCMP)
9. Standards Council of Canada (SCC-CCN)
10. Statistics Canada (StatCan)
11. Sustainable Development Technology Canada (SDTC)

<sup>1</sup> Reports through ISED

## ANNEX 5: LIST OF ABBREVIATIONS

**AOC:** Area of Concern

**AQMS:** Air Quality Management System

**BOD:** Biochemical oxygen demand

**BPA:** Bisphenol A

**CEPA:** *Canadian Environmental Protection Act, 1999*

**CESI:** Canadian Environmental Sustainability Indicators

**DSDS:** Departmental federal sustainable development strategy

**FERP:** Federal Emergency Response Plan

**FSDS:** Federal Sustainable Development Strategy

**G7:** Group of Seven

**G20:** Group of 20

**GCDWQ:** Guidelines for Canadian Drinking Water Quality

**GDP:** Gross domestic product

**GHG:** Greenhouse gas

**GLWQA:** Canada-United States Great Lakes Water Quality Agreement

**IMO:** International Maritime Organization

**MBCA:** *Migratory Birds Convention Act, 1994*

**MPA:** Marine protected area

**NO<sub>2</sub>:** Nitrogen dioxide

**NPRI:** National Pollutant Release Inventory

**PBDE:** Polybrominated diphenyl ether

**PFOS:** Perfluorooctane sulfonate

**PM<sub>2.5</sub>:** Fine particulate matter

**RAP:** Remedial Action Plan

**SARA:** *Species at Risk Act*

**SDGs:** Sustainable Development Goals

**SEA:** Strategic environmental assessment

**SFM:** Sustainable forest management

**SMART:** Specific, measurable, achievable, relevant and time-bound

**SO<sub>2</sub>:** Sulphur dioxide

**UK:** United Kingdom

**UN:** United Nations

**US:** United States

**VOC:** Volatile organic compound

## REFERENCES

- Biodivcanada.ca. 2014. [2012 Canadian Nature Survey](#).
- Biodivcanada.ca. 2015. [2020 Biodiversity Goals and Targets for Canada](#).
- Canadian Council of Forest Ministers. 2016. [Overview – Sustainable Forest Management](#).
- Canadian Council on Invasive Species. 2015. [Why Should We Care?](#)
- Canadian Medical Association. 2008. [No Breathing Room – National Illness Costs of Air Pollution](#).
- Canadian Parks Council. 2014. [Connecting Canadians to Nature](#).
- Colautti, R.I., S.A. Bailey, C.D.A. van Overdijk, K. Amundsen and H.J. MacIsaac. 2006. [Characterized and projected costs of nonindigenous species in Canada](#). Biological invasions 8: 45-59.
- Environment and Climate Change Canada. 2010. [Shared Responsibility](#).
- Environment and Climate Change Canada. 2011. [Environment Canada Protected Area Strategy](#)
- Environment and Climate Change Canada. 2012. [Status Report on the Pulp and Paper Effluent Regulations](#)
- Environment and Climate Change Canada. 2015. [About Freshwater Quality Monitoring and Surveillance](#).
- Environment and Climate Change Canada. 2015. [Cleaning Up Lake Winnipeg – Lake Winnipeg Basin Initiative](#)
- Environment and Climate Change Canada. 2015. [Damage to Infrastructure and Canadian Industries](#).
- Environment and Climate Change Canada. 2015. [Disposal at Sea](#).
- Environment and Climate Change Canada. 2015. [Mining](#).
- Environment and Climate Change Canada. 2015. [Nutrients](#).
- Environment and Climate Change Canada. 2015. [Wastewater](#).
- Environment and Climate Change Canada. 2015. [Wastewater Pollution](#).
- Environment and Climate Change Canada. 2016. [Air Health Indicator – Ozone and Fine Particulate Matter](#).
- Environment and Climate Change Canada. 2016. [Migratory Birds](#).
- Environment and Climate Change Canada. 2016. [Trends in Canada's Migratory Bird Populations](#).
- Federal, Provincial and Territorial Governments of Canada. 2010. [Canadian Biodiversity: Ecosystem Status and Trends 2010](#).
- Fisheries and Oceans Canada. 2011. [National Framework for Canada's Network of Marine Protected Areas](#).
- Fisheries and Oceans Canada. 2015. [2015-2016 Report on Plans and Priorities](#).
- Fisheries and Oceans Canada. 2015. [Aquaculture Statistics, Facts and Figures](#).
- Fisheries and Oceans Canada. 2015. [Facts on Canadian Fisheries](#).
- Fisheries and Oceans Canada. 2015. [Overfishing and Food Security](#).
- Government of Canada. 2004. [An Invasive Alien Species Strategy for Canada](#).
- Government of Canada. 2015. [Backgrounder: 2020 Biodiversity Goals and Targets for Canada](#).
- Government of Canada. 2015. [Risk Assessment](#).
- Government of Canada. 2016. [Species at Risk Public Registry – Schedule 1](#).
- Government of Ontario. 2009. [Lake Simcoe Protection Plan](#).
- Government of Quebec. 2011. [Quebec Residual Materials Management Policy](#).
- Health Canada. 2007. [Residential Indoor Air Quality Guidelines – Moulds](#).
- Health Canada. 2013. [Radon – Reduction Guide for Canadians](#).
- Health Canada. 2014. [Carbon Monoxide](#).
- Health Canada. 2016. [Drinking Water Advisories in First Nations Communities](#).
- Health Canada. 2016. [First Nations and Inuit Health – Water and Wastewater](#).
- Intergovernmental Panel on Climate Change. 2014. [Summary for policymakers – Climate Change 2014: Impacts, Adaptation, and Vulnerability](#).
- International Maritime Organization. 2016. [Introduction to IMO](#).
- Natural Resources Canada. 2014. [Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation](#).

Natural Resources Canada. 2014. [The State of Canada's Forests](#).

Natural Resources Canada. 2016. [Forest Certification in Canada](#).

Natural Resources Canada. 2016. [Impacts](#).

Parks Canada. 2015. [Ecological Integrity](#).

Sustainable Development Technology Canada. 2014. [Annual Report 2014](#).

Sustainable Development Technology Canada. 2015. [About Us](#).

Transport Canada. 2013. [A Review of Canada's Ship-Source Oil Spill Preparedness and Response Regime – Setting a Course for the Future](#).

Transport Canada. 2015. [Ballast Water](#).

Transport Canada. 2015. [Marine Pollution Sources and Regulation](#).

United Nations. 2015. [Transforming Our World – The 2030 Agenda for Sustainable Development](#).

United States Environmental Protection Agency. 2016. [The Problem – Nutrient Pollution](#).