

Government Gouvernement of Canada du Canada

2021 PROGRESS REPORT

ON THE

2019-2022

FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY



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Errata (July 2022)

Please take note of the following typographic errors identified after this report was prepared for publication.

On page 47, the phrase "NO NEW DATA" replaces the prior idiosyncratic formulation of "NO DATA" in the two grey circles on the top-left side of the page. The text "NO DATA" is deleted.

On page 135, the value of "45" replaces the value of "51" in the grey circle and in the text under the headline "RESULT". This value corresponds to the accurate explanation of this result on page 136, which is unchanged. The value of "51" is deleted.

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MINISTER'S MESSAGE



I am pleased to report to Parliament and Canadians concerning the Government of Canada's progress toward the goals and targets of the 2019 to 2022 Federal Sustainable Development Strategy.

This report should be read in tandem with departmental reporting on 2020 to 2023 Departmental Sustainable Development Strategies. The new format includes improvements to the progress scorecard and rating system, introduced in the 2018 Progress Report.

The findings of this report, as required under the *Federal Sustainable Development Act*, are based on the best available evidence and have been reviewed by subject matter experts. Of the thirty-two targets in the 2019 to 2022 Federal Sustainable Development Strategy, three were achieved, fifteen are underway, and eight require attention. Another six targets have insufficient data to assess progress made within this three-year cycle.

Much has changed in the world since we tabled the 2019 to 2022 Federal Sustainable Development Strategy in Parliament – perhaps more so than in any previous sustainable development reporting cycle. The novel coronavirus COVID-19 has immeasurably changed people's lives across the globe and in our own country. While the pandemic did impede some of the activities detailed in this report, such as data collection or policy implementation, many other activities have enabled us to counteract and mitigate these challenges.

Notwithstanding the challenges the pandemic has presented to the health and well-being of Canadians, I am greatly encouraged by signs of accelerated collective action toward environmental sustainability. We continue to make progress on fighting climate change, protecting lands and waters, and preserving biodiversity in Canada in tandem with our provincial and territorial partners. We are well aware that Canadians are demanding that we go further and faster, and we are committed to the hard work required. Together, we must preserve Canada's irreplaceable natural heritage for generations to come.

The contents of the Federal Sustainable Development Strategy have grown over time. So too have the progress reports that reflect the many activities in Canada's evolution toward sustainable development, as well as potential areas for improvement in our collective efforts. This report marks the conclusion of the strategies and reports prepared under the original *Federal Sustainable Development Act* since 2008. Future strategies and reports will be prepared with the changes required by amendments to the Act that came into force in December 2020 and in a spirit of continuous improvement.

Finally, I would like to thank the many federal organizations that have collaborated with Environment and Climate Change Canada to produce this report.

THE HONOURABLE STEVEN GUILBEAULT, P.C., M.P. MINISTER OF ENVIRONMENT AND CLIMATE CHANGE

ABOUT THIS REPORT

MAKING PROGRESS ON CANADA'S GOALS

The 2019 to 2022 Federal Sustainable Development Strategy (FSDS) includes 13 aspirational goals supported by measurable targets and clear action plans—all aimed at realizing the vision that Canada is one of the greenest countries in the world and that our quality of life will continue to improve.

Forty-three departments and agencies across the government are involved in delivering the strategy. Together, these organizations are taking federal action to implement sustainable development in Canada, often working in close partnership with Indigenous governments and peoples, provinces, territories, and municipalities. The thirteen goals support a vision for sustainable development in Canada that acknowledges its unique responsibilities and circumstances:



EFFECTIVE ACTION ON CLIMATE CHANGE

A low-carbon economy contributes to limiting global average temperature rise to well below 2 degrees Celsius and supports efforts to limit the increase to 1.5 degrees Celsius.



GREENING GOVERNMENT

The Government of Canada will transition to low-carbon, climate-resilient, and green operations.



CLEAN GROWTH

A growing clean technology industry in Canada contributes to clean growth and the transition to a low-carbon economy.



MODERN AND RESILIENT **INFRASTRUCTURE**

Modern, sustainable, and resilient infrastructure supports clean economic growth and social inclusion.



CLEAN ENERGY

All Canadians have access to affordable, reliable, and sustainable energy.

HEALTHY COASTS AND OCEANS

Coasts and oceans support healthy, resilient, and productive ecosystems.









PRISTINE LAKES AND RIVERS

Clean and healthy lakes and rivers support economic prosperity and the well-being of Canadians

SUSTAINABLY MANAGED LANDS AND FORESTS

Lands and forests support biodiversity and provide a variety of ecosystems services for generations to come.

HEALTHY WILDLIFE POPULATIONS

All species have healthy and viable populations.



CLEAN DRINKING WATER

All Canadians have access to safe drinking water and, in particular, the significant challenges Indigenous communities face are addressed.

SUSTAINABLE FOOD

Innovation and ingenuity contribute to a world-leading agricultural sector and food economy for the benefit of all Canadians.



CONNECTING CANADIANS WITH NATURE

Canadians are informed about the value of nature, experience nature first hand, and actively engage in its stewardship.

SAFE AND HEALTHY COMMUNITIES

All Canadians live in clean, sustainable communities that contribute to their health and well-being.

WHAT IS THE PURPOSE OF THIS REPORT?

This report shows how the Government of Canada is doing three years since the last Progress Report was tabled in 2018, and almost two and a half years since the **2019 to 2022 Federal Sustainable Development Strategy** was tabled in Parliament. It shows where there is progress toward our goals and targets; it also shows where more work is required. These results inform the actions that the Government of Canada is taking now, and they will help to shape the next FSDS.

The results presented in this progress report reflect data collection and monitoring, and are based on objective information transparently conveyed to Canadians. They are sourced from indicators that track performance on the environmental sustainable development issues presented in this report.

Unless stated otherwise, the data in this report are current as of August 1, 2021. As some datasets are updated very frequently, readers are encouraged to view data sources to see more information, context, and recent results about their areas of interest.

For each of the 13 goals, this report sets out:

- the federal ministers responsible for targets and federal organizations that contribute to implementing the goal;
- results for targets and milestones, as well as key trends in the data;
- an indication of progress to date, assessed at the level of individual targets;
- why the goal is important;
- supplemental information that helps to understand the context of the goals or targets;
- risks, challenges, and additional steps required to meeting the goals or targets; and,
- linkages with the United Nations 2030 Agenda for Sustainable Development and other international agreements and initiatives.

The current federal strategy is Canada's fourth such document; the current report is Canada's fifth. It reflects twelve years of goals, targets, and progress toward environmental sustainable development with a core principle of continuous improvement. This progress report improves on previous reports by:

- continuing to implement the scorecard and rating system that was introduced in the 2018 Progress Report to communicate results and progress;
- continuing to make information on progress clear and accessible; and,
- simplifying the report structure.

This report reflects a change in the way that the Government of Canada has pursued sustainable development. *An Act to Amend the Federal Sustainable Development Act* came into force as of December 1, 2020, and future Federal Sustainable Development Strategies will reflect this new legislative context. This progress report concludes reporting conducted under the 2008 *Federal Sustainable Development Act*.

OTHER SOURCES OF INFORMATION

The progress report complements other sources of information on federal actions and results. These include

- the Canadian Environmental Sustainability Indicators program;
- **GC InfoBase**, the authoritative source of government expenditure information and indicator results;
- 2020 to 2023 Departmental Sustainable Development Strategy reporting, which includes reporting on contributing actions in the 2019 to 2022 FSDS;
- Departmental Results Reports, which include reporting on sustainable development commitments; and,
- indicators published through governmental reports that include program-level information about sustainable development commitments.

HELP TO SPREAD THE WORD!

Help spread the word about the Government of Canada's sustainable development progress! Share our results on social media using the hashtags

#GCresults #ResultsGC #SustDev

GOAL	TARGET	PROGRESS
\bigcirc	Reduce Canada's total GHG emissions by 30% by 2030, relative to 2005 emission levels	ATTENTION REQUIRED
\bigcirc	Increase zero-emission light-duty vehicle sales to 10% by 2025, 30% by 2030, and 100% by 2040	UNDERWAY
	Reduce federal government GHG emissions by 40% by 2030	UNDERWAY
	Divert at least 75% of non-hazardous operational waste from landfills by 2030	NO NEW DATA
	Divert at least 75% of plastic waste from landfills by 2030	NO NEW DATA
	Divert at least 90% of all construction and demolition waste from landfills	NO NEW DATA
	Achieve 75% carbon neutrality in federal office lease transactions where market conditions permit and a competitive environment exists	NO NEW DATA
	Achieve 80% zero-emission vehicles within the federal administrative fleet by 2030	UNDERWAY
	Develop departmental measures to reduce climate change risks to asset services and operations by 2022	NO NEW DATA
	Use 100% clean electricity within the federal government by 2025	UNDERWAY
	Implement our Mission Innovation commitment to double federal government investments in clean energy, research, development, and demonstration by 2020	ACHIEVED



GOAL	TARGET	PROGRESS
æ	Increase the percentage of managed migratory bird species whose population sizes fall within an acceptable range from a baseline of 57% in 2013 by 2025	ATTENTION REQUIRED
000	Resolve all long-term drinking water advisories on public systems on reserve by March 31, 2021	ATTENTION REQUIRED
X	Improve environmental performance of the agriculture sector by achieving a score of 71 or higher on the Index of Agri-Environmental Sustainability by 2030	NO NEW DATA
\bigotimes	Achieve 90% compliance with <i>Fisheries Act</i> regulations related to aquaculture	UNDERWAY
(Grow Canada's agri-food exports to \$75 billion per year by 2025	UNDERWAY
B	Increase or maintain the number of Canadians that visit parks and green spaces—and increase participation in biodiversity conservation activities relative to a 2010 baseline by 2020	ACHIEVED
800	Increase the percentage of Canadians living in areas where air quality standards are achieved from 70% in 2015 to 85% in 2030	UNDERWAY
	Decrease emissions of fine particulate matter, nitrogen oxides, sulphur oxides, and volatile organic compounds from all sources from 1990 levels	UNDERWAY
	Take risk management actions in a timely manner for all substances found to be a risk to the environment or human health by 2022	UNDERWAY

THE INFLUENCE OF COVID-19 ON PROGRESS TOWARD THE GOALS

THE COVID-19 PANDEMIC

March 2020 was marked in Canada by the rapid adoption of public health measures to mitigate and control the spread of the novel coronavirus COVID-19, which continued through the year, and were also in force during 2021. To track the effects of COVID-19 in Canada, Statistics Canada has published information for Canadians on the ways in which COVID-19 is **changing our lives**. Existing and future research will help to clarify effects on transportation, air quality, and other key environmental issues.

Beyond its immediate repercussions, as the **United Nations Department of Economic and Social Affairs** has noted, the lasting effects of COVID-19 will affect the ability of countries to meet a range of social, environmental, and economic goals, including our collective ambition to achieve the 2030 Agenda and the 17 Sustainable Development Goals, as well as the post-2020 Global Biodiversity Framework.

COVID-19 AND FEDERAL SUSTAINABLE DEVELOPMENT ACTIVITIES

Important practical considerations impacted this report and will have future ramifications for later reporting. For example, data collection and analysis may be delayed or hampered, making it difficult to assess the performance of current mitigation measures or delaying decisions regarding whether measures should be adjusted to meet current or updated federal targets. Conversely, in some contexts the crisis has motivated efforts to modify behaviour and collect data to address current challenges and find improved practices in the future.

In relation to the timeframe reported on in this report, COVID-19 has influenced activities to work toward targets and goals within the 2019 to 2022 FSDS in the following ways:

- Funding programs, have in some cases, redirected resources toward pandemic efforts or to new temporary programs, resulting in different activities or projects funded and completed.
- Work-from-home guidelines and travel restrictions may have delayed or deferred engagement and consultation activities. As these activities resumed, they shifted to digital platforms. Where possible,

some consultation timelines were extended and made flexible to encourage public participation.

- Monitoring, surveillance, and fieldwork activities may have been reduced during periods of strict "lockdown" measures, and procedures have been adjusted to account for new health protocols.
- Activities to process data have, in some cases, been affected. There may be gaps in data where data gathering was precluded.
- Publication of some documents, such as reports or surveys, has been delayed or deferred to either accommodate for resources that have shifted to prioritize COVID-19 mitigation and recovery activities, or as a result of shifting public engagement practices.
- The COVID-19 pandemic continues to present challenges to the implementation of infrastructure projects. Indigenous Services Canada is supporting First Nations in their pandemic response and recovery. Necessary public health measures, contractor and human resources shortages, and supply chain interruptions continue to create delays in meeting targets.

Some of these impacts on federal activities will continue to influence efforts to rebuild and recover from the effects of COVID-19 while making progress on Canada's goals for sustainable development.

Work-from-home guidance, among other changes, will influence Canada's Greening Government targets, including forecasts for reduced greenhouse gas emissions (GHGs) from real property. The effects of COVID-19 and associated health measures on progress toward greening government operations will continue to be analyzed in future years.

PROGRESS ON CROSS-CUTTING PRIORITIES

In addition to goals, targets, and milestones, the 2019 to 2022 FSDS sets out cross-cutting priorities that support progress across multiple areas and reflect major steps for federal sustainable development. The Government of Canada has taken action on these priorities by:

- building on Canada's commitment to implement the 2030 Agenda for Sustainable Development;
- strengthening informed and sustainable decisionmaking for environmental sustainability across government;
- responding to emerging sustainable development issues including the shift to a circular economy and acting on plastic pollution and waste;
- building on the publication of the Arctic and Northern Policy Framework; and,
- building a sustainable ocean economy.

Responsibility for the environment in Canada is shared by federal, provincial, and territorial governments, as well as Indigenous governments, municipalities, and private land owners. The Government of Canada has multiplied efforts to work with its partners to conserve Canada's land, water, and wildlife to ensure a safe, healthy, and sustainable future for all Canadians. Progress toward these efforts are reflected in multiple chapters of this report and, in Budget 2021, the Government of Canada committed \$2.3 billion over five years to conserve 25% of Canada's lands and inland waters, and to take action to prevent priority species at imminent risk of disappearing.

SUPPORTING THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

Adopted by United Nations member states in 2015, the **2030 Agenda** is a global framework of action for people, planet, prosperity, peace, and partnership. It includes **17 Sustainable Development Goals** (SDGs) and 169 targets that apply to all countries.

Canada is committed to implementing the 2030 Agenda and its SDGs at home and abroad. Many of the federal government's priorities, policies and programs are helping Canada make progress on these goals, including reducing poverty; growing and strengthening Canada's middle class; reconciliation with Indigenous peoples; advancing gender equality and the empowerment of all women and girls; taking action on climate, clean energy and oceans; and ensuring access to justice for all Canadians. In July 2018, Canada presented its first Voluntary National Review to the United Nations High-Level Political Forum, which took stock of Canada's progress to date, noted our challenges, and set the stage for the continued work ahead.

CANADA'S IMPLEMENTATION OF THE 2030 AGENDA

The Minister of Children, Families and Social Development leads Canada's implementation of the 2030 Agenda. To ensure continued progress and coordination of Canada's efforts, Budget 2018 provided support for implementation of the 2030 Agenda. Budget 2018 allocated \$49.4 million over thirteen years, starting in fiscal year 2018 to 2019, to establish a Sustainable Development Goals (SDG) Unit at Employment and Social Development Canada to coordinate Canadian efforts to advance the SDGs both domestically and internationally, and also to fund monitoring and reporting activities by Statistics Canada.

The SDG Unit serves as a coordinating body for Canada's implementation of the 2030 Agenda. It is responsible for raising awareness, coordinating efforts, and monitoring and reporting on Canada's progress on the 17 SDGs, in collaboration with other federal government departments and all partners.

Budget 2018 also provided up to \$59.8 million over thirteen years from existing departmental resources, starting in fiscal year 2018 to 2019, for an SDG Funding Program to support the work of stakeholders, including not-for-profit organizations, provinces and territories, municipalities, academia, the private sector, Indigenous peoples, women, youth and vulnerable populations to deliver improved outcomes for Canadians. The program helps to identify and fill gaps in Canada's efforts to meet the SDGs and to improve understanding of the social, economic and environmental needs of populations at risk of being left behind. It also establishes Indigenous people as key partners to implement the 2030 Agenda.

PROGRESS TO DATE

In June 2019, following nationwide in-person and online consultations on Canada's approach to implementing the 2030 Agenda, the Government of Canada released **Towards Canada's 2030 Agenda National Strategy**. This interim document was an important milestone toward establishing the structures, processes, and activities needed to move the 2030 Agenda forward in a coordinated, transparent, and accountable manner. It introduces 30 concrete federal actions to advance the 2030 Agenda and the SDGs. It also establishes the foundation for a **Canadian Indicator Framework** to complement the Global Indicator Framework used to track and report progress internationally.

Since its launch in 2019, the SDG Funding Program has provided funding to eighty-eight organizations, for a total of approximately \$17 million. The grants and contributions allocated through the SDG Funding Program support projects that aim to increase public awareness of the SDGs, support new partnerships to advance action, and identify and implement innovative initiatives to drive progress on the SDGs.

The SDG Funding Program also provided funding to three National Indigenous Organizations (the Assembly of First Nations, the Métis National Council, and Inuit Tapiriit Kanatami) to facilitate their participation in the National Strategy, allow them to continue raising awareness of the 2030 Agenda among their communities, and identify and address opportunities to contribute to Canada's efforts to meet the 2030 Agenda in ways that support their own unique priorities.

In February 2021, Canada released **Moving Forward Together—Canada's 2030 Agenda National Strategy**. Moving Forward Together builds on the foundations laid out in the Towards Canada's 2030 Agenda National Strategy document to create and foster an enabling environment for ongoing participation, dialogue, and whole-of-society collaboration to help advance progress on the 2030 Agenda and the SDGs. The Government of Canada also developed a 2030 Agenda Federal Implementation Plan to articulate how it will implement the SDGs and the 2030 Agenda National Strategy core objectives. This plan includes federal roles and responsibilities and the structures and mechanisms that will support whole-of-government coordination and actions to implement the 2030 Agenda and the SDGs.

Explore Canada's progress toward the global targets and indicators by visiting Statistics Canada's **SDG Data Hub** and Canada's progress toward its domestic targets and indicators by visiting the Canadian Indicator Framework Open SDG Platform.

AN ENVIRONMENTAL LENS ON THE 2030 AGENDA AND THE SUSTAINABLE DEVELOPMENT GOALS

The FSDS is a key component of the federal government's contribution to the whole-of-society 2030 Agenda National Strategy by supporting a range of Sustainable Development Goals.

Many priorities and programs listed in the FSDS align well and contribute to the 2030 Agenda, including:

 the first ever Food Policy for Canada, which sets out a roadmap to a healthier and more sustainable food system for Canada with investments and initiatives that contribute to economic growth, improved health and environmental outcomes, and food security for all Canadians;

- Canada's Feminist International Assistance Policy, which seeks to eradicate poverty and build a more peaceful, inclusive, and prosperous world;
- Canada's climate objectives as outlined in the Pan-Canadian Framework on Clean Growth and Climate Change and A Healthy Environment and a Healthy Economy, as well as investments in clean economic growth and investments in international climate finance; and,
- Canada's Incentives for Zero-Emission Vehicles (iZEV) Program, which seeks to reduce the amount of transportation-related GHG emissions and make zero-emission vehicles more affordable.

The 13 FSDS goals support twelve of the 17 SDGs:

- SDG 2: Zero hunger
- SDG 3: Good health and well-being
- SDG 6: Clean water and sanitation
- SDG 7: Affordable and clean energy
- SDG 8: Decent work and economic growth
- SDG 9: Industry, innovation, and infrastructure
- SDG 11: Sustainable cities and communities
- SDG 12: Responsible consumption and production
- SDG 13: Climate action
- SDG 14: Life below water
- SDG 15: Life on land
- SDG 17: Partnerships for the goals

A following infographic details how the goals in the FSDS interact with the 17 SDGs. In each chapter of this report, a section on "Canada in the World" sets out which United Nations Global Indicator Framework targets are aligned with progress toward the FSDS goal associated with that chapter.

SUSTAINABLE DEVELOPMENT GOALS	SUPPORTED BY FSDS	SUPPORTING FSDS GOALS	SDG IDENTIFIER
No poverty			15 19494
Zero hunger	\bigcirc	(X) (886)	2 ==
Good health and well-being	\bigcirc		3
Quality education			4
Gender equality			s#: @
Clean water and sanitation	\bigcirc		6
Affordable and clean energy	\bigcirc		n time
Decent work and economic growth	\bigcirc		*****
Industry, innovation and infrastructure	\bigcirc		atsitiv S
Reduced inequalities			10 (‡)
Sustainable cities and communities	\bigcirc		11542555 A
Responsible consumption and production	\bigcirc		12 10
Climate action	\bigcirc		13
Life below water	\bigcirc		14 III 14 III
Life on land	\bigcirc		15 au <u> </u>
Peace, justice and strong institutions			16 million
Partnerships for the goals	\bigcirc		" ***



STRENGTHENING INFORMED AND SUSTAINABLE DECISION-MAKING FOR ENVIRONMENTAL SUSTAINABILITY ACROSS GOVERNMENT

Decision-makers need to consider the environmental effects of proposed policies, plans, and programs to make informed and sustainable decisions. As a result, all federal departments and agencies are required to assess **potential environmental effects** when developing policies, programs, and plans that are submitted to a Minister or Cabinet for approval, and communicate those results to Canadians.

Canada is committed to continuing to strengthen these assessments (known as strategic environmental assessments) across the federal government. This supports the federal government's promise to Canadians to make decisions based on evidence and to set a higher bar for openness and transparency in government. When departments and agencies conduct strategic environmental assessments on new policy, plan, and program proposals, they consider how their proposal could affect the goals and targets set out in the FSDS.

Departments and agencies continue to include commitments and results related to implementing strategic environmental assessments in their sustainable development strategies and reports.

AN UPDATE ON EMERGING SUSTAINABLE DEVELOPMENT ISSUES

CIRCULAR ECONOMY

The linear way that economies use and dispose of resources puts increasing pressure on Canada's natural systems, communities, and public health. Transitioning to a clean economy starts with finding smart new approaches and technologies that design waste out of Canada's economic systems—both biological and technical—and create economic opportunities out of the materials that citizens and organizations might otherwise throw away.

The circular economy is increasingly recognized as an important way of doing business that regenerates natural systems, and extracts as much value as possible from resources by repairing, reusing, repurposing, refurbishing or recycling products and materials—eliminating waste and greenhouse gas emissions along the entire life cycle of a product or material. By participating in the circular economy, communities, businesses, and people—of all ages and from all walks of life—are rethinking the lifecycle and potential value of materials and products before they become waste. The circular economy is finding ways to move toward greener, more sustainable options that support a more competitive economy.

The Government of Canada championed the **Ocean Plastics Charter** during its G7 Presidency in 2018. The Charter promotes using a more sustainable approach to producing, using, and managing plastics. By signing onto the Charter, governments, businesses, and organizations commit to a more resource-efficient lifecycle approach to plastics stewardship on land and at sea. These partnerships help to build momentum for real action on plastic pollution around the world.

In November 2018, the Canadian Council of Ministers of the Environment launched the **Canada-wide Strategy on Zero Plastic Waste**. Building on the Ocean Plastics Charter, the Strategy takes a circular economy approach to plastics and provides a framework for action in Canada. In July 2020, Environment Ministers approved a two-stage Action Plan to implement the Strategy.

The Government of Canada is taking a comprehensive approach to meet the target of zero plastic waste by 2030. Important aspects of the agenda include investing in research through **Canada's Plastics Science Agenda**, innovation through the **Canadian Plastics Innovation Challenges**, and in community action through the **Zero Plastic Waste Initiative**. In addition, the federal government's **Greening Government Strategy** contains a commitment to divert at least 75% of plastic waste from its operations by 2030.

Canada has partnered with the Finnish innovation fund SITRA, Finland, and the Netherlands to host three high-level events. These events address the important role circularity plays in the fight against climate change and the nature crisis, and that it will play in future economies. The landmark circular economy event of the year, the **World Circular Economy Forum** (WCEF2021), was held in Toronto, Canada from September 13 to 15, 2021. This event marked the first time the annual forum was held in North America. WCEF2021 built on previous events to focus on the cross-cutting issues and topics that are central to economic recovery and the circular shift. WCEF2021 identified the key actions and systemic changes needed to create the conditions for a thriving global circular economy.

THE ARCTIC AND NORTHERN POLICY FRAMEWORK

In September 2019, the Government of Canada launched the **Arctic and Northern Policy Framework**. The framework was co-developed with more than twenty-five Indigenous organizations representing Inuit,

First Nations, and Métis peoples, the three territorial governments, and three provincial governments (Manitoba, Québec, and Newfoundland and Labrador). This framework is intended to identify shared priorities, goals, and objectives in Canada's Arctic and North, through 2030. It is also designed to be more comprehensive in scope than previous strategies, incorporating both a domestic and international understanding of the unique opportunities and challenges that exist for these regions. The framework was developed by Northerners, for Northerners.

Budget 2019 announced more than \$700 million over ten years in **new and focused funding** to ensure that Arctic and northern communities can continue to grow and prosper. This funding includes new support for more diversified post-secondary education in the territories, enhanced infrastructure resources to connect northern and remote communities, increased economic development programming, and more support to enable critical Arctic research.

Since the launch of the Arctic and Northern Policy Framework, the Government of Canada and Indigenous, territorial, and provincial partners have affirmed a national governance approach to describe how partners will collaborate to share information and assess progress on the framework. In line with the co-development of the framework, partners are also collaborating to develop regional governance approaches. These regional governance structures will be used to develop implementation plans and monitor progress on implementing the goals and objectives of the framework.

The collaborative process used to co-develop the Arctic and Northern Policy Framework has also been an effective mechanism to inform the response to the COVID-19 pandemic, including over \$854 million in targeted COVID-19 relief and recovery measures for Arctic and Northern communities. It has also been a mechanism to support partners in identifying key priorities in the context of pandemic recovery.

QUALITY OF LIFE MEASUREMENTS

Deeply embedded in the heart of sustainable development is the concept of "quality of life", as set out in the *Federal Sustainable Development Act*:

The purpose of this Act is to provide the legal framework for developing and implementing a Federal Sustainable Development Strategy that makes decision making related to sustainable development more transparent and subject to accountability to Parliament, promotes coordinated action across the Government of Canada to advance sustainable development and respects Canada's domestic and international obligations relating to sustainable development, with a view to improving the quality of life of Canadians.

This echoes the "Call to Action" in the 1987 **Our Common Future Report** (or the "Brundtland Commission"), which suggested that the issues in sustainable development are "inevitably of far reaching importance to the quality of life on earth—indeed to life itself". The fundamental goal of improving Canadians' quality of life provides a useful way in which to understand the central organizing principle for the FSDS.

Canada is committed to integrating quality of life measurements within government decision-making. This work is detailed in the December 2019 Mandate Letter for the Minister of Middle Class Prosperity and Associate Minister of Finance. More specifically, this letter sets out a commitment to better incorporate quality of life measurements into government decisionmaking and budgeting, drawing on lessons from other jurisdictions such as New Zealand and Scotland. Environment and Climate Change Canada is working closely with Finance Canada and Statistics Canada to align these related initiatives and ensure that well-being today does not come at the expense of future generations.

To advance this commitment, Budget 2021 introduced Canada's Quality of Life Framework, based on international best practice, evidence of the determinants of well-being, and engagement with experts and Canadians on what makes for a good quality of life in Canada. Further information is available in an accompanying discussion paper, Toward a Quality of Life Strategy for Canada.

THE IMPACT ASSESSMENT ACT AND THE STRATEGIC ASSESSMENT OF CLIMATE CHANGE

In August 2019, the *Impact Assessment Act* came into force. The *Impact Assessment Act* establishes a new process for considering both positive and negative environmental, health, social, and economic effects of projects that will undergo a federal impact assessment.

One of the factors to be considered in the impact assessment process of a designated project is the extent to which the effects of this project hinder or contribute to the Government of Canada's ability to meet its climate change commitments, including the Paris Agreement, Canada's 2030 target, and the goal of Canada achieving net-zero emissions by 2050.

In July 2020, Environment and Climate Change Canada published a **Strategic Assessment of Climate Change** under the *Impact Assessment Act*. This document reflects comments received in public consultation, as well as the Government of Canada's goal of net-zero emissions by 2050. The strategic assessment of climate change activities will enable consistent, predictable, efficient, and transparent consideration of climate change throughout federal impact assessments.

This strategic assessment of climate change:

- describes the greenhouse gas and climate change information that project proponents need to submit at each phase of a federal impact assessment;
- requires proponents of projects with a lifetime beyond 2050 to provide a credible plan that describes how the project will achieve net-zero emissions by 2050; and
- explains how the Impact Assessment Agency of Canada or lifecycle regulators, with support from expert federal authorities, will review, comment on, and complement the climate change information provided by proponents.

Environment and Climate Change Canada plans to review and update the strategic assessment of climate change every five years.

THE BLUE ECONOMY STRATEGY

There is increasing global recognition that a sustainable ocean economy is critical to achieving the goals of the 2030 Agenda for Sustainable Development, and the Government of Canada has been at the forefront of international efforts in this regard. During Canada's 2018 presidency, G7 members committed to the goals set out in the **Charlevoix Blueprint for Healthy Oceans, Seas and Resilient Coastal Communities**. The Government of Canada has also led the development of the **Ocean Plastics Charter**, bringing together leading governments, businesses, and civil society organizations to move toward a more resource efficient and sustainable approach to the management of plastics on land and at sea. As a member of the High Level Panel for a Sustainable Ocean Economy, the Prime Minister joined with the heads of state and government of thirteen other ocean nations in December 2020 to adopt the **Transformations ocean action agenda**, including a commitment to sustainably manage 100% of the ocean area under national jurisdiction by 2025, guided by sustainable ocean plans.

To further these commitments, and as set out in the October 2020 Speech from the Throne and January 2021 mandate letters, the Minister of Fisheries, Oceans and the Canadian Coast Guard is now leading a whole-of-government initiative to develop a comprehensive blue economy strategy. This strategy is intended to support Canada's economic recovery and is focused on growing Canada's ocean economy to create good middle class jobs and opportunities for ocean sectors and coastal communities, while also advancing reconciliation and conservation objectives.

In February 2021, the Minister of Fisheries, Oceans and the Canadian Coast Guard launched a public engagement process to inform the development of the **Blue Economy Strategy** by seeking input from stakeholders and Canadians.

A RENEWED APPROACH TO SUSTAINABLE DEVELOPMENT

LEGISLATIVE RENEWAL

On December 1, 2020, *An Act to Amend the Federal Sustainable Development Act* came into force. The purpose of the *Federal Sustainable Development Act*, as amended, includes making "decision making related to sustainable development more transparent and subject to accountability to Parliament". As such, the Act, as amended, steers the Government of Canada toward a focus on sustainable development more broadly (as opposed to simply the environment), and promotes coordinated action by requiring more than ninety federal organizations to contribute to the FSDS (up from twenty-seven under the 2008 Act).

While the 2019 to 2022 FSDS was prepared under the 2008 *Federal Sustainable Development Act*, future strategies will be tabled under the Act as amended. This will have the following effects:

- grant flexibility to shift focus from environmental decision-making to sustainable development decision-making;
- enable a whole-of-government approach by significantly increasing the number of federal departments required to contribute to the FSDS;
- require more collaboration and coordination across government;
- increase transparency, including by requiring departments to report annually to parliamentarians on their results; and,
- support more effective engagement with Indigenous peoples and the Canadian public, including by doubling representation of Indigenous peoples on the Sustainable Development Advisory Council.

TOWARD THE FUTURE OF FEDERAL CONTRIBUTIONS TO SUSTAINABLE DEVELOPMENT IN CANADA

The 2019 to 2022 FSDS is the fourth federal strategy prepared by Environment and Climate Change Canada to implement the *Federal Sustainable Development Act*. Similarly, the related 2020 to 2023 Departmental Sustainable Development Strategies are the fourth round of departmental strategies. These strategies are the last that were prepared under the 2008 Act and, together with this Progress Report, they mark a culmination of the initial cycle of federal and departmental strategies that started in 2010.

Today, Environment and Climate Change Canada is drawing up new plans for the FSDS. When *An Act to Amend the Federal Development Act* came into force on December 1, 2020, it began to generate positive changes that require the next FSDS to be different than those that have gone before. Between 2010 and 2019, when the first to fourth strategies were tabled, the FSDS has grown from an initial four themes to a mature strategy with thirteen goals and many more targets, departmental actions, key priorities, and short-term milestones. For more than ten years, Canadians from across the country have engaged with and improved the FSDS through public consultations. For many Canadians, the FSDS is a primary site of information on the Government of Canada's sustainable development priorities.

Yet much has changed since the *Federal Sustainable Development Act* came into force in 2008. Perhaps the greatest among these changes is located in the global context of sustainable development. In 2008, the World Commission on Environment and Development's 1987 report *Our Common Future* provided the language and ambition for sustainable development. In particular, the much-quoted definition of sustainable development remains useful today: that it is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Yet the 2030 Agenda and the Sustainable Development Goals mark progress in this global context of sustainable development by deepening and clarifying the integrated nature of sustainable development. Whether thinking about the Government of Canada's federal policy on sustainable development or about the global context of the concept and growing consensus around its goals, sustainable development has grown to reflect a vibrant diversity of interests, issues, and partners.

What has not changed since the first FSDS is the commitment by federal organizations implicated in the *Federal Sustainable Development Act* to prepare and report on sustainable development activities. Canada's commitment to providing ongoing oversight of its transparency and accountability is unwavering. Engagement numbers tracked by the Sustainable Development Office in Environment and Climate Change Canada show that public interest in sustainable development is only increasing. Each FSDS has generated an increase in public comments and in overall engagement.

Future federal strategies and departmental strategies will continue to improve as they take shape within the manifold holistic relationships that constitute sustainable development policy in Canada—both the relationships between organizations within the federal government and also, and most importantly, the relationship between the Government of Canada, Parliamentarians, and the Canadian public.

HOW DOES THIS REPORT MEASURE PROGRESS?

PERFORMANCE MEASUREMENT

The Government of Canada uses performance measurement and indicators to determine whether we are making progress on commitments identified in the 2019 to 2022 FSDS.

This Progress Report responds to the slate of performance indicators presented in Annex II of the FSDS. The FSDS includes many of the indicators developed by the Canadian Environmental Sustainability Indicators (CESI) program in Environment and Climate Change Canada, which serves as the prime instrument to measure progress on sustainable development. The FSDS also includes indicators from reporting structures used in the departmental planning and reporting cycle of contributing federal departments and agencies, as well as from surveys conducted on a regular or semiregular basis. Over time, the federal government has developed new indicators to provide a better understanding of progress against targets. This can be a lengthy process and requires existing data or the development of regular data collection and a strong and transparent methodology.

Indicators provide an evidence-based foundation for determining progress. Some are developed on a yearly cycle. Others are updated on longer five-year cycles, depending on the complexity, range, and source of the information. Given the varied nature of the set of indicators used in contributions to the FSDS, it is not possible to update each indicator for the relevant Progress Report. Nor is it useful from a long-term perspective to reject indicators where an update cycle may place them outside a given FSDS reporting cycle, especially where an indicator may be the most authoritative source of a given dataset. To balance timely reporting and authoritative data, indicators are presented with the most recent data and with transparent reporting over their source and update cycles. Annex II includes more detailed information on the source of data for the indicators used in the FSDS and this report, as well as their update cycles.

This report continues the progress scorecard and rating system used in the 2018 Progress Report to communicate results with four possible assessments:

- Achieved
- On track underway
- Attention required
- No new data available

Assessments of progress toward targets are based on most recently published indicator results, as set out in the FSDS. Each chapter presents FSDS targets alongside most recent indicator results as well as considerations in determining the assessment.

CANADIAN ENVIRONMENTAL SUSTAINABILITY INDICATORS

The CESI program provides data and information to track Canada's performance on key environmental sustainability issues including climate change and air quality, water quality and availability, and the protection of nature. Environmental indicators are based on objective and comprehensive information and convey environmental trends in a straightforward and transparent manner.

CESI selects indicators by using the following criteria:

- Policy relevance. Does a prospective data set accurately reflect an FSDS goal or target in whole or in part?
- Utility. Does a prospective indicator meet the needs of decision makers and the public—and is it useful for the purposes to which it is put?
- Soundness. Will this indicator provide a consistent and solid methodology that yields data comparable over time?
- Data availability and integrity. Does the dataset use existing high-quality data that adequately covers the subject in question?

Through CESI, Environment and Climate Change Canada produces these indicators with the support of other federal departments and agencies, including, Health Canada, Statistics Canada, Natural Resources Canada, Parks Canada Agency, Transport Canada, and Fisheries and Oceans Canada. Some indicators are developed with provincial and territorial governments. Beyond the indicators used by the 2019 to 2022 FSDS, Environment and Climate Change Canada produces a range of additional indicators found on the CESI website.

The CESI website also ensures that national, regional, local, and international trends are accessible to all Canadians through graphics, explanatory text, interactive maps, and downloadable data. Indicator results are linked to their key social and economic drivers, and information provides links to how issues are influenced by consumers, businesses, and governments. Each indicator is accompanied by a technical explanation of how it is calculated.

DEPARTMENTAL REPORTING CYCLES

Some indicators in the 2019 to 2022 FSDS are sourced from annual Departmental Results Reports or other

regular surveys prepared by departments and agencies through government-wide corporate reporting on annual Departmental Plans or other reporting cycles. In some cases, these indicators may be the same as or in addition to indicators used in reporting on Departmental Sustainable Development Strategies, which provide another layer of integrated environmental sustainability reporting in the regular cycle of reporting on departmental plans and performance.

REPORTING AGAINST SHORT-TERM MILESTONES

The 2019 to 2022 FSDS sets out short-term milestones for each goal. Activities related to these milestones help contextualize Canada's progress toward its targets and goals. In each chapter of this report, the listed activities respond directly to the short-term milestones set out in the 2019 to 2022 FSDS. Where milestones are scheduled to conclude after the publication of this report, interim results have been included to provide a full picture of progress up to the point of publication.

AN UPDATE ON KEY PRIORITIES

This Progress Report provides an update on the key priorities set out in the 2019 to 2022 FSDS. This update takes the form of an annex that outlines which federal organizations that contribute to the FSDS are leading or supporting work toward the key priorities. Additional reporting can be found through those organizations' relevant reporting through the following sources:

- reporting on 2020 to 2023 Departmental Sustainable Development Strategies;
- annual **Departmental Result Reports** prepared by all federal organizations; and,
- the Government of Canada's portal for grants and contribution data published as part of the Open Government Action Plan.

CHANGES IN THE 2021 PROGRESS REPORT

This Progress Report emphasizes accessibility of information and streamlines the complex representation of goals, targets, milestones, priorities, and indicators that make-up the constitutive fabric of reporting on the 2019 to 2022 FSDS.

As each FSDS has grown and changed its approach to respond to feedback from the Commissioner of the Environment and Sustainable Development and Canadians, so too do the Progress Reports change to respond to each FSDS. For example, the 2016 to 2019 FSDS presented a list of forty-seven indicators used to track progress. The 2019 to 2022 FSDS presents a list of eighty-four indicators.

New to the 2019 to 2022 FSDS is a separation of indicators into two categories. These are:

- measures of progress toward the target; and,
- complementary contextual indicators supporting the goal.

Indicators that provide direct measures of progress toward the target substantiate the result statements that are used to determine the assessment of the Government of Canada's progress. In contrast, indicators that provide complementary contextual information help to flesh out progress related to the goal in various ways. Indicators range from providing data on select milestones to direct measures of progress, and extend to providing supplementary information relevant to the goal.

Since the quantity of indicators has increased in the 2019 to 2022 FSDS from previous strategies, this Progress Report focuses on presenting the highlights of measures of progress toward the target with the most relevant sections of each contextual indicator. More detail about each indicator can be found in documents developed by the owner of the indicator. For example, each Canadian Environmental Sustainability Indicator has a technical explanation hosted on the CESI website.

To permit readers to clearly understand where the indicators listed in the 2019 to 2022 FSDS are presented in this Progress Report, and to guide readers to sources of information about each indicator, this report includes an annex that lists the indicators used by each goal and presents the page numbers where they appear.





MINISTER OF ENVIRONMENT AND CLIMATE CHANGE MINISTER OF TRANSPORT WHOLE-OF-GOVERNMENT IMPLEMENTATION

Effective Action on Climate Change



A low-carbon economy contributes to limiting global average temperature rise to well below 2 degrees Celsius and supports efforts to limit the increase to 1.5 degrees Celsius

There are two medium-term targets within this goal. Reporting on short-term milestones and contextual indicators set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Environment and Climate Change Minister of Transport Whole-of-Government Implementation

FEDERAL ORGANIZATIONS

Agriculture and Agri-Food Canada Canadian Institutes of Health Research Crown-Indigenous Relations and Northern Affairs Canada Finance Canada Environment and Climate Change Canada Fisheries and Oceans Canada Global Affairs Canada Health Canada Indigenous Services Canada Infrastructure Canada Innovation, Science and Economic Development Canada National Research Council of Canada Natural Resources Canada Parks Canada Agency Public Health Agency of Canada Public Safety Canada Public Services and Procurement Canada Standards Council of Canada Transport Canada

A low-carbon economy contributes to limiting global average temperature rise to well below 2 degrees Celsius and supports efforts to limit the increase to 1.5 degrees Celsius

About the milestones

The impacts of climate change pose a significant threat to the well-being of Canadians. In response, the Government of Canada collaborated with provinces and territories, and with input from Indigenous peoples, developed the 2016 Pan-Canadian Framework on Clean Growth and Climate Change to reduce greenhouse gas emissions, drive clean growth, and build Canada's resilience to a changing climate. This plan includes a pan-Canadian approach to pricing carbon pollution, and measures to achieve reductions across all sectors of the economy. Building on this plan, the Government of Canada also released a strengthened climate plan in December 2020, A Healthy Environment and a Healthy Economy. Changes laid out in these plans will stimulate new jobs across the country in the development, support, and construction of energy efficiency, electric vehicle charging infrastructure, public transit, and development of new technologies.

Together, the short-term milestones listed below help Canada to mitigate and adapt to climate change, and represent progress toward the steps outlined in the 2019 to 2022 FSDS in relation to carbon pricing, regulatory activity in the electricity and energy sector, zero-emission vehicle sales, and adaptation preparedness. Given the economy-wide nature of climate action, many of the milestones reported on in other chapters of this report also reflect progress on climate change.

2018

- As of May 2018, Environment and Climate Change Canada's regulation for heavy-duty vehicles were updated.
- In December 2018, final regulations for the planned phase-out of traditional coal-fired electricity by 2030 were announced in the Canada Gazette.
- In 2018, a survey administered every five years by Natural Resources Canada found that 67% of communities and 72% of businesses in natural-resource sectors have access to tools and information for adaptation decision-making.

2019

- As of March 2019, the Task Force on the Just Transition for Canadian Coal Power Workers and Communities
 provided two reports to the Government of Canada on how to make the transition away from coal-fired electricity
 a fair one for Canadian coal workers and communities. The Task Force was established to help understand and
 minimize the impacts of the planned phase-out of traditional coal-fired electricity by 2030.
- As of 2019, carbon pricing has been in place across Canada through a combination of the federal carbon pricing backstop system and provincial systems that meet the federal benchmark.

2020

- As of March 2020, the Low Carbon Economy Fund has funded ninety-six projects across the country to reduce emissions, save energy and create jobs.
- In July 2020, the Government of Canada published the <u>Third Annual Synthesis Report</u> on the Pan-Canadian Framework on Clean Growth and Climate Change. This report details progress made in 2019 across the four pillars of pricing carbon pollution, complementary actions to reduce emissions across the economy, adaptation and climate resilience, and clean technology, innovation, and jobs. As the synthesis report details in full, significant progress continues to be made on these pillars.

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2020 - continued

- In November 2020, the Canadian Net-Zero Emissions Accountability Act was tabled in Parliament. The purpose
 of this Act is to require the setting of national targets for the reduction of greenhouse gas emissions based
 on the best scientific information available and also to promote transparency and accountability in achieving
 those targets, in support of achieving net-zero emissions in Canada by 2050, and the Government of Canada's
 international commitments to reduce emissions in Canada.
- In December 2020, the Government of Canada released Canada's Strengthened Climate Plan, A Healthy Environment and a Healthy Economy, containing sixty-four new and strengthened federal measures and \$15 billion in new investments to drive further reductions in GHG emissions and build a stronger, cleaner, more resilient, and inclusive economy. Measures included in the Strengthened Climate Plan are reflected throughout this 2021 Progress Report beyond this chapter to illustrate where they support progress on priorities related to clean energy, home energy efficiency improvements, zero-emission vehicles, and public transit.

2021

- In February 2021, the Minister of Environment and Climate Change announced the Net-Zero Advisory Body. This independent group of experts has a mandate to engage with Canadians and provide advice to the Minister on pathways to achieve net-zero emissions by 2050. The *Canadian Net-Zero Emissions Accountability Act*, as laid out in Bill C-12, establishes the Net-Zero Advisory Body in law to provide independent advice to the government and conduct engagement on optimal pathways to achieve net-zero emissions by 2050. This advisory body will produce an annual report and, per the Act, the federal government will publicly respond to any advice related to the measures and strategies that could be taken to achieve a greenhouse gas emissions target provided by the advisory body in this report. The Act establishes an accountable and transparent system of planning and reporting to ensure Canada meets these targets and achieves the long-term goal of net-zero by 2050.
- On April 19, 2021, the Minister of Finance tabled the Government of Canada's Budget 2021, which includes over \$17 billion in support for green recovery to create jobs, build a cleaner economy, and fight and protect against climate change. These investments, along with other actions including strengthened alignment with the United States to further cut pollution from transportation and methane emissions, mean that Canada is now positioned to reduce emissions by an estimated 36% below 2005 levels by 2030.
- On April 22, 2021, the Prime Minister announced Canada's enhanced greenhouse gas reduction target of 40 to 45% below 2005 levels by 2030. This replaces the previous target of 30% below 2005 levels by 2030, and reflects a significant increase in Canada's ambition to fight climate change. This target was included in Canada's enhanced Nationally Determined Contribution submission to the United Nations Framework Convention on Climate Change, in advance of the 2021 United Nations Climate Change Conference of the Parties (or "COP 26") climate negotiations occurring in late 2021.
- On June 29, 2021, the Minister of Transport, Minister of Environment and Climate Change, and Minister of Canadian Heritage announced that the Government of Canada is setting a mandatory target for all new light-duty vehicle sales to be zero-emission by 2035, accelerating Canada's previous goal of 100% sales by 2040. To ensure Canada reaches this goal, and to provide certainty about the pathway to get there, the Government of Canada will pursue a combination of investments and regulations to help Canadians and industry transition to a zero-emission vehicle future. Building on ongoing stakeholder engagement on zero-emission vehicles held to date, the Government of Canada will also consult industry, non-governmental organizations, and other levels of governments on its approach to meet its 100% zero-emission vehicle sales target by 2035.

Ongoing

- Building on the April 2018 publication of final regulations to reduce methane from the oil and gas sector, the Government of Canada is continuing to take action to reduce methane emissions. To ensure that Canada fully achieves its existing target of a 40 to 45% reduction in methane emissions below 2012 levels by 2025, the Government of Canada will monitor the effectiveness of the existing federal regulations, and will continue to work with partners to ensure these objectives are achieved. To help accelerate a reduction in methane emissions, the Government of Canada announced the \$750 million Emissions Reduction Fund. The fund provides repayable funding to eligible onshore and offshore oil and gas companies to support their investments to reduce greenhouse gas emissions, where companies that eliminate methane emissions might be eligible for partially repayable contributions. In late 2021, Canada is planning to publicly report on the efficacy of the suite of federal actions to achieve the 2025 methane target.
- In addition to the above actions on reducing methane emissions, as announced in the December 2020 Strengthened Climate Plan, the Government of Canada has proposed to strengthen Canada's approach to reducing methane emissions from the oil and gas sector by establishing new targets for 2030 and 2035, based on international best practices.
- The Federal Greenhouse Gas Offset System is being developed as part of the Government of Canada's carbon
 pollution pricing system and strengthened climate plan in order to support Canada's actions to reduce
 GHG emissions. The offset system will incentivize activities in the Agriculture, Forestry, and Waste sectors
 that lead to greenhouse gas reductions, which are not required under existing regulations or covered by
 other measures related to carbon pollution pricing. Final regulations are targeted for release in fall 2021.
- By the end of 2021, Environment and Climate Change Canada plans to finalize the Clean Fuel Regulations (also known as the Clean Fuel Standard), covering liquid fossil fuels in Canada, with reduction requirements coming into force in 2022. This timeline was updated in light of the COVID-19 pandemic. Other components of this legislation are planned to follow this new timeline.
- The Government of Canada has committed to providing the climate change information, data, and tools that underpin effective climate action. Since its launch in 2018, the <u>Canadian Centre for Climate Services</u> continues to work with partners to improve the availability of tailored and localized climate services to support effective adaptation planning, including through <u>climatedata.ca</u>.
- Through the Natural Climate Solutions Fund initiative, the Government of Canada is continuing to invest up to \$3.9 billion over ten years in nature-based climate solutions, including planting two billion trees as well as restoring and enhancing wetlands, peatlands, grasslands, and agricultural lands to boost carbon sequestration. An open call for applications is planned for release in the fall of 2021.

Minister of Environment and Climate Change supported by a whole-of-government approach to implementation



TARGET

By 2030, reduce Canada's total greenhouse gas emissions by 30%, relative to 2005 emission levels.

NOTE

On April 22, 2021, the Prime Minister announced Canada's enhanced GHG emission reduction target of 40 to 45% below 2005 levels* by 2030. This replaces the previous target, as written above, which was reflected in the 2019 to 2022 FSDS at the time it was tabled in Parliament, and against which this report assesses progress.



RESULT

According to data published in 2021, Canada emitted a total of 730 megatonnes of carbon dioxide equivalent (Mt CO_2 eq) in 2019. Over the 2005 to 2019 period, total emissions decreased by 9 Mt or 1.1%. Data for 2019 does not yet reflect many measures outlined in the Pan-Canadian Framework. Many greenhouse gas mitigating measures and regulations under Canada's climate plan are designed to become gradually more stringent so their impact on emissions will not be immediately discernable.



PROGRESS

Based on the progress made to 2019 on reducing greenhouse gas emissions, from data available from the National Inventory Report published in 2021, this target was assessed as requiring further attention for Canada to achieve. Recognizing that additional action was needed, in December 2020, the Government of Canada released A Healthy Environment and a Healthy Economy, which builds on the Pan-Canadian Framework and will enable Canada to exceed its original 2030 emissions reduction target under the Paris Agreement. The investments made in Budget 2021, along with other action including strengthened alignment with the United States to further cut pollution from transportation and methane emissions, mean that Canada is now positioned to reduce emissions by about 36% below <u>2005 levels*</u> by 2030.

The Government of Canada will continue to work with provinces, territories, Indigenous peoples, civil society, industry, and other partners to advance shared priorities to drive down greenhouse gas emissions and create economic opportunity in all regions of the country.

Minister of Transport



TARGET

Zero-emission vehicles will represent 10% of new light-duty vehicle sales by 2025, 30% by 2030, and 100% by 2040.

NOTE

On June 29, 2021, The Minister of Transport, Minister of Environment and Climate Change, and Minister of Canadian Heritage announced that the Government of Canada is setting a mandatory target for all new light-duty vehicle sales to be zero-emission by 2035. This replaces the previous 100% sales target, as written above, which was reflected in the 2019 to 2022 FSDS at the time it was tabled in Parliament, and against which this report assesses progress.



RESULT

In the first half of 2020, zero-emission vehicles represented 3.5% of the light-duty vehicle market share. Their market share increased to 3.7% in the third quarter of 2020.



. . . .

PROGRESS

Progress is on track. Transport Canada estimates that zero-emission vehicle market share would need to be approximately 3.9% in 2020 to maintain the trajectory to reach the 2025 target.

Greenhouse gas emissions, Canada, 1990 to 2019



SOURCE: Canadian Environmental Sustainability Indicators Program, 2021

Emissions reductions from many greenhouse gas mitigating measures and regulations under Canada's climate plan are designed to become gradually more stringent so their impact on emissions will increase over time.

Indexed trend in greenhouse gas emissions per person and per unit of gross domestic product, Canada, 1990 to 2019





Projected greenhouse gas emissions in 2030 (MT CO₂ eq.)

* 2005 historical number based on 2020 National Inventory Report

SOURCE: Environment and Climate Change Canada, 2021

These projections and estimates were calculated prior to the publication of the 2021 National Inventory Report, and thus the baseline used to calculate the amounts represented here is different from the revised baseline established in 2021, and against which historical emissions are measured. Please see the **methodological note on page 33** in this chapter for more detail.

WHY IT'S IMPORTANT

The world's climate is changing due to increasing concentrations of anthropogenic greenhouse gases in the atmosphere. The changing climate is a critical global problem that will affect future generations' ability to meet their basic needs if greenhouse gas emissions are not mitigated and societies fail to adapt. Global atmospheric concentrations in 2020 reached 417 parts per million—a level unprecedented since four million years ago, when the planet's temperatures were two to four degrees Celsius warmer. There is no doubt that continued greenhouse gas emissions would have far reaching and unpredictable environmental, social, and economic consequences. Climate change is a twin crisis to biodiversity loss and ecological degradation.

The effects of anthropogenic climate change are already felt across Canada, and especially so in Canada's north and Arctic regions. We are seeing rising sea levels, more frequent and severe wildfires and pest outbreaks, erosion of coastlines, changing ocean chemistry (acidification and hypoxia), and more extreme weather events such as storms and heat waves.

Climate change affects the health of Canadians across the country and increases strain on its health systems. Recent events—such as flooding in New Brunswick, Ontario and Québec in 2019, the spread of Lyme disease into eastern Canada, the British Columbia wildfires in 2017 and 2018, and the Alberta Fort McMurray wildfires in 2016—demonstrate the risks Canadians face from extreme weather events. Climate change has been linked to the increased spread and intensity of zoonotic diseases such as Ebola, SARS, MERS, Lyme disease, and potentially with the novel coronavirus COVID-19, per the **United Nations Environment Programme**.

It is well understood that Canada's changing climate exacerbates existing challenges and health stressors for Indigenous peoples in Canada, including wildfires, permafrost thaw, changing wildlife patterns, diminishing access to traditional food sources, and flooding. Each of these is already having a direct impact on the social and economic well-being of First Nations, Inuit, and Métis peoples.

Effective action on climate change means transitioning to a low-carbon economy and enabling Canada to reduce its greenhouse gas emissions while continuing to grow its prosperity through improving efficiency in processes, buildings, and vehicles, and by realizing opportunities in emerging markets such as renewable energy and clean technology. While reducing emissions is necessary to help lessen the severity of climate change impacts in the future, Canada also needs additional efforts to build resilience to these impacts. Taking action to adapt to climate change impacts is about making smart, informed, forward-looking decisions that take future climate change impacts into account. Effective adaptation measures can save lives, minimize damages, and lower costs over the long term for communities, individuals, businesses, organizations, and governments.

MEETING THE TARGETS

GREENHOUSE GAS EMISSION REDUCTIONS

Under the Paris Agreement, Canada committed to reducing its GHG emissions by 30% below 2005 levels by 2030. **Canada's total GHG emissions** in 2019 were 730 Mt CO₂ eq., as reported in Canada's **2021 National Inventory Report**, which uses a baseline of 739 Mt CO₂ eq. This is a net decrease of 9 Mt or 1.1% from 2005 emissions.

Based on the progress made to 2019 on reducing greenhouse gas emissions, from data available from the 2021 National Inventory Report, this target was assessed as requiring further attention for Canada to achieve the target. Recognizing that more action on climate change was needed to support the goals of the Paris Agreement, on April 22, 2021, the Prime Minister committed Canada to reduce its greenhouse gas emissions by 40-45% below 2005 levels by 2030. This reflects a significant increase in ambition for Canada; however, it will build on the momentum established by the continued implementation of the Pan-Canadian Framework, the release of the strengthened climate plan in December 2020, and the new investments announced between the 2020 Fall Economic Statement and Budget 2021.

In 2019, the oil and gas sector was the largest source of GHG emissions, accounting for 26% of total national emissions, or 191 Mt CO₂ eq. Over the 1990 to 2019 period, emissions from the oil and gas sector increased 87% from 102 Mt CO₂ eq in 1990. This increase is mostly attributable to the increased production of crude oil and the expansion of the oil sands industry. The transport sector was the second largest source and accounts for 25% of total national emissions, or 186 Mt CO_2 eq. Over the 1990 to 2019 period, emissions from the transport sector grew by 54%. This growth was mostly driven by increases from freight trucks and passenger light trucks. Other Canadian economic sectors, including buildings, electricity, heavy industry, agriculture, and waste, each accounted for between 7% and 12% of total GHG emissions in Canada as of 2019. Notably,

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between 1990 and 2019, GHG emissions from combustion-based electricity generation have decreased by 36% from 95 Mt CO_2 eq in 1990 to 61 Mt CO_2 eq in 2019.

It takes time before the impact of new programs, policies, and investments translate into reductions in greenhouse gas emissions. Data from 2019 does not yet reflect many measures under Canada's 2016 climate plan, the Pan-Canadian Framework. Additionally, many greenhouse gas mitigating measures and regulations are designed to become gradually more stringent so their impact on emissions will increase over time. Progress stemming from these measures will be reflected in future National Inventory Reports.

For many years, governments, consumers, and businesses have taken action to reduce the intensity of GHG emissions. Canada's economy has grown more rapidly than its GHG emissions. The emissions intensity for the entire economy (GHG per GDP) has declined by 37% between 1990 and 2019, or from 0.55 to 0.35 Mt CO₂ eq per billion dollars in GDP. Over the same period, the amount of GHGs emitted per person decreased 11% from 21.7 to 19.4 tonnes of CO₂ eq per person. More efficient industrial processes, a shift to a more service-based economy, and a decrease in the emissions associated with electricity generation all contributed to these decreases.

IMPORTANT: As discussed in Canada's 2021 National Inventory Report (NIR), changes in data or methods that are planned on a continuous improvement basis often lead to the recalculation of GHG estimates for the entire time series, from 1990 to the most recent year available.

The 2021 NIR revised the figure corresponding to the 2005 baseline year to 739 Mt CO_2 eq. However, the publications referred to in the following two sections related to reference case scenarios and projections refer to the prior 2005 baseline year figure of 730 Mt CO_2 eq. Figures using this now superseded baseline are indicated with an asterisk (*).

Given this revised baseline calculation, caution must be applied as these reference cases and projections are not directly comparable to current GHG emission data. Environment and Climate Change Canada plans to publish updated projections making use of the new 2005 baseline data in late fall 2021.

GREENHOUSE GAS EMISSION REFERENCE CASE SCENARIOS

Canada's **Second Biennial Report**, published in 2016, projected that GHG emissions in 2030 would be 815 Mt CO_2 eq without any action taken*.

Under Canada's **2020 Reference Case scenario** that serves as the baseline for the assessment of Canada's Strengthened Climate Plan, it is projected that Canada's emissions in 2030 would be 674 Mt CO_2 eq, or 8% below 2005 levels*. When including the contribution from the land use, land use change, and forestry (LULUCF) sector, emissions are projected to be 657 Mt CO_2 eq in 2030, or 10% below 2005 levels*. The 2020 Reference Case scenario includes actions taken by governments, consumers, and businesses put in place up to September 2020, and assumes governments take no further action after September 2020.

GREENHOUSE GAS EMISSION PROJECTIONS-LOOKING AHEAD TO 2030 AND 2050

The 2016 Pan-Canadian Framework on Clean Growth and Climate Change was Canada's first-ever national climate plan and is projected to reduce Canada's emissions in 2030 by 227 Mt CO_2 eq compared to 2005 levels^{*}.

Adding to the 2016 Pan-Canadian Framework on Clean Growth and Climate Change, the Government of Canada released Canada's Strengthened Climate Plan, A Healthy Environment and a Healthy Economy, in December 2020. This plan includes sixty-four new and strengthened federal measures, with \$15 billion in new investments, to meet and exceed Canada's initial target of 30% emissions reduction below 2005 levels* by 2030. According to Environment and Climate Change Canada's analysis, the full implementation of Canada's Strengthened Climate Plan is projected to reduce Canada's emissions in 2030 by an additional 85 Mt CO₂ eq*. Together, the Pan-Canadian Framework and the Strengthened Climate Plan are projected to bring Canada's 2030 emissions to 503 Mt CO₂ eq,* which is equivalent to at least 31% below 2005 levels*.

Building on these commitments, Budget 2021 announced \$17.6 billion in support for green recovery to create jobs, build a cleaner economy, and fight and protect against climate change. The investments made in Budget 2021, along with other action including strengthened alignment with the United States to further cut pollution from transportation and methane emissions, mean that Canada is now positioned to reduce emissions by about 36% below 2005 levels* by 2030.

Federal actions are also only part of the picture for Canada's overall emissions reductions. Many provinces and territories have committed to deep GHG reduction targets for both 2030 and 2050, but not all have announced a complete set of measures to reach these targets. Additional provincial and territorial measures will build on the impacts of the proposed federal measures, leading to further emission reductions. The Government of Canada is committed to working with provinces and territories to advance shared priorities that will further lower emissions, including on a regional and bilateral basis.

The Government of Canada has committed to achieving net-zero emissions by 2050, and, in November 2020, tabled draft legislation toward this end. The *Canadian Net-Zero Emissions Accountability Act*, which received Royal Assent on June 29, 2021, requires the government to set emissions-reduction targets at five-year intervals for 2030, 2035, 2040, and 2045, along with a system of mandatory plans and reports on implementation progress and results. It will also require that the Commissioner of the Environment and Sustainable Development examine and report on implementation of the measures intended to achieve the target at least once every five years after the Act receives Royal Assent. The Act also establishes in law the Net-Zero Advisory Body that was launched in February 2021.

As new measures are announced, detailed, and implemented, they will be included in the modelling that estimates GHG emission reductions. They will also impact future projected emissions levels, including for 2030.

ZERO-EMISSION VEHICLE SALES

The Government of Canada continues to work toward its zero-emission vehicle sales targets. The Government of Canada's 2020 Fall Economic Statement allocated \$287 million in funding over two years starting in fiscal year 2020 to 2021 for the Incentives for Zero-Emission Vehicles program, in addition to the \$300 million provided in Budget 2019. The Fall Economic Statement also provided an additional \$150 million over three years, starting in fiscal year 2021 to 2022, for infrastructure development to support the deployment of charging and hydrogen fueling stations. To seize on economic opportunities as Canada transitions toward zero-emission vehicles, the Government of Canada also announced an investment of \$295 million for the Ford Motor Company of Canada's Oakville Assembly Complex to retool it to become Canada's first electric vehicle battery production facility, which will also help to create economic opportunities for Canada and boost competitiveness in automotive manufacturing.

The Incentive for Zero-Emission Vehicles program continues to show strong results. Between the inception of the program in May 2019 and December 2020, more than 72,000 Canadians and Canadian businesses benefitted from federal point-of-sale incentives. This program, along with other federal investments in zero-emission vehicles, have helped increase Canada's zero-emission vehicle market share over the last few years. According to Statistics Canada, ZEV market share grew to 3% in 2019, up from 2% in 2018. While data for the full 2020 year is not yet available, Canada is on track to see further market share growth in zero-emission vehicles. Market share was 3.5% in the **first half of 2020**, and 3.7% in the **third quarter of 2020**. This evidence supports an assessment that progress toward the target is on track.

FOR CONTEXT

GREENHOUSE GAS EQUIVALENCIES

According to the GHG equivalencies calculator developed by **Natural Resources Canada**, a one megatonne emission reduction is the equivalent of removing approximately 306,000 passenger vehicles from roadways, or the energy-based emissions from 234,000 homes for one year.

CLIMATE CHANGE ADAPTATION EFFORTS BY COMMUNITIES AND BUSINESSES

According to the 2018 **National Climate Change Adaptation** survey of 100 community representatives and 250 individuals of various industry organizations of all sizes, 57% of communities and 32% of businesses are acting to adapt to the risks and opportunities resulting from a changing climate. This survey was undertaken on behalf of Natural Resources Canada.

To provide information to support sound decisions and actions that address climate change and adapt to its impacts, the Government of Canada has issued **Canada in a Changing Climate: Advancing our Knowledge for Action**. This is the national assessment of how and why Canada's climate is changing, as well as

the impacts of these changes on Canada's communities, environment, economy, and how Canadians are adapting.

The Government of Canada is building resilience to the impacts of climate change through a suite of investments in infrastructure, community projects, and other priority areas. For example, the Government has invested \$2 billion in the Disaster Mitigation and Adaptation Fund to support infrastructure projects that help communities better manage the risks of disasters triggered by natural hazards. Budget 2021 proposed to provide \$1.4 billion over twelve years, starting in fiscal year 2021 to 2022, to top up the fund and support work dedicated to small-scale projects, with 10% of the total funding envelope dedicated to Indigenous recipients.

Additionally, under the Strengthened Climate Plan, the Government of Canada has committed to developing Canada's first-ever National Adaptation Strategy with provincial, territorial, and municipal Governments, Indigenous peoples, and other key partners. The strategy will establish a shared vision for climate resilience in Canada, identify key priorities for increased collaboration, and outline a framework for measuring progress at the national level. This work will help inform where the Government of Canada should best target its policies, programs, and investments going forward.

INDIGENOUS PEOPLES IN CANADA AND CLIMATE CHANGE

While GHG emissions originating from Indigenous communities are modest—estimated at less than one million tonnes per year across the country—the impacts of climate change on Indigenous peoples are disproportionately greater than for other Canadians. Further, the changing climate exacerbates existing challenges and health stressors for Indigenous peoples in Canada, including wildfires, permafrost thaw, changing wildlife patterns, diminishing access to traditional food sources, and flooding. Indeed, there is strong evidence that Indigenous peoples already face and will to continue to experience climate pressures that exceed their current adaptation capacity.

Many Indigenous leaders have reinforced the need to take action to reduce pollution, to adapt to the impacts of climate change, and to improve the ways in which the natural environment is respected and protected. In doing so, they reinforce that leadership by Indigenous peoples is critical to achieving the foundational changes required to address climate change. The Government of Canada has committed to supporting Indigenous climate leadership and self-determined climate action, both of which are critical to advancing Canada's reconciliation with Indigenous peoples based on the recognition of rights, respect, cooperation, and partnership.

To support Indigenous climate leadership, the government is partnering with First Nations, Inuit, and Métis peoples to set an agenda for climate action and a framework for collaboration. Recognizing Indigenous climate leadership means investing in the agency of Indigenous peoples and communities, supporting Indigenous-led and delivered solutions, equipping Indigenous peoples with equitable resources, and ensuring appropriate access to funding to implement self-determined climate action.

CHANGES IN CANADA'S TEMPERATURE, SNOW COVER, AND SEA ICE

TEMPERATURE CHANGE

Changes in climate variables such as temperature, precipitation, and humidity affect a wide range of natural processes and human activities. Temperature changes can influence crops, forests, infrastructure, disease spread, water availability, and ecosystem health, including ecosystems' abilities to support healthy wildlife populations. Temperature change also helps to understand how the climate is changing in response to emissions of GHGs.

In Canada, the **national average temperature** for 2020 was 1.1 degree Celsius above the average temperature over the period from 1961 to 1990, considered as the reference value. Average annual temperatures were consistently above or equal to the reference value from 1993 onward.

From 1948 to 2020, Canada has experienced a mean annual increase of 1.8 degrees Celsius. The annual average temperature in Canada has increased at roughly double the global mean rate. In northern Canada, it is roughly three times the global mean rate.

The effects of widespread warming are projected to intensify and will include more extreme heat, less extreme cold, longer growing seasons, shorter snow and ice cover seasons, earlier spring peak streamflow, thinning glaciers, thawing permafrost, and rising sea levels, with projected consequences for affected ecosystems and ecosystem inhabitants.

SNOW COVER CHANGE

Canada is a snowy country, which affects the climate, water flows, and ecosystems. Snow cover (or the extent of land with snow on the ground) naturally varies with temperature, precipitation, and climate cycles. Decreases in snow cover represent increases in bare soil or vegetation that absorb incoming sunlight, in contrast to snow that reflects a high proportion of sunlight. This is called the "snow-albedo feedback".

Snow also insulates soil and protects plants and animals from cold winter temperatures. Arctic animals such as muskox and caribou are strongly affected by the amount of winter snow and frequency of winter thaws.

Spring snow cover trends are significant because they influence hydrology, ecosystems, and the risk of wildfires, and because climate system positive feedbacks (such as snow-albedo effects) are strongest during the spring. From 1972 to 2019, Canadian snow cover in May shows a decreasing trend of 2.2%. Over the same period, snow cover in June shows a decreasing trend of 5.2%.
Recent decreases in the extent of snow cover especially in the spring period—are linked to warming air temperatures over the Northern Hemisphere and Canada. Decreases are greater in June because most snow cover in that part of the year is located in the Canadian Arctic, where warming has been the strongest over recent decades.

SEA ICE CHANGE

Sea ice is a prominent feature in the waters of northern Canada, and consists of ice that grows and melts each year ("first-year ice") as well as ice that is present all year round ("multi-year ice"). The amount and type of sea ice present influences human activities, wildlife, and habitat. For example, sea ice influences marine transportation, commercial fishing, offshore resource development, hunting and fishing patterns of Indigenous people, and tourism and recreation. It also influences wildlife's access to food sources, reproductive success, and access or timing of migration routes. Sea ice also influences the climate through sea ice-albedo feedback. This means that changes in sea ice can affect ocean currents and the exchange of heat and water vapour from ocean to atmosphere.

In 2020, the **sea ice area** in northern Canadian waters reached 1.04 million square kilometres, representing 27.6% of the total area. This represents a decline from 2018, when the average sea ice area was 1.23 million square kilometers, or 32.8%. The lowest sea ice area occurred in 2012, with 0.70 million square kilometres.

Summer sea ice area has decreased over the past five decades of monitoring. Between 1968 and 2020, Arctic sea ice in Canada declined at a rate of 7.5% per decade, which corresponds to a loss equivalent to twice the area of Nova Scotia every decade.



Photo credit: Environment and Climate Change Canada – Garry Donaldson

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

CLIMATE CHANGE AND COLLECTIVE ACTION

Achieving our climate targets requires a concerted effort from all levels of government, including Indigenous governments, as well as civil society, business, industry, and Canadians. Cooperation with the provinces and territories is particularly important to move forward on Canada's climate objectives.

Canada's geographic, demographic, and economic circumstances present substantial challenges and influence its GHG emissions profile. For example, while Canada has a relatively small but rapidly growing population relative to other OECD countries, its population is dispersed across one of the world's largest and coldest countries. These factors contribute to heavier energy and transportation needs than in smaller and more densely populated countries. However, the intensity of GHG emissions for the Canadian economy (measured by GHGs per gross domestic product) has decreased 36% since 1990 and 20% since 2005 due to structural changes in the economy, increases in energy efficiency, fuel switching, and modernization of industrial processes.

Canada experiences a wide range of climate conditions. Most of the inhabited regions have distinct seasons with very cold winters and very warm summers. Heating and cooling needs greatly influence energy use and GHG emissions.

Canada's climate has been warming for more than ten years. Northern regions are the most affected, and extreme events such as drought, forest fires, floods, and severe thunderstorms are happening more frequently throughout the country.

The effects of climate change are not distributed equitably. Instead, increases in coastal flooding, drought, heatwave severity, wildfire risks, and urban floods will impact different regions and communities in distinct ways, and may exacerbate inequities in access to services, infrastructure, and health and social support systems that are already experienced by Canadians. Adaptation plans that integrate this understanding can help to mitigate inequitable effects of climate change. The COVID-19 pandemic illustrates that human health is at the core of a strong society. It is critical that protecting health from climate risks is prioritized with equity considerations in mind so that Canadians are healthy, safe, and resilient to climate-related impacts. While **Canada's economy** is primarily driven by the service sector, as of 2019 its manufacturing, construction, mining, oil and gas, and forestry sectors represent about 27% of the economy. These GHG intensive sectors contribute significantly to Canada's GHG levels.

ZERO-EMISSION VEHICLES AND THE COVID-19 PANDEMIC

Sales of light-duty vehicles (passenger cars, vans, and light trucks) in 2020 have decreased relative to 2019 as a result of COVID-19. Analysis by sector experts suggests that Canada also saw a modest drop in zero-emission vehicle sales in 2020 compared to 2019, with the highest impact seen in the second quarter of 2020 during the initial phase of the pandemic. Even as that holds true, Canada's zero-emission vehicle market share remained strong in 2020 and reached 3.7% in the third quarter of 2020. Making zero-emission vehicles affordable remains a priority and federal officials continue to assess the need for additional measures to ensure that Canada is on track to meet its zero-emission vehicle sales targets.

CANADA IN THE WORLD

Taking action on climate change supports the United Nations 2030 Agenda for Sustainable Development and its global Sustainable Development Goals (SDGs), in particular, SDG 3 (Good health and well-being), SDG 7 (Affordable and clean energy), SDG 9 (Industry, innovation, and infrastructure), SDG 11 (Sustainable cities and communities), SDG 12 (Responsible consumption and production), SDG 13 (Climate Action), SDG 14 (Life below water), SDG 15 (Life on land), and SDG 17 (Partnerships for the goals).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 3.9:

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.



Target 7.1:

By 2030, ensure universal access to affordable, reliable and modern energy services.

Target 7.2:

By 2030, increase substantially the share of renewable energy in the global energy mix.

Target 7.3:

By 2030, double the global rate of improvement in energy efficiency.



Target 9.4:

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.



Target 11.6:

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

Target 11.b:

By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels.



Target **12.4**:

By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

Target 12.8:

By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.



Target 13.1:

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

Target 13.2:

Integrate climate change measures into national policies, strategies and planning.

Target 13.3:

Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.



Target 14.2:

By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.



Target 15.1:

By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.



Target 17.7:

Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed.

Target 17.16:

Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries.

Target 17.17:

Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

This goal also supports Canada's commitment to other international agreements and initiatives, including the United Nations Framework Convention on Climate Change and the Paris Agreement.





ALL MINISTERS

Greening Government



The Government of Canada will transition to low-carbon, climate-resilient, and green operations

There are eight **medium-term** targets within this goal, which reflects the Government of Canada's Greening Government Strategy. Reporting on **short-term milestones** and contextual indicators helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

All Ministers

FEDERAL ORGANIZATIONS

All departments and agencies

The Government of Canada will transition to low-carbon, climate-resilient, and green operations

About the milestones

The Greening Government Strategy is a plan to ensure that the government's operations will be net-zero emissions and climate resilient by 2050, including real property, fleets, procurement and national safety and security operations. Many targets and commitments are included in the 2019 to 2022 FSDS.

Federal operations contribute to GHG emissions and have other environmental impacts. The Government of Canada can reduce its environmental footprint and lead by example by adhering to environmentally conscious decision-making on real property, fleets, procurement, and other operational issues. Together, the short-term milestones listed below help to reduce environmental impacts from federal operations and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2019

 As of 2019, the Government of Canada completed a portfolio-wide carbon neutral study to assess opportunities to reduce GHG emissions as well as the range of possible costs related to those opportunities across departments and agencies.

2020

- As of March 2020, all executive vehicle purchases were zero-emissions vehicles or hybrid electric vehicles.
- Also as of March 2020, the federal government has purchased a total of 1441 hybrid electric vehicles and zero-emission vehicles. This includes 287 purchases in fiscal year 2019 to 2020, which represents 69% of unmodified, light-duty vehicle purchases.
- Between April 2019 and March 2020, 55,840 kg of batteries and 4,355 metric tons of paper were diverted for recycling at select federal facilities. This represents a step toward the federal government's milestone commitment to track and disclose potable water consumption and waste diversion rates by 2022.
- As of March 2020, the federal government real property portfolio had 197 net zero carbon buildings and ninety-five more are net-zero carbon-ready. All new federal buildings will be constructed to be net-zero carbon. For existing buildings, departments are reducing emissions from real property by buying clean electricity, implementing energy efficiency projects, and deploying energy managers at facilities, such as bases, across Canada.
- As of March 2020, Public Services and Procurement Canada has achieved a 58.1% GHG reduction in Crownowned buildings (excluding housing) since 2005. Forecasts show future reductions of 2% per year for Public Services and Procurement Canada buildings.
- As of March 2020, Public Services and Procurement Canada has integrated environmental considerations in more than 40% of its standing offers and supply arrangements, which allows clients to factor environmental impacts into their purchasing decisions.

2020 - continued

- As of March 2020, 49% of Public Services and Procurement Canada's fleet are fuel-efficient vehicles and 75% of its administrative vehicles are considered alternative fuel operation. Of the other vehicles used for departmental operations such as trucks, 30% are considered alternative fuel, and 16% of medium-size trucks have clean diesel technology. Natural Resources Canada is using telematics to assess fleet operational needs in several client departments and has logged more than 3,000 administrative class vehicles in fourteen departments. Associated recommendations to fleet managers for operational changes have the potential to reduce annual GHG emissions by just under 1.5 kilotonnes, reduce the number of vehicles by 140, and replace 472 existing vehicles with zero-emissions or hybrid energy vehicles at end of life. These steps support the federal government's commitment that departments will develop a strategic approach and take actions to decarbonise their road, air, and marine fleets.
- As of 2020, fourteen departments were initiating or completing department-level climate risks assessments. In addition, three departments have assessed climate risks at thirty-one existing facilities in advance of the federal commitment to integrate climate change adaptation into the design, construction, and operations of all major real property projects. For example, the Canada Border Services Agency has assessed climate risks at twenty-four sites where existing facilities will be replaced by new facilities, and Public Services and Procurement Canada has launched environmental impact assessments for National Capital Region construction projects, including the Alexandra Bridge replacement. Reporting is currently voluntary in advance of becoming mandatory; therefore, more data is expected.
- As of 2020, in support of the federal government's commitment that by 2021 departments will take action to understand the wide range of climate change impacts that could potentially affect federal assets, services, and operations across the country, Public Services and Procurement Canada has developed a strategy to incorporate climate change vulnerability assessments into asset management planning. Requirements from the federal government's Climate Risk and Vulnerability Assessment have been incorporated into the 2021 to 2022 Building Management Plan Call Letter. As of December 2020, climate adaptation and mitigation measures for buildings have been integrated into Public Services and Procurement Canada's Threats and Risks Assessment process.
- As of November 2020, Public Services and Procurement Canada has completed a Feasibility Analysis for Plastics in the Workplace. Public Services and Procurement Canada has also launched Occupant Awareness pilot programs in buildings to improve employee awareness and engagement in reducing plastic waste in federal operations. Similarly, as of 2019 Fisheries and Oceans Canada has launched pilot projects to divert single use plastic lab waste and personal protective equipment waste from landfills. Fisheries and Oceans Canada is also completing a Waste Audit Framework. As of 2019, the Treasury Board Secretariat has provided Guidance for the Reduction of Plastic Waste in Meetings and Events to all departments as part of its efforts to eliminate single-use plastics in government operations, events, and meetings.
- As of 2020 the Canadian Coast Guard is in the early stages of investigating modular designs in plastic buoys
 with the goal of extending the life of the buoys, and to better facilitate recycling at end of life. They are also
 investigating innovative recycling options for plastic buoys with the goal of diverting as much material away from
 landfill as is reasonably achievable. This is an example of progress toward the federal government's commitment
 to promote the procurement of sustainable plastic products and reduce associated plastic packaging waste.

Ongoing

 The Government of Canada remains committed that, for all new domestic office leases and lease renewals awarded after April 1, 2025, where the federal government is the majority tenant, market conditions permit, and a competitive environment exists, preference will be given to buildings with the highest available ENERGY STAR[®] PortfolioManager[®] score.



TARGET

Reduce greenhouse gas emissions from federal government facilities and fleets by 40% by 2030 (with an aspiration to achieve this target by 2025), and 80% below 2005 levels by 2050 (with an aspiration to be carbon neutral).



RESULT

In 2019-2020, federal GHG emissions were 34.6% lower than in fiscal year 2005 to 2006.



PROGRESS

Progress is on track.

All Ministers



TARGET

Divert at least 75% (by weight) of non-hazardous operational waste from landfills by 2030.

NOTE

This target is for federal operations.



RESULT

Although reporting is not yet mandatory, in fiscal year 2019 to 2020 four departments reported diverting an average of 59% of non-hazardous operational waste from landfills.



PROGRESS

Data from all applicable departments is not yet available. The first full publication of data is expected in late 2023 for fiscal year 2022 to 2023, as noted in the Greening Government Strategy.



TARGET

Divert at least 75% (by weight) of plastic waste from landfills by 2030.

NOTE This target is for federal operations.



RESULT

Although reporting is not yet mandatory, in fiscal year 2019 to 2020 two departments reported diverting an average of 40% of plastic waste from landfills.



PROGRESS

Data from all applicable departments is not yet available. The first full publication of data is expected in late 2023 for fiscal year 2022 to 2023, as noted in the Greening Government Strategy.

All Ministers



TARGET

Divert at least 90% (by weight) of all construction and demolition waste from landfills (striving to achieve 100% by 2030).

NOTE

This target is for federal operations.



RESULT

Although reporting is not yet mandatory, in fiscal year 2019 to 2020 one department reported diverting an average of 79% of construction and demolition waste from landfills.



PROGRESS

Data from all applicable departments is not yet available. The first full publication of data is expected in late 2023 for fiscal year 2022 to 2023, as noted in the Greening Government Strategy.



TARGET

By 2030, 75% of domestic office lease transactions must be carbon neutral in situations where the federal government represents 75% or greater of the occupied space (square meters), where market conditions permit, and where a competitive environment exists.



RESULT

No data is available. Please refer to the About the milestones section in this chapter where activities undertaken to date are outlined.



PROGRESS

Data from all applicable departments is not yet available. The first full publication of data is expected in late 2025, as noted in the Greening Government Strategy.

All Ministers



TARGET

The federal administrative fleet will be comprised of at least 80% zero-emission vehicles by 2030.



UNDERWAY

• •

RESULT

At the end of baseline fiscal year 2019 to 2020, 1.1% of the federal administrative fleet was comprised of zero-emission vehicles and 9% of the fleet was either hybrid or zero-emission vehicles.



A baseline year has been set and progress is on track.

All Ministers



TARGET

By 2022, federal departments have developed measures to reduce climate change risks to assets, services and operations.

RESULT

Although reporting is not yet mandatory, by the end of fiscal year 2019 to 2020, a number of departments have developed measures to reduce climate change risks to assets, services and operations.



PARTIAL DATA

PROGRESS

Data from all applicable departments is not yet available. The first full publication of data is expected in late 2023 for fiscal year 2022 to 2023, as noted in the Greening Government Strategy.

All Ministers



TARGET

By 2025, the federal government will use 100% clean energy.



UNDERWAY

• •

RESULT

In fiscal year 2019 to 2020, 87% of electricity use by the federal government was from non-emitting sources.

PROGRESS

Progress is on track.





Federal greenhouse gas emissions from real property and administrative fleet operations by source for fiscal years 2005 to 2006 and 2019 to 2020

SOURCE: Centre for Greening Government, 2021

Greenhouse gas emissions by federal organization for facilities and administrative fleet operations in fiscal year 2019 to 2020 and the percentage change in emissions compared with fiscal year 2005 to 2006



SOURCE: Centre for Greening Government, 2021

WHY IT'S IMPORTANT

The Government of Canada owns 32,000 buildings across the country, and through its operations, consumes a significant amount of energy from GHG emitting sources. In addition, the federal government manages a large fleet of more than 31,000 on-road vehicles, and spends billions of dollars each year on goods and services.

This large environmental footprint represents an opportunity to lead the transition to a low-carbon economy: stimulating the clean technology sector, contributing to Canada's international climate change commitments, and achieving cost savings. Buying electricity from non-GHG emitting sources is one of the steps the federal government has taken.

MEETING THE TARGETS

FEDERAL GREENHOUSE GAS EMISSION REDUCTIONS

GHG emissions from federal facilities and fleets have steadily declined. Progress toward this target is on track.

As of fiscal year 2019 to 2020, federal GHG emissions from government facilities and administrative fleets have been reduced by 34.6% since fiscal year 2005 to 2006, more than halfway to the 2030 target. Federal facility emissions were reduced by purchasing and contracting cleaner electricity, reducing district heating and cooling, and retrofits for energy efficiency. Federal fleet emissions were reduced through lowered use of vehicles and the purchase of more energy efficient vehicles.

Consistent with practices in other jurisdictions, some GHG emissions were excluded from the Government of Canada's GHG emissions reduction target for safety and security reasons. For example, these included emissions from military, Canadian Coast Guard and Royal Canadian Mounted Police operations. In the 2019 to 2020 reporting year, these emissions were 951 kilotonnes, which represents a 12% rise from 2005-2006 levels. As of November 2020, these emissions are included in the scope of the new target to reach net-zero emissions by 2050.

In May 2020, Public Services and Procurement Canada finalized the National Capital Region Roadmap on low-carbon federal operations, presenting options and strategies to achieve net-zero by 2050. This follows the completion of deep energy and GHG retrofits in December 2019 rehabilitations of the West Block and Senate of Canada. In 2020, Public Services and Procurement Canada has also launched a Climate Change Vulnerability Assessment for the buildings and grounds of the Parliamentary Precinct.

DIVERSION OF FEDERAL NON-HAZARDOUS OPERATIONAL WASTE

Data for this target is not yet fully ready and the first full publication of data is expected in late 2023 for fiscal year 2022 to 2023, as noted in the Greening Government Strategy.

Although reporting is not yet mandatory, in fiscal year 2019 to 2020, four departments reported diverting an average of 59% of non-hazardous operational waste from landfills.

DIVERSION OF FEDERAL PLASTIC WASTE

Data for this target is not yet fully ready and the first full publication of data is expected in late 2023 for fiscal year 2022 to 2023, as noted in the Greening Government Strategy.

Although reporting is not yet mandatory, in fiscal year 2019 to 2020, two departments reported diverting an average of 40% of plastic waste from landfills.

DIVERSION OF FEDERAL CONSTRUCTION AND DEMOLITION WASTE

Data for this target is not yet fully ready and the first full publication of data is expected in late 2023 for fiscal year 2022 to 2023, as noted in the Greening Government Strategy.

Although reporting is not yet mandatory, in fiscal year 2019 to 2020, one department reported diverting 79% of construction and demolition waste from landfills.

FEDERAL CARBON NEUTRAL OFFICE LEASES

Data for this target is not yet ready. First full publication of data is expected in late 2025.

FEDERAL ADMINISTRATIVE FLEET OF ZERO-EMISSION VEHICLES

At the end of baseline fiscal year 2019 to 2020, 1.1% of the federal administrative fleet was comprised of zero-emission vehicles and 9% of the fleet was either hybrid or zero-emission vehicles. Rapid increases are anticipated as more zero-emission vehicles become available, and as most, if not all of the fleet will require replacement within the next nine years. Considering the time period and replacement rate, progress toward its target is on track.

DEPARTMENTAL MEASURES TO REDUCE CLIMATE CHANGE RISKS

Data from all applicable departments is not yet available. The first full publication of data is expected in late 2023 for fiscal year 2022 to 2023, as noted in the Greening Government Strategy.

FEDERAL USE OF CLEAN ENERGY

As of the 2019 to 2020 reporting year, 87% of electricity use by the federal government was purchased from non-emitting sources. Progress toward this target is on track.

FOR CONTEXT

BEYOND FEDERAL OPERATIONS: DIVERTING AND DISPOSING SOLID WASTE IN CANADA

To put the work of greening government operations in its national context, in Canada most garbage collected for disposal ends up in landfills and a small amount is incinerated. This can lead to air emissions, land disturbance, or water pollution. The extraction and processing of new resources needed to replace those discarded as waste leads to more pollution. Furthermore, improperly disposed waste create difficulties for wildlife through contaminated water consumption or other impacts of contaminated air, water, and soil.

Diverting waste by recycling and composting can help reduce the impact of solid waste—recyclables, organic materials, and garbage generated by homes, businesses, and institutions—on the environment.

From 2002 to 2018, the **total amount of solid waste** collected in Canada increased by 4.2 million tonnes (or 14%). During this time, the amount of waste in landfills or incinerated increased by 1.7 million tonnes (or 7%) to reach 25.7 million tonnes in 2018. In the same year, 9.2 million tonnes of waste was diverted from landfills, which represents an increase of 2.6 million tonnes (or 39%) from 2002. In 2018, the non-residential sector was responsible for 58% of disposed waste, and 47% of diverted waste.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

REAL PROPERTY COMPLEXITY

Emissions reductions from real property assets typically require longer timeframes and involve more stakeholders and greater resources, especially as the federal government owns many aging buildings.

ADAPTATION

Climate change also affects federal infrastructure, such as buildings, wharves, and bridges. Federal organizations have to adapt these assets to be more resilient.

FLEET

Zero-emission vehicles are not yet widely available for most of the vehicle classes that the federal government operates.

THE COVID-19 PANDEMIC

The COVID-19 pandemic has impacted the way the federal government uses buildings and fleets. This has influenced and continues to influence planning processes related to reducing emissions and energy use.

CANADA IN THE WORLD

Federal actions on climate change also support SDG 7 (Affordable and clean energy), SDG 9 (Industry, innovation, and infrastructure), SDG 11 (Sustainable cities and communities), SDG 12 (Responsible consumption and production), and SDG 13 (Climate action).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 7.2:

By 2030, substantially increase the share of renewable energy in the global energy mix.



Target 9.4:

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.



Target 11.6:

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

Target 11.b:

By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.



Target 12.5:

By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

Target 12.7:

Promote public procurement practices that are sustainable, in accordance with national policies and priorities.



Target 13.2:

Integrate climate change measures into national policies, strategies and planning.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

This goal also supports Canada's commitment to other international agreements and initiatives, including the United Nations Framework Convention on Climate Change and the Paris Agreement.



Greening Government Strategy

The Greening Government Strategy is helping Canada to take action on climate change within federal operations. We are taking steps to reduce the environmental impacts across the Government of Canada. The science is clear. Human activities are driving unprecedented changes in the Cartity's climate. These pose significant risks that need to be addressed. We are greening our own operations with a new net-cero emissions by 2050 commitment, and espanding the scope of the target to include areas such as emissions related to national safety and exercise commuting, and encoursement of poeta and environe.

Four key focus areas



Goals: modernibing fleets with zero-emission vehicles and hybrids; switching to lower carbon fuels; promoting and incentivizing lower-carbon employee travel, and commuting.





Goals: constructing zero carbon buildings, maximizing energy efficiency in existing buildings, reducing water consumption, diverting waste from landfills, and minimizing ecosystem impacts.





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Climate-Resilient Services and Operations

Coals: anticipating future climate related hazards, risk planning, and minimizing disruptions to our operations: using nature-based solutions to protect physical assets from threats, such as flooding.





Procurement of Goods and Services

Gools: transitioning to a net zero, circular economy through green procurement and adopting clean technologies, products and services such as XOO% clean electricity and low carbon building materials.





Our environmental impacts and greenhouse gas emissions need to be considered in everything we do. The Centre for Greening Government is working with federal organizations to ensure operations are resilient, green, and net-zens.

- We are showing leadership in our own operations inspiring sustainable ways of working and reducing greenhouse gas emissions.
- 2 We are working with key partners and stakeholders to implement the Strategy.

We are leading in a way that learns from and impires others - to help 3 build a more sustainable tomorrow for us all by taking action today.



MINISTER OF INNOVATION, SCIENCE AND INDUSTRY MINISTER OF ECONOMIC DEVELOPMENT AND OFFICIAL LANGUAGES MINISTER OF NATURAL RESOURCES

Clean Growth



A growing clean technology industry in Canada contributes to clean growth and the transition to a low-carbon economy

There are two medium-term targets within this goal. Reporting on short-term milestones and contextual indicators set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Innovation, Science and Industry (previously Minister of Innovation, Science and Economic Development)

Minister of Economic Development and Official Languages (previously Minister of Innovation, Science and Economic Development) Minister of Natural Resources

FEDERAL ORGANIZATIONS

Atlantic Canada Opportunities Agency Canada Economic Development for Québec Regions Canadian Northern Economic Development Agency Employment and Social Development Canada Environment and Climate Change Canada Federal Economic Development Agency for Southern Ontario Federal Economic Development Agency for Northern Ontario Global Affairs Canada Innovation, Science and Economic Development Canada National Research Council of Canada Natural Resources Canada Standards Council of Canada Statistics Canada Sustainable Development Technology Canada Western Economic Diversification Canada A growing clean technology industry in Canada contributes to clean growth and the transition to a low-carbon economy

About the milestones

Research, development, and demonstration of innovative technologies are crucial to addressing climate change and other forms of environmental degradation. The Government of Canada is expanding the clean technology sector while also supporting greener industry practices, and solutions to plastic waste. Together, the short-term milestones listed below help to support clean growth and the transition to a low-carbon economy, and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2020

- As of March 2020, forty-two projects are underway in Natural Resources Canada's Clean Growth Program, which is providing \$155 million to support clean technology research, development, and demonstration projects in Canada's energy, mining, and forest sectors.
- As of March 2020, Natural Resources Canada has supported sixty-five external research, development, and demonstration projects under the Energy Innovation Program to reduce GHG emissions. These projects foster innovation in areas such as renewable energy; smart grids; energy-efficient buildings; carbon capture, utilization and storage; and the cleaner production of oil and gas.
- In July 2020, federal, provincial, and territorial ministers approved Phase 2 of the Action Plan on Zero Plastic Waste, which follows prior approval of Phase 1 in June 2019. Phase 2 focuses on preventing plastic pollution in oceans, inland lakes, and waterways, advancing science to monitor the impacts of plastics pollution within the environment, consumer awareness, clean-up, and taking global action.

Ongoing

- Since 2018, the <u>Canadian Plastics Innovation Challenges</u> have been providing funding to small- and medium-sized enterprises to develop technology that addresses plastic waste. The Government of Canada is investing nearly \$19 million to support winning Canadian innovators with up to \$150,000 to develop a proof of concept, and subsequently up to \$1 million to develop a prototype (if selected). Challenges include supporting innovation in reducing plastic waste and microfibers from textiles, finding sustainable alternatives to plastic packaging, developing sustainable fishing and aquaculture gear, and developing innovative solutions to address plastic waste and toxic substances from electronics.
- Between 2019 and 2022, Natural Resources Canada's CanmetMATERIALS research centre is continuing to collaborate with Canadian and international partners to deliver clean energy materials science and technology focused on four research streams: 1) transportation, buildings, and industry; 2) pipelines; 3) clean energy production; and, 4) emerging defence materials.
- Between 2019 and 2022, Natural Resources Canada's CanmetMINING research centre is continuing to develop clean technology solutions for the mining industry through partnerships to advance clean energy use, efficient processes, and reduce water use in mining. Other CanmetENERGY labs in Devon, Ottawa, and Varennes are playing key roles in federal research and development on clean energy technology and its environmental impacts.
- First published in 2019, the Canadian Minerals and Metals Plan envisions Canada as a leading mining nation and the supplier of choice for minerals and metals needed by the clean technology industry. The Preliminary Version Action Plan 2020 was released in March 2020 and introduced signature pan-Canadian initiatives and investments.
- In fall 2021, the \$5 million Grand Prize winner of the "Crush It! Challenge" is planned to be selected from among the top six finalists announced in May 2019. This challenge aims to develop new clean technology solutions that transform energy use for crushing and grinding rocks in the mining industry to fight climate change, increase competitiveness, and transform the mining cycle with breakthrough innovations and science.

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Minister of Natural Resources Minister of Innovation, Science and Industry Minister of Economic Development and Official Languages



TARGET

Implement our Mission Innovation commitment to double federal government investments in clean energy research, development and demonstration from 2015 levels of \$387 million to \$775 million by 2020.



RESULT

At the sixth Mission Innovation Ministerial in June 2021, the Minister of Natural Resources announced that the Government of Canada has exceeded its target, with total federal spending of \$786.8 million.



PROGRESS

This target has been achieved.

Minister of Innovation, Science and Industry Minister of Economic Development and Official Languages



TARGET

Increase the value of Canada's clean technology exports to \$15.6 billion by 2025.



RESULT

In 2019, the value of Canada's environmental and clean technology exports was \$7.1 billion.

NOTE

Innovation, Science and Economic Development Canada and Natural Resources Canada exclude primary manufactured goods and waste and scrap goods when estimating the total value of clean technology exports.



PROGRESS

Progress requires attention.

WHY IT'S IMPORTANT

A clean and healthy environment and a strong economy must go hand in hand in the modern world. The Government of Canada is taking action to support clean growth and transition to a more resource-efficient, lower-pollution, low-carbon economy. Around the world, demand is increasing for technologies that reduce GHG emissions, increase resilience to climate change, and improve the quality of air and water. The global clean technology market is expected to exceed \$2.5 trillion by 2022 and continue to grow, with the **Global Commission on the Economy and Climate** estimating that by 2030, the clean economy will grow to \$26 trillion and create sixty-five million jobs worldwide.

Canada's clean technology companies are well positioned to compete in this large and growing global market. Clean technology companies can help Canada's established industries to lower their environmental impacts, leverage new technologies and solutions, and remain competitive in global supply chains.

Canada has the opportunity to be a true global leader in clean technology as elaborated in the **Healthy Environment and Healthy Economy** plan. By investing in clean technologies and innovation, Canada can generate economic growth, create and maintain good, well-paying jobs, and help to meet our climate change goals. The Government of Canada recognizes the potential in the transition to clean growth and is acting to boost Canada's clean technology activity. By developing and adopting clean technologies, Canadian companies are creating opportunities to become globally competitive while reducing impacts on climate, water, land, and air.

MEETING THE TARGETS

CLEAN ENERGY INVESTMENTS

Canada met its **Mission Innovation** commitment to double federal government investment in clean energy research, development, and demonstration from \$387 million in 2015 to \$775 million by 2020. At the sixth Mission Innovation Ministerial in June 2021, Minister Seamus O'Regan announced that Canada had exceeded its target, with total federal spending of \$786.8 million.

Natural Resources Canada is supporting hundreds of projects and initiatives across ten energy research, development, and demonstration programs, representing more than \$600 million in funding over the next five years, in key areas such as carbon capture, use, and storage; cleaner production of oil and gas; low-carbon fuels; renewable energy; electricity; transportation; the built environment; and across the broader natural resource sectors. Projects aim to reduce emissions and environmental impacts and to increase energy efficiency and competitiveness. These projects work to overcome barriers to large-scale adoption of clean energy, unlock solutions to complex and persistent problems, and facilitate deep decarbonisation of "hard to abate" sectors.

With the adoption of the Pan-Canadian Framework on Clean Growth and Climate Change, federal, provincial, and territorial governments committed to a common vision for accelerating clean growth in Canada and abroad. They pledged funding for clean energy innovation and clean growth programs, including but not limited to clean energy technologies. Support for Canada's clean technology companies comes from a range of funding sources across the innovation continuum, from research and development to commercialization and scale-up.

Since its launch in 2018, the Clean Growth Hub has helped clean technology companies learn about the range of opportunities in federal programs and services and has provided tailored advice to over 1,800 clean technology stakeholders.

In December 2020, the Government of Canada announced that it will be investing \$8 billion over seven years through the Strategic Innovation Fund's new **Net Zero Accelerator** to rapidly expedite decarbonisation projects with large emitters, to scale-up clean technology, and to accelerate Canada's industrial transformation across all sectors. The Net Zero Accelerator will help to drive investment into large emissions-reducing and job-creating projects across every region of Canada.

The Government of Canada's six regional economic development agencies are also important drivers of clean technology investment in Canada. These include the Atlantic Canada Opportunities Agency, Canada Economic Development for Québec Regions, Canadian Northern Economic Development Agency, Federal Economic Development Agency for Northern Ontario, Federal Economic Development Agency for Southern Ontario, and Western Economic Diversification Canada. These agencies invest in clean technology development, adoption and commercialization. Regional development agencies have committed to maintaining their investment levels in clean technology until 2023 to contribute to clean growth in Canada.

Sustainable Development Technology Canada is a flagship program that supports the development and demonstration of innovative Canadian technological solutions that address climate change, clean air, clean water, and clean soil. Since 2001, the program has invested approximately \$1.4 billion in almost 540 projects, creating 16,930 direct and indirect jobs. Companies funded by the program have reduced GHG emissions by an estimated 22.4 megatonnes of carbon dioxide equivalent annually.

The Government of Canada's Strengthened Climate Plan (also discussed in the Effective Action on Climate Change chapter of this report) provided an additional \$750 million over five years to Sustainable Development Technology Canada. These funds will support start-ups and help scale-up companies to enable pre-commercial clean technologies the opportunity to demonstrate feasibility. They will also support early commercialization efforts.

CLEAN TECHNOLOGY EXPORTS

In 2019, Canada's **clean technology goods and services exports** were valued at \$7.1 billion in nominal terms (preliminary estimates). Exports have increased by 6% annually from \$4.3 billion in 2012 to \$7.1 billion in 2019. The current export growth rate supports an assessment that progress toward this target requires attention.

Innovation, Science and Economic Development Canada and Natural Resources Canada exclude primary manufactured goods and waste and scrap goods when estimating the total value of clean technology exports. Examples of **goods and services** included in this category include technologies for environmental protection activities and sustainable resource activities.

According to Canada's **Survey of Environmental Goods and Services**, the top three clean technology export areas are:

- transportation technologies and services (\$3.03 billion in exports in 2018);
- energy efficient technologies and services (\$1.26 billion in exports in 2018); and,
- clean energy equipment and services (\$0.66 billion in exports in 2018).

According to Export Development Canada, Canada's share of the global technology market is relatively small (estimated at 1% to 2%), as the market is dominated by the United States. The top three export destinations for Canadian clean technology are the United States (70%), the United Kingdom (9%), and Japan (3%).

The Trade Commissioner Service at Global Affairs Canada is helping companies sell their products and services outside Canada by connecting them with its funding and support programs, international opportunities, and its network of trade commissioners in more than 160 cities worldwide. Through its Clean Technology International Business Development Strategy (2017-2021) announced in Budget 2017, the Trade Commissioner Service is helping more Canadian clean technology firms pursue export opportunities and is helping these companies scale internationally and generate more revenue. It is also helping Canadian firms capitalize on growing global market opportunities, including competing for global climate finance business opportunities, while contributing to Canada's efforts to build back better and reduce GHG emissions.

Along with the Trade Commissioner Service, Export Development Canada and the Business Development Bank of Canada have helped to reduce financing challenges experienced by Canadian clean technology companies in light of the COVID-19 pandemic. Many of these companies are small- and medium-sized enterprises.

Since the beginning of the pandemic, the **Clean Growth Hub** has played an important role in gathering information on the impacts of COVID-19. The Hub has also informed the clean technology sector about government support measures, including through regular discussions with clean technology industry associations, and through proactive outreach to existing and new clients. The Industry Strategy Council also engaged with clean technology stakeholders.

Many federal relief and recovery measures are tailored to small- and medium-sized organizations. Such measures include the Business Credit Availability Program and the Canada Emergency Business Account. Many federal relief and recovery measures provide opportunities for clean technology firms.

In addition, the Canada Infrastructure Bank, which is mandated to attract private and institutional investment into revenue-generating projects in the public interest, is targeting investment in renewable generation, transmission and storage, energy retrofits for buildings, and zero-emission buses and charging infrastructure. Investments through the Canada Infrastructure Bank's **\$10 billion Growth Plan** will also assist Canada in its post-pandemic economic recovery.

To better capture clean technology companies' realities in light of COVID-19, Innovation, Science and Economic Development Canada is devoting a greater focus on tracking and reporting on domestic sales in addition to export sales. This move aligns with recent results from Statistics Canada's **Survey of Environmental Goods and Services**, which shows that in 2018, Canadian clean technology companies sold more domestically than internationally in several clean technology categories.

FOR CONTEXT

ESTIMATED MEASURES OF THE CANADIAN CLEAN TECHNOLOGY SECTOR

Beyond clean energy investments and clean technology exports, Statistics Canada estimates that, in 2019, there were approximately **211,000 jobs** (preliminary estimates) in the Canadian clean technology sector, which is 5% higher than in 2018 and accounts for 1.1% of all jobs in Canada.

Statistics Canada also estimates other economic variables of Canada's clean technology activities. The Environmental and Clean Technology Products Economic Account measures the contribution of the clean technology products sub-sector in the Canadian economy in terms of gross domestic product. In 2019, the gross domestic product of this sub-sector was valued at **\$31,716 million** (preliminary estimates).

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

DECARBONISATION PATHWAYS

The Government of Canada's commitment to achieving net zero GHG emissions by 2050 adds additional momentum to achieving Canada's clean energy investment and clean technology export targets. As Canada's **Industry Strategy Council** notes, Canada's clean technology sector is well positioned to develop and deploy solutions to support decarbonisation pathways across all sectors. In turn, these decarbonisation pathways will greatly benefit Canada's higher GHG emission sectors such as transportation, oil and gas, agriculture, and manufacturing.

CHALLENGES TO THE GROWTH OF CLEAN TECHNOLOGY

To grow the clean technology sector, the Government of Canada's **Clean Technology Economic Strategy Table** (2018) outlines several challenge areas. These include the following:

- low access to patient capital growth, scale-up investments and grant funding suited to the unique risks and costs of clean technology;
- disconnections between environmental policy targets and regulations;
- lack of stringent domestic environmental regulations that hinders adopting new technologies;
- small relative firm size, a lack of strategic expertise, market information and participation in targeted international bodies hamper market access for Canadian clean technology firms;
- insufficient representation of women and Indigenous peoples in the workforce; and,
- limited entrepreneurial or business skills and other soft skills among start-ups.

To address these challenge areas, Canada's strengths in natural resources and ability to drive growth in the clean technology sector will be critical. Overcoming these challenges will benefit the transition to a clean growth economy.

While Canada's energy, mining, and forestry sectors are prominent developers and adopters of clean technology, market barriers, such as capital costs and competition with pre-existing higher carbon technologies, are preventing synergies across these sectors, while circular economy requirements call for recycled and not pristine materials. Furthermore, Canadian companies frequently report facing challenges in scaling up in Canada's small domestic clean technology market, and also with accessing sufficient patient growth capital. Transformative clean technology projects often require investments at a scale and with a time horizon outside the scope of traditional project financing. To help draw in private sector investments for these projects, the Government of Canada's Budget 2021 proposes to make up to \$1 billion available on a cash basis over five years, starting in fiscal year 2021-2022. These resources will help to fuel the growth of innovative Canadian companies. They will also create jobs for highly skilled workers and bring important environmental and climate solutions to the world.

COVID-19 AND CLEAN TECHNOLOGY EXPORTS

The COVID-19 pandemic has generated supply chain and production challenges for clean technology companies, including delays on input parts, cross-border and/or inter-regional human resource restrictions, and project initiation delays. These challenges have impacted firm-level sales and especially exports.

COVID-19 AND RESEARCH

There has been a slight delay in research performed by Natural Resources Canada due to the economic slowdown and building closures caused by COVID-19. However, as buildings open for occupancy, research is being prioritized.

CANADA IN THE WORLD

Investing in clean technology research, development, and demonstration supports SDG 9 (Industry, innovation, and infrastructure), SDG 12 (Responsible consumption and production), SDG 13 (Climate action), and SDG 17 (Partnerships for the goals).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 9.5:

Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030 encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.



Target 12.2:

By 2030, achieve the sustainable management and efficient use of natural resources.

Target 12.5:

By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.



Target **13.2**:

Integrate climate change measures into national policies, strategies and planning.



Target 17.17:

Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

This goal also supports Canada's contribution to Mission Innovation, a global initiative working to accelerate clean energy innovation.





MINISTER OF INFRASTRUCTURE AND COMMUNITIES

Modern and Resilient Infrastructure



Modern, sustainable, and resilient infrastructure supports clean economic growth and social inclusion

There is one medium-term target within this goal. Reporting on short-term milestones and contextual indicators set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Infrastructure and Communities

FEDERAL ORGANIZATIONS

Indigenous Services Canada Infrastructure Canada Natural Resources Canada National Research Council of Canada Standards Council of Canada Modern, sustainable, and resilient infrastructure supports clean economic growth and social inclusion

About the milestones

Infrastructure can pose environmental challenges, but it can also be a driving force behind climate solutions. The Government of Canada is advancing green infrastructure, updating and modernizing building codes, and supporting research, development, and demonstration projects. Together, the short-term milestones listed below help to advance green and climate-resilient infrastructure, and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2020

- The National Research Council of Canada will publish Canada's updated National Model Codes, which will support the integration of climate resiliency into future infrastructure builds. From January to March 2020, the National Research Council of Canada ran the final public review of proposed changes to the 2015 editions of the National Building, Fire and Plumbing codes, and the National Energy Code of Canada for Buildings 2017. The committees of the Canadian Commission on Building and Fire Codes are currently finalizing these updates. The next editions are anticipated to be available in December 2021.
- As of January 2021, forty-one standards, guidance, and other standardization projects have been initiated under the Standards Council of Canada's 2016-2021 Standards to Support Resilience in Infrastructure program. Twenty-one of those projects have been published or otherwise completed. In 2019, Standards Council of Canada published an interim progress report detailing the first thirty-one projects initiated in the first three years of the program. In March 2021, Standards Council of Canada published a national consultation campaign report identifying remaining gaps and future priorities. And, as announced in the Government of Canada's Budget 2021, tabled on April 19, 2021, an additional \$11.7 million was proposed to renew the Standards to Support Resilience in Infrastructure Program, so that the Standards Council of Canada can continue to update standards and guidance in priority areas such as flood mapping and building in Canada's North.
- As of November 2020, following three successful calls for proposals under the Green Construction through Wood program, nearly twenty demonstration buildings and bridges across Canada have been selected for potential funding, with fifteen currently underway. To encourage the increased use of engineered wood products in non-traditional building construction, the program has also provided funding for extensive research and development activities on fire and structural performance. This work supports revisions to the 2020 edition of the National Building Code of Canada concerning the height and size of wood buildings.

2021

Through 2019 to 2021, the National Research Council Canada's Climate-Resilient Buildings and Core Public Infrastructure Initiative, funded by Infrastructure Canada, engaged the Canadian Standards Association (CSA) Group and Underwriters Laboratories of Canada (ULC) to identify and update key standards referenced in the Model National Codes, and to develop new standards and guidelines to improve resilience to climate change and extreme events. These updates to standards and guidelines include the publication of five new Canadian standards and updates to seven suites of standards with CSA and ULC. Additionally, the CSA Guideline on Durability of Buildings was re-written as a standard and there were fifty proposals for changes to the Canadian Electrical Code. Finally, 102 Performance Specifications Sections for the Canadian National Master Construction Specification were developed, and a review of all CSA standards referenced in the Model National Codes was completed. In this period, the Climate Resilient Buildings and Core Public Infrastructure initiative also developed future climate design data for 660 locations to be used by design and engineering professionals, and to be reflected in building and infrastructure codes and standards.

Minister of Infrastructure and Communities



\$11.37

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TARGET

By the end of the 2027 to 2028 fiscal year, invest \$26.9 billion in funding for green infrastructure initiatives that reduce greenhouse gas emissions and improve climate resilience and environmental quality.

RESULT

As of March 2021, based on data provided by Infrastructure Canada, \$11.37 billion in green stream funding has been committed to projects. An additional federal contribution of \$3.04 billion has been approved for projects in multi-stream programs with green, social, and/or public transit stream funding. At this time, 40% of the way through the twelveyear Investing in Canada Plan, more than 40% of the green stream funding is committed to projects.



PROGRESS

Progress toward this target is on track.

WHY IT'S IMPORTANT

Green infrastructure—including water and wastewater systems, clean energy, low-carbon transportation, climate resilient infrastructure like flood mitigation systems, and structural or natural infrastructure to protect against a changing climate and reduce impacts of natural hazards within communities—protects the natural environment, supports healthy and resilient communities, drives economic growth, and improves quality of life.

Canada needs modern water and wastewater facilities to ensure that Canadians have clean water to drink and to protect our lakes, rivers, and oceans from pollution. Clean energy infrastructure will help decrease GHG emissions and air pollution. Deployment of electric vehicle chargers and natural gas and hydrogen refuelling stations will help lower barriers to using low-carbon transportation options (as discussed earlier in this report in relation to the medium-term target on zero-emission vehicle sales). And as the impacts of climate change continue to manifest, climate resilient infrastructure that protects Canadians will become increasingly important to sustain economic, environmental, and social well-being.

In addition to green infrastructure, other infrastructure investments—for example, to provide affordable housing and upgrade public transit—also contribute to environmental sustainability, economic prosperity, and improved quality of life.

MEETING THE TARGETS

INVESTMENTS IN GREEN INFRASTRUCTURE INITIATIVES

Investing in modern and resilient infrastructure is supported by federal funding to provinces, territories, and municipalities for green infrastructure initiatives. These investments are being rolled out in two phases under the **Investing in Canada Plan**, which has five priority areas: public transit infrastructure, green infrastructure, social infrastructure, trade and transportation infrastructure, and rural and northern community infrastructure.

By the end of 2017 to 2018, as reported in the **2018 Progress Report** on the previous FSDS, the Government of Canada had approved \$3.2 billion in funding for green infrastructure initiatives.

As of March 2021, based on data provided by Infrastructure Canada, \$11.37 billion in green stream funding has been committed to projects. An additional federal contribution of \$3.04 billion has been approved for projects in multi-stream programs with green, social, and/or public transit stream funding. Forty percent (40%) of the way through the twelve-year Investing in Canada Plan, more than 40% of the green stream funding is committed to projects. Progress is on track to meet the goal of investing \$26.9 billion in funding for green infrastructure initiatives by the end of fiscal year 2027-2028.

Priorities under the Investing in Canada Plan include helping municipalities to increase green space and tree canopies, and to build better storm water drainage systems. Funding under the plan supports communities to develop and implement new land use and watershed management plans to reduce the destructive impacts of fire, floods, and drought. A **climate lens** is part of the project review process for key programs under the Investing in Canada Plan to ensure that GHG emissions and climate risks are considered before important capital projects receive funding.

FOR CONTEXT

ZERO-EMISSION VEHICLES CHARGING INFRASTRUCTURE

In addition to the Incentive for Zero-Emission Vehicles program discussed earlier in the Effective Action on Climate Change chapter, the Government of Canada is investing in charging infrastructure for zero-emission vehicles.

Since 2016, the Government of Canada has invested more than \$380 million to deploy over 34,500 chargers for electric vehicles. This work supports the establishment of a coast-to-coast network of EV fast chargers, as well as chargers in targeted areas where Canadians live, work, and play. These investments also support establishing natural gas refueling along key freight corridors, and hydrogen refueling in key metropolitan areas, where those vehicles are most likely to circulate.

In November 2020, the Government of Canada's 2020 Fall Economic Statement announced \$150 million for zero-emission vehicle infrastructure.

As of March 2021, 5,689 electric vehicle chargers are open to the public or under construction. There are also fifteen hydrogen stations, of which five are open, and twenty-two natural gas stations, of which nine are open, twelve are under construction, and one is under negotiation.

ASSET MANAGEMENT PLANS

Asset management plans help to operate and sustain public infrastructure. In 2019, 9% of municipalities had strengthened their asset management practices as a result of federal funding through Infrastructure Canada. Similarly, as of 2019, 3.5% of municipalities built or enhanced their capacity to reduce GHG emissions and adapt to climate change as a result of federal funding through Infrastructure Canada.

CANADA'S CORE PUBLIC INFRASTRUCTURE SURVEY

Green infrastructure helps municipalities adapt to climate change and practice modern asset management. After recognizing a need for guality data to support Canada's public infrastructure investments and to guide evidence-based decision-making, Infrastructure Canada and Statistics Canada worked together to launch Canada's Core Public Infrastructure Survey in 2017. This survey provides a national snapshot of the stock, condition, and performance of public infrastructure across Canada. Survey results are based on responses from government organizations including provincial and territorial departments and ministries, regional governments, and municipalities with at least 500 residents. In fall 2019, the second round of the Canada Core Public Infrastructure Survey was launched to collect data for reference year 2018. This data is reported below.

According to the 2018 survey results, 38.83% of municipalities factored climate change adaptation into decision-making processes in 2018. The same survey results found that 28.06% of municipalities have a documented asset management plan.

Water management is an important area of municipal infrastructure that extends to boil water advisories and to wastewater management. As of 2018, which is the most recent data, there were over **52,153 municipal potable water, storm water, and wastewater facilities** in Canada, including treatment facilities, pump stations, lift stations, reservoirs and storage tanks, ponds, wetlands (for storm water), and other end-of-life facilities.

According to 2018 survey results, which represents the most recent data, 4.32% of the 2,983 municipally-owned organizations across Canada that own potable water assets issued at least one drinking water advisory that exceeded fifteen days in 2018. This represents an increase from the first results of the survey, at which time 4.15% of the 1,494 municipalities across Canada that owned potable water assets issued at least one drinking water advisory that exceeded fifteen days in 2016.

According to 2018 survey results, 23.99% of **municipallyowned wastewater systems** needed to upgrade their wastewater systems to meet effluent quality standards of the *Federal Wastewater Systems Effluent Regulations*. This represents a decrease of 4.34 points from 2016 results, at which time 28.22% required upgrading.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

RESILIENT INFRASTRUCTURE

Canadian buildings and infrastructure will continue to face risks from floods, droughts, heat waves, and high winds. This ongoing challenge will require the adaptation of buildings and infrastructure to withstand future natural disasters and the impacts of climate change. In particular, in Canada's Arctic and along the Pacific and Atlantic coasts, climate change is expected to place additional stress on infrastructure due to thawing of permafrost, reductions in sea ice, and rising sea levels.

Strong evidence-based research and data inform sound decisions related to infrastructure. However, many investment decisions still tend to favour "tried-and-true" or conventional approaches. Successfully developing and building infrastructure to meet future climate challenges will depend on building support for innovative approaches by examining research and best practices drawn from domestic and international sources. A national stakeholder engagement campaign undertaken by the Standards Council of Canada in 2020 found that, while progress has been made, significant gaps remain and further efforts are needed to develop climate-resilient standards and guidance.

It often takes years to adjust conventional approaches and put innovative methods into practice. This is because the time between the construction and completion of an infrastructure project and the availability of data on its impacts on services and the environment can be significant.

Under the Pan-Canadian Framework on Clean Growth and Climate Change, the National Research Council of Canada has partnered with Infrastructure Canada to deliver the **Climate-Resilient Buildings and Core Public Infrastructure Initiative** over a five-year period (2016-2021). The purpose of the initiative was to develop decision support tools that integrate climate resilience into guides, codes, and related materials for the design of resilient new buildings and core public infrastructure. The initiative also aimed to broadly enhance capacity to address existing and future climate change and extreme weather events impacting Canada's built public infrastructure.

So far, more than 200 collaborators have contributed to the Climate-Resilient Buildings and Core Public Infrastructure Initiative, including all levels of government, industry, academia, non-profit organizations, and the climate science community. From these collaborations, the initiative has achieved major outcomes, including: new standards related to flooding; new guidelines for buildings and roofs; and new provisions related to climate change, sustainability, and the resilience of highway bridges.

INVESTMENTS IN DRINKING WATER AND WASTEWATER INFRASTRUCTURE

The National Assessment of First Nations Water and Wastewater Systems—2009 to 2011 identified the need for additional investments to maintain and operate infrastructure in Indigenous communities. While some progress has been made, gaps remain such as those discussed in the Clean Drinking Water chapter that follows.

THE COVID-19 PANDEMIC AND THE INVESTING IN CANADA PLAN

The COVID-19 pandemic has introduced new challenges and considerations for the Investing in Canada Plan. Infrastructure Canada has adapted the **Investing in Canada Infrastructure Program** to respond to these impacts by adding flexibility to help accelerate the launch of new projects, expanding project eligibility, and accelerating approvals.

THE COVID-19 PANDEMIC AND CANADA'S NATIONAL MODEL CODES

Canada's **National Model Codes** include codes for buildings, fire safety requirements, plumbing systems, energy efficient requirements, and farm buildings. While expected to be available in December 2021, the publication timing for the National Research Council of Canada's updated National Model Codes has been extended due to a number of factors. These include the complexity of the proposed changes, a significant volume of comments received from the public review, the COVID-19 pandemic, and the request of provinces and territories to receive all four model code documents concurrently.

To continue developing Canada's National Model Codes as is best possible, resources have been allocated to support guidelines to work from home and via videoconferencing, and the schedule of development has been reviewed and optimized to reduce overall delays.

CANADA IN THE WORLD

Ensuring Canada's infrastructure is modern and resilient supports the 2030 Agenda's SDG 6 (Clean water and sanitation), SDG 7 (Affordable and clean energy), SDG 9 (Industry, innovation and infrastructure), and SDG 13 (Climate action).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 6.1:

By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

Target 6.3:

By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

Target 6.4:

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.



Target 7.1:

By 2030, ensure universal access to affordable, reliable and modern energy services.

Target 7.2:

By 2030, increase substantially the share of renewable energy in the global energy mix.

Target 7.3:

By 2030, double the global rate of improvement in energy efficiency.



Target 9.4:

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.



Target 13.1:

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

Target **13.2**:

Integrate climate change measures into national policies, strategies and planning.




MINISTER OF NATURAL RESOURCES

Clean Energy



All Canadians have access to affordable, reliable, and sustainable energy

There are two medium-term targets within this goal. Reporting on short-term milestones and contextual indicators set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Natural Resources

FEDERAL ORGANIZATIONS

Atlantic Canada Opportunities Agency Crown-Indigenous Relations and Northern Affairs Canada Environment and Climate Change Canada Finance Canada Indigenous Services Canada Natural Resources Canada National Research Council of Canada Infrastructure Canada

All Canadians have access to affordable, reliable, and sustainable energy

About the milestones

Energy use is a major contributor to GHG emissions and climate change. The Government of Canada is increasing energy efficiency across communities and economic sectors, supporting non-GHG emitting technologies, and establishing robust national energy codes. Together, the short-term milestones listed below will help all Canadians have access to affordable, reliable and sustainable energy, and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2020

- Between January and March 2020, the National Research Council of Canada undertook a public review of the proposed 2020 national energy codes, which include net-zero-energy-ready tiers. Set for publication in 2021, the 2020 National Model Codes for new homes and buildings is a major milestone and is expected to include a tiered performance structure leading to a net-zero energy ready level for provinces and territories to adopt, with improvements of 10% to 60% (based on tier) over baseline performance compared to the 2017 codes. Natural Resources Canada continues to support the development and eventual adoption of these new, tiered codes by provinces and territories, as well as the current codes. For example, in 2020, Natural Resources Canada developed and provided free online access to code training materials, videos and tools, and developed new Canadian standards.
- In November 2020, the Fall Economic Statement of the Government of Canada announced \$2.6 billion over seven years to Natural Resources Canada for providing, retroactive to December 1, 2020, up to 700,000 grants of up to \$5,000 to enable homeowners to make energy-efficient improvements to their homes paired with an EnerGuide home energy evaluation, and support to recruit and train Energy Advisors to meet increased demand.
- As of 2020, Natural Resources Canada continues to offer financial assistance, tools, and information guides for a range of activities aimed at improving energy efficiency in industrial, commercial, and institutional facilities, including (but not limited to) the implementation of ISO 50001 energy management systems. Canadian industrial companies that have implemented ISO 50001 have achieved an average cumulative energy performance improvement of nearly 10% on average within the first two years.
- As of 2020, the Government of Canada launched the Hydrogen Strategy for Canada, which provides a framework to guide actions and investments to grow the production and use of hydrogen, leading to economic and environmental opportunities across the country. Hydrogen is a key element of the path to net-zero emissions, and the strategy positions Canada to be a supplier of choice to the world for clean hydrogen and the technologies that use it.
- As of 2020, the Government of Canada launched the Small Modular Reactor Action Plan for the development, demonstration, and deployment of Small Modular Reactors to reduce emissions, decarbonise heavy industry, and spur economic development.
- The 2020 Fall Economic Statement of the Government of Canada announced measures to bring clean power to
 more Canadians and accelerate Canada's coal phase-out by working with the provinces and territories to build
 new electricity transmission infrastructure with support from the Canada Infrastructure Bank. Two and a half
 billion dollars are earmarked for clean power. By working in collaboration with provincial and regional partners,
 Canadians will be connected to clean electricity across Canada through the Atlantic Loop and other regional
 projects. These measures also advance smart renewable energy and grid modernization projects to enable the
 clean grid of the future. This includes support to increase renewable power generation capacity such as wind
 and solar, and to advance electrification of the broader economy and help jurisdictions minimize the role of fossil
 fuel-fired electricity generation in their electricity systems.

Ongoing

- The Government of Canada continues to implement national programs to support the Pan-Canadian Framework on Clean Growth and Climate Change. The Emerging Renewable Power Program is supporting renewable technologies such as instream tidal power, bifacial solar power, and geothermal power.
- The Clean Energy for Rural and Remote Communities Program continues to support community-led renewable energy and capacity building projects aimed at reducing rural and remote communities' reliance on diesel and other fossil fuels for heat and power. After two rounds of intake, eighty-eight renewable energy, bioheat, and capacity-building projects have been selected for support, with these projects set to produce an estimated 63 megawatts of renewable electricity and 52.738 gigajoules of bioheat.
- The Northern Responsible Energy Approach for Community Heat and Electricity ("Northern REACHE") program continues to fund renewable energy and energy efficiency projects, and related capacity-building and planning, in Yukon, the Northwest Territories, Nunavut, Nunavik, and Nunatsiavut. Since 2016, the Northern REACHE program invested \$22 million in 122 projects that will help to reduce Northern communities' reliance on diesel for heating and electricity, and to increase the use of local renewable energy sources and energy efficiency.
- The Smart Grid Program is investing \$100 million over five years to support twenty-one demonstration and deployment projects. These projects are a key enabler for GHG mitigation as they increase the hosting capacity of renewable generation, leverage additional capacity from existing electricity infrastructure, and increase resiliency.
- Natural Resources Canada's CanmetENERGY Devon and Ottawa laboratories are supporting the prize winners of the Sky's The Limit biojet challenge program under Impact Canada. This challenge is designed to help the aviation industry to remove combustion-related GHG emissions.

Minister of Natural Resources



TARGET

By 2030, 90% and in the long term, 100% of Canada's electricity is generated from renewable and non-emitting sources.

RESULT

By March 31, 2019, 82% of Canada's electricity is generated from renewable and non-emitting sources.



82%

PROGRESS

Progress is on track.

Minister of Natural Resources



TARGET

By 2030, 600 petajoules of total annual energy savings will be achieved as a result of adoption of energy efficiency codes, standards and practices from a baseline savings of 20.0 petajoules in 2017 to 2018.

NOTE

The 2017 to 2018 baseline was revised after the publication of the 2019 to 2022 FSDS through Natural Resources Canada's **Departmental Sustainable Development Strategy** to apply consistent methodologies for all related results of the baseline.



RESULT

By the end of fiscal year 2019 to 2020, adoption of energy efficient codes, standards, and practices has achieved a savings of 35.6 petajoules.



PROGRESS

Progress is on track.



Electricity generation in Canada by source in TWh and percentage of total generation

SOURCE: Natural Resources Canada 2019

WHY IT'S IMPORTANT

Canada already has one of the world's cleanest electricity systems and is the world's **third largest hydroelectricity producer**. Clean technology is bringing innovative energy solutions to the forefront of efforts to continue making progress. Canada needs to accelerate the development and adoption of non-GHG emitting energy. It must continue to reduce energy consumption through improved efficiencies and by making more energy-conscious decisions about energy consumption. In addition to supporting the transition to a low-carbon economy, a cleaner energy system also provides benefits such as healthier homes, more resilient infrastructure and ecosystems, and jobs for Canadians across the country.

To support the transition to a clean energy future, the Government of Canada is working with partners to generate cleaner power, use more renewable fuels, and produce cleaner oil and gas. The Government of Canada is also working to help Indigenous and northern communities reduce their reliance on diesel for electricity and heat.

Increasing energy efficiency is an important way to reduce GHG emissions while saving money and increasing competitiveness. Saving energy now reduces the need for additional generating capacity in the future. According to the **International Energy Agency**, energy efficiency measures and technology innovation have the potential to keep Canada's energy demand on a steady decline to 2050, despite rising economic activity.

The Government of Canada will continue to support Canadians in making their homes and businesses more energy efficient through measures such as energy labelling of appliances and vehicles, EnerGuide home evaluations, and energy efficiency tools and standards for industry.

MEETING THE TARGETS

CLEAN ENERGY IN CANADA

To monitor progress, the Government of Canada tracks electricity generation from renewable sources such as solar, tidal, biomass, wind, and hydroelectricity, as well as from non-GHG emitting sources such as nuclear energy. Between 2016 and 2018, the share of electricity produced from renewable and non-GHG emitting sources increased by 1% to reach **82% of the total electricity produced in Canada**. This 82% share combines 67% from renewable sources and 15% from nuclear sources. This evidence suggests that Canada is on track toward its target of generating 90% of its electricity from renewable and non-emitting sources by 2030 and, in the long term beyond 2030, of generating 100% clean electricity.

Beyond electrical generation, which is predominantly from renewable and non-emitting sources, the **total energy mix** in Canada remains dominated by non-renewable energy sources. These include coal, oil, and gas. In total, non-renewable energy sources constituted 83.2% of total energy in Canada for 2018. Renewable energy sources such as hydro, solar, wind, biomass, tidal, and geothermal energy sources generated 16.8% of total energy in Canada for 2018.

INCREASING ENERGY EFFICIENCY

Energy efficiency is one of the fastest and most inexpensive ways to help build Canada's clean-growth future while meeting climate change commitments. As countries around the world undertake their plans to emerge from the economic impacts of COVID-19, energy efficiency measures present an opportunity to generate economic activity for a green recovery, create jobs, and improve our competitiveness. This includes boosting the retrofit economy while providing the support Canadians need in making energy efficient retrofits to their homes.

Canada plays a leadership role globally by working collaboratively with international partners to increase energy efficiency and accelerate the clean energy transition. This includes joining the **Three Percent Club**—a global alliance of public and private sector organizations seeking to improve energy efficiency at a rate of at least 3% per year.

In fiscal year 2019-2020, adopting energy efficiency codes, standards, and practices in Canada has achieved total annual energy savings of 35.6 petajoules. This represents progress toward meeting the target of 600 petajoules of total annual energy savings by 2030. The total annual energy savings resulting from adoption of energy efficiency codes, standards, and practices have been continuously increasing over the last three years, from 20.0 petajoules in 2017-2018, to 26.7 petajoules in 2018-2019, and to 35.6 petajoules in 2019-2020. Net-zero building codes for new and existing buildings are currently in development. Adoption of the 2020 new building energy code is expected by December 2023, while adoption of the code for existing buildings is expected in 2025. Once finalized and adopted, these measures are expected to result in significant, rapid energy savings. This evidence supports the assessment that progress toward this target is on track.

To increase energy efficiency across the country, the Government of Canada continues to increase the stringency of energy efficiency standards for products. It is working on developing new energy codes and providing funding to help organizations identify and adopt energy efficiency practices. The Government of Canada also disseminates information for industrial operators to improve energy performance. Finally, it has launched new initiatives under **ENERGY STAR®**, which is an internationally recognized mark of high efficiency. In Canada, Natural Resources Canada administers and promotes ENERGY STAR®.

Fifty partners across Canada use Natural Resources Canada's EnerGuide energy rating system for homes and its premium standards. In the fiscal year 2019-2020, 87,000 existing and nearly 10,000 new homes were labelled using the EnerGuide system, which has resulted in 1.9 petajoules saved.

By June, 2019, three amendments to Canada's *Energy Efficiency Regulations* were published. These amendments updated minimum energy performance standards for thirty-six product categories. Requirements for most products set out in these regulatory amendments came into force at the beginning of 2020. These amendments will support energy efficiency improvement of appliances and equipment, including residential, commercial, and industrial heating and ventilation products over the next several years. In fiscal year 2019-2020, amendments to the *Energy Efficiency Regulations* have saved an estimated 4.6 petajoules in energy (attributable to Amendments 13-16).

In June 2019, Canada launched the **Energy Manager Program** to help organizations identify and adopt energy efficiency practices. The program will provide \$3.1 million to small- and medium-sized enterprises, municipalities, universities, schools, hospitals, and not-for-profit organizations in provinces where the federal carbon pricing backstop applies: Saskatchewan, Manitoba, Ontario and New Brunswick. Since its launch, the program has received 237 applications worth \$18 million and has signed more than twenty-five contribution agreements worth \$3.1 million to hire energy managers and conduct energy assessments.

In 2020, Canada published a Model National Framework for energy benchmarking, labelling, and disclosure for commercial and institutional buildings. The purpose of this framework is to provide best practices and guidelines to jurisdictions and other organizations managing benchmarking, labelling, and disclosure initiatives. To date, the Government of Canada has provided financial support for thirteen initiatives that help provinces, territories, municipalities and others to benchmark, label, and disclose energy use. Canada continues to work on national model energy codes for new and existing buildings and homes. The 2020 edition of the National Energy Code for Buildings and the National Building Code of Canada introduce tiered performance requirements for buildings and homes, respectively. National model codes for new buildings and homes are expected to be published in December 2021.

For houses and small residential buildings, five tiers are proposed. These range from the current base requirement to 70% energy improvement. For buildings, four tiers are proposed, and these range from the base requirement to 60% energy performance improvement. Adoption of highest tiers would enable provinces and territories to achieve "net-zero energy ready" construction.

Work is underway to broaden the application of the next cycle of national model energy codes, currently scheduled for 2025, to include existing buildings and homes for publication. Significant technical research and study is underway to inform these new requirements.

Natural Resources Canada publishes and disseminates tools and information guides on a range of topics for industrial operators to help them improve their **energy performance**. These include the national energy use database, energy use calculators, energy management guidelines, and employee guidebooks and awareness resources for topics relevant to energy management (e.g. energy management systems, energy management and information systems, energy use factsheets, etc.).

ENERGY STAR®

Natural Resources Canada continues to administer the ENERGY STAR® for Products program, which encourages and promotes consumer purchases of high-efficiency products. In addition, in 2020 Natural Resources Canada continued to expand the ENERGY STAR® PortfolioManager® benchmarking tool to include additional features such as the 1-100 ENERGY STAR® score for new building types, and offering a certification program that recognizes higher-performing commercial and institutional buildings. The ENERGY STAR® score rating system and the certification program are now available for ten building types. Also in 2020, the Government of Canada updated six ENERGY STAR® product specifications, including windows, doors and skylights, and heat and energy recovery ventilators.

Since Natural Resources Canada launched the ENERGY STAR® Challenge for Industry and the ENERGY STAR® for Industry Certification in 2017, forty-two Canadian industrial facilities have participated in the programs. ENERGY STAR® Energy Performance Indicators have also been developed for automobile assembly facilities, automobile engine facilities, automobile transmission facilities, cement manufacturing facilities, commercial bakeries, fertilizer manufacturing facilities, frozen fried potato processing facilities, and integrated steel mills.

In Ontario, Natural Resources Canada has launched the ENERGY STAR® Multifamily High-Rise Pilot Program —a new five-year certification program—to improve the energy efficiency of medium and high rise multifamily buildings beyond the provincial building code.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

CLEAN ENERGY AND THE STRENGTHENED CLIMATE PLAN

A transition to cleaner energy poses opportunities as well as challenges for Canada.

On December 11, 2020, the Government of Canada announced its strengthened climate plan, A Healthy Environment and a Healthy Economy, to fight climate change and to rebuild a more sustainable and resilient economy. This plan builds on the Pan-Canadian Framework, supported by an initial \$15 billion in investments and in collaboration with provinces and territories.

In the strengthened climate plan, key clean energy actions include retrofitting homes and buildings, expanding the supply of clean electricity and clean fuels, increasing the availability of renewables and next-generation clean energy and technology, and producing low-carbon products that fill a growing gap in market demand for energy efficient goods.

OVERCOMING BARRIERS TO USING ALTERNATIVE SOURCES OF ENERGY

There is a need to develop, demonstrate and deploy technologies that better integrate variable renewable energy sources in electricity systems, such as wind and solar, to reduce the technical challenges of maintaining the balance between electricity load and generation throughout the day.

Canada's geography, climate, and low population density provide challenges and opportunities for clean energy, and it is important that remote and rural communities are included in the transition away from fossil fuel and toward clean energy. For example, transition efforts in Canada's Arctic regions can be slowed by complexities in power provision, dependence on diesel, and limits in local capacity. Rural and remote communities, sometimes just outside of larger cities, do not have the requisite infrastructure to transition from fossil fuels. To address this challenge, the **Clean Energy for Rural** and **Remote Communities** program funds projects to reduce community reliance on diesel fuel for heat and power. Along with international and Indigenous partners, Canada is also co-leading the **Arctic Remote Energy Networks Academy** through the Sustainable Development Working Group of the Arctic Council to expand collaborative, expertise-based networks of energy professionals in the Arctic and support project development.

MEETING INCREASING DEMANDS WHILE REDUCING GREENHOUSE GAS EMISSIONS

Electrification in other sectors of the economy, such as transportation, will require sustained investments in electricity generation, transmission, and distribution assets. To ensure that electrification reduces emissions, increased electricity demand will need to be supplied by non-emitting generating sources.

A NEED FOR MORE INVESTMENTS IN CLEAN ENERGY

In 2018, Canadian private investments in clean energy decreased significantly from 2012. As variable renewables such as wind and solar are the fastest growing segment in electricity production, there is an opportunity to encourage private and public investment in activities related to manufacturing and marketing that firms make. These investments and activities serve to increase the value of their products and services in developing technologies for fuel supply, generation, storage, and distribution. Opportunities such as these are crucial to move toward a low-carbon energy future.

IMPROVING ENERGY INTERCONNECTIONS

Energy interties are transmission lines that connect separate electric grids and enable electricity trading between jurisdictions or regions. Some provinces, such as Québec and Ontario, can transfer very large volumes of electricity both north-south and east-west. Other jurisdictions have limited intertie capacity. An interconnected electricity transmission system would enable increased generation and transmission of renewable electricity across Canada.

ENSURING A SMOOTH TRANSITION AS CANADA PHASES OUT COAL-FIRED ELECTRICITY GENERATION

In 2018, **coal-fired power plants** generated 7% of Canada's electricity. This represents a 2% reduction from 2016 when it stood at 9%, as reported in the 2018 FSDS Progress Report. Coal-fired plants are the highest emitting sources of GHGs. An accelerated phase-out of coal power has implications for workers and communities supported by the coal industry.

To address this challenge, the Government of Canada established the Task Force on the Just Transition for Canadian Coal Power Workers and Communities. Based on the recommendations, the Government of Canada committed \$185 million, including \$35 million for the Canada Coal Transition Initiative to support skills development and economic diversification, and \$150 million for a dedicated infrastructure fund beginning in fiscal year 2020-2021 to support economic diversification in impacted communities.

As of 2021, under the Canada Coal Transition Initiative the Government of Canada has invested a total of over \$22.5 million in thirty-six projects across Saskatchewan, Alberta, New Brunswick, and Nova Scotia through its regional development agencies (Western Economic Diversification Canada and the Atlantic Canada Opportunities Agency).

INCREASING ENERGY EFFICIENCY DURING COVID-19

Accelerating energy efficiency is crucial for the energy transition. The COVID-19 pandemic presents a unique opportunity to upskill and expand Canada's jobs-rich energy efficiency workforce. Canada has recently invested in e-training opportunities in partnership with organizations that are active and experienced in this area.

For example, as a first step to support the sector during the pandemic, Canada is investing in support for online training and promoting skills development in the energy efficiency sector through a partnership with Efficiency Canada, the Canadian Institute for Energy Training, and the Heating, Refrigeration and Air Conditioning Institute of Canada. This will provide Canadians with the opportunity to access training at a reduced rate to develop the needed skills and prepare Canada's energy efficiency workforce to re-enter the economy.

CANADA IN THE WORLD

Ensuring Canada has one of the cleanest electricity systems in the world supports SDG 7 (Affordable and clean energy), SDG 9 (Industry, innovation and infrastructure), and SDG 12 (Responsible consumption and production).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 7.2:

By 2030, increase substantially the share of renewable energy in the global energy mix.

Target 7.3:

By 2030, double the global rate of improvement in energy efficiency.



Target 9.4:

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.



Target 12.2:

By 2030, achieve the sustainable management and efficient use of natural resources.





MINISTER OF FISHERIES, OCEANS AND THE CANADIAN COAST GUARD

Healthy Coasts and Oceans



Coasts and oceans support healthy, resilient and productive ecosystems

There are two medium-term targets within this goal. Reporting on short-term milestones and contextual indicators set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Fisheries, Oceans and the Canadian Coast Guard

FEDERAL ORGANIZATIONS

Environment and Climate Change Canada Fisheries and Oceans Canada Natural Resources Canada Parks Canada Agency Transport Canada

Coasts and oceans support healthy, resilient and productive ecosystems

About the milestones

Pollution, climate change, and developmental pressures affect the health of Canada's coasts, oceans and marine life. In collaboration with partners, the Government of Canada is working to protect these crucial resources through marine spatial planning, advancing conservation networks, carefully monitoring marine pollution, and targeting programs to protect the lives of whales. Together, the short-term milestones listed below help to protect Canada's coasts, oceans, and marine life, and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2019

- As of the end of 2019, Canada has conserved 13.8% of its ocean through marine protected areas, other effective area-based conservation measures, and other federal and provincial conserved areas.
- As of 2019, there has been no evidence of marine pollution from disposal activities at monitored ocean disposal sites since 2007.

2020

- In January 2020, Transport Canada enhanced its ability to detect changes in coastal and ocean environments through the National Aerial Surveillance Program's acquisition of a third Dash 8 aircraft.
- In April 2020, Transport Canada, with the essential support of the Canadian Coast Guard, worked to preserve the lives of North Atlantic right whales by introducing a fourth year of revised vessel speed restriction measures. These build on previous measures implemented in 2019.
- In the September 2020 Speech from the Throne, the Government of Canada announced its commitment to
 preserving Canada's nature legacy by protecting 25% of Canada's lands and 25% oceans by 2025. Canada is
 also working with international partners to develop a post-2020 Global Biodiversity Framework, to be adopted
 at the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity. This builds on
 earlier commitments by the Government of Canada as outlined in this chapter.
- As of December 2020, targeted ghost gear retrieval efforts supported by the Government of Canada have resulted in the removal of over sixty-nine tons of abandoned, lost, or otherwise discarded fishing gear from coastal waters. Ghost gear is fishing equipment or fishing-related litter that has been abandoned, lost, or otherwise discarded.
- In 2020, building on targeted fisheries management measures established since 2017, Fisheries and Oceans Canada implemented a suite of new management measures to protect marine mammals such as the North Atlantic right whale, Southern Resident killer whales, and St. Lawrence Estuary beluga.
- In 2020, building on work undertaken in 2019, the Government of Canada worked to reduce the threat of underwater noise from vessels by introducing three Interim Sanctuary Zones to prohibit vessels from transiting through important Southern Resident killer whales areas and by doubling the distance at which vessels are allowed to approach killer whales. Fisheries and Oceans Canada has also launched a research initiative, Understanding the Marine Environment to Better Protect Whales, to analyze the impact of environmental stressors such as underwater vessel noise on marine mammals.
- In 2020, the Marine Mammal Response Program increased its capacity by funding organizations with expertise in marine mammal response and necropsies.

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2020 - continued

- In 2020, in recognition of the importance of collaborating with provinces, territories, and Indigenous peoples to co-manage Canada's three oceans, provinces were invited as partners in the marine spatial planning process, which is a collaborative and transparent approach to ocean planning that fosters economic growth while advancing marine conservation and socio-cultural objectives. This invitation followed targeted investments made in 2019 to organizations that directly support Indigenous peoples' effective and sustained engagement in marine spatial planning.
- In 2020, Canada launched the Sustainable Fisheries Solutions and Retrieval Support Contribution Program. This two-year, \$8.3 million program aimed at reducing the threat of ghost gear is currently overseeing twenty-two projects in Canada and four internationally. The program is the first of its kind in the world dedicated to support the reduction of ghost fishing gear.
- As of 2020, the Government of Canada's fisheries management measures on the east and west coasts remain focused on preventing entanglement and there is support for industry trials of innovative fishing technologies (e.g., ropeless fishing gear) and methods to prevent and/or mitigate whale entanglement.

2021

- By March 31, 2020, 95% of fiscal year 2019-2020 flight hours were completed under the National Aerial Surveillance Program, and by March 31, 2021, 95% of fiscal year 2020-2021 flight hours were completed.
- As of 2021, the Canadian Hydrographic Services have completed bathymetric surveys for all twenty-three high-priority commercial ports identified under the "Modern Hydrography and Charting in Key Areas" Oceans Protection Plan initiative. This will inform the development of updated nautical charts for improved mariner safety in Canadian waters.
- In activities that will be ongoing until the end of 2021, nearly sixty external projects and various internal projects have collected baseline data under the <u>Coastal Environmental Baseline Program</u> at the following sites: Port of Saint John, NB; Port of Vancouver, BC; Port of Prince Rupert, BC; lower St. Lawrence Estuary, QC; Iqaluit, NU; and Placentia Bay, NL. This program was launched in November 2016 with a plan to provide \$50.8 million over five years to collect comprehensive data on the state of six coastal marine ecosystems in Canada. Fisheries and Oceans Canada scientists work closely with Indigenous and coastal communities to develop and implement the program, and also to determine what data is collected.

Ongoing

- In activities that will be ongoing until 2022, national marine conservation area monitoring has been underway by Parks Canada Agency and its partners to collect and assess data on species and habitats, environmental quality, and the use of marine conservation areas.
- The Government of Canada continues to deliver on the Ocean Plastics Charter and its comprehensive agenda to address plastic pollution and waste. This includes reducing plastic waste and pollution, including reducing the impacts of ghost fishing gear, investing in innovative Canadian technologies, and mobilizing community action on marine litter.

Minister of Fisheries, Oceans and the Canadian Coast Guard



TARGET

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

RESULT

As of December 2020, 13.8% of coastal and marine areas were recognized as conserved including 8.9% in protected areas and 4.9% in other effective area-based conservation measures.



13.8%

PROGRESS

This target has been achieved.

Minister of Fisheries, Oceans and the Canadian Coast Guard



TARGET

By 2020, all major fish and invertebrate stocks are managed and harvested at levels considered to be sustainable, from a baseline of 96% harvested within established ecosystem limits in 2016.



RESULT

In 2019, of the 176 major fish and invertebrate stocks assessed, 166 (94%) were harvested at sustainable levels, and 10 stocks (6%) were overharvested.



PROGRESS

Attention is required.



Proportion of area conserved, Canada, 1990 to 2020

SOURCE: Canadian Environmental Sustainability Indicators, 2021



Harvest of major stocks relative to approved levels, Canada, 2011 to 2019

SOURCE: Canadian Environmental Sustainability Indicators, 2021

WHY IT'S IMPORTANT

Canada has unparalleled coastal and ocean resources. Protecting these waters is critical to the lives and livelihoods of all Canadians. Coasts and oceans are facing challenges from climate change, which is influencing rising sea levels, changing ocean chemistry (acidification and hypoxia), increasing water temperatures, and intensifying the loss of marine habitat and biodiversity. Marine shipping, human use and development of Canada's coasts and oceans are increasing, which poses environmental risks such as the potential for oil spills, underwater noise, and the introduction of invasive species. The Government of Canada needs to continue to take action to ensure that Canadians benefit from healthy, resilient, sustainably managed, and productive fisheries and ecosystems over the long term.

The introduction and spread of invasive alien species results in loss of biodiversity, leading to major economic costs. Climate change can make these impacts worse for example, as colder waters in the Arctic and sub-Arctic become warmer, they become more receptive to potentially invasive alien species from more temperate areas.

Conserving coastal and marine areas helps address environmental challenges such as climate change, while allowing the sustainable use of ocean resources, and Canada is committed to establishing and managing marine protected areas and other effective area-based conservation measures.

Efforts to protect Canada's coastal and marine areas recognize the role of Indigenous peoples in Canada and the traditional use of those areas.

MEETING THE TARGETS

MARINE CONSERVED AREAS

The Government of Canada has conserved almost **14% of Canada's marine and coastal areas** and has thus achieved and surpassed its target to conserve 10% of coastal and marine areas by 2020 through the establishment of marine protected areas and other effective area-based conservation measures.

Over the last twenty years, the total marine area conserved has increased by more than thirty-eight times over; in the last five years it has increased by more than tenfold. This significant increase is a result of new protected areas and other effective area-based conservation measures such as marine refuges. In 2019, Canada surpassed its target in part through the creation of the **Tuvaijuittuq Marine Protected Area**, which protects 319,411 square kilometers of Canada's ocean area and is a culturally and historically significant marine area. At the end of 2020, marine refuges covered about 283,000 square kilometers of Canada's marine territory. Fisheries and Oceans Canada sets out details related to all the **marine areas** that contribute to this target.

Marine refuges are long-term fisheries area closures assessed as meeting Canada's criteria for marine areas conserved with other effective area-based measures, based on scientific advice provided and developed by the Canadian Science Advisory Secretariat in 2016. Areas conserved with other measures must meet all elements of the Pan-Canadian definition and international definition to be recognized as conserved. Criteria are set out in the appendix of the **One with Nature** report.

Fisheries and Oceans Canada, Parks Canada Agency, and Environment and Climate Change Canada each have specific but complementary mandates for establishing marine protected areas:

- Oceans Act marine protected areas are established to conserve and protect marine species and their habitats, including species that are fished, endangered or threatened marine species, as well as unique habitats and areas of high biological productivity or biodiversity;
- National marine conservation areas are established to conserve representative examples of Canada's natural and cultural marine heritage and to provide opportunities for public education and enjoyment; and,
- National wildlife areas and migratory bird sanctuaries are established to conserve habitat for a variety of wildlife including migratory birds and endangered species.

Areas established by these departments, along with provincially established areas, contribute to conservation networks in Canada's marine bioregions. These networks' primary goal is to provide long-term conservation of marine biodiversity, ecosystem function, and special natural features.

Different jurisdictions conserve areas for different purposes, and control the amount of allowed human activity (such as transportation, fishing, or recreation). Marine conservation includes a wide range of management and stewardship activities.

Examples include support for the recovery of species at risk, prevention and mitigation of the impact of aquatic invasive species, and strengthening Canada's response to ship-source marine pollution. As an example of habitat conservation, the **Scott Islands** marine National Wildlife Area is the first protected marine area established under the *Canada Wildlife Act*. This marine area was established on June 27, 2018 and conserves a vital marine area for millions of seabirds on the Pacific coast. It is ecologically and biologically significant for its biologically rich environment, diversity of marine mammals and fish species, and important habitat for several marine mammal species at risk. The area attracts five to ten million migratory birds each year.

SUSTAINABLE FISH HARVEST

To ensure the continued prosperity and sustainability of Canadian fisheries, the Government of Canada implements harvest and management strategies grounded in ecosystem-based, precautionary, and emerging ecosystem approaches. When establishing harvest limits, environmental effects on fish stocks and the effects of fishing on the wider environment are considered, frameworks to manage risks are applied, and uncertainty is not used as a reason for inaction. Notably, the **precautionary approach** in fisheries management began in 2009. Precautionary approach components are built into the **Sustainable Survey for Fisheries** and are progressively improved on an annual basis.

In 2019, **166 of the 176 major fish stocks** (94%) were harvested at sustainable levels, and ten were overharvested (6%), including the snow crab, Northern shrimp, herring, sockeye salmon, and beluga in various regions. **Conservation and sustainable use policies** seek to avoid overharvesting. This evidence demonstrates that Canada's progress toward its 2020 target of all (100%) of fish stocks harvested at sustainable levels requires more attention.

Overall, from 2012 to 2018, the percentage of overharvested stocks has been consistently low. Of the **176 major fish stocks** assessed in 2019, 52 (30%) were in the healthy zone, 29 (16%) were in the cautious zone, and 25 (14%) were in the critical zone. The remaining 70 (40%) could not be classified and have uncertain status. Many new stocks added to the **Sustainability Survey for Fisheries** since 2014 have an uncertain status and thus contributed to the high number of stocks overall with uncertain status.

As of 2020, fishery management measures also include the following:

• A new season-long fishing area closure protocol in the Gulf of St. Lawrence to protect marine mammals such as the North Atlantic right whale.

- Area-based fishery closures that apply to recreational and commercial salmon fishing in the Strait of Juan de
 Fuca and the Gulf Islands in Southern Resident killer whale critical habitat.
- New gear marking requirements for all non-tended fixed gear fisheries in Atlantic Canada and Québec allowing us to distinguish between Canadian and U.S. entanglements.

In addition to the above activities, and as part of the 2019 amendments to the Fisheries Act, the Fish Stock Provisions introduce new requirements to manage major fish stocks prescribed by regulation. These requirements state that major fish stocks must be maintained at levels necessary to promote their sustainability. If a major fish stock declines to or below its limit reference point, a plan must be developed and implemented to rebuild that point. Fisheries and Oceans Canada received \$107.4 million over five years, starting in fiscal year 2019-2020, and \$17.6 million per year ongoing to invest in science and fishery management activities, including rebuilding plans, to support the implementation of the Fish Stocks provisions. This work is also related to Fisheries and Oceans Canada's efforts toward ensuring that all species have healthy and viable populations, which is further detailed in the "Healthy Wildlife Populations" section of this report.

FOR CONTEXT

MONITORING MARINE ECOSYSTEMS

Globally, it is estimated that about eight million tonnes of plastic pollution enter the oceans every year. This plastic waste can be unintentionally ingested by seabirds, such as the Northern Fulmar, which feed at the surface of the oceans. Sampling plastic in the stomachs of seabirds provides information on plastic pollution on the surface of Canada's oceans. Between 2001 and 2018, 69% of the Northern Fulmars collected from across Canada had plastic particles in their stomach.

The Government of Canada monitors **national shellfish harvest area quality**. High bacteria levels in marine waters potentially make shellfish unsafe for human consumption and can lead to closing harvest areas to ensure food safety. The proportion of harvest areas approved or conditionally approved is a partial measure of the quality of marine coastal water. In 2018, 68% of Canada's shellfish harvest area was approved or conditionally approved for harvest for human consumption. The percentage of approved or conditionally approved shellfish harvest areas has remained consistent since 2010. **Eelgrass** is a common seagrass species that plays an important role in coastal and estuarine ecosystems. It is widespread on the Pacific, Atlantic, and Arctic (Hudson Bay) coasts of Canada. Eelgrass beds provide a variety of ecosystem services, including stabilizing sediments and reducing the force of waves. They are also habitats for various types of animals including fish and invertebrates. The Government of Canada is continuing to collect data on eelgrass.

The Government of Canada actively monitors ships in Canadian waters to **prevent pollution releases into the marine environment**. Marine pollution spills can have long-term negative environmental and economic consequences. Given their relatively large volume of fuel oil or cargo, commercial ships are the focus of the surveillance. Since 2015, offshore spills have generally accounted for 5% or less of the volume of detected spills each year, except in 2018 and 2019 where they accounted for 18% and 33%, respectively.

In Canada, it is illegal to **dispose of material at sea** without a permit. Each year in Canada between two and four million tonnes of material are disposed of at sea. Approximately 90% of this material is dredged sediment from estuarine or marine sources, or excavated inorganic material from land-based sources. Federally designated disposal sites have been monitored since 2007. Monitored sites follow guidelines to ensure that studies can detect environmental degradation at disposal sites. For example, in 2019, 13 sites of a total of 104 active disposal sites were monitored. As of 2019 no evidence was found of marine pollution from the disposal of permitted materials, which are primarily dredged material, fish waste, or excavation waste.

THE WHALES INITIATIVE

Canada's oceans are home to 42 distinct populations of whales and include iconic but endangered species such as the Southern Resident killer whale, North Atlantic right whale, and St. Lawrence Estuary beluga. Whales feature centrally in the cultures of many Indigenous groups and the broader social history of our coastal areas. They are vital components of marine ecosystems and support eco-tourism in coastal communities across the country. Their iconic status draws substantial foreign and domestic attention to them and to the Government's efforts to protect them and support their recovery.

Entering its fourth year, the **Whales Initiative** continues to advance long-term solutions and implement yearly measures to protect North Atlantic right whales, Southern Resident killer whales, and St. Lawrence Estuary belugas from human-caused risks to their survival. These include threats from noise and other disturbances, entanglements in fishing gear, vessel strikes, and contaminants.

NORTH ATLANTIC RIGHT WHALES

In 2019, Transport Canada, with the essential support of the Canadian Coast Guard, introduced a third year of measures to reduce the likelihood of lethal vessel collisions with North Atlantic right whales. Following the death of several right whales in Canadian waters, enhanced measures were introduced mid-season and were in place until the end of the season. Enhanced measures from 2019 were revised and reintroduced in 2020 with new seasonal management areas, a new restricted zone, and a new voluntary trial slowdown in the Cabot Strait.

In 2019 and 2020, Fisheries and Oceans Canada directed significant scientific effort toward the monitoring of North Atlantic right whales using both aerial surveys and acoustic technologies. These efforts help to understand the distribution, movement, and behavior of right whales, as well as the environmental stressors affecting them. This research provides information that enables better protection for right whales from activities related to fisheries and shipping, as well as the strategies necessary to help their recovery as an endangered species. Scientific work on whale identification and counting of individuals are done in collaboration with other parties.

In 2020, there were no known deaths of right whales in Canadian waters and a greater than 99.9% compliance rate with Transport Canada mandatory measures.

SOUTHERN RESIDENT KILLER WHALES

Since 2020, three new calves have been born and, as of February 2021, the population was comprised of seventy-five individuals.

In 2019 and 2020, in partnership with the Vancouver Fraser Port Authority's Enhancing Cetacean Habitat and Observation Program, participation in vessel slowdowns increased and a new slowdown was trialed. In-shore vessels were also requested to move away from important feeding areas for Southern Resident killer whales. Research to support these measures included the deployment of a world-class underwater listening station. As detailed in the About the milestones section earlier in this chapter, Transport Canada put in place three seasonal Interim Sanctuary Zones in Southern Resident killer whale critical habitat and increased the approach distance from 200 metres to 400 metres through an Interim Order under the *Canada Shipping Act, 2001.*

Since 2019, Parks Canada Agency has been taking action in collaboration with others to support the recovery

of Southern Resident killer whales through law enforcement, compliance promotion, science and monitoring, and Indigenous engagement.

UNDERWATER NOISE MANAGEMENT PLANS

The Government of Canada is acting on the environmental issue of the impacts of shipping-related underwater noise on whales. As part of Transport Canada's commitments under the Whales Initiative, the department is exploring the concept of Underwater Vessel Noise Management Plans. In 2019, Transport Canada held stakeholder engagement sessions across Canada to help advise on the development and implementation of such plans. Based on feedback from these sessions, in 2020 Transport Canada laid the groundwork for a National Working Group on Underwater Vessel Noise Reduction Targets to examine the issue of underwater vessel noise in Canadian waters.

In addition to domestic efforts, and as underwater noise is a global issue, Canada, with co-sponsorship from Australia and the United States, submitted a proposal to the International Maritime Organization to add underwater vessel noise to its work program. The proposal was scheduled to be considered in spring 2021.

Canada is also leading and contributing to international research projects focused on quiet ship technologies, and is advancing efforts to understand the impacts of underwater noise in the Arctic.

MARINE MAMMAL RESPONSE

Under the Whales Initiative, Fisheries and Oceans Canada also established a national **Marine Mammal Response Program** to conserve and protect marine mammals and sea turtles. In collaboration with conservation groups and non-governmental organizations, the Marine Mammal Response Program provides umbrella support for marine mammal incident response networks in all regions. More specifically, the program works with partners in the following ways:

- track and respond to marine mammal entanglements, strandings (dead and live), ship strikes, and other threats;
- quantify threats affecting marine mammal species, with a focus on species assessed as at risk; and,
- collect data and information to support the conservation and protection of marine mammals and sea turtles which includes: Species at Risk recovery planning mitigation measures and policy development.

OCEANS PROTECTION PLAN COLLABORATION

The **Oceans Protection Plan** aims to preserve and restore marine ecosystems that are vulnerable to increased marine shipping and development. It helps to protect marine mammals by reducing the impact of day-to-day vessel traffic, increasing the number of fishery officers, and increasing surveillance of protected areas. Under the Oceans Protection Plan, fishery officers have been trained and equipped to provide lead experts with time-sensitive and safety-conscious support during marine mammal response.

In 2019, as part of the Oceans Protection Plan, Fisheries and Oceans Canada launched a research initiative named **Understanding the Marine Environment to Better Protect Whales**. This initiative is providing \$26.6 million over five years to analyze the impact of environmental stressors such as underwater vessel noise on marine mammals, especially on the endangered North Atlantic right whale, the Southern Resident killer whale, and the St. Lawrence Estuary beluga. As of July 2019, \$5.1 million was identified for project investments. Research under this initiative will help to understand the stressors that affect Canada's marine environment and the species that live in them.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

Aligning the economic interests of Canada's marine sector with the environmental sustainability of its coasts and oceans is complex and challenging.

ENVIRONMENTAL RISKS

Increased marine shipping poses environmental risks that include increased noise pollution, abandoned and wrecked vessels, invasive species introduction and spread, oil spills, and collisions with marine mammals.

While plans to rebuild critically low fish stocks have been developed, some stocks face especially challenging environmental conditions that may impede their rate of recovery—notably, waters that are warming because of climate change.

Plastic waste in the ocean remains a major environmental issue given its negative impacts on marine life.

Further research is required to understand better the potential effect of drugs and pesticides used in aquaculture on fish-bearing waters and habitats.

THE COVID-19 PANDEMIC

In 2020, restrictions on travel, movement across provincial borders, and public gatherings proved challenging for marine mammal response experts. Training and in-person meetings were moved online. Despite these obstacles, responders were able to perform their important work safely by following proper advice and guidelines.

External and internal projects funded under the Coastal Environmental Baseline Program have been challenged by COVID-19-related restrictions that affect some fieldwork, data collection, and analytic activities. To overcome this challenge, projects have implemented innovative solutions or activities to meet milestones and have, in some cases, amended contribution agreements to allow for updated work plans and budgets.

Ongoing restrictions on travel and public gatherings due to COVID-19 have impacted progress on Oceans Protection Plan engagement. Engagement has transitioned to on-line when feasible and considered acceptable by participants. A lack of connectivity and capacity remain impediments to effective engagement. The Oceans Protection Plan National Engagement Hub is being trained in a virtual environment and will support the implementation of on-line engagement to account for continuing pandemic restrictions. In 2020, travel and social distancing restrictions from COVID-19 impacted survey efforts of North Atlantic right whales, thereby limiting detection data that was vital to implement mid-season vessel traffic management measures. In response, Transport Canada used available data on right whale detections and increased aerial surveillance over key areas of known right whale groupings to secure additional whale detections to ensure mid-season measures were viable and data-driven. In the same year, scientists at Fisheries and Oceans Canada continued their important work of surveying and monitoring North Atlantic right whales in Canadian waters. Despite challenges presented by COVID-19, Fisheries and Oceans Canada increased aerial surveillance efforts to ensure adequate coverage and to inform fisheries and vessel management measures. Real-time acoustic detection made by Viking buoy systems were also introduced in 2020 to trigger fisheries and vessel management measures.

COVID-19 introduced some challenges in educating boaters on requirements of the 2020 Southern Resident killer whale general vessel measures, as educational materials could not be handed out at marinas, dock walks, or events. As a result, the education strategy was revised to distribute materials electronically and through virtual events.

The National Aerial Surveillance Program went on a standby posture in mid-March 2020 due to COVID-19 and lost some planned flight hours as the program shifted to a reduced schedule until mid-May 2020. Subsidiary effects of the pandemic have caused crew shortages and challenges with regular maintenance. In response, Transport Canada introduced cleaning procedures and protocols to ensure that crews remain healthy and able to conduct daily operations, in addition to augmenting crews from other regions to deal with shortages. Weather challenges to flights have been met by conducting daily meteorological assessments to mitigate adverse impacts on planned missions.

CANADA IN THE WORLD

Ensuring Canada's coasts and oceans support healthy, resilient, and productive ecosystems also supports SDG 6 (Clean water and sanitation), SDG 12 (Responsible consumption and production), SDG 14 (Life below water), and SDG 17 (Partnerships for the goals).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 6.3:

By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

Target 6.6:

By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

Target 6.b:

Support and strengthen the participation of local communities in improving water and sanitation management.



Target 12.4:

By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.



Target 14.1:

By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

Target 14.2:

By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and taking action for their restoration in order to achieve healthy and productive oceans.

Target 14.4:

By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement sciencebased management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.

Target 14.5:

By 2020, conserve at least 10% of coastal and marine areas, consistent with national and international law and based on the best available scientific information.



Target 17.17:

Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

Additionally, work under this goal also supports progress toward the 2020 Biodiversity Goals and Targets for Canada and the global conservation objectives of the United Nations Convention on Biological Diversity. In particular, this work reinforces Canada's commitment to conserve lands and inland waters (Canada Target 1) and promoting sustainable fish harvests (Canada Target 9).



MINISTER OF ENVIRONMENT AND CLIMATE CHANGE

Pristine Lakes and Rivers



Clean and healthy lakes and rivers support economic prosperity and the wellbeing of Canadians

There are two medium-term targets within this goal. Reporting on short-term milestones and contextual indicators as set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Environment and Climate Change

FEDERAL ORGANIZATIONS

Environment and Climate Change Canada Fisheries and Oceans Canada Natural Resources Canada Parks Canada Agency Transport Canada Clean and healthy lakes and rivers support economic prosperity and the well-being of Canadians

About the milestones

The integrity of Canada's lakes and rivers deteriorates when their beneficial uses are impaired and when harmful levels of nutrients and industrial effluent exist. The Government of Canada is acting to prevent degradation, restore beneficial uses, and ensure transparency in its activities through regular monitoring and reporting. Together, the actions listed below help to protect Canada's lakes and rivers and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2018

 As of 2018, regulations to reduce the risk from metal mining have been expanded to include diamond mines. Environment and Climate Change Canada annually tracks compliance with regulations that reduce risks from metal and diamond mining, and pulp and paper effluents, as is detailed under the "For Context" section later in this chapter.

2020

- In April 2020, the Governments of Canada and Manitoba released the second edition of the State of Lake Winnipeg Report, which assessed the ecosystem health of Lake Winnipeg as stable compared to the previous report released in 2011. However, the broader ecosystem health has deteriorated due to the introduction of invasive species and changes in fish populations.
- In June 2020, the Governments of Canada and the United States released the Great Lakes Highlights Report, which assessed the status and trend for Great Lakes water quality as "fair and unchanging" overall.
- In December 2020, Environment and Climate Change Canada published the overview of the State of the St. Lawrence River 2019, which found overall that the status of the St. Lawrence was improved, but sits at a fragile balance.
- As of 2020, Environment and Climate Change Canada's Lake Winnipeg Basin Program has taken action to reduce phosphorus loading in targeted landscapes by funding wetland restoration, retention structures construction to intercept agricultural and urban runoff, vegetative buffer management, and beneficial management practices implementation that prevent livestock from entering lands and rivers.
- As of 2020, action has been taken across the remaining Canadian Great Lakes Areas of Concern. Nipigon Bay has had all impaired beneficial uses restored, and remedial actions are complete at Spanish Harbour and Jackfish Bay. Since 2014, progress in the 11 remaining Areas of Concern includes over 175 implemented projects, totaling \$14 million, to restore beneficial uses.
- As of 2020, in the five Areas of Concern identified for priority action, 29 beneficial uses have been restored, and progress continues toward restoring the remaining 20. All restoration actions have been implemented in Nipigon Bay and Peninsula Harbour, and work continues to restore lost habitat in Niagara River, address eutrophication in Bay of Quinte, and resolve beach closures in St Lawrence River. In the other nine Areas of Concern, 39 beneficial uses have been restored, and work continues on 47 other impairments.
- As of 2020, three binational strategies for Chemicals of Mutual Concern have been finalized. Two strategies are awaiting final approval by the United States Environmental Protection Agency. A draft Canadian Great Lakes strategy for three remaining Chemicals of Mutual Concern has been developed and will be posted for public comment once approved.

99



TARGET

Achieve and maintain a 40% reduction in annual phosphorus loading into Lake Erie from a 2008 baseline to meet the binational (Canada-US) phosphorus targets.

NOTE

To reduce annual phosphorus loading by 40%, Canada and the United States agreed to an annual target load of 6,000 tonnes entering the western and central basins of the lake. For Canada, this means a reduction of 212 tonnes of phosphorus loads per year. To fulfill requirements in the **Canada-US Great Lakes Water Quality Agreement**, Canada is working with its partners to achieve this reduction by implementing actions in the **Canada-Ontario Lake Erie Action Plan**.



RESULT

In 2018, 8,742 tonnes of phosphorus was estimated to have entered the western and central basins of Lake Erie from all sources. Of that, 1,422 tonnes (or 17%) of the phosphorus load was estimated to come from Canadian sources.



PROGRESS

Attention is required.

Minister of Environment and Climate Change



TARGET

By 2022, reduce nutrient loadings in the Lake Winnipeg Basin by an estimated 44,700 kilograms per year in support of Manitoba's plan to reduce phosphorus in Lake Winnipeg by 50% to pre-1990 levels.



UNDERWAY

RESULT

Accounting for projects completed between 2010 and 2020, projects funded by Environment and Climate Change have prevented an estimated 41,656 kilograms of phosphorus per year from reaching Lake Winnipeg and its tributaries.

PROGRESS

Progress is on track.

100



Estimated cumulative reduction in amount of phosphorus reaching Lake Winnipeg

SOURCE: Canadian Environmental Sustainability Indicators, 2020

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WHY IT'S IMPORTANT

Lakes and rivers across Canada—from the Fraser, to the Mackenzie, to the Great Lakes and the St. Lawrence, to the Saint John River, to the Churchill, and to Great Bear and Great Slave Lake—sustain a rich variety of plants and animals. These lakes and rivers also supply drinking water to millions of Canadians, provide opportunities for swimming, boating and recreational fishing, and support economic activities such as tourism, commercial fisheries, agriculture, and shipping. Groundwater provides drinking water to millions of Canadians, sustains stream and river base flow during dry periods, and supports ecological services.

Many lakes and rivers have been impacted by water pollution and contamination. For example, untreated storm water, urban and agricultural run-off, and undertreated wastewater have caused excessive nutrient levels in some lakes, streams, and rivers, leading to algal blooms and zones of low oxygen that can make water unsafe for drinking, swimming, and fishing.

Working with provinces and territories, Canada contributes to the protection of lakes and rivers by managing fisheries, protecting habitat, supporting safe navigation, monitoring ecosystems, managing federal lands, and participating in the management of boundary waters shared with the United States, such as the Great Lakes.

MEETING THE TARGETS

Almost 90% of Canada's land and inland waters fall under provincial or territorial jurisdiction. Through programs, funding, and scientific activities, the Government of Canada complements provincial and territorial initiatives to reduce water pollution and help ecosystems. Reducing phosphorus loading to Lake Erie and Lake Winnipeg, in particular, are key priorities for federal and provincial programming due to ongoing concerns about nutrient levels.

Maintaining healthy levels of phosphorus is an important part of protecting lakes and rivers. Phosphorus levels that are too high or too low can have harmful impacts on a lake's food web. When phosphorus levels in water become too high, aquatic plant growth can become excessive and harmful. The decay of excess plant material can reduce the amount of oxygen available for fish and other aquatic animals. High nutrient levels can also lead to harmful algal blooms that can kill wildlife that live in or use the water, and affect human health. Conversely, too little phosphorus can result in not enough plant or algal growth to support a lake's food web, which could reduce fish populations and harm local fisheries.

PHOSPHORUS IN LAKE ERIE

Phosphorus loadings in **Lake Erie** comes mainly from "non-point" sources such as agriculture and urban storm water runoff. In 2018, these accounted for 77% of loadings. Other sources include atmospheric deposition, "point sources" such as wastewater treatment plants and industrial effluent, and input from Lake Huron.

Phosphorus loadings are highly variable from year to year due to climatic factors such as precipitation or drought, which influence how much phosphorus enters a water body. Wetter years afford greater phosphorus loading than do drier years, which lead to low levels of run-off from surrounding lands and less phosphorus washed into the lake and tributaries that feed it. The lowest years of non-point phosphorus loading were in 2010, 2012, and 2016, which coincide with years of low precipitation in the Lake Erie Basin. Given this yearly variability, a longer time period is required to determine a statistically significant trend. Caution is required in making comparison across years and estimating trends.

Through the **Canada-US Great Lakes Water Quality Agreement**, Canada and the United States agreed to reduce phosphorus loads entering the western and central basin of Lake Erie by 40% from 2008 levels to decrease the extent of harmful and nuisance algal blooms and zones of depleted oxygen.

In 2018, 8,742 tonnes of phosphorus were estimated to have entered the western and central basins of Lake Erie from all sources. Of that, 1,422 tonnes (or 17%) of the phosphorus load was estimated to come from Canadian sources.

For the period of 2017 to 2020, projects funded by Environment and Climate Change Canada in the Lake Erie Basin are expected to reduce Canadian sources of phosphorus by an estimated 20 tonnes per year by 2022. This data indicates that more attention is required in this area of joint responsibility.

The Government of Canada is implementing the **Canada-Ontario Lake Erie Action Plan** (released in 2018) to address harmful algal blooms and zones of depleted oxygen in the Lake Erie Basin. The plan contains more than 120 actions that Canada, Ontario, and partners will take to work toward Canada-U.S. binational phosphorus reduction targets. Federal implementation of the plan is underway through the delivery of the Great Lakes Protection Initiative and other national programming.

PHOSPHORUS IN LAKE WINNIPEG BASIN

In the Lake Winnipeg Basin, projects funded by Environment and Climate Change Canada between 2010 and 2020 have reduced the amount of phosphorus reaching the lake from its watershed by an estimated 213,678 kilograms, or by an estimated 41,656 kilograms per year. This indicates that Canada is on track to meet its target of reducing nutrient loadings by 44,700 kilograms per year by 2022.

To address phosphorus in the Lake Winnipeg Basin, projects have received funding to restore wetlands, build retention ponds, stabilize riverbanks and lake shorelines, and implement management practices to prevent livestock from entering lakes and rivers. Along with the Government of Manitoba and other partners, Environment and Climate Change Canada is supporting nutrient reduction demonstration projects and research.

FOR CONTEXT

PRISTINE LAKES AND RIVERS

The Government of Canada is actively involved in monitoring the health of the country's many lakes and rivers. While Canada has approximately 0.5% of the world's population, it possesses approximately 7% of the world's renewable freshwater supply.

From 2001 to 2017, most rivers in Canada had normal **water quantity** when compared to water flows over the thirty-year normal period of 1981 to 2010. Since 2010 there has been an increase in sites with higher than normal water quantity. In 2017, at the drainage region level, higher than normal flows were observed in northern British Columbia, much of the Prairie provinces, northern Ontario, and southern Québec.

For the 2017 to 2019 period, **water quality** in Canada was rated fair to excellent at 82% of monitored sites. The highest proportion of sites with negative impacts on water quality was in areas where there was urban development or mining, combined with agriculture, forestry, or a combination of these factors. Degraded water quality damages the health of freshwater ecosystems and can disrupt fisheries, tourism, and agriculture.

As in Lake Winnipeg Basin, maintaining healthy levels of phosphorus is important in the **four Canadian Great Lakes**. As of 2019, phosphorus levels were too high in the offshore waters of Lake Erie, too low in the offshore waters of Lake Ontario, Lake Huron, and Georgian Bay, and at the right level in the offshore waters of Lake Superior. The Great Lakes **Areas of Concern** program began in 1987 to address the most environmentally degraded areas within the Great Lakes basin and to restore beneficial uses. A beneficial use impairment is a reduction in the chemical, physical, or biological integrity of waters in the Great Lakes as a result of local human activities.

As of 2020, three Areas of Concern have been removed from the list: Collingwood Harbour (1994), Severn Sound (2002), and Wheatley Harbour (2010). Nipigon Bay has had all impaired beneficial uses restored, as of 2016, and is only pending final approval to be formally removed from the list of Areas of Concern. Of the thirteen remaining Areas of Concern, remedial actions are complete in two and efforts continue to restore the remaining eleven.

In the **St. Lawrence River**, phosphorus and nitrogen levels exceeded water quality guidelines at most monitoring stations during the 2017 to 2019 period. Only one station had nitrogen level exceedances occur in less than 10% of samples. Phosphorus and nitrogen levels in the St. Lawrence River are affected by a variety of human activities along the river such as municipal wastewater and agricultural drainage. The St. Lawrence River flows into the Gulf of St. Lawrence, where the nitrogen and phosphorus levels contribute to harmful algal blooms.

METAL AND DIAMOND MINING EFFLUENT

Mining is an important sector for the Canadian economy, and in 2019 the metal ore and diamond mining industries **employed** 43,100 people, and accounted for approximately 1% (or 19,859 million dollars) of Canada's **gross domestic product**. Without adequate regulations, metal and diamond mining could have harmful impacts on the environment. For example, the effects of untreated mining effluent could be highly damaging to aquatic environments, as well as fish and fish habitat. Proper management can mitigate these impacts.

The Metal Mining Effluent Regulations, developed under the Fisheries Act in 2002, were designed to protect fish and fish habitat by governing the discharge of mining effluent into water frequented by fish. In 2018, the regulations were amended to include diamond mines, becoming the Metal and Diamond Mining Effluent Regulations. The newly amended regulations include revisions to strengthen effluent limits and improve the monitoring of environmental effects.

Between 2003 and 2019, **fish toxicity test results** fluctuated between 91.7% and 99.6% compliance with regulatory limits. During this time, the percentage of mining operations meeting regulatory standards for total suspended solids increased from 92.1% to 96.7%. Test results for all other deleterious substances and pH levels ranged from 97.7% to 100% compliance.

In 2019, the second year in which diamond mines were reported under the amended *Metal and Diamond Mining Effluent Regulations*, five diamond mining facilities and 140 metal mining facilities in Canada were subject to the regulations. Compared to 2018 results, the percentage of mining operations meeting regulatory standards for deleterious substances and the maximum level for the pH decreased or remained at the same level, whereas the compliance percentage for the minimum pH and the fish toxicity increased. For deleterious substances, compliance was 99% for five substances and above 98% for the remaining substances, except for total suspended solids, which had a compliance rate of 96.7%.

PULP AND PAPER EFFLUENT QUALITY

Canada is a world leader in producing pulp and paper products. In 2019, the pulp, paper, and paperboard mills industry **employed** more than 26,000 Canadians and accounted for 0.2% of Canada's **gross domestic product**. The *Pulp and Paper Effluent Regulations*, developed under the *Fisheries Act*, govern the discharge of harmful substances from pulp and paper mills into water frequented by fish. The regulations were designed to encourage mills to modify their processes to improve water quality and protect fish, fish habitat, and the use of fisheries resources.

Between 1985 and 2019, the quality of **pulp and paper effluent** released directly to the environment has improved. Tests for toxicity that meet regulatory standards have increased from 25% to 97.8% during this period. In 1985, tests for biochemical oxygen demand and for total suspended solids met the regulatory standards 68% and 60% of the time, respectively, which has increased to 99.9% of the time in 2019 for both tests.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

IMPROVING POLLUTION PREVENTION MEASURES

Intensive agriculture operations, mining operations, and heavily used urban lands close to watercourses pose a risk to water quality. However, initiatives from the federal, provincial, and municipal governments, such as amendments to the *Metal Mining Effluent Regulations* in 2018 to include diamond mines (becoming the *Metal and Diamond Mining Effluent Regulations*) are intended to improve pollution prevention measures.

AQUATIC INVASIVE SPECIES

While the number of new aquatic invasive species entering the Great Lakes has been significantly reduced, invasive species already in or around the Great Lakes, such as sea lamprey, zebra and quagga mussels, and purple loosestrife contribute to displacement of native species, block water flow, degrade water quality, and can disrupt the food web. Cumulatively, these effects generate environmental and economic impacts. Lake Winnipeg has experienced similar ecosystem stress from excessive amounts of nutrients from both urban and rural sources and the growing infestation of aquatic species such as zebra mussels.

INTERNATIONAL ACTION IS REQUIRED

Domestic action alone is insufficient to protect and restore Canadian lakes and rivers. Progress in achieving Canada's targets and milestones depends on activities taken in partnership with Canada's neighbours, especially the United States, and is supported by international agreements such as the Canada–US Great Lakes Water Quality Agreement.

THE COVID-19 PANDEMIC

COVID-19 has delayed or deferred elements of project implementation, engagement, and data collection related to the Great Lakes Areas of Concern program and to the Lake Winnipeg Basin program. Factors related to COVID-19 included construction shutdowns, a shortened or missed field season, postponed community engagement, and work from home guidelines. These delays have introduced discrepancies between resources and expectations; they have also influenced completion and planning times. Projects have been re-scoped to account for these delays and ensure that progress continues.

CANADA IN THE WORLD

Ensuring Canada's lakes and rivers are pristine supports SDG 6 (Clean water and sanitation), SDG 8 (Decent work and economic growth), SDG 12 (Responsible consumption and production), SDG 14 (Life below water), SDG 15 (Life on land), and SDG 17 (Partnerships for the Goals).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 6.3:

By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

Target 6.5:

By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.



Target 8.4:

Improve progressively, through 2030, global resource efficiency in consumption and production and endeavor to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead.



Target 12.4:

By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.



Target 14.1:

By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.



Target 15.1:

By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.



Target 17.17:

Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

Work under this goal also supports progress toward the 2020 Biodiversity Goals and Targets for Canada and the global conservation objectives of the United Nations Convention on Biological Diversity, in particular, to decrease pollution from excess nutrients.





MINISTER OF ENVIRONMENT AND CLIMATE CHANGE MINISTER OF NATURAL RESOURCES

Sustainably Managed Lands and Forests


Lands and forests support biodiversity and provide a variety of ecosystem services for generations to come

There are three medium-term targets within this goal. Reporting on short-term milestones and contextual indicators as set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Environment and Climate Change Minister of Natural Resources

FEDERAL ORGANIZATIONS

Atlantic Canada Opportunities Agency Canada Food Inspection Agency Finance Canada Environment and Climate Change Canada Jacques Cartier and Champlain Bridges Incorporated Natural Resources Canada Parks Canada Agency Statistics Canada Lands and forests support biodiversity and provide a variety of ecosystem services for generations to come

About the milestones

Unsustainable practices negatively affect Canada's lands and forests and, by extension, all Canadians and wildlife species that depend on ecosystems. By continuing to create national wildlife and conservation areas with its partners, and by ensuring that Canada's annual timber harvest remains sustainable, the Government of Canada is taking action to protect these crucial resources. Together, the short-term milestones listed below help to protect Canada's lands and forests, and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2019

 As of 2019, timber harvest in Canada has remained below the estimated sustainable wood supply since 1990. The most recent data shows that 140 million cubic metres of industrial roundwood was harvested in 2019, well below the sustainable wood supply of 218 million cubic metres.

2021

- In the September 2020 Speech from the Throne, the Government of Canada announced its commitment to
 preserving Canada's nature legacy by protecting 25% of Canada's lands and 25% oceans by 2025. Canada is
 also working with international partners to develop a post-2020 Global Biodiversity Framework, to be adopted
 at the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity. This builds on
 earlier commitments by the Government of Canada as outlined in this chapter.
- As of 2021, plans to create new national wildlife and conservation areas are in progress. The Government of Canada is in the process of establishing eight new National Wildlife Areas (NWAs) in 2021: one in Atlantic Canada (Big Glace Bay Lake), three island sites in the Saint Lawrence Seaway near Montreal, and four sites in Saskatchewan. Following this, NWAs for the islands of Isle Haute, Saint Paul Island, and Country Island will follow in 2022. The Government of Canada and the Dehcho First Nations have also announced the creation of an Indigenous Protected and Conserved Area through the Edéhzhíe Establishment Agreement, with NWA designation planned for 2021. The Community Pastures Conservation area in Saskatchewan is also being developed through collaboration between the Governments of Canada and Saskatchewan and the ranching community.

Ongoing

• The 1997 National Parks System Plan remains in effect. Parks Canada Agency will continue to use the system plan as one means to identify future national parks that can contribute to the Government of Canada's commitment to conserve 25% of Canada's land and freshwaters as well as 25% of Canada's oceans by 2025, as outlined by the September 2020 Speech from the Throne.

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TARGET

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.

12.5% A

RESULT

As of December 2020, 12.5% of terrestrial areas and inland waters were recognized as conserved, including 11.7% in protected areas and 0.8% in other effective area-based conservation measures.



PROGRESS

This target was not met. Attention is required to ensure continued progress toward conserving terrestrial areas and inland water beyond 2020.

Minister of Environment and Climate Change



TARGET

By March 31, 2023, ecological integrity will be maintained or improved in 92% of national park ecosystems.



UNDERWAY

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RESULT

As of 2019, ecological integrity was maintained or improved in 86% of national park ecosystems.

PROGRESS

Progress is on track.



TARGET

Between 2019 and 2022, maintain Canada's annual timber harvest at or below sustainable wood supply levels.

NOTE

The National Forestry Database set the **sustainable wood supply** at 218 million cubic metres for 2019.



RESULT

Wood supply has remained below sustainable levels between 1990 and 2019. In 2019, 140 million cubic metres of industrial roundwood was harvested, well below the sustainable wood supply of 218 million cubic metres.



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PROGRESS

Progress is on track.

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Proportion of area conserved, Canada, 1990 to 2020

SOURCE: Canadian Environmental Sustainability Indicators, 2021



Ecological integrity status and trends of ecosystems in 43 national parks, Canada, 2019

SOURCE: Canadian Environmental Sustainability Indicators, 2020

Maximum sustainable wood supply and annual harvest of industrial roundwood, Canada, 1990 to 2019



SOURCE: Canadian Environmental Sustainability Indicators, 2021

WHY IT'S IMPORTANT

Canada's natural spaces, including forests, wetlands, grasslands, peatlands, and tundra, as well as agricultural lands provide habitat that wildlife populations need to thrive. They also provide ecosystem services that are essential for well-being, such as filtering the air and water, and storing carbon dioxide, an important GHG. Forests are fundamental to the cultural and spiritual values of Indigenous peoples, while many Canadians have a profound attachment to wilderness.

Lands and forests also contribute to Canada's economy. In 2018, **the forest sector** contributed about \$25.8 billion to Canada's economy and directly supported about 210,600 jobs across the country, including an estimated 11,600 Indigenous jobs as of 2016, according to data from 2020. More than lumber, pulp, and paper, Canada's commitment to clean technology and a low-carbon economy is generating attention for its advanced bioproducts and non-traditional forest products.

While Canada enjoys large tracts of forest land and other wilderness areas, Canadians cannot take them for granted. Over-harvesting, climate change, and extreme weather events can affect Canada's forests and those communities that depend on them. Protecting and sustainably using lands and forests is necessary to ensure they provide benefits for the long term. Canada's world-class national park system includes forty-seven national parks that protect over 342,456 square kilometres of land to pass on unimpaired to future generations. Protecting forested areas also helps to protect and sustain lands of cultural importance to Indigenous peoples and maintain traditional uses of the land and resources.

MEETING THE TARGETS

TERRESTRIAL CONSERVED AREAS

Well-managed conserved areas protect wild species and their habitats for current and future generations. Habitat conservation is a measure of human response to the loss of biodiversity and natural habitat. Where protected areas are created in areas of high development stress, they withdraw the land from expected future impacts and contribute to biodiversity conservation, while improving the health of ecosystems. In turn, healthy ecosystems provide benefits such as clean water, mitigation of climate change, pollination, and improved human health.

In Canada, a network of protected areas is a collection of protected areas and other effective area-based conservation measures that operate cooperatively to safeguard important ecological components of biodiversity as a whole. Canada's network of protected areas include national parks, conservation areas, and areas that are managed to conserve biodiversity.

As of December 2020, 12.5% of terrestrial areas and inland water were recognized as conserved through a network of protected areas and other effective areabased conservation measures: 11.7% in protected areas, and 0.8% in other effective area-based conservation measures. Terrestrial area conserved has increased by 68% in the last twenty years, and by 11% in the last five years. Conserved areas include protected areas, as well as areas conserved with other effective area-based conservation measures (that is, areas that do not meet the formal definition of protected area but are managed in a way that conserves biodiversity over the long term). While progress is positive, more attention is required to this area. The Government of Canada did not meet its target of conserving at least 17% of terrestrial areas and inland water by 2020. Attention should ensure that Canada is on track to reach its newer target to conserve 25% of terrestrial areas and inland water by 2025.

In 2019, additional conserved areas in Canada included the following:

- Thaidene Nene National Park Reserve, Thaidene Nëné Wildlife Conservation Area, and Thaidene Nëné Territorial Protected Area. These areas, designated as an Indigenous Protected and Conserved Area by the Łutsël K'é Dene First Nation, added 26,000 square kilometres of protected area in the Northwest Territories;
- Kitaskino Nuwenëné Wildland Provincial Park added 1,600 square kilometres of protected area in Alberta;
- Tanzin Lake Ecological Reserve added 1,110 square kilometres of protected area in Saskatchewan;
- 38,000 square kilometres of area conserved with other effective area-based conservation measures was recognized in British Columbia; and,
- Canadian Forces Base Shilo added 231 square kilometres of area conserved with other effective area-based conservation measures in Manitoba.

In 2020, additions included the following:

- almost sixty new protected areas and other effective area-based conservation measures in Québec, with 32,383 square kilometres reported so far;
- St. Marys River Provincial Park added parcels totaling thirty-two square kilometres in Nova Scotia; and,
- five other effective area-based conservation measures in Prince Edward Island that total 1.8 square kilometres.

The proportion of terrestrial area (land and freshwater) conserved varies by province and territory, and ranges from 4.2% in Prince Edward Island to 19.5% in British Columbia. Each province has set aside areas for conservation, and progress toward conservation targets varies by jurisdiction.

An increasing number of Indigenous protected areas and areas conserved with other measures are being established. Recent examples include the

- Central Purcell Mountains Indigenous Protected
 and Conserved Area in British Columbia;
- Tłicho Lands Indigenous Conserved Area and Edéhzhíe Indigenous Protected Area in the Northwest Territories; and,
- Kitaskino Nuwenëné Wildland Provincial Park in Alberta.

These areas are either managed cooperatively with jurisdictions and Indigenous peoples or they are led and managed by Indigenous peoples.

As of 2021, plans to create new national wildlife and conservation areas, and to support Indigenous Guardians initiatives, have significantly progressed. The Government of Canada is in the process of establishing eight new NWAs: one in Atlantic Canada (Isle Haute), three island sites in the Saint Lawrence Seaway, and four sites in Saskatchewan. For example, the **Community Pastures Conservation Area** in Saskatchewan is being developed through collaboration between the Governments of Canada and Saskatchewan and the ranching community. This area consists of 80,093 hectares that are among the most ecologically significant grassland in Canada, with cultural and spiritual connections for First Nations and Métis peoples. It is also a nationally significant bird area that provides habitat for several bird species at risk.

NATIONAL PARK ECOSYSTEM INTEGRITY

Park ecosystems have integrity when their native components, such as native species and biological communities, natural landscapes, and functions, are intact and likely to persist. National park ecosystems are managed to improve or maintain ecological integrity. Representative components of major park ecosystems, such as forests, freshwater, and wetlands, are monitored to determine their condition and trend. A park ecosystem may have a good, fair, or poor condition. Its trend may be improving, stable, or declining. Trends are based on changes in the ecosystem condition over a five-year period.

As of 2019, the **ecological integrity** of 86% of park ecosystems was maintained or improved, which is an increase of 4% since 2018. This result represents progress that is on-track to meet Canada's target to maintain or improve ecological integrity in 92% of national park ecosystems by March 31, 2023.

Of the 119 ecosystems in 43 national parks that were assessed, 61% are in good condition, 24% are in fair condition, and 16% are in poor condition. Most park ecosystems are stable (75 of 119 or 63%), 27 are improving, and 17 are declining.

SUSTAINABLE TIMBER HARVEST

Almost 38% of Canada's land area is forest. The timber harvest is an important part of the Canadian economy. Canada is committed to **sustainable forest management** that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social, and cultural opportunities for current and future generations.

To ensure that forests can continue to provide timber, harvests must remain within sustainable limits and below the maximum sustainable harvest, known as the "wood supply," which is set at 218 million cubic meters for 2019. Data for timber harvests comes from the **National Forestry Database** maintained by the Canadian Forest Service. Data contained in the database are provided by provincial and territorial resource management organizations and the Government of Canada.

Between 1990 and 2019, **timber harvest in Canada** ranged from 48% to 84% of the estimated wood supply. Canada's wood supply has remained relatively stable between 1990 and 2019, decreasing slightly during this time. This pattern is the result of economic factors and reduced global demand for Canadian pulp and paper products. In 2019, 140 million cubic metres of industrial roundwood was harvested, well below the sustainable wood supply of 218 million cubic metres. Canada is well on track toward its target of maintaining the annual timber harvest at or below sustainable levels between 2019 and 2022.

FOR CONTEXT

DEFORESTATION AND REGENERATION

Canada's low annual **deforestation** rate has declined over the last twenty-seven years, dropping from 64,000 hectares per year in 1990 to 34,300 hectares per year in 2018. During that time, less than 0.5% of Canada's total forest area was converted to other land uses, and the conversion of forests to agriculture and hydroelectric development has recently declined. Canada's mining, oil, and gas sector has increased deforestation activities since 1990, but the conversion of forest to agricultural land will likely remain the largest cause of deforestation in Canada in the future. These conversions are small relative to the overall size of Canada's forests, but may be highly significant to ecological sustainability.

Regenerating Canada's forests ensures that harvested areas regrow as forests and continue to produce timber and provide ecosystem services, such as carbon storage, water quality regulation, and habitat provision. Successful regeneration is required following forest harvesting on Crown forest lands.

Tree planting helps to control species composition and can regenerate forests that are better adapted to future climate conditions. In 2018, at least 427 million seedlings were planted on 350,000 hectares of provincial forest lands in Canada, and seeding was used to re-establish forests on an additional 6,000 hectares.

The total areas artificially regenerated (planting of tree seedlings or seeds) decreased by 8% in 2018 from the previous year, and the number of seedlings planted declined by 5%. Declines are likely related to the gradual decline in area harvested starting in 2015. In the past twenty years, artificial regeneration has been applied to almost 55% of the area harvest.

LAND USE CHANGE

Environment and Climate Change Canada's Canadian Environmental Sustainability Indicators program in collaboration with Agriculture and Agri-Food Canada's Science and Technology Branch have developed an indicator to measure the amount of land-use change. It reports the proportion of agricultural land that has been converted to settlement and the amount of forest converted to cropland and settlement in Canada south of 60°N (the southern territorial border of Yukon, Northwest Territories and Nunavut) from 2010 to 2015.

Looking at land-use changes between cropland, forest, and settlement south of 60°N from 2010 to 2015, 3,473 square kilometres of land-use change was observed, representing well under 1% of the overall area. Of the land-use change observed, a large proportion (65% or 2,258 square kilometres) was conversion of forest to cropland. About 1,215 square kilometres (or 35%) of cropland and forest were converted to settlement.

WETLANDS

Wetlands—including marshes, fens, bogs, swamps, and ponds—are among Earth's most productive ecosystems. They provide numerous ecosystem services such as purifying waters, removing pollutants, buffering floods or droughts, and carbon storage. They also support many species (including species at risk) and significant numbers of migratory birds, fish, and amphibians. A wide diversity of plants, and many other species make their home in wetlands. Given their biodiversity, wetlands provide places to watch wildlife and reconnect with the natural environment.

As of 2016, Canada had about 1.29 million square kilometers of wetlands, accounting for 13% of its terrestrial area—or close to one quarter of the world's remaining wetlands. Where wetlands have been monitored, they generally show declines in extent to due to conversion to agriculture and other development, and are being threatened by air pollution and climate change. Environment and Climate Change Canada's Canadian Environmental Sustainability Indicators program plans to update this indicator in 2022.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

COORDINATED ACTION FOR LAND CONSERVATION

Canada's target to conserve at least 17% of terrestrial area is an important part of its contribution to achieving the global Aichi biodiversity targets as part of the United Nations Convention on Biological Diversity. This national target was developed collaboratively by federal, provincial, and territorial governments, as well as Indigenous organizations and governments. Many of the new areas needed to reach the 17% target are on provincial, territorial, and Indigenous lands. Decisions related to this target are complex to plan, negotiate, and coordinate, and the processes for establishing protected and conserved areas are time-consuming and depend on a variety of factors, including partner and stakeholder support.

Protected and conserved areas are also vulnerable to stresses such as urban and rural development, pollution, invasive alien species, and climate change. Such pressures can result in the loss or impairment of ecosystems and greater stress on species at risk, while degrading ecological and cultural values of heritage places, including a sense of connection to place.

THE COVID-19 PANDEMIC

Although COVID-19 has reminded Canadians about the importance of protected areas and green spaces in general, it has introduced difficulties in meeting work plan timelines for funded **Target 1 Challenge** projects and Indigenous Guardians initiatives that help Canada to meet its terrestrial conservation targets. As a result, not all activities in 2019 to 2020 occurred. However, meeting project timelines remains an important priority moving forward. To adjust for COVID-19 restrictions, work plan activities have either been modified or postponed. For example, consultations have moved online and allocated funds for Indigenous recipients that could not be spent were deferred to 2020-2021 or were re-allocated in adapted project plans.

CLIMATE CHANGE AND THE FORESTRY SECTOR

Climate change is posing challenges to the forestry industry with increased risk from fires, pests, droughts, changing growth rates, and distributions of tree species. Researchers from Natural Resources Canada's Canadian Forest Service are investigating the possibility that Canada's forests could be altered in new and significant ways by climate change and increased natural disturbances, particularly if there are no effective adaptation measures in place.



CANADA IN THE WORLD

Ensuring that lands and forests support biodiversity and provide a variety of ecosystem services for generations to come also supports SDG 8 (Decent work and economic growth), SDG 11 (Sustainable cities and communities), and SDG 15 (Life on land).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 8.9:

By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.



Target 11.4:

Strengthen efforts to protect and safeguard the world's cultural and natural heritage.

Target 11.7:

By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.



Target 15.1:

By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forest, wetlands, mountains, and drylands, in line with obligations under international agreements.

Target **15.2**:

By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

Work under this goal also supports progress toward the 2020 Biodiversity Goals and Targets for Canada and the global conservation objectives of the United Nations Convention on Biological Diversity.

In particular, this work reinforces Canada's commitment to preserve lands and inland waters (Canada Target 1) and the sustainable management of forests (Canada Target 6).





MINISTER OF ENVIRONMENT AND CLIMATE CHANGE

Healthy Wildlife Populations



All species have healthy and viable populations

There are two medium-term targets within this goal. Reporting on short-term milestones and contextual indicators set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Environment and Climate Change

FEDERAL ORGANIZATIONS

Canada Border Services Agency Canada Food Inspection Agency Environment and Climate Change Canada Fisheries and Oceans Canada Jacques Cartier and Champlain Bridges Incorporated National Defense Parks Canada Agency

All species have healthy and viable populations

About the milestones

Climate change, pollution, and other forms of environmental degradation threaten Canada's rich legacy of biodiversity. To combat these threats and protect Canada's wildlife populations, the Government of Canada is working with partners to advance conservation activities and develop conservation action plans, identify marine priority threats and priority freshwater areas, and address invasive alien species. Notably, some wildlife species require coordination and collaborative action across international boundaries. Together, the short-term milestones listed below help to protect Canada's plants, animals, and ecosystems, and they represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2020

- In February 2020, following engagement with stakeholders in the agriculture and forest sectors through the Pan-Canadian Approach to Transforming Species at Risk Conservation in Canada, federal-provincial-territorial Deputy Ministers responsible for conservation, wildlife, and biodiversity agreed to develop conservation action plans by Fall 2021. These plans seek to align conservation and sector policy and practice with positive outcomes for wildlife populations. They particularly focus on species at risk and benefit sector sustainability.
- As of 2020, the Pan-Canadian Approach to Transforming Species at Risk Conservation in Canada continues to be implemented through cooperative action on priority places, species, sectors, and threats. Stewardship-based conservation planning and actions have been implemented for all six priority species, including twelve conservation agreements either finalized or in negotiation for three species (Boreal and Southern Mountain Caribou and Wood Bison) with provinces, territories, and Indigenous peoples. Across eleven priority places, partners and stakeholders were engaged, governance frameworks were established, multi-species and ecosystem-based conservation action planning was advanced, and early actions were implemented. For priority sectors, conservation action planning is underway (with the agricultural sector) or has been initiated (with the forest sector).
- As of 2020, pathways for the introduction of invasive alien species in Canada are generally identified, and risk-based intervention or management plans have been developed to target these invasive alien species. For example, ballast water is considered a priority pathway for aquatic invasive species. As a result, the Government of Canada has strengthened the ballast water regulatory regime and is developing amendments to these regulations to help implement the International Convention for the Control and Management of Ships' Ballast Water and Sediments, which came into force in 2017. The aquarium, water garden, and live food trade is another pathway of introduction for aquatic invasive species. In collaboration with provinces and territories, the Government of Canada has developed standardized "Don't Let it Loose" public messaging and logos to increase awareness of the introduction and spread of aquatic invasive species through the release of pets and plants (from aquariums, ponds, and water gardens), live food and fish bait, and the illegal introduction of sport and recreational fish through manual stocking.
- As of 2020, the Canada Nature Fund for Aquatic Species at Risk has continued to fund 57 projects over five years. These projects target over 75 populations of aquatic species at risk in seven priority freshwater places across Canada, and also more than 50 populations of aquatic species at risk affected by two marine threats—fishing interactions (entanglements and bycatch of aquatic species at risk), and physical and acoustic disturbance (such as vessel collisions and marine noise).

2020 - continued

• As of **2020**, work is underway on a shared, national five-year strategic and operation plan to support and implement the goals identified in A Pan-Canadian Approach to Wildlife Health. An Implementation Options Report for the Pan-Canadian Approach to Wildlife Health has been developed with federal, provincial and territorial representatives from departments of environment, agriculture, and public health, academics, NGOs, Indigenous organizations, and other groups. Deputy Ministers responsible for conservation, wildlife, and biodiversity received and acknowledged this report; it was recognized as fulfilling the direction given by Ministers in June 2019. Subsequently, Deputy Ministers requested that work be done to determine recommendations for governance and funding models. As of June 2020, a contractor has provided a report with recommendations for governance and funding for the Pan-Canadian Approach to Wildlife Health.

Ongoing

- In work that is continuing through this period, the Government of Canada's national regulatory framework and national policy coordination support the prevention, detection, and management of invasive alien species. For example, the *Aquatic Invasive Species Regulations* provide a suite of regulatory tools under the *Fisheries Act* to prevent the introduction of aquatic invasive species and control and manage their establishment and spread, once introduced. In part, the *Aquatic Invasive Species Regulations* are implemented nationally in collaboration with the Interdepartmental Working Group on International Borders, which was established in 2020 to address the import and other human-mediated movement of aquatic invasive species through international border ports of entry.
- Environment and Climate Change Canada is committed to conserving wildlife populations and is part of a collective effort focused on bringing birds back ("Three Billion Birds"). A recent report in Science on "Decline of the North American avifauna" estimated that North America has lost one in four birds (2.9 billion birds) since 1970. As part of its effort, Environment and Climate Change Canada is monitoring national population change for all bird species. Indicators based on data from 2013 and 2016 both estimate that only 57% of Canadian bird populations were within acceptable limits. The department is working to reverse declines and increase the percentage of species with acceptable population levels by adopting innovative approaches that investigate the causes of bird population change and that help identify and evaluate appropriate conservation actions. Implementing conservation measures for migratory birds relies on cooperation at all levels of government, as well as domestic and international collaborations with Indigenous peoples, non-governmental organizations, academia, industry, and other stakeholders. Even as conservation measures are implemented, it will take time to see meaningful change in bird populations. An updated indicator that incorporates new data through 2019 should be available in early 2022.

Minister of Environment and Climate Change



TARGET

By 2020, species that are secure remain secure and populations of species at risk under federal law exhibit trends that are consistent with recovery strategies and management plans.

NOTE

Two separate indicators are used to track progress against this target. The 2018 Progress Report on the 2016 to 2019 FSDS reported that 80% of Canada's wild species were ranked as secure or apparently secure as of 2015. It also reported that, of 113 species at risk that have population goals in recovery strategies or management plans and for which trends are available, 43% showed progress consistent with objectives. At that time, progress was assessed as "attention required".



RESULT

As of 2015, 80% of species fall within the categories of secure or apparently secure while 20% fall within the categories of vulnerable, imperiled, or critically imperiled. Less than 1% are presumed extirpated or possibly extirpated (no longer found in Canada).

As of November 2019, of the 130 species at risk that have population goals in recovery strategies or management plans and for which trends are available, 42% show positive movement toward objectives, 47% do not show progress, and 11% show mixed evidence.



PROGRESS

Attention is required.

Minister of Environment and Climate Change



TARGET

By 2025, increase the percentage of migratory bird species whose populations sizes fall within an acceptable range—neither too low nor too high—from a baseline of 57% in 2013.



RESULT

In 2016, 57% of Canada's migratory bird species had population sizes within an acceptable range according to data published in 2019.



57%

PROGRESS

Attention is required.

National conservation status of native wild species, Canada, 2015



SOURCE: Canadian Environmental Sustainability Indicators, 2018

80% of species fall within the categories of secure or apparently secure while 20% fall within the categories of vulnerable, imperiled, or critically imperiled. Less than 1% are presumed extirpated or possibly extirpated (no longer found in Canada).

Are population and distribution trends of species at risk consistent with objectives? Canada, November 2019



SOURCE: Canadian Environmental Sustainability Indicators, 2020



Status of bird species listed in the *Migratory Birds Convention Act* in relation to population goals, Canada, 2016

SOURCE: Canadian Environmental Sustainability Indicators, 2019

WHY IT'S IMPORTANT

Maintaining biodiversity—the variety of genes, species and ecosystems, including the ecological processes that allow them to evolve and adapt—helps to ensure that ecosystems function in ways that support both the plants and animals that comprise the ecosystems. Biodiversity also helps ecosystems provide the essential services Canadians depend on, including the provision of food and medicines, flood control and water purification, pollination, and pest control.

Healthy wildlife populations and habitat are important parts of biodiversity. Some species in Canada have experienced population declines and some are now at risk of becoming extinct. Species can become threatened because of habitat loss or deterioration from human activities—for example, agriculture, urban development, invasive alien species, pollution, and climate change. Climate change can also affect wildlife health and contribute to the spread of disease.

MEETING THE TARGETS

WILDLIFE CONSERVATION

Canada is home to about 80,000 species of wildlife, including animals, plants, and fungi. Every five years the Wild Species report assesses the status of Canada's species. The most recent **Wild Species 2015** report was published in 2017. The next publication of the Wild Species report, and the associated **Status of Wild Species** indicator, will be in 2022. Therefore, at this time the Wild Species 2015 data remains the most current. Trends in coverage indicate Canada is making significant progress in understanding the status of its biodiversity. While Canada is making progress toward its target for species at risk recovery, the data do not show strong enough evidence to indicate that it will meet the target. This area requires attention.

The **Wild Species 2015** report assessed the status in Canada of nearly 30,000 species, a substantial increase from 12,000 in the 2010 report. Based on the 2015 assessment, 80% of species fall within the categories of secure or apparently secure while 20% fall within the categories of vulnerable, imperiled, or critically imperiled. Less than 1% are presumed extirpated or possibly extirpated (no longer found in Canada). Most of the 8,145 species examined for changes in national extinction risk level between 2010 and 2015 did not change. Of those that did change, nine had genuine improvements in status, while the status of 21 others deteriorated due to changes in population size, distribution, or threats to the species. Monitoring wildlife species is important to determine their status, including if they are at risk. The Committee on the Status of Endangered Wildlife in Canada assesses wildlife species that may be at risk and places them in a risk category. If conservation actions are effective, the risk level will generally decrease over time. Nonetheless, depending on the life cycle of the species and the condition of its habitat, recovery may take many decades. In addition, some wildlife species are naturally rare in Canada, and these species will remain at some level of risk.

The Species at Risk Act provides for the recovery of extirpated, endangered, or threatened wildlife species. For species of special concern, management is required to prevent them from becoming endangered or threatened. If a species is assessed as "at risk", a key step is to develop a recovery strategy or management plan that may include population and distribution objectives. Species recovery or management is affected by the species' life span, reproductive cycle, and habitat state. Threats such as habitat loss and pollution also affect management or recovery. Rare species can be particularly difficult to manage if the species is hard to find and identify.

As of November 2019, final recovery strategies have been published for 332 extirpated, endangered, or threatened species, and management plans have been published for 110 species of special concern. Of these 442 species, 189 have been reassessed since their recovery strategy or management plan was finalized. There was not enough information to determine population and distribution trends for 59 species.

Of the 130 species for which **trends** could be determined as of November 2019, 55 (42%) show progress toward their population and distribution objectives. Another 61 species (47%) do not show progress, and 14 species (11%) show mixed evidence with some evidence of decline alongside improving trends.

In 2019, the Chestnut-collared longspur bird species did not show a trend consistent with its population and distribution objectives. The most recent Committee on the Status of Endangered Wildlife in Canada assessment for the Striped Bass fish (St. Lawrence River population) assessed the original St. Lawrence River population as extinct. Striped Bass from the Miramichi River were stocked in the St. Lawrence River and established a self-reproducing population. As these established fish originated from a different population the original St. Lawrence River population is considered to no longer exist.

Of the 492 **wildlife species at risk** that have been reassessed, and where sufficient data are available to determine if there is a change of status, 88 species

(18%) are now in a higher risk category, 89 species (18%) are now in a lower risk category, and the remaining
315 (64%) show no change in status. In November 2019,
9 wildlife species were reassessed, of which 2 were previously assessed as endangered (a wildlife species facing imminent extirpation or extinction):

- the Western Harvest Mouse (*dychei* subspecies) remained endangered; and,
- the Striped Bass (original St. Lawrence River population) was designated extinct.

In addition, three species—the Western Harvest Mouse (*megalotis* subspecies), Coastrange Sculpin, and Chestnut-collared Longspur—were newly assessed as endangered. The other four species that were reassessed showed no change in their status.

Changes in risk level can be a result of improved information rather than actual changes in the condition of the wildlife species. This is more likely to be the case for wildlife species that have improved in status than for wildlife species that have declined in status. Most wildlife species remain in the same category when they are reassessed.

MIGRATORY BIRD SPECIES

Birds are an integral part of nature and are culturally and economically important. They provide important ecological services such as controlling insect and rodent populations, dispersing seeds, and pollinating plants. Birdwatching is a popular activity and many Canadians feed birds in their backyards. Meanwhile, waterfowl hunting contributes to tourism, provides food, and maintains cultural traditions.

Beyond these services, birds are useful as indicators of overall ecosystem health because they are sensitive to environmental changes. Most species of birds in Canada are protected under the *Migratory Birds Convention Act* and the Government of Canada actively monitors migratory bird populations. When species' populations do not fall within acceptable bounds, conservation actions can be taken to improve trends over time.

The **State of Canada's Birds 2019** report draws on almost fifty years of data to describe the changing health of Canada's bird populations. The North American Bird Conservation Initiative produced this collaborative report, under the leadership of Environment and Climate Change Canada, Birds Canada, Ducks Unlimited Canada, and Nature Canada. Populations of shorebirds, grassland birds, and aerial insectivores have rapidly declined, while waterfowl and birds of prey populations have recovered from historical lows. These results represent a call for conservation action and a testament to the achievement of collective work.

Bird populations fluctuate naturally in response to ecological conditions, but negative changes in bird populations result from many different factors. These include habitat loss, pollution, agricultural impacts, climate change, invasive species, and hunting. There are also sources of direct mortality, such as collisions with windows and cat predation. At the end of the nineteenth century, many species in North America were hunted almost to extinction. Since that time, efforts to conserve Canada's birds have included commercial harvesting bans, regulations that promote sustainable recreational hunting, and habitat conservation in Canada and along birds' migratory routes, wintering ranges, and throughout the entire annual cycle.

Environment and Climate Change Canada's 2019 indicator release on **migratory birds protected under the** *Migratory Bird Convention Act* shows that, in 2016, of the 358 bird species with adequate monitoring data, 57% had population sizes within an acceptable range. Waterfowl and forest birds had the highest proportion of populations within acceptable bounds, but only 12% of grassland and aerial insectivore birds had populations within acceptable bounds. These results do not show strong enough evidence to indicate that the target for improving this result is being met. Therefore, this target requires more attention.

Populations of waterfowl have benefited from efforts to conserve, enhance, and restore wetlands. Many geese species, a type of waterfowl, have also taken advantage of the increased availability of waste grain in harvested farm fields. Populations of some Arctic geese species have increased to the point that they are now above acceptable bounds. Overpopulation occurs when a species is so abundant that it has negative impacts on other species or habitats, or when it conflicts with human uses (by causing excessive crop damage, for example). Therefore, population bounds may have minimum and maximum levels, with the latter not defined unless it proves relevant.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

WILDLIFE CONSERVATION

Wildlife populations can take a long time to recover as the rate of recovery relates to their life spans, reproductive cycles, responses to human pressures, and the management of their ecosystem.

Species can become threatened as a result of habitat loss or deterioration caused by agriculture, urban and rural development, pollution, and climate change.

Several species groups are showing large population declines, including grassland birds, shorebirds, and aerial insectivores. This finding was described by **The State of Canada's Birds 2012** report, and **The State of Canada's Birds 2019** has reinforced it.

The **State of North America's Birds 2016** report highlighted similar concerns and notes that many oceanic birds in North America have major conservation concerns. Some of the largest declines were among species that migrate long distances. For example, grassland species that migrate from the Great Plains to Mexico's Chihuahuan grasslands have on average lost almost 70% of their continental populations since 1970.

Many wildlife species in Canada have not yet been assessed to determine their risk status, and as a result, there is not a complete picture of the health of wildlife populations.

INVASIVE ALIEN SPECIES

According to the **International Union for Conservation of Nature**, invasive alien species are the second most significant threat to biodiversity after habitat loss and degradation. These species reach Canada by air, land, or water pathways—whether through intentional or unintentional human action—leading to serious ecological and socio-economic consequences.

MIGRATORY BIRD SPECIES

Like other wildlife populations, migratory bird species can take a long time to recover as the rate of recovery relates to their life spans, reproductive cycles, responses to human pressures, and the management of their ecosystem.

Many migratory bird species face threats outside Canada that can only be addressed through engaging internationally in conservation actions. These actions are important insofar as birds depend on favourable habitat conditions along their entire migratory route. Birds with longer migratory pathways tend to show greater declines. For instance, shorebirds depend on coastal areas and inland wetlands for breeding, migration, and wintering, and these areas are lost to coastal development and human disturbance.

Canada is leading global discussions to address the international dimensions of migratory bird conservation. For example, Canada co-leads work on the **Arctic Migratory Birds Initiative** through the Conservation of Arctic Flora and Fauna working group of the Arctic Council. This initiative is designed to improve the status and secure the long-term sustainability of declining Arctic breeding migratory bird populations across four flyways that span the circumpolar Arctic, the Americas, Africa-Eurasia, and East Asia-Australasia.

THE COVID-19 PANDEMIC

COVID-19 has introduced difficulties in engaging and collaborating with partners and stakeholders to implement the Nature Legacy for Canada Initiative announced in Budget 2018. This initiative is a roadmap to protect Canada's biodiversity through protection of lands and waters and conservation of species at risk; it includes the Pan-Canadian Approach to Transforming Species at Risk Conservation in Canada. As a result, not all planned activities in 2019 to 2020 occurred. However, meeting work plan timelines remains an important priority and adaptations have already occurred to adjust for COVID-19 restrictions.

CANADA IN THE WORLD

Working to ensure that all species have healthy and viable populations also supports SDG 11 (Sustainable cities and communities), SDG 14 (Life below water), and SDG 15 (Life on land).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 11.4:

Strengthen efforts to protect and safeguard the world's cultural and natural heritage.



Target 14.4:

By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.



Target 15.5:

Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and preserve the extinction of threatened species.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

Work under this goal also supports progress toward the 2020 Biodiversity Goals and Targets for Canada and the global conservation objectives of the United Nations Convention on Biological Diversity, in particular, by focusing on the status of species (Canada Target 2).





MINISTER OF INDIGENOUS SERVICES

Clean Drinking Water



All Canadians have access to safe drinking water and, in particular, the significant challenges Indigenous communities face are addressed

There is one medium-term target within this goal. Reporting on short-term milestones and contextual indicators set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Indigenous Services

FEDERAL ORGANIZATIONS

Health Canada Indigenous Services Canada Public Health Agency of Canada Statistics Canada All Canadians have access to safe drinking water and, in particular, the significant challenges Indigenous communities face are addressed

About the milestones

Access to clean drinking water remains a challenge in parts of Canada, particularly in some Indigenous and remote communities. Up-to-date drinking water quality guidelines are an important element of the Government of Canada's approach to this issue. The short-term milestones listed below helps to ensure that Canadians have high quality information about drinking water quality and represents progress toward the steps outlined in the 2019 to 2022 FSDS.

2020

 On November 30, 2020, the Government of Canada announced over \$1.5 billion in additional investments to help meet the Government's commitment to clean drinking water in First Nations communities. These additional investments increase support for operations and maintenance of water and wastewater infrastructure on reserves, as well as funding for water and wastewater infrastructure construction, repairs, and other initiatives. They also include funding to continue work to lift all long-term drinking water advisories on public systems on reserves as soon as possible.

2021

- Between April 2019 and March 2021, 94% (17 of 18) of planned final water quality guidelines/guidance documents were published in the Canada Gazette. The remaining document will be published once additional data has been collected from provinces and territories.
- Additional investments of \$1.04 billion over two years, starting in 2022-23, were made in Budget 2021 to support
 water and wastewater projects, including to support the planning, procurement, construction, and commissioning
 of water and wastewater capital projects for both new builds, as well as system repairs and upgrades.

Minister of Indigenous Services



TARGET

By March 31, 2021, all of the long-term drinking water advisories on public systems on reserve are to be resolved.

NOTE

The baseline is set at 105 long-term drinking water advisories. However, additional advisories may be added and/or lifted in any given month. Thus the number remaining plus those that have been lifted to date will not result in the baseline.



RESULT

As of September 28, 2021, 117 long-term drinking water advisories on public systems on reserves have been lifted by First Nations, with support from Indigenous Services Canada, since November 2015, and 45 long-term drinking water advisories are in effect.



PROGRESS

Attention is required. The COVID-19 pandemic has impacted water and wastewater projects, resulting in delays to expected lift dates. Other challenges common to infrastructure projects have also impacted project timelines. An Action Plan is in place and initiatives are underway to address all remaining long-term drinking water advisories on public systems on reserve. The Government of Canada's 2020 Fall Economic Statement announced over \$1.5 billion in additional investments, including \$309.8 million to enable work to lift all long-term drinking water advisories on public systems on reserves to continue, which will help to respond to project delays including those resulting from the COVID-19 pandemic.

WHY IT'S IMPORTANT

Water is a fundamental need for drinking, cooking, generating energy, and cleaning. Along with sound management of freshwater ecosystems, access to safe water and sanitation is essential to human and ecosystem health, environmental sustainability, and economic prosperity.

While Canada's drinking water is among the safest in the world, access to clean drinking water does remain a challenge in some First Nation communities on reserve, as well as in small and remote communities. The Government of Canada is working with First Nations communities to address drinking water needs and remove such barriers to health and safety.

MEETING THE TARGET

There are more than **630 First Nation communities** in Canada with some larger communities that have multiple water systems in place. In November 2015, as part of the Government of Canada's commitment to lift all long-term water advisories affecting First Nations water systems, 77 long-term drinking water advisories were in effect in 53 communities. In January 2018, the Government of Canada expanded the scope of its commitment to eliminate all long-term drinking water advisories to include all public drinking water systems on reserve (an additional 250 public systems). At that time, the baseline was reset to 105 long-term drinking water advisories.

As of September 28, 2021, 117 long-term drinking water advisories on public systems have been lifted by First Nations, with support from Indigenous Services Canada, since November 2015, and 45 long-term drinking water advisories are in effect. Indigenous Services Canada maintains **real-time results** for long-term drinking water advisories on reserve, as well as a map of the communities affected. Note that while the baseline is set at 105 long-term drinking water advisories, additional advisories may be added and/or lifted in any given month. For this reason, the number of advisories remaining plus those that have been lifted to date will not result in the baseline.

Although progress has been made, the Government of Canada has publicly communicated that the March 2021 deadline for lifting all long-term drinking water advisories on public systems on reserves will not be met. Progress toward this target requires attention. An Action Plan is in place and initiatives are underway to address all remaining long-term drinking water advisories on public systems on reserve. The Government of Canada's 2020 Fall Economic Statement announced over \$1.5 billion in additional investments, including \$309.8 million to enable work to lift all long-term drinking advisories on public systems on reserves to continue, which will help to respond to project delays including those resulting from the COVID-19 pandemic. As well, additional investments of \$1.04 billion over two years, starting in 2022-23, were made in Budget 2021 to support water and wastewater projects.

The Government of Canada remains committed to supporting clean drinking water and ending all long-term drinking water advisories on public systems on reserves. Initiatives are underway to address all the remaining long-term advisories. As of June 2021, there were 751 water and wastewater projects in 582 First Nations Communities. Of these projects, 408 are complete. These projects include:

- 103 new water and wastewater treatment plants and lagoons, of which 59 are completed and 44 underway;
- 481 projects to renovate or upgrade existing infrastructure, of which 289 are completed and 192 are ongoing;
- 76 projects for feasibility studies or design work, of which 36 are complete and 40 are ongoing; and,
- 91 supporting projects or initiatives, of which 24 are completed and 67 are ongoing.

FOR CONTEXT

DRINKING WATER ADVISORIES IN CANADA

In Canada generally, most drinking water advisories are issued as a precaution before drinking water quality problems happen. Advisories take three forms: "Do not consume", "Do not use", and, most frequently, "Boil water". Each year, boil water advisories represent the vast majority of advisory data—up to 98%.

Of these **boil water advisories** in 2019, 2% were due to the detection of *Escherichia coli* (*E. coli*), and 11% were due to other microbiological water quality parameters. Equipment and process-related problems caused the remaining 87% of boil water advisories in 2019. Between 2010 and 2019, the percentage of boil water advisories issued on a precautionary basis due to *E. coli* and other microbiological parameters decreased.

BENCHMARKS FOR WATER QUALITY

Drinking water authorities need benchmarks for water quality to determine whether a drinking water management program is working. In Canada, benchmarks are provided through drinking water guidelines developed by Health Canada. These guidelines inform the testing of drinking water at various points along its journey to consumers and the determination of the safety of the water for drinking. Since April 2019, the Government of Canada has conducted fourteen **public consultations** on proposed new or updated drinking water quality guidelines, such as those for **aluminum**, **diquat**, and **malathion** in drinking water.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

A LONGSTANDING PROBLEM

The solutions to address drinking water in First Nations are unique to each community, and Indigenous Services Canada officials work closely with each community to find the most appropriate solution. Indigenous Services Canada is committed to partnering with First Nations, as well as exploring partnerships with organizations, on new approaches that will ensure that on-reserve water and wastewater systems are safe and adequately meet the unique needs of each community.

THE COVID-19 PANDEMIC

The global COVID-19 pandemic has impacted all communities in Canada. First Nations are leading the response to protect the health and wellbeing of their communities, and some have chosen to limit the entry and exit into their communities, such as limiting non-essential travel, and maintain perimeter security to protect the health and safety of their members by significantly reducing their risk of COVID-19 exposure.

These necessary public health measures, as well as contractor and human resources shortages and supply chain interruptions, have created delays in meeting targets to complete infrastructure projects both on- and off-reserve across Canada, including to the expected lift dates for some long-term drinking water advisories.

AGING INFRASTRUCTURE

Across Canada, an ongoing issue is the aging infrastructure for drinking water. Problems with equipment or processes were the primary reasons for increases in boil water advisories issued on a precautionary basis between 2010 and 2017.

Since 2016, the Government of Canada has made over \$5.3 billion in commitments to First Nations to build and repair water and wastewater infrastructure, and to support effective management and maintenance of water systems on reserves. This includes funding announced as part of the 2020 Fall Economic Statement of \$1.5 billion starting in 2020-2021, and \$114.1 million per year ongoing thereafter, to help accelerate the work being done to end all long-term drinking water advisories on public systems on reserves, to better support the operation and maintenance of systems, and to continue program investments in water and wastewater infrastructure. It also includes additional investments of \$1.04 billion over two years, starting in 2022-23, to support water and wastewater projects.

CANADA IN THE WORLD

Ensuring safe drinking water for all Canadians also supports SDG 3 (Good health and well-being) and SDG 6 (Clean water and sanitation).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 3.9:

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.



Target 6.1:

By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

Target 6.3:

By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

Target 6.b:

Support and strengthen the participation of local communities in improving water and sanitation management.





MINISTER OF AGRICULTURE AND AGRI-FOOD MINISTER OF FISHERIES, OCEANS AND THE CANADIAN COAST GUARD

Sustainable Food



Innovation and ingenuity contribute to a world-leading agricultural sector and food economy for the benefit of all Canadians

There are three medium-term targets within this goal. Reporting on short-term milestones and contextual indicators as set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Agriculture and Agri-Food Minister of Fisheries, Oceans and the Canadian Coast Guard

FEDERAL ORGANIZATIONS

Agriculture and Agri-Food Canada Canada Border Services Agency Canadian Food Inspection Agency Canadian Northern Economic Development Agency Crown-Indigenous Relations and Northern Affairs Canada Environment and Climate Change Canada Health Canada Indigenous Services Canada Innovation, Science and Economic Development Canada Fisheries and Oceans Canada Public Services and Procurement Canada

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Innovation and ingenuity contribute to a world-leading agricultural sector and food economy for the benefit of all Canadians

About the milestones

The health and environmental sustainability of Canada's food system are crucial to its integrity. To protect food security, improve health outcomes, and ensure that Canadians have access to the information they need to make choices relating to food, the Government of Canada has developed a Food Policy for Canada and Healthy Eating Strategy, and it continues to develop and implement regulations, standards, and risk management activities. Together, the short-term milestones listed below help to ensure Canadians have access to nutritious food, and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2019

- In January 2019, the *Safe Food for Canadians Regulations* came into force, under which organic certification requirements are extended to aquaculture products. Organic aquaculture products did not require certification under the Safe Food for Canadians Regulations for a twenty-four-month period that ended on January 15, 2021.
- In January 2019, as part of the Healthy Eating Strategy, the new Canada's food guide was launched. The new food guide recognizes that the food choices Canadians make can have an impact on the environment, and includes recommendations to make more environmentally friendly food choices.
- In June 2019, the Food Policy for Canada was launched with the vision that "All people in Canada are able to access a sufficient amount of safe, nutritious, and culturally diverse food. Canada's food system is resilient and innovative, sustains our environment and supports our economy."
- In June 2019, Fisheries and Oceans Canada released for consultation the draft Framework for Aquaculture Risk Management, which helps ensure the sustainable management of aquaculture activities. The framework has been revised based on stakeholder input, and the next iteration will be published in winter 2021.

2020

- In December 2020, the two Organic Agriculture Standards which had been under review were published.
- As of 2020, Health Canada continues to implement the Healthy Eating Strategy to counter diet-related chronic disease in Canada by improving healthy eating information, improving the nutrition quality of foods, protecting vulnerable populations, and supporting increased access to and availability of nutritious foods.
- As of 2020, the *Safe Food for Canadians Regulations* have fully come into force. However, until further notice, the Canadian Food Inspection Agency will not prioritize compliance activities for the manufactured food sector due to the COVID-19 pandemic.

Ongoing

 As part of the Food Policy for Canada, Agriculture and Agri-Food Canada is working collaboratively with government, the agriculture and food sector, civil society, Indigenous organizations, and other partners to improve integrated social, health, environmental, and economic outcomes in Canada's food system. For example, since 2019, Agriculture and Agri-Food Canada has implemented the Local Food Infrastructure Fund and the Food Waste Reduction Challenge.

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Minister of Agriculture and Agri-Food



TARGET

By 2030, support improvement in the environmental performance of the agriculture sector by achieving a score of 71 or higher for the Index of Agri-Environmental Sustainability (reflecting the quality of water, soil, air, and biodiversity).



RESULT

In 2016, Canada achieved a score of 65 (or "good") on the Index, using data from the 2011 Census of Agriculture.



PROGRESS

No new data is available. An updated Index will be available in December 2021, using data from the 2016 Census of Agriculture. 2021 Census of Agriculture data is scheduled for release in May 2022.

Minister of Fisheries, Oceans and the Canadian Coast Guard



TARGET

Achieve 90% compliance with *Fisheries Act* regulations related to aquaculture.



RESULT

Of the 219 aquaculture inspections in 2019, 99% did not result in charges. Of the same 219 aquaculture inspections, 67% did not identify any violations.



PROGRESS

Progress is on track.
Minister of Agriculture and Agri-Food



TARGET

Grow Canada's agri-food exports to \$75 billion per year by 2025.

\$**73**.9 B

RESULT

In 2020, the value of Canada's agriculture and agri-food exports was \$73.9 billion. In the same year, including domestic sales and exports, the percentage change of agri-food products sold was 3.3%.



PROGRESS

Progress is on track.



Inspected aquaculture operations under Fisheries Act regulations, Canada, 2011 to 2019

SOURCE: Canadian Environmental Sustainability Indicators, 2021

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WHY IT'S IMPORTANT

Canada's food system includes agriculture, aquaculture, fisheries, and food and beverage processing. This system provides safe and healthy food for Canadians, helps ensure long-term food security, and is an important part of Canada's economy. In 2018, the **agriculture and agri-food system** generated \$143 billion, or 7.4% of Canada's GDP, and employed 2.3 million Canadians, providing one in eight jobs in Canada. Strengthening the agriculture and agri-food sector includes finding innovative ways to respond and adapt to new and emerging issues, and seizing new value-added market opportunities to ensure sustainable growth.

Canada's food is harvested on farmlands, caught in oceans and freshwater systems, hunted and gathered in the wilderness, or grown in homes and communities. Protecting Canada's environment, including freshwater and soil quality, will help ensure that its food systems continue to feed Canadians and create jobs over the long term. As defined by the Food and Agriculture Organization of the United Nations, **sustainable food systems** are food systems that enable food safety, food security, and nutrition for future generations in accordance with the three dimensions of sustainable development. New technologies present the agri-food sector with an important opportunity to grow and market healthy foods that will benefit the environment and all Canadians through a more sustainable food system.

All Canadians, including those in isolated northern communities, should have access to nutritious food. For Indigenous peoples, this includes traditional or country food as well as store-bought food. Indigenous peoples have unique considerations relative to food systems, and much higher rates of food insecurity compared to the general Canadian population. Recognition and support for self-determination of Indigenous peoples, including traditional and local food production systems, is one way the Government of Canada is advancing its commitment to reconciliation with Indigenous peoples, based on recognition of rights, respect, cooperation, and partnership.

Food waste is another important issue for Canada's food system. According to the Food and Agriculture Organization, **food waste** accounts for nearly 7% of worldwide greenhouse gas emissions. In 2016, and again in 2018, G20 agricultural ministers highlighted food loss and waste as a global problem of enormous economic, environmental, and societal significance. Recent research estimates that over half of Canada's food supply is lost or wasted annually. Nearly 11.2 million metric tonnes of this waste is avoidable, estimated at a value of nearly \$50 billion. Accordingly, the Food Policy for Canada published in 2019 identifies food waste reduction as a priority action area.

MEETING THE TARGETS

AGRI-ENVIRONMENTAL SUSTAINABILITY

National level **biodiversity, air, soil, and water quality** data were last published by Agriculture and Agri-Food Canada in 2016, covering the period between 1981 and 2011. The **2021 Census of Agriculture data** is scheduled for release in May 2022.

The overall trend from 1981 to 2011 for biodiversity shows steady and consistent improvements across Canada. For air quality, considering various agricultural atmospheric emissions together, agriculture's environmental performance is "Good", having been relatively stable between 1981 and 2006, with significant improvement after to 2011.

In 2016, as reported in the **2018 Progress Report**, Canada achieved a score of 65 (or "good") on the **Index of Agri-Environmental Sustainability**, using data from the 2011 Census of Agriculture. As of the publication date of this progress report, there was no new data available to report on the target to achieve a result of 71 or higher on this index. The Index is expected to be updated by December 2021.

AQUACULTURE

Aquaculture is the farming of fish, shellfish, and aquatic plants in freshwater or saltwater. It is the fastest growing food production sector and provides half of all fish for human consumption in the world. However, in the coming decade, a shortfall in fish and seafood is projected, which may be met by increases in aquaculture production informed by scientific research and implemented through science-based decision making, in addition to improved policies and regulations.

In Canada, aquaculture represents about one third the total fisheries value and about 20% of total seafood production by weight. In 2019, by weight, salmon accounted for 82% of finfish aquaculture production and mussels accounted for 60% of shellfish aquaculture production. Aquaculture operators' compliance with environmental standards helps to protect Canada's aquatic environment and limit environmental damage caused by human activities. If not sustainably managed, different types of aquaculture operations have different environmental effects that range from local nutrient or chemical deposits into water systems to direct risks to wild species, such as habitat alteration and potential disease spread.

waste reduction as a priority action as

In Canada, aquaculture management is a shared responsibility between the federal and provincial governments, and the Fisheries Act sets out the Government of Canada's jurisdiction over fisheries and fish habitat. In June 2015, the Aquaculture Activities Regulations came into effect. These regulations increase oversight by requiring private aquaculture operations to report data on activities such as the type and quantities of drugs and pesticides used to treat diseases and pests. In 2016, the Government of Canada began collecting data annually under the authority of Aquaculture Activities Regulations. Fishery officers conduct inspections to validate licence reporting and to determine compliance with aquaculture licences, conditions of licence, and other legislation. Where necessary, fisheries officers respond to complaints and conduct investigations.

Based on the severity of a violation, enforcement can include education, warnings, required changes, or charges. Between 2011 and 2018, an annual average of 284 inspections, 51 violations and 2 charges occurred. Enforcements efforts prior to 2018 focused on the marine finfish sector, which has a high level of compliance. In 2018, enforcement efforts moved to the Pacific shellfish sector, which has resulted in a lower reported rate of compliance due to increases in violations detected and charges laid. Also in 2018, reporting on compliance rates was modified to include all violations that led to charges being laid. In addition to charges, **enforcement actions** can include education, warnings, and alternative measures.

Measured as the percentage of inspections that do not result in charges, **compliance rates** with *Fisheries Act* regulations are high. Of the 219 aquaculture inspections in 2019, 99% did not result in charges. Of the same 219 inspections undertaken in 2019, 67% did not identify any violations. A total of 72 violations were found and 2 charges were laid in relation to attempts to obstruct or hinder a fishery officer. This evidence suggests that progress is on track toward the target of achieving 90% compliance with *Fisheries Act* regulations related to aquaculture. Changes in reporting enforcement from 2018 will continue to be analyzed and factored in to future assessments of progress in this area.

AGRICULTURE AND AGRI-FOOD EXPORTS

The agriculture and agri-food sector is a significant contributor to the Canadian economy and the global market offers tremendous growth potential for Canada's agricultural production. Targets assessing changes in agricultural export values measure progress toward the result of growing the economy through agriculture and agri-food, and complement measures of Canadian agriculture and agri-food environmental sustainability. Despite facing challenges of strong competition and other economic factors, the overall value of **Canadian agricultural exports** reached \$73.9 billion in 2020. This keeps Canada on track to meet its ultimate target of \$75 billion in agriculture and agri-food exports by 2025, and along with domestic sales, contributes to a 3.3% change in all agri-food products sold in 2020.

To make progress toward this target from 2019 to 2021, Agriculture and Agri-Food Canada has worked closely with Global Affairs Canada, provinces, territories, and industry stakeholders. Together, this assistance helped the Canadian agricultural sector to take advantage of market and trade opportunities, including those resulting from the Canada-European Union Comprehensive Economic and Trade Agreement and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

Agriculture and Agri-Food Canada worked with government partners to implement the Canada-United States-Mexico Agreement and to promote its benefits for the Canadian agricultural sector. Ongoing efforts to advance agricultural interests in trade negotiations with key partners and to advocate for science-based trade rules supported and enhanced Canada's international market presence.

Agriculture and Agri-Food Canada also led initiatives to enhance market diversification and trade opportunities to help Canadians compete in the global marketplace and build commercial success. These initiatives included intelligence products, in-market services of agricultural trade commissioners, Canada Brand promotional tools, and collaborative initiatives to support exports by small and medium-sized enterprises.

Canada continues to work with provincial and territorial partners under the Canadian Agricultural Partnership to support market development efforts of Canadian exporters. The Partnership assists farmers in adapting to climate change, conserving water and soil resources, and sustainably growing their businesses to meet increasing global food demand.

FOR CONTEXT

ENVIRONMENTAL FARM PLANNING

Agricultural environmental performance is primarily determined by how farmland is managed. Environmental farm planning supports awareness and adoption of sustainable practices on agricultural land. An environmental farm plan is the practice of developing formal, written overall assessments of environmental issues or concerns related to an operation, and typically includes recommendations for beneficial management practices to address these risks. Canada tracks data on these plans through the **Farm Management Survey** conducted by Statistics Canada and Agriculture and Agri-Food Canada. According to the most recent survey, based on 2016 Census of Agriculture data, 40% of Canada's 193,492 farms had an environmental farm plan in 2017 and an additional 7% said they were developing them.

Across Canada, farms in Québec and New Brunswick were the most likely to have an environmental plan, while farms in western Canada were less likely to report having one. In terms of farm type, dairy producers, pig producers, and poultry producers were much more likely to have environmental farm plans, while beef producers were less likely to do so.

WILDLIFE HABITAT CAPACITY

Wildlife habitat capacity is the extent and quality of habitat that can support a diversity of species such as terrestrial birds, mammals, reptiles, and amphibians. When wilderness becomes agricultural land, significant wildlife habitat capacity is lost through wetland drainage, natural land cultivation, loss of grasslands, overgrazing, and fragmentation or loss of forest cover. However, management practices such as conservation tillage, shelterbelt planting, responsible grazing, and watercourse buffering can regain some of this capacity and sustain biodiversity. Wooded areas, wetlands, shorelines, and natural pastures on agricultural land are important wildlife habitats while the land also produces food for human use.

Between 2011 and 2017, there has been little change in **wildlife habitat capacity** on agricultural land. Despite some areas of decline (3.1% of area), overall wildlife habit capacity grew by 0.3% due to an increase in capacity on 3.4% of land. Increases occurred in the western prairies where crop types shifted from grain to pastures and hay, which support more wildlife species for breeding and feeding. At the same time, declines occurred in the eastern prairies and in eastern Canada, primarily along the St. Lawrence Lowlands where agricultural fields expanded and natural and semi-natural cover was lost.

DIET-RELATED HEALTH RISKS AND OBESITY RATES IN CANADA

Statistics Canada tracks diet-related health risks, which helps to provide context for Canada's progress in achieving a sustainable and healthy food sector.

For example, **heart diseases** caused 139.9 deaths per 100,000 Canadians in 2019, which represents a decrease from the previous figure of 143.5 deaths per 100,000 Canadians in 2018.

In 2019, Type II Diabetes caused at least 5.8 deaths per 100,000 Canadians, which represents an increase from the previous figure of at least 5.4 deaths per 100,000 Canadians in 2018.

In 2020, Statistics Canada found that Canada has an **obesity rate** of 24.3% of adults (ages 18 to 79) and 10.1% of children and youth (ages 5-17), based on data using measured height and weight that was gathered from 2018 to 2019. This represents a decrease from previous data gathered from 2016 to 2017, at which time the obesity rate was 26.9% of adults and 10.6% of children and youth, based on data using measured height and weight.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

ENVIRONMENTAL PRESSURES

The impact of invasive alien species on agricultural areas is severe and often irreversible. Controlling invasive alien species is expensive, and eliminating these species is seldom possible. Prevention is the most cost-effective way to manage this risk.

Ongoing efforts are required to minimize pressures on the environment from agriculture, such as habitat loss and degradation, water pollution, and GHG emissions. These efforts will not only minimize pressures on the environment but can also lead to other benefits, such as improved soil quality and increased productivity of agricultural lands.

CLIMATE CHANGE IMPACTS

Climate change impacts may significantly alter Canadian ecosystems. Among the many Canadians who will have to adapt to new and evolving risks resulting from climate change are Canadian farmers, who will need to adjust to varying growing seasons, drier or wetter conditions, and extreme weather. Agriculture and Agri-Food Canada will continue to play a leadership role in designing and funding scientific research and delivering programs to transfer knowledge and to provide support for the agricultural sector to increase their agri-environmental sustainability, resilience, and preparedness for climate change impacts.

Climate change impacts are also negatively altering the ability of northern and remote Indigenous peoples to go out on the land and secure country food or other food sources, which affects their deep ties to ancestral land, cultural identity, and traditions.

FOOD SECURITY

Some Canadians still do not have easy access to affordable, nutritious food, especially those living in isolated northern communities or those for whom the supply of traditional and country foods are affected by climate change and the depletion of local natural resources.

FOOD WASTE

Food waste is a problem in Canada. In addition to being a waste of the land, water, and soil resources used to produce food that is not ultimately eaten, food waste disposed in landfills produces methane, a powerful GHG many times more potent than carbon dioxide. An Environment and Climate Change Canada study, the **National Waste Characterization Report**, found that food waste makes up about 23% of the waste landfilled in Canada. Emissions from Canadian landfills account for 20% of national methane emissions, and represent nearly 2% of Canada's total GHG inventory.

FOOD INNOVATION

More data about the value of key Canadian crops such as canola, wheat, and pulses is required to understand how they can provide plant-based meat alternatives and new food products. To address this lack, Innovation, Science and Economic Development Canada's **Innovation Superclusters Initiative** plans to explore the development of progress indicators in collaboration with the Protein Industries Canada Supercluster and Agriculture and Agri-Food Canada once program data is available. These indicators will report on the environmental sustainability of **Protein Industries Canada** projects.

THE COVID-19 PANDEMIC

The COVID-19 outbreak has affected Canada's food supply chain and food security for vulnerable populations. The Government of Canada launched a number of emergency initiatives to focus on or include food insecurity. These initiatives include

- Agriculture and Agri-Food Canada's \$50 million Surplus Food Rescue Program;
- Agriculture and Agri-Food Canada's \$77.5 million Emergency Processing Fund;
- Agriculture and Agri-Food Canada's \$200 million Emergency Food Security Fund;
- Employment and Social Development Canada's \$350 million Emergency Community Support Fund;
- Indigenous Services Canada's \$1.065 billion
 Indigenous Community Support Fund that may be used to address food insecurity; and,

 an additional \$25 million from Crown-Indigenous Relations and Northern Affairs Canada to enhance the Nutrition North food subsidy.

Canada is also working to support producers, processors, and agri-food businesses during the pandemic to ensure that Canadians continue to have access to high quality and affordable food.

CANADA IN THE WORLD

Contributing to a world-leading agricultural sector and food economy for the benefit of all Canadians supports SDG 2 (Zero hunger), SDG 12 (Responsible consumption and production), SDG 14 (Life below water), and SDG 15 (Life on land).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 2.4:

By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.



Target 12.3:

By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.



Target 14.2:

By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.

Target 14.4:

By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement sciencebased management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.



Target 15.1:

By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

Target 15.3:

By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

Target 15.5:

Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

Work under this goal also supports progress toward the 2020 Biodiversity Goals and Targets for Canada and the global conservation objectives of the United Nations Convention on Biological Diversity.

In particular, it supports efforts to maintain or improve the level of biodiversity and wildlife habitat capacity on agricultural lands, maintain or improve water and soil quality, and sustainably manage aquaculture in Canada under a science-based regime in ways that conserve biodiversity.

Work on aquaculture contributes to Target 7 under the Aichi Biodiversity Targets: "By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity."





MINISTER OF ENVIRONMENT AND CLIMATE CHANGE

Connecting Canadians with Nature



Canadians are informed about the value of nature, experience nature first hand, and actively engage in its stewardship

There is one medium-term target in this goal. Reporting on short-term milestones and contextual indicators as set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS Minister of Environment and Climate Change

FEDERAL ORGANIZATIONS

Environment and Climate Change Canada Jacques Cartier and Champlain Bridges Incorporated Parks Canada Agency Canadians are informed about the value of nature, experience nature first hand, and actively engage in its stewardship

About the milestones

Connecting Canadians with nature is important for well-being and helps people to understand the importance of conservation. It also provides a way for people to interact as a community. For some people, including Indigenous peoples, living with nature is central to their ways of life and fundamental to culture. To this end, the Government of Canada encourages Canadians to venture into nature and visit Canada's abundant national parks and national historic sites. The short-term milestones listed below reflect on the extent to which Canadians engage with their natural heritage, and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2020

- Between April 2019 and March 2020, visitation to federal protected areas such as selected NWAs, national parks, and national marine conservation areas reached 16.1 million. This represents a 2% increase over the previous year.
- Between April 2019 and March 2020, visitation to national historic sites was 8.7 million. This represents a 5% decrease from the previous year.



Minister of Environment and Climate Change



TARGET

By 2020, maintain or increase the number of Canadians that get out into nature—for example, by visiting parks and green spaces—and increase participation in biodiversity conservation activities relative to a 2010 baseline.



RESULT

In 2019-2020, visits to national parks and marine conservation areas increased 29% from visits in 2010-2011, as 16.1 million visitors experienced Canada's National Parks and National Marine Conservation Areas.

The 2017 Households and the Environment Survey found that almost one in five (or 18%) of Canadian households surveyed engaged in unpaid activities to conserve or protect either the environment or wildlife. In the same survey, 87% of Canadian households reported that they had a park or green space close to home, and 85% of Canadian households reported that they visited that park or green space.



PROGRESS

This target has been achieved.

WHY IT'S IMPORTANT

Connecting with nature benefits Canadians, their communities, and the environment. Spending time in nature can improve physical and mental health and support children's development, while nature-based tourism provides economic benefits for Canada. Getting out and experiencing nature also inspires Canadians to help protect it.

Canadians are already passionate about nature and are taking action to protect it. Canada's national parks, national marine conservation areas, and national historic sites report 25 million visits each year, while people also connect with nature by visiting green spaces in their communities or by participating in nature-based activities like hiking, horseback riding, or gardening. Many also take action to protect the environment.

The Government of Canada supports Canadians by expanding opportunities to experience nature and get involved in conservation and by enabling children to connect with nature from a young age to lay the foundation for a life-long practice.

Indigenous peoples have an important role as stewards of their traditional lands, waters, and ice. Canada supports Indigenous rights and responsibilities in protecting and conserving ecosystems, developing and maintaining sustainable economies, and continuing the profound connection between Canadian lands and waters and Indigenous cultures.

The Government of Canada is committed to engaging meaningfully with Indigenous peoples in the conservation of lands and wildlife resources. For example, from April 2019 to March 2020, more than two-thirds (or 69%) of Indigenous peoples surveyed indicated that Environment and Climate Change Canada had engaged them meaningfully in conserving nature. Examples of programs designed to work collaboratively with Indigenous peoples in their traditional territories include the **Indigenous Guardians Pilot Program** and the administration of the federal *Species at Risk Act*.

MEETING THE TARGET

VISITS TO NATIONAL PARKS AND NATIONAL MARINE CONSERVATION AREAS

Progress toward this target is measured by the number of visits to national parks and to national marine conservation areas. National parks are located on the Atlantic, Pacific, and Arctic coasts, across the interior mountains, plains, and Great Lakes, and reach as far north and south as Canada goes. Canada's parks include world-renowned names such as **Banff** and **Jasper**, as well as the more recently established **Qausuittuq** and **Thaidene Nene**. Canada's marine conservation areas include **Fathom Five** and **Saguenay-St. Lawrence** marine parks. Visits for recreational, educational, and cultural purposes are measured, while local and commercial traffic and same-day re-entries or overnight stays do not constitute new visits.

In 2010 to 2011, there were 12.5 million visitors to Canada's national parks and national marine conservation areas. In 2019 to 2020, visits to these areas increased 29% with a total of 16.1 million visitors. This data shows that Canada has met its target to maintain or increase the number of Canadians who experience nature by 2020, relative to a 2010 to 2011 baseline.

CANADIANS AND THE ENVIRONMENT

Environmental engagement activities can consist of organized group activities, such as beach or park clean-up days, and also unpaid help provided by schools, religious institutions, or sport and community associations. While the COVID-19 pandemic has influenced the ability of groups to gather as they had in prior years, these activities can also consist of efforts by individuals across Canada.

Statistics Canada's **Households and the Environment Survey** collects information to understand the impact that Canadian households have on environment and natural resource use. The survey is repeated every two years.

The 2017 Households and the Environment Survey found that almost one in five (or 18%) of Canadian households engaged in unpaid activities to **conserve or protect either the environment or wildlife**. This is a slight increase over findings from the prior iteration of the survey, which found that in 2015 17% of Canadian households engaged in these activities. However, this finding is lower than the survey's 2011 findings, when 19% of Canadian households engaged in unpaid conservation or protection activities.

Similarly, in 2017, 87% of Canadian households reported that they had a **park or green space** close to home, and 85% of those reported that they visited that park or greenspace. These findings are unchanged from the previous iteration of the survey in 2015. They are slightly higher than in the survey's 2011 findings, when 86% of Canadian households reported that they had a park or green space close to home, and 84% of those reported that they visited that park or greenspace.

FOR CONTEXT

VISITS TO SELECT NATIONAL WILDLIFE AREAS

There are currently 55 NWAs across Canada that contain nationally significant habitats for animals or plants, and that protect over 2.1 million hectares of habitat—more than three-quarters of which is marine habitat. According to the *Canada Wildlife Act*, these areas are created and managed for wildlife conservation, research, and interpretation.

Ten of the **national wildlife areas** are open to the public to experience wildlife habitat and spend time connecting with nature. Activities in these areas range from trailwalking, hiking, geocaching, and wildlife watching to fishing, hunting, and canoeing, depending on the area in question. As of March 31, 2020, Environment and Climate Change Canada found that there was a 23% increase in visits to selected NWAs over preceding years.



ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

CLIMATE CHANGE

Climate change and other environmental factors impact progress toward achieving the target. The risks to the delivery of programs and services for Canadians to experience their national parks include:

- invasive species within national parks impact biodiversity and detract from the visitor experience (see the chapter on Healthy Wildlife Populations in this report); and
- extreme weather impacts park infrastructure, such as roads and bridges, putting the delivery of programs and services at risk.

MORE PARTNERSHIPS ARE NEEDED

The Government of Canada needs to build more partnerships and facilitate Indigenous connections with traditionally used lands and waters. This effort should also increase the number of cooperative management structures with decision-making roles for Indigenous partners.

THE COVID-19 PANDEMIC

Parks Canada Agency has played an important role in delivering critical services during the COVID-19 pandemic and in providing Canadians with access to the health and wellness benefits that come from spending time outdoors and in wide-open spaces. The pandemic highlights, now more than ever, the importance of protected places for the collective health, well-being, and prosperity of Canadians. In 2020, 80% of visitors indicated that the ability to access national parks and historic sites was important to their mental health and 82% indicated it provided them with a sense of normalcy during uncertain times.

In 2020 and 2021, as part of national efforts to flatten the curve of the COVID-19 pandemic, Parks Canada Agency temporarily suspended visitor access and services while the Agency modified its operations to enable Canadians to safely enjoy national parks, historic sites, and marine conservation areas. From the resumption of operations in June 2020 to the end of the fiscal year on March 31, 2021, Parks Canada Agency welcomed 17 million Canadians to outdoor spaces in 98 destinations across the country. While this represents a decline in visitation—due largely to the temporary closure and national and regional limitations on travel—Parks Canada Agency locations were an important part of supporting the physical and mental health and wellbeing of millions of Canadians in thousands of communities in 2020 and 2021.



CANADA IN THE WORLD

Ensuring that Canadians are informed and able to experience the value of nature supports SDG 11 (Sustainable cities and communities) and SDG 12 (Responsible consumption and production).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 11.4:

Strengthen efforts to protect and safeguard the world's cultural and natural heritage.



Target 12.8:

By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

Work under this goal also supports progress toward the 2020 Biodiversity Goals and Targets for Canada and the global conservation objectives of the United Nations Convention on Biological Diversity, in particular, by encouraging Canadians to get involved in biodiversity conservation activities (Canada Target 19).





MINISTER OF ENVIRONMENT AND CLIMATE CHANGE MINISTER OF HEALTH

Safe and Healthy Communities



All Canadians live in clean, sustainable communities that contribute to their health and well-being

There are three medium-term targets within this goal. Reporting on short-term milestones and contextual indicators as set out in the 2019 to 2022 Federal Sustainable Development Strategy helps to describe progress toward this goal.

FEDERAL RESPONSIBILITIES

MINISTERS

Minister of Environment and Climate Change Minister of Health

FEDERAL ORGANIZATIONS

Canada Border Services Agency Crown-Indigenous Relations and Northern Affairs Canada Environment and Climate Change Canada Fisheries and Oceans Canada Health Canada Indigenous Services Canada Jacques Cartier and Champlain Bridges Incorporated National Defense National Research Council Canada Natural Resources Canada Parks Canada Agency Public Safety Canada Public Services and Procurement Canada Standards Council of Canada Statistics Canada Transport Canada

All Canadians live in clean, sustainable communities that contribute to their health and well-being

About the milestones

Chemicals, pesticides, and harmful substances can affect human and environmental health. The Government of Canada is acting to reduce pollution and protect communities through air quality standards, management plans, monitoring, and outreach campaigns. Together, the short-term milestones listed below help to protect human and environmental well-being and represent progress toward the steps outlined in the 2019 to 2022 FSDS.

2019

- In June 2019, the Minister of the Environment and Climate Change and the Minister of Health published the new Canadian Ambient Air Quality Standard (CAAQS) for ozone in the Canada Gazette, Part 1. The new ozone CAAQS is set at 60 parts per billion and will come into effect on January 1, 2025. This standard was developed collaboratively with provinces, territories, Indigenous peoples, and industry/health/environmental stakeholders through the Canadian Council of Ministers of the Environment. The review of the CAAQS for fine particulate matter is underway and, if warranted, more stringent standards will be established in 2022.
- In 2019, the revised Environmental Emergency Regulations came into force. These regulations help to
 reduce the frequency and severity of accidental releases of hazardous substances into the environment.
 Made under the Canadian Environmental Protection Act, 1999 (CEPA), they improve industry's capacity
 to manage environmental emergencies that may occur at fixed facilities across Canada. The revised
 Environmental Emergency Regulations cover additional hazardous substances.

2020

• As of 2020, Health Canada completed 98% of the remaining re-evaluation of the remaining legacy pesticides. Health Canada continues to make progress on these large and complex re-evaluations, which continue to be a priority as new re-evaluations and special reviews are initiated every year.

2021

• As of March 2021, the Government of Canada has addressed 3,974 substances (91%) of the 4,363 chemicals targeted for assessment under the Chemicals Management Plan.

Ongoing

 Public outreach on environmental health continues to reach Canadians via the Healthy Home campaign. A number of outreach activities and tools have been developed to help inform Canadians on how they can protect themselves from chemicals and pollutants around the home. This includes various forms of digital communication, a Healthy Home tool kit, and more items currently in development, including information tailored to specific vulnerable populations.

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Minister of Environment and Climate Change



68%

TARGET

Increase the percentage of Canadians living in areas where air quality standards are achieved from 70% in 2015 to 85% in 2030.

RESULT

For the period of 2016 to 2018, the percentage of Canadians living in areas where air quality standards were less than or equal to the 2020 Canadian Ambient Air Quality Standards (CAAQS) are achieved was 68%. This is an improvement on the result from the period of 2005 to 2007 of 60%.



PROGRESS

Progress is on track. Most recent results demonstrate overall improvements in the long-term trend from the period of 2005 to 2007, although large wildfires have negatively affected air quality in Alberta and British Columbia during the 2016 to 2018 period.

Minister of Environment and Climate Change



DECREASE

TARGET

Continued decrease in emissions from 1990 of fine particulate matter, nitrogen oxides, sulphur oxides, and volatile organic compounds from all sources.

RESULT

In 2019, emissions of four key air pollutants (sulphur oxides, nitrogen oxides, volatile organic compounds, and fine particulate matter), ranged from 77% to 8% lower in 2019 than in 1990.

PROGRESS

UNDERWAY

Progress is on track.



TARGET

By 2022, take risk management actions in a timely manner for 100% of substances found to be a risk to the environment or human health.



UNDERWAY

RESULT

As of March 2021, 87.5% of actions were taken in a timely manner to protect the environment.

As of March 2021, 100% of actions were taken in a timely manner to protect the health of Canadians.



Progress is on track.



Percentage of Canadians living in areas where outdoor concentrations of air pollutants were below the 2020 Canadian Ambient Air Quality Standards, 2005 to 2018

SOURCE: Canadian Environmental Sustainability Indicators, 2021



Air pollutant emissions, Canada, 1990 to 2019

SOURCE: Canadian Environmental Sustainability Indicators, 2021

WHY IT'S IMPORTANT

The Government of Canada is committed to ensuring that Canadians live in clean, safe environments that contribute to their health and wellbeing. Among other measures, this means improving air quality, protecting the health of Canadians and the environment from harmful substances, and preventing environmental emergencies or mitigating their impacts if they do occur.

Air pollution, even at low levels, can affect health, especially for children, the elderly, and those with health conditions. It also affects the environment and results in economic costs due to lost productivity, increased need for medical care, and impaired quality of life. Each year, 42 premature deaths per 100,000 Canadians can be linked to **human-caused air pollution**, such as from car exhaust and industrial emissions. Furthermore, about 32% of Canadians live in areas where outdoor concentrations of air pollutants exceed at least one of the Canadian Ambient Air Quality Standards. The total socio-economic **cost of air pollution** is \$120 billion per year.

While chemicals are part of our everyday lives and provide many benefits, some can be harmful if not properly managed. Managing these substances, as well as assessing and remediating contaminated sites, protects human health and the environment, and benefits Canada's economy.

MEETING THE TARGETS

EXPOSURE TO OUTDOOR AIR POLLUTANTS

Overall, Canadians enjoy good outdoor air quality. However, everyday exposure to air pollutants can contribute to health issues such as asthma and cardiovascular diseases. Low levels of exposure to some air pollutants have been linked to increased hospitalization, emergency room visits, and premature death.

The Canadian Ambient Air Quality Standards are health and environmental-based outdoor air quality objectives for airborne pollutant concentrations. They are intended to protect human health and the environment, and to drive continuous improvement in air quality in Canada. Improved air quality reduces heart attacks, hospital visits, and allergy and asthma attacks; it also prevents lost school and work days. Cleaner air reduces damage to crops, forests, surface waters, and infrastructure.

Between 2005 to 2007 and 2016 to 2018, the percentage of Canadians living in areas where **air quality standards** were less than or equal to the 2020 Canadian Ambient Air Quality Standards increased from 60% to 68%.

Increases can be attributed to air quality improvements in larger urban areas in Alberta and Québec. However, large wildfires have negatively affected air quality in Alberta and British Columbia during the 2016 to 2018 period. This result demonstrates that Canada's progress toward its target of achieving 85% by 2030 is on track.

To arrive at this result, seven standards for four air pollutants (fine particulate matter [PM2.5], ground-level ozone $[O_3]$, nitrogen dioxide $[NO_2]$, and sulphur dioxide $[SO_2]$) were used to assess whether the population of an area was exposed to air pollutant concentrations below or above the standards. For the population of an area to be exposed to air pollutant concentrations below the standards, which is a positive result, all air pollutants had to be below (or equal to) their respective standards.

AIR POLLUTANT EMISSIONS

Air pollution problems such as smog and acid rain result from pollutants emitted or released into the atmosphere, and from interactions between pollutants. Most pollutants are released by human activities such as transportation, fuel burning for electricity and heating, and industrial activities.

Overall, Canadian emissions of most **major air pollutants** are declining. Between 1990 and 2019, the largest reductions were observed for sulphur oxide emissions, which decreased by 77%. Over the same period, carbon monoxide emissions were reduced by 55%, volatile organic compounds by 42%, nitrogen oxides by 29%, and fine particulate matter by 8%. Reductions since 1990 are due in part to government actions and voluntary initiatives from key industrial emitters. In 2019, the majority of emissions of these air pollutants in Canada came from the oil and gas industry, transportation, agriculture, and dust and fires associated with activities such as road dust, constructions operations, and prescribed burning. These results demonstrate that Canada's progress toward its target of achieving reductions in major air pollutants is on track.

To contextualize this progress, Environment and Climate Change Canada also tracks **air quality trends**. Between 2005 and 2019, concentrations of nitrogen dioxide, sulphur dioxide, volatile organic compounds, and peak ground-level ozone have decreased. However, average ground-level ozone concentrations showed almost no change, and fine particulate matter concentrations exhibited variable results.

MANAGING HARMFUL CHEMICALS

Through the **Chemicals Management Plan**, launched in 2006, the Government of Canada assesses chemicals used in Canada and takes action to manage those that are harmful to human health or the environment. The plan set out 4,363 priority chemicals to address by 2020, with provisions for risk managing the hundreds of new substances that enter Canada each year. Assessments under the plan enable Canada to identify whether or not controls are needed and, if so, what type of control is best suited to reduce or prevent potential harm.

To support the Chemicals Management Plan, public outreach activities inform Canadians about reducing the risks from chemicals, including those who work with vulnerable populations such as daycare workers, nurses, Indigenous groups, and health practitioners. Health Canada also conducts research, monitoring, and surveillance activities to address existing and emerging chemicals of concern, inform risk assessment needs and activities, and to respond to outstanding questions about and knowledge gaps related to the effects and exposure of chemical substances on humans.

In January 2019, Health Canada launched the **Healthy Home Campaign** to raise Canadians' awareness about health risks from chemicals of concern and pollutants that may be found in and around the home, including mould and asbestos.

As of March 2021, the Government of Canada has addressed 3,974 (91%) of the 4,363 chemicals identified as priorities for attention by 2020 to 2021, including draft and final assessment screening reports. Where risks were identified, Canada has instituted measures to manage them to protect human health and the environment.

As of March 2021, 87.5% of actions were taken in a timely manner to protect the environment, and 100% of actions were taken in a timely manner to protect the health of Canadians. These results demonstrate that Canada's progress to take risk management actions in a timely manner for 100% of substances found to be a risk to the environment or human health by 2022 is on track.

Consultations with Canadians were held during 2019 on the topics of "defining vulnerable populations", "informed substitution within Canada's chemical program", and on protecting Canadian workers from chemical exposure. In February 2021, the Chemicals Management Plan Science Committee also held a virtual meeting to explore the evolution of the Chemicals Management Plan substances risk assessment program and directions for the future.

Budget 2021 announced renewed funding for the Chemicals Management Plan to continue addressing chemicals in Canada to protect the environment and the health of Canadians.

FOR CONTEXT

MORTALITY ATTRIBUTABLE TO OUTDOOR AIR POLLUTION

Although Canada has made substantial efforts to improve air quality in Canada over the last few decades, **outdoor air pollution** continues to be an important public health issue. This is especially true for two major air pollutants: ground-level ozone and fine particulate matter. Exposure can lead to chronic lung disease, heart attacks, strokes, and mortality.

These adverse effects contribute to economic costs through lost productivity; they also influence overall well-being when individuals and families must confront illness and death.

On average, for short-term exposure between 1984 and 2012 and for years in which estimates can be made, approximately 2% of deaths in Canada can be attributed to exposure to ground-level ozone (O_3), excluding deaths from injuries. This attribution has a detectable increase from 1984 to 2012. Between 2001 and 2012, 0.8% of deaths can be attributed to fine particulate matter (PM2.5). Note that these indicators consider exposure as mortality to air pollution concentration on the same day only; it does not include the health impacts of long-term impacts to air pollutants.

HUMAN EXPOSURE TO HARMFUL SUBSTANCES

Chemicals such as mercury (and its compounds), lead, inorganic cadmium compounds, and bisphenol A are on the **Toxic Substances List** of the *Canadian Environmental Protection Act, 1999.* When released into the environment, these chemicals have or may have immediate or long-term harmful effects on the environment or biological diversity, and they may also constitute a danger to the environment that sustains life and constitute or may constitute danger to human health.

Humans are exposed to chemicals that are present in air, soil, water, products, and food in many ways, including through inhalation, ingestion, and skin contact. Canada uses a variety of methods, tools, and models to assess human exposure to environmental chemicals and their potential health effects, including through indirect estimates by measuring chemicals in the environment, food or products, and also through direct biomonitoring.

Between 2007 and 2017, national biomonitoring of harmful substances conducted as part of the Canadian Health Measures Survey shows that the average concentrations in Canadians of bisphenol A (BPA), lead, and cadmium have generally decreased. Meanwhile, average concentrations of mercury remained stable.

CHEMICALS IN SEDIMENT, WATER, AND LIVING CREATURES

Polybrominated diphenyl ethers (PBDEs) are common additives in flame retardants. However, they can accumulate over time in organisms such as fish, and they tend to biomagnify through food webs and concentrate in animals such as predatory fish, birds, and mammals. Among PBDE subgroups declared as "toxic" by the *Canadian Environmental Protection Act*, 1999, tetraBDE, pentaBDE, and hexaBDE meet criteria for virtual elimination and Canada has prohibited their manufacture, import, use, and sale, with a limited number of exemptions for products that contain them.

PBDEs found in Canada are from domestic and international sources, as they can be suspended in air and transported over long distances. Where flame retardants such as PBDEs are present, as in consumer goods, exposure may occur via inhalation as flame retardants leach out of those goods.

From 2016 to 2018, **fish sampling in Canada** revealed that concentrations of triBDE, tetraBDE, and hexaBDE were below the guidelines. PentaBDE concentrations were above the guidelines for at least one sample in each drainage region. These results are similar to those in a previous 2013 to 2015 sampling campaign, with the exception of lower concentrations of tetraBDE in the Great Lakes in 2016 to 2018, which is a positive result. Current human exposure to PBDEs is well below levels considered to be concerning.

From 2007 to 2018, sediment sampling was conducted in twelve drainage regions in Canada. Concentrations of triBDE, hexaBDE, and octaBDE were below the guidelines in all samples and drainage regions. Concentrations above the guidelines were observed in one drainage region for tetraBDE, in eight drainage regions for pentaBDE, and in three drainage regions for decaBDE.

Perfluorooctane sulfonate (PFOS) has been used in stain repellents, fire-fighting foams, and metal plating; however, its widespread occurrence, bioaccumulation, persistence, and toxicity in animals makes it a chemical of ecological concern.

PFOS, its salts and precursors, are listed under the *Canadian Environmental Protection Act, 1999.* The manufacture, use, sale, offer for sale, and import of PFOS, as well as products containing PFOS, have been prohibited since 2008, with a limited number of exceptions. Activities related to PFOS were further restricted in 2016. Fish sampling conducted between 2015 and 2017 found that **concentrations of PFOS** in all sampled regions were below the guidelines for fish health in all fish. However, four of the nine drainage regions had samples showing concentrations of PFOS that exceeded the wildlife diet guidelines. In some instances, PFOS concentrations in fish exceeded the guidelines for the protection of mammals and birds that eat fish, suggesting that PFOS may threaten predators higher in the food chain.

A separate examination of 163 **water samplings** from 2016 to 2017 found that all water samples had PFOS concentrations at least 200-fold lower than the guideline for water. Of these samples, 49% had PFOS detectable in concentrations ranging from less than 2 nanograms per litre up to 26.1 nanograms per litre.

RELEASES OF HARMFUL SUBSTANCES TO WATER AND AIR

Releasing some substances to the environment can harm human health, wildlife, and biological diversity once they enter the food web and accumulate in living tissues. Exposure to substances such as toxic metals can be hazardous to humans and wildlife, even in small amounts. Mercury and its compounds, lead, and inorganic cadmium compounds are listed as toxic under the *Canadian Environmental Protection Act, 1999*. These harmful substances can be released to water or emitted into the atmosphere.

Most releases of mercury, lead, and cadmium to water are contained in effluent from wastewater treatment facilities. Wastewater treatment facilities do not generate these substances. The main source of mercury, lead and cadmium in wastewater effluents usually comes from industrial discharge to sewers. Compared to 2003, **facility-based releases** of mercury, lead, and cadmium to water were 72%, 60%, and 41% lower in 2019 (respectively).

Emissions of mercury and cadmium have not changed substantially since 2011. This may be due to a range of competing factors such as increases in the level of production as well as the implementation of new, cleaner technologies, facility closures, and regulations coming into force in the earlier years. Between 1990 and 2019, **mercury, lead, and cadmium emissions** decreased by 92%, 89%, and 95%, respectively.

Mercury emissions reductions are mostly attributed to a large drop in emissions from the non-ferrous refining and smelting industry since 1990. Lead emissions reductions have resulted from implementing regulations to limit or eliminate lead in products such as gasoline and paints, as well as closing outdated smelters and implementing regulated pollution prevention plans in smelters. Finally, cadmium emissions reductions are attributed to closing outdated smelters and implementing pollution prevention plans.

ON THE JOURNEY

RISKS AND CHALLENGES TO MEETING THE TARGETS

PUBLIC HEALTH MEASURES AND COVID-19

Competing sources of information from the media and online are sometimes confusing and contradictory. Public environmental health outreach activities from Health Canada and other credible sources are extremely important. An ongoing challenge is to remain highly visible as an authoritative source and be able to reach all citizens including those in remote and vulnerable populations.

DISPROPORTIONATE HARM AND COVID-19

Pollution and other sources of environmental harm disproportionately affect Indigenous and racialized communities. In the past, for example, environmental circulation of persistent organic pollutants and heavy metals in country food were diagnosed as a public health hazard to Inuit in the Arctic. These pollutants were generated by production outside of the region. As a result, Canada took action to address this issue at its source through the **Northern Contaminants Program** and global advocacy through the Arctic Council and the United Nations Environment Programme.

Today, the impacts of the COVID-19 pandemic have been disproportionately borne by disadvantaged groups in Canadian society. Environmental factors also influence the intensity and spread of COVID-19, leading to further disproportionate health outcomes for racialized and vulnerable communities. The Air Quality Program is exploring how to address air pollution in specific areas that are particularly stressed—so-called "hotspots" where environmental harms can disproportionately affect vulnerable populations.

INTERNATIONAL COOPERATION ON AIR POLLUTION

Pollutants originating from beyond Canada's borders both within North America and overseas—affect air quality in Canada. As it is an international issue, domestic action alone is insufficient. Instead, international cooperation is required. For this reason, Canada is party to the Canada-U.S. Air Quality Agreement and the United Nations Economic Commission for Europe Convention on Long-range Transboundary Air Pollution. Both agreements aim to reduce the flow of transboundary air pollution.

AIR POLLUTANTS AND AIR QUALITY

While most key air pollutants from Canadian sources are declining, improving air quality remains a challenge, especially:

- where there is high vehicle traffic, industrial activity, or concentrated livestock production;
- where more frequent wildfires in forests and grasslands are occurring—and climate change increases the risk for these events;
- in communities where wood-burning stoves and fireplaces are common, causing higher levels of fine particulate matter to be released; and
- in specific areas where air quality may be influenced by air pollutant flows from other countries, in particular the United States.

THE CHEMICALS MANAGEMENT PLAN

The Chemicals Management Plan has been successful in identifying risks and putting controls in place to manage harmful substances. Measuring the effectiveness of the program in meeting environmental and human health objectives, however, continues to be an area of challenge, given that it takes time to see a measurable response in the environment and in Canadians from the risk management actions taken.

COVID-19 delayed the publication of draft and final screening assessment reports under the Chemicals Management Plan. Publishing regulatory packages typically affects industry and other stakeholders due to specified comment periods and new risk management actions. The pandemic affected the ability of many stakeholders to provide comments or organize to address new risk management actions. However, publications resumed in July 2020 and the program developed a publication strategy to resume publication while recognizing stakeholder challenges. This strategy staggered publications and considered the need to limit the burden that publication may have on reviewers. The strategy also included flexibility to accept comments following the close of the formal 60-day public comment process. The program engaged with key stakeholders to discuss the publications plan.

COVID-19 restrictions have contributed to delays in meeting the 2020 commitment date for the completion of the re-evaluation of legacy pesticides. Delays were experienced during the early stages of the pandemic as a result of publication limitations and network access. The remaining legacy pesticides are complex reevaluations based on their large use patterns and require large volumes of scientific data that may be complex to generate.

INTERNATIONAL COOPERATION ON HARMFUL CHEMICALS

Domestic efforts alone are not sufficient to fully protect the health and environment of Canadians from risks that originate from beyond Canada's borders. Canadians and their environment are also exposed to chemicals entering Canada through long-range transport (through air, water currents, and in migratory species) and from products imported to Canada.

To mitigate these risks and promote global cooperation and action, Canada is actively engaged in all of the global chemicals and waste conventions (including the Basel, Rotterdam, Stockholm, and Minamata conventions, and the Montreal Protocol), and in the ongoing negotiations on the global chemicals and waste agenda beyond 2020.

FEDERAL CONTAMINATED SITES

To reduce environmental and health risks from known federal contaminated sites, the **Federal Contaminated Sites Action Plan** was established in 2005 and renewed in 2019 for an additional fifteen years. Since its creation, the plan has completed 7,700 site assessments and has completed remediation at 1,040 sites. In Phase IV of the plan, running between 2020 to 2024, the program eligibility criteria has been expanded to improve program efficiency and to allow more sites to be addressed that may impact Indigenous people living on reserves or in Northern communities.

While there is a plan in place to remediate the more than 2000 remaining priority contaminated sites, there is no simple 'walk-away' solution for the remediation of large contaminated sites such as the Faro (Yukon) and Giant Mine (Northwest Territories). These sites will be utilizing containment techniques that will require long-term monitoring, such as to contain arsenic trioxide at Giant Mine. However, custodians sometimes experience project delays due to weather conditions or other unforeseen circumstances.

CANADA IN THE WORLD

Taking action to ensure that all Canadians live in safe and healthy communities supports SDG 2 (Zero hunger), SDG 3 (Good health and well-being), SDG 9 (Industry, innovation, and infrastructure), SDG 11 (Sustainable cities and communities), SDG 12 (Responsible consumption and production), SDG 13 (Climate action), and SDG 15 (Life on land).

Representative targets within the **United Nations' Global Indicator Framework** for these SDGs are listed below:



Target 2.4:

Strengthen efforts to protect and safeguard the world's cultural and natural heritage.



Target 3.9:

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.



Target 9.4:

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.



Target 11.6:

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.



Target 12.4:

By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.



Target 13.1:

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.



Target 15.1:

By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

SUPPORT FOR OTHER INTERNATIONAL AGREEMENTS

Progress toward this goal supports the Stockholm Convention on Persistent Organic Pollutants under the United Nations Environment Programme and the regional Protocol on Persistent Organic Pollutants to the Convention on Long-range Transboundary Air Pollution under the United Nations Economic Commission for Europe. Progress also supports the Rotterdam Convention, the Montreal Protocol on Substances that Deplete the Ozone Layer, and the Minamata Convention on Mercury.





REFERENCE MATERIAL

2021 Progress Report Annexes

ANNEX I: ABOUT THE FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY

THE ROLE OF LEGISLATION

The *Federal Sustainable Development Act* (the Act) establishes the requirement to produce the Government of Canada's Federal Sustainable Development Strategy (FSDS). The Act provides the legal framework for developing and implementing an FSDS that will make sustainable development 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 at least once every three years. *An Act to amend the Federal Sustainable Development Act* received Royal Assent in February 2019, came into force on December 1, 2020, and sets out amendments to ensure that future strategies will be more effective, inclusive, and accountable.

THE ROLE OF FEDERAL ORGANIZATIONS

Environment and Climate Change Canada plays a key role in implementing the Act. It houses the Sustainable Development Office, which is responsible for developing and maintaining systems and procedures to monitor progress on implementation of the FSDS, and for preparing FSDS Progress Reports at least once every three years. The Sustainable Development Office also coordinates the development of the strategy.

Sustainable development includes many departmental and agency mandates beyond that of Environment and Climate Change Canada. The Act reflects this inclusivity by requiring agencies named in its schedule and departments named in Schedule I of the *Financial Administration Act* to prepare sustainable development strategies that comply with and contribute to the FSDS.

The role of departments and agencies also includes:

- collaborating with Environment and Climate Change Canada to develop the FSDS;
- integrating environmental and sustainable development considerations into policy, plan and program development through strategic environmental assessments; and,
- preparing sustainable development strategies containing objectives and plans within their mandate that contribute to the FSDS.

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 from each of the following: Indigenous peoples, environmental non-governmental organizations, business organizations, and organizations representative of labour);
- the appropriate committee of each House of Parliament; and,
- the public.

A publicly available synthesis report summarizes the results of these consultations. Taken together, they inform the final strategy.

THE STRUCTURE OF THE FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY

The 2019 to 2022 FSDS is organized around 13 aspirational goals. These goals are a Canadian reflection of the United Nations Sustainable Development Goals that focus on environmental issues. They acknowledge Canada's unique responsibilities and circumstances. These goals are aspirational and take a long-term view toward addressing important challenges and problems. They remain attuned to environmental information, data, and indicators and encourage flexibility in the choice of strategies for their achievement. Lastly, these goals reflect Canada's domestic and international priorities and commitments.

One or more targets contribute to each goal. To the extent possible, targets fit the following criteria:

- Measurable: it should be clear how progress will be measured, and targets should be supported by indicators that accurately represent what is being measured and that allow for comparison over time.
- Time-bound: clear time frames should specify what is required by when.
- Medium-term view: targets should aim for achievement in three to five years.
- Relevant: targets should fall within federal jurisdiction and departmental mandates.
- Consistent: targets should be consistent with Government of Canada priorities.
- Principled: targets should reflect the principles set out in the Federal Sustainable Development Act.

Short-term milestones complement FSDS targets. These milestones represent interim steps that will help ensure the Government of Canada stays on track to achieve its longer-term objectives. In general, short-term milestones should be achievable within one three-year FSDS cycle.

ACTION PLANS AND 2020 TO 2023 DEPARTMENTAL SUSTAINABLE DEVELOPMENT STRATEGIES

Action plans constitute implementation strategies as required by the Act. These plans set out what the Government of Canada will do to achieve its medium-term targets and aspirational goals. They include priority measures, as well as other actions that support the goals and targets. Action plans should:

- be clear, meaning they should be written in plain language, well-defined and understandable;
- be relevant, meaning they should have a clear connection to one or more targets or to a goal; and,
- reflect actions the Government of Canada is taking or plans to take during the three-year FSDS cycle (recognizing that actions may cover part of the three-year cycle or may extend beyond it).

Action plans as set out in the FSDS are complemented by specific commitments set out in Departmental Sustainable Development Strategies. Departmental strategies must be tabled in Parliament within one year of the FSDS. They must include actions and performance measures that contribute to FSDS action plans.

Overall, departmental strategies provide detailed information on what departments and agencies are doing to help meet the goals, targets, and milestones set out in the FSDS. They include each department's sustainable development vision, their specific sustainability commitments and actions, performance indicators to show how they are meeting their commitments, and information on departmental decision-making and sustainable development practices, including their implementation of strategic environmental assessments. Departments and agencies bound by the Act contribute differently to FSDS goals and targets depending on their mandate; however, all are responsible for contributing to the goal of greening government operations.

Departmental Sustainable Development Strategies to support the 2019 to 2022 FSDS will be in place from 2020 to 2023.

While provinces and territories, Indigenous peoples, businesses, the scientific community, non-governmental organizations and Canadian citizens contribute to achieving environmental outcomes and the 17 Sustainable Development Goals of the 2030 Agenda, only federal actions are included in FSDS action plans. It is important to note that responsibility for the environment is shared. The federal government supports environmental sustainability within the constraints of its jurisdiction and authorities. As a result, it can be difficult to make direct links between federal actions and environmental outcomes.

DEPARTMENTS AND AGENCIES

The following departments and agencies are required to table sustainable development strategies under the Act, as listed in the 2019 to 2022 FSDS:

- Agriculture and Agri-Food Canada
- Atlantic Canada Opportunities Agency
- Canada Border Services Agency
- Canada Economic Development for Québec Regions
- Canada Revenue Agency
- Canadian Heritage
- Finance Canada
- Justice Canada
- Employment and Social Development Canada
- Environment and Climate Change Canada
- Fisheries and Oceans Canada
- Global Affairs Canada
- Health Canada
- Immigration, Refugees and Citizenship Canada
- Indigenous and Northern Affairs Canada (Indigenous Services Canada and Crown-Indigenous Relations and Northern Affairs Canada)
- Innovation, Science and Economic Development Canada
- National Defence
- Natural Resources Canada
- Parks Canada Agency
- Public Health Agency of Canada
- Public Safety Canada
- Public Services and Procurement Canada
- Transport Canada
- Treasury Board of Canada Secretariat
- Veterans Affairs Canada
- Western Economic Diversification Canada
- Women and Gender Equality Canada

While not bound by the Act, the following organizations are contributing to the 2019 to 2022 FSDS:

- Canadian Coast Guard*
- Impact Assessment Agency of Canada (previously Canadian Environmental Assessment Agency)
- Canadian Food Inspection Agency
- Canadian Institutes of Health Research
- Canadian Northern Economic Development Agency
- Correctional Service Canada
- Federal Economic Development Agency for Southern Ontario
- Federal Economic Development Agency for Northern Ontario
- Infrastructure Canada
- Jacques Cartier and Champlain Bridges Incorporated
- National Capital Commission
- National Research Council Canada
- Royal Canadian Mounted Police
- Standards Council of Canada
- Statistics Canada
- Sustainable Development Technology Canada

*The Canadian Coast Guard is included as part of Fisheries and Oceans Canada throughout the strategy.

CANADIAN ENVIRONMENTAL **SUSTAINABILITY NDICATORS**

Tracking Canada's performance on key environmental issues

CLIMATE

Greenhouse gas emissions. our changing climate and its impacts

AIR

Air quality and the effects of pollution on human health and the environment

WATER

Water quality and availability across Canada, pressures on aquatic ecosystems

WILDLIFE/HABITAT

Biodiversity, sustainable use of resources and Canada's commitment to conserved areas

SOCIO-ECONO

The effects of pollution and waste on human health and the environment

INTERACTIVE MAPPING APPLICATION

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Sustainability Indicators Indicators based on sound, consistent and scientifically-accepted methodologies

CES

Canadian Environmental



Measuring the progress towards environmental sustainability (SDG: Sustainable Development Goals)
ANNEX II: TRACKING PROGRESS THROUGH INDICATORS IN THE 2019 TO 2022 FSDS

INDICATORS USED IN THIS REPORT

This annex lists the indicators used by each goal, records the year in which each indicator was most recently updated, and notes the page number(s) on which each indicator appears. This information is intended to help readers to clearly understand where the indicators listed in the 2019 to 2022 FSDS are presented in this report, and to guide readers to sources of information where they can see more about each indicator. Throughout, the **Canadian Environmental Sustainability Indicators program** is referred to by its acronym "CESI".

EFFECTIVE ACTION ON CLIMATE CHANGE

Measures of progress toward the target								
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated			
Canada's greenhouse gas emissions	Greenhouse gas emissions	CESI	Every year	28, 30, 32-34	2021			
Zero-emission vehicles	Percentage of new light-duty vehicle sales that are made up of zero-emission vehicles	Transport Canada	Every year	29, 34	2021			

	Complementary contextual indic	cators supportin	ng the goal		
	Greenhouse gas intensity	CESI	Every year	30, 33	2021
	Greenhouse gas emissions by economic sector	CESI	Every year	32-33	2021
	Progress towards Canada's green- house gas emissions reduction target	CESI	Every year	33-34	2021
\bigcirc	Temperature change	CESI	Every year	35	2021
	Snow cover	CESI	Every two years	35-36	2020
	Arctic sea ice	CESI	Every two years	36	2021
	National Climate Change Adaptation Survey	Natural Resources Canada	Every five years	34	2018

GREENING GOVERNMENT

Measures of progress toward the target							
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated		
Greenhouse gas emissions reductions from federal buildings and fleets	Percentage change in energy related greenhouse gas emissions from facilities and fleets relative to fiscal year 2005 to 2006	Treasury Board of Canada Secretariat – Centre for Greening Government	Every year	45, 49, 50	2020		
	Percentage of non-hazardous operational waste diverted from landfill	Treasury Board of Canada Secretariat – Centre for Greening Government	Every year	45, 50	New		
Real property and	Percentage of plastic waste diverted from landfill	Treasury Board of Canada Secretariat – Centre for Greening Government	Every year	46, 50	New		
fleet	Percentage of construction, renovation and demolition waste diverted from landfill	Treasury Board of Canada Secretariat – Centre for Greening Government	Every year	46, 50	New		
	Percentage of the federal administrative fleet comprised of zero-emission vehicles	Treasury Board of Canada Secretariat – Centre for Greening Government	Every year	47, 50	2021		

Measures of progress toward the target							
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated		
Real property and fleet – continued	Percentage of office leases that are reporting energy, water and waste using ENERGY STAR® PortfolioMan- ager® (as of April 1, 2019, for all new domestic office leases and lease renewals for space more than 500 m ² , landlords must report building energy, water usage and waste generated using the online tool ENERGY STAR® PortfolioManager® to benchmark the performance of buildings).	Treasury Board of Canada Secretariat – Centre for Greening Government Public Services and Procurement Canada	Every year	47, 50	New		
Adaptation to climate change	Number of departments that have developed measures to reduce climate change risks to assets, services and operations identified through departmental climate change risk assessment processes	Treasury Board of Canada Secretariat – Centre for Greening Government	Every year	48, 51	New		
Procurement	Percentage of purchased electricity from clean generation sources	Treasury Board of Canada Secretariat – Centre for Greening Government	Every year	48, 51	2020		

Complementary contextual indic	ators supportin	ng the goal		
Progress towards Canada's greenhouse gas emissions reduction target	CESI	Every year	33-34	2021
Solid waste diversion and disposal	CESI	Every two years	51	2021

CLEAN GROWTH

Measures of progress toward the target							
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated		
Federal investment in clean energy, research, development and demonstration	Clean energy investment tracking	Natural Resources Canada	Every year	57, 58	2021		
Clean technology exports	Value of clean technology exports	Statistics Canada	Every year	57, 58	2021		

Complementary contextual indic	ators supportin	ig the goal		
Clean tech sector jobs	Statistics Canada	Every year	60	2021
Clean tech sector gross domestic product	Statistics Canada	Every year	60	2021
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MODERN AND RESILIENT INFRASTRUCTURE

Measures of progress toward the target							
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated		
Federal invest- ment in green infrastructure initiatives	Percentage of funding under the green infrastructure stream of the Investing in Canada plan that has been allocated to projects	Infrastructure Canada	Every year	67, 68	2021		
	Complementary contextual indic	ators supportir	ng the goal				
	Value of green infrastructure projects approved under the Investing in Canada plan (federal share)	Infrastructure Canada	Every year	67, 68	2018		
	Percentage of municipalities that have integrated consideration of climate change impacts into their asset management planning and practices (Core Public Infrastructure Survey)	Infrastructure Canada / Statistics Canada	Every two years	69	2020		
	Percentage of municipalities across Canada with sustained boil water advisories per year (Core Public Infrastructure Survey)	Infrastructure Canada / Statistics Canada	Every two years	69	2020		
	Percentage of wastewater systems that are high, medium and low risk based on federal wastewater systems effluent regulations	Infrastructure Canada	Every two years	69	2020		
	Percentage of municipalities who practice asset management (Core Public Infrastructure Survey)	Infrastructure Canada / Statistics Canada	Every two years	69	2020		
	Percentage of municipalities that strengthened their asset management practices as a result of federal funding through Infrastructure Canada	Infrastructure Canada	N/A	69	2019		

Complementary contextual indicators supporting the goal

Percentage of municipalities that built or enhanced their capacity to reduce greenhouse gas emissions and adapt to climate change as a result of federal funding through Infrastructure Canada	Infrastructure Canada	N/A	69	2019
Number of structural and/or natural assets with improved structural capacity to adapt to climate change, disaster, weather, etc.	Infrastructure Canada	N/A	N/A	N/A

CLEAN ENERGY

Measures of progress toward the target								
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated			
Clean power generation	Electricity generation from renew- able and non-emitting sources	Natural Resources Canada	Every year	77, 78, 79	2020			
Energy efficiency	Energy efficiency	Natural Resources Canada	Every year	77, 79	2020			

Complementary contextual indicators supporting the goal



Measures of progress toward the target							
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated		
Marine conservation	Canada's conserved areas (marine)	CESI	Every year	88, 89, 90	2021		
Sustainable fisheries	Sustainable fish harvest	CESI	Every year	88, 89, 91	2021		

	Complementary contextual indic	ators supportir	ng the goal		
	Shellfish harvest area quality	CESI	Every two years	91	2020
	Eelgrass sites and trends	CESI	Every three years	92	2020
	Status of major fish stocks	CESI	Every year	91	2021
	Marine pollution spills	CESI	Every three years	92	2018
	Monitoring disposal at sea	CESI	Every three years	92	2020





PRISTINE LAKES AND RIVERS

Measures of progress toward the target							
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated		
Lake Erie	Phosphorus loading in Lake Erie	CESI	Every year	100, 102	2020		
Lake Winnipeg Basin	Nutrients in Lake Winnipeg Note: in 2019, to facilitate timely data presentation, this indicator was subdivided into two indicators, as follows: * Reductions in phosphorus loads to Lake Winnipeg ** Nutrients in Lake Winnipeg	CESI	Every year* Every two years**	100, 101, 103	2020* 2018**		

Complementary contextual indicators supporting the goal

Phosphorus levels in the offshore waters of the Great Lakes	CESI	Every three years	103	2020
Nutrients in the St. Lawrence River	CESI	Every two years	103	2021
Restoring the Great Lakes Areas of Concern	CESI	Every year	103	2020
Water quality in Canadian rivers	CESI	Every year	103	2021
Water quantity in Canadian rivers	CESI	Every two years	103	2020
Metal and diamond mining effluent quality	CESI	Every year	103-104	2021
Pulp and paper effluent quality	CESI	Every year	104	2021



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SUSTAINABLY MANAGED LANDS AND FORESTS

Measures of progress toward the target						
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated	
Terrestrial ecosys- tem conservation	Canada's conserved areas (terrestrial)	CESI	Every year	110, 112, 114	2021	
Health of national parks	Ecological integrity of national parks	CESI	Every year	110, 112, 115	2020	
Sustainable forests	Sustainability of timber harvest	CESI	Every year	109, 111, 113, 115	2021	

Complementary contextual indicators supporting the goal

Amount of Canadian forests: deforestation	Natural Resources Canada	Every year	115-116	2020
Forest regeneration	Natural Resources Canada	Every year	116	2020
Land use change	CESI	To be deter- mined	116	2021
Extent of Canada's wetlands	CESI	Every four years	116	2016



HEALTHY WILDLIFE POPULATIONS

Measures of progress toward the target						
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated	
Species at risk	Species at risk population trends	CESI	Every year	124, 125, 127	2020	
	Status of wild species	CESI	Every five years	124, 125, 127	2018	
Migratory birds	Population status of Canada's migratory birds	CESI	Every three years	124, 126, 128	2019	

Complementary contextual indicators supporting the goal							
AS)	Changes in the status of wildlife species at risk	CESI	Every year	127-128	2020		

CLEAN DRINKING WATER

	Measures of progress to	oward the targe	t		
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated
	Number of long-term drinking water advisories on First Nations public systems on reserve	CESI	Every three years	N/A	2021
Long-term drinking water advisories	Number of long-term drinking water advisories on First Nations public drinking water systems Note: to facilitate timely data presen- tation, this indicator has been added in place of the CESI program indicator above. Reporting from Indigenous Services Canada presents frequent, authoritative updates.	Indigenous Services Canada	Every year— updates are made through- out the year	135, 136	2021

Complementary contextual indicators supporting the goal



Drinking water advisories in Canada

CESI

Every two years

VO

136 2020

SUSTAINABLE FOOD

Measures of progress toward the target						
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated	
Sustainable agriculture	Index of Agri-Environmental Sustainability	Agriculture and Agri-Food Canada	Every five years	143, 146	2016	
Sustainable aquaculture	Management of Canadian aquaculture	CESI	Every year	143, 145, 146-147	2021	
Agri-food exports	Value of agriculture and agri-food exports. Note: this indicator has been included to provide additional information related to the target.	Agriculture and Agri-Food Canada	Every year	144, 147	2021	
	Percentage change of agri-food products sold	Agriculture and Agri-Food Canada	Every year	144, 147	2021	

	Complementary contextual indic	cators supportin	g the goal		
	Environmental farm planning on agricultural land	Agriculture and Agri-Food Canada	Every three years	147-149	2019
	Wildlife habitat capacity on agricultural land	CESI	Every three years	149	2019
	Rates of diet-related chronic diseases in Canada	Statistics Canada	Every year	149	2021 (mortality) 2020 (diagnosed)
	Obesity rate in Canada	Statistics Canada	Every year	149	2021

CONNECTING CANADIANS WITH NATURE

Measures of progress toward the target							
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated		
Visitation to parks and participation in biodiversity conservation activities	Number of visits at Parks Canada natural heritage places	Parks Canada Agency	Every year	155, 156	2020		

	Complementary contextual indic	ators supportir	ng the goal		
	Trends in percentage of Canadians who report that they visited parks or public greenspaces	Statistics Canada	Every two years	155, 156	2019
Res and a second	Number of visits to selected national wildlife areas	Environment and Climate Change Canada	Every year	157	2020
	Percentage of Canadians who report that they take definite action to protect the environment	Statistics Canada	Every two years	155, 156	2019

SAFE AND HEALTHY COMMUNITIES

Measures of progress toward the target						
Target	Indicator	Source	Update cycle	Progress Report pages	Year updated	
Air quality	Population exposure to outdoor air pollutants	CESI	Every year	164, 166, 167	2021	
Chemicals Management Plan	Percentage of substances that are found to be toxic to the environment that have controls in place in a timely manner	Environment and Climate Change	Every year	165, 168	2021	
	Percentage of actions taken in a timely manner to protect the health of Canadians from substances found to be a risk to human health	Health Canada	Every year	165, 168	2021	
Air pollutant emissions	Air pollutant emissions	CESI	Every year	164, 166, 167	2021	

Complementary contextual indicators supporting the goal					
	Air health trends	CESI	Every three years	168	2018
•)	Air quality	CESI	Every year	167	2021
	Human exposure to harmful substances	CESI	Every three years	168	2020
	PBDE in fish and sediment	CESI	Every three years	169	2020
	PFOS in fish and sediment	CESI	Every three years	169	2020
	Release of harmful substances to water	CESI	Every year	169	2021
	Emissions of harmful substances to air	CESI	Every year	169-170	2021

ANNEX III: UPDATE ON KEY PRIORITIES IN THE 2019 TO 2022 FSDS

WHAT ARE KEY PRIORITIES?

The 2019 to 2022 FSDS sets out action plans for each goal, which constitute implementation strategies to illustrate how we will achieve our medium-term targets and aspirational goals. Part of the action plans are made up of key priorities that support the goals.

To clarify where more information on these priorities can be found, this Progress Report sets out the key priorities in the same language with which they were presented in the 2019 to 2022 FSDS. It then lays out the federal lead(s) within the FSDS as well as any supporting federal organizations for each key priority. Reporting on priorities is available through Departmental Sustainable Development Strategies and other forms of departmental reporting. As these commitments are implemented, some details may change.

It is important to note: the list of supporting organizations is not exhaustive. This list presents only those federal organizations that support the key priority. Some key priorities are implemented through partnerships with provinces, territories, Indigenous peoples, municipalities, international partners, and other organizations. These partners are not listed here, as their participation is outside of the remit of the 2019 to 2022 FSDS to present federal activities.

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EFFECTIVE ACTION ON CLIMATE CHANGE

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our greenhouse gas emission reduction target and our Effective Action on Climate Change goal, we will continue to implement the Pan-Canadian Framework on Clean Growth and Climate Change, which includes commitments under 4 pillars: pricing carbon pollution; complementary measures to reduce emissions across the economy; adaptation and climate resilience; and clean technology, innovation and jobs. We will continue to strengthen our collaboration with Indigenous peoples and support their climate leadership in mitigation and adaptation actions, based on recognition of rights, respect, and cooperation.

In support of our greenhouse gas emission reduction target, we have launched the Low Carbon Economy Leadership Fund in 2017, which is providing \$1.4 billion over 5 years to provinces and territories to leverage investments in projects that will generate clean growth and reduce emissions. In addition, in 2017 we launched the Low Carbon Economy Challenge, which will invest more than \$500 million over 5 years to leverage Canadian ingenuity to reduce emissions and generate clean growth.

In support of our greenhouse gas emission reduction target, we will support remote and northern communities in building capacity and reducing greenhouse gas emissions, including supporting reduced reliance on diesel through programs including the Generating New Opportunities: Indigenous Off-diesel Initiative and the Clean Energy for Rural and Remote Communities Program.

Federal lead:

Environment and Climate Change Canada

Supporting federal organizations:

Whole-of-government implementation

Federal lead:

Environment and Climate Change Canada

Federal lead:

Natural Resources Canada

EFFECTIVE ACTION ON CLIMATE CHANGE

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our greenhouse gas emission reduction target, we will continue to review measures that could be considered inefficient related to fossil fuel subsidies, with a view to reforming them as necessary. As part of that work, Canada recently committed to undergo a peer review of inefficient fossil fuel subsidies under the Group of Twenty (G20) process. This voluntary process is expected to compare and improve knowledge, and push forward the global momentum to identify and reduce inefficient fossil fuel subsidies.

In support of our zero-emission vehicle target, Budget 2019 proposed to provide \$300 million over 3 years, starting in 2019 to 2020, for a new federal purchase incentive of up to \$5,000 for eligible vehicles with a manufacturer's suggested retail price of less than \$45,000. It also included a commitment to work with auto manufacturers to secure voluntary zero-emission vehicle sales targets to ensure vehicle supply meets demand. On May 1, 2019, we launched the Incentives for Zero-Emission Vehicles (iZEV) Program.

In support of our Effective Action on Climate Change goal, we support the Task Force on Climate-related Financial Disclosures' voluntary international disclosure standards and a phased approach to adopting them by major Canadian companies, as appropriate. By supporting these standards, we aim to raise firms' awareness of the importance of tracking, managing, and disclosing material climate-related risks and opportunities in a consistent and comparable way. We will also encourage adoption by federal Crown corporations where appropriate and relevant to their business activities.

In support of our Effective Action on Climate Change goal, Budget 2019 proposed to provide \$151 million over 5 years, starting in 2019 to 2020, and \$9.28 million per year ongoing, to improve emergency management in Canada. This includes helping to ensure communities and infrastructure are resilient to natural disasters, such as forest fires and floods.

In support of our Effective Action on Climate Change goal, we have established Canada's Expert Panel on Sustainable Finance. We recognize that the cost of transitioning to a low-carbon economy is substantial, and that private capital will need to be mobilized to support this transition. The panel is consulting the private sector, and in particular Canada's financial sector, on issues related to sustainable finance such as climate-related disclosures and investments that consider environmental factors.

Federal lead:

Environment and Climate Change Canada

Finance Canada

Federal lead:

Transport Canada

Supporting federal organizations:

Innovation, Science and Economic Development Canada

Natural Resources Canada

Federal lead:

Finance Canada

Supporting federal organizations:

Environment and Climate Change Canada

Federal leads:

Environment and Climate Change Canada Indigenous Services Canada Natural Resources Canada Public Safety Canada

Federal leads:

Environment and Climate Change Canada

Finance Canada

EFFECTIVE ACTION ON CLIMATE CHANGE

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our Effective Action on Climate Change goal, we will continue to support international efforts to combat climate change, including by advancing implementation of the Paris Agreement, following through on our historic \$2.65 billion commitment to support climate action in developing countries between 2016 and 2021, and taking action to implement, promote, and support the Kigali Amendment to phase down hydrofluorocarbons.

Federal leads:

Environment and Climate Change Canada

Global Affairs Canada

Supporting federal organizations:

Crown-Indigenous Relations and Northern Affairs Canada

Health Canada

Indigenous Services Canada

Natural Resources Canada

Public Safety Canada

EFFECTIVE ACTION ON CLIMATE CHANGE

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our Effective Action on Climate Change goal, we will continue to advance adaptation and build resilience to climate change across Canada, including by:

- fostering collaboration through Canada's Climate Change Adaptation Platform by addressing knowledge gaps, enabling knowledge exchange and dissemination of tools, and developing capacity to help decision makers take action
- supporting large-scale infrastructure projects through the Budget 2017 commitment to invest \$2 billion over 10 years*, starting in 2018, for a Disaster Mitigation and Adaptation Fund to strengthen community infrastructure against the effects of climate change
- maintaining the Canadian Centre for Climate Services to help Canadians improve their understanding of how the climate is changing and provide data, tools, guidance and other resources to support climate-smart decisions
- improving our understanding of how climate change is affecting northern transportation infrastructure and our capacity to adapt through the Northern Transportation Adaptation Initiative
- developing a new strategy to sustainably manage water and land in the Prairies, in partnership with the provinces of Alberta, Saskatchewan and Manitoba as well as Indigenous partners, academics and private sector groups
- improving our weather and water services by strengthening the science underpinning them and enhancing our ability to deliver earlier and more accurate information about environmental conditions and extremes such as severe weather and flooding
- maintaining the WeatherCAN mobile weather app, which provides real-time weather forecasts and alerts to Canadians
- providing \$65 million over 5 years through Budget 2017 to implement the health elements outlined in the Pan-Canadian Framework on Clean Growth and Climate Change

Federal leads:

Environment and Climate Change Canada

Natural Resources Canada

Supporting federal organizations:

Transport Canada

* This text corrects the reference in the FSDS of Budget 2017 supporting this investment over 11 years starting in 2017-2018.



GREENING GOVERNMENT

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

Under the Greening Government Strategy, we commit to:

- low-carbon, sustainable, and climate-resilient real property
- low-carbon mobility and fleet
- climate-resilient assets, services, and operations
- green goods and services

Federal lead:

Treasury Board Secretariat
Supporting federal organizations:
Whole-of-government



CLEAN GROWTH

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our clean energy investment target and our Clean Growth goal, we will continue to bolster the ability of Canadian clean technology companies to develop, scale up, and access international markets by continuing to implement the Innovation and Skills Plan and the Pan-Canadian Framework on Clean Growth and Climate Change. This includes:

- investing \$2.3 billion between 2017 and 2022 to support companies and projects of all sizes, including:
 - \$1.4 billion to the Business Development Bank of Canada and Export Development Canada to increase access to capital to allow companies to scale into global competitors
- \$400 million to Sustainable Development Technology Canada to support the development and demonstration of precommercial clean technologies
- \$155 million to the Clean Growth Program, which funds industry-driven clean technology research, development and demonstration in Canada's energy, mining and forestry sectors
- \$75 million for 5 Impact Canada clean technology challenges focused on unlocking breakthrough solutions to complex and persistent problems: Women in Clean Tech, The Sky's the Limit, Power Forward, Crush It! and the Generating New Opportunities: Indigenous Off-diesel Initiative
- \$52.9 million per year to the Energy Innovation Program, which funds projects focused on significantly reducing greenhouse gas emissions in the areas of electricity, buildings, transportation and industry

Federal leads:

Infrastructure, Science and Economic Development Canada

Natural Resources Canada



CLEAN GROWTH

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

- supporting innovative solutions to address plastic waste in areas such as food packaging, ghost fishing gear, and the compostability of bioplastics through the Canadian Plastics Innovation Challenge launched in October 2018
- supporting the Clean Technology Data Strategy, the foundation for collecting and measuring the economic, environmental, and social impacts of clean technology in Canada
- implementing measures announced in the 2018 Fall Economic Statement and Budget 2019 to advance clean technology and clean growth in Canada, including:
- \$50 million over the next 3 years to increase funds available to clean technology firms under the Venture Capital Catalyst Initiative (VCCI). This new stream of funding is in addition to the \$400 million already announced in Budget 2017 for the VCCI to help meet Canada's climate change goals and to help Canada's innovative clean technology firms bring their technologies to market
- immediate expensing for clean technology to increase market adoption
- the creation of a Centre for Regulatory Innovation to modernize the regulatory system and encourage innovation
- providing advice and support to Canadian companies through the Clean Growth Hub, the federal government focal point for clean technology
- implementing national green infrastructure programs (Smart Grid, Electric Vehicle Infrastructure Demonstration Program, Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative, Energy Efficient Buildings, Emerging Renewable Power, and Clean Energy for Remote and Rural Communities) which represent an \$820 million investment under Budget 2017

In support of our Clean Growth goal, we will work with provinces, territories and other partners to implement the Canada-wide Strategy on Zero Plastic Waste, including through actions in key areas such as addressing single-use and disposable plastics and increasing recycled content in plastic products.

In support of clean growth objectives, in line with our Clean Growth goal, we will work with territorial and Indigenous governments to advance the economic elements of the Arctic and Northern Policy Framework by developing a Pan-Territorial Growth Strategy to stimulate sustainable and diverse economic growth in Yukon, Northwest Territories and Nunavut.

Supporting federal organizations:

Atlantic Canada Opportunities Agency

Canadian Northern Economic Development Agency

Canada Economic Development for Québec Regions

Environment and Climate Change Canada

Federal Economic Development Agency for Southern Ontario

Finance Canada

Global Affairs Canada

Sustainable Development Technology Canada

Western Economic Diversification Canada

Federal lead:

Environment and Climate Change Canada

Supporting federal organizations:

Fisheries and Oceans Canada

Federal Lead:

Canadian Northern Economic Development Agency

Supporting federal organizations:

Crown-Indigenous Relations and Northern Affairs Canada

MODERN AND RESILIENT INFRASTRUCTURE

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our green infrastructure target, we will continue to implement our long-term infrastructure plan, which focuses on investments in projects that will help build our economy for the future.

In support of our green infrastructure target, Budget 2017 provided \$9.2 billion over 11 years through the Investing in Canada Infrastructure Program in green infrastructure, including clean energy generation, transmission and storage initiatives, structural or natural infrastructure projects that are better adapted to the impacts of climate change, as well as projects that increase access to drinking water.

In support of our green infrastructure target, we will work with provinces and territories to target a 10-megatonne reduction in greenhouse gas emissions in 2030 through investments made within integrated bilateral agreements.

In support of our green infrastructure target, we will invest \$40 million over 4 years, starting in 2018–2019, through the Green Construction through Wood program to update national building codes, increase education, and demonstrate through innovative projects the capacity for using wood in non-traditional construction projects as a sustainable means of growing our built environment.

In support of our modern and resilient infrastructure goal, Budget 2019 proposed to provide \$130 million over 5 years to deploy new recharging and refuelling stations in workplaces, public parking spots, commercial and multi-unit residential buildings, and remote locations.

In support of our modern and resilient infrastructure goal, Budget 2019 proposed to provide \$151.23 million over 5 years to improve emergency management in Canada. This investment will improve Canada's ability to predict and respond to threats and will help to assess the condition and resilience of critical infrastructure in the aftermath of a natural disaster.

In support of our modern and resilient infrastructure goal, Budget 2019 proposed to provide \$211 million to support increased resiliency and emergency management on-reserve and \$48 million to renew funding for infrastructure projects on-reserve that will protect communities from climate related hazards, recognizing that First Nations communities face disproportionate health and safety risks from emergencies and natural disasters.

Federal lead:

Infrastructure Canada

Supporting federal organizations:

Fisheries and Oceans Canada

Federal lead:

Infrastructure Canada

Federal lead:

Infrastructure Canada

Federal lead:

Natural Resources Canada

Federal lead:

Natural Resources Canada

Federal lead:

Natural Resources Canada

Supporting federal organizations:

Public Safety Canada

Infrastructure Canada

Federal lead:

Indigenous Services Canada

Supporting federal organizations:

Natural Resources Canada

Fisheries and Oceans Canada

CLEAN ENERGY

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our clean power generation and energy efficiency targets, we will continue to work closely with provinces and territories, including through the Pan-Canadian Framework on Clean Growth and Climate Change, to:

- increase energy efficiency, including by working with experts and other partners to drive efficiency in housing, building, communities, industry and transportation
- use cleaner power, including by significantly expanding our clean electricity generating capacity, and by increasing the share of energy provided by electricity
- use more renewable fuels in transportation, heating and cooling and industrial processes
- produce cleaner oil and gas, including by supporting increased efficiency and new technologies to capture and store emissions

Federal leads:

Environment and Climate Change Canada Natural Resources Canada

Federal lead:

Natural Resources Canada

Supporting federal organizations:

Environment and Climate Change Canada

Federal lead:

Natural Resources Canada

Supporting federal organizations:

Statistics Canada

Federal leads:

Environment and Climate Change Canada

Natural Resources Canada

In support of our energy efficiency target, Budget 2019 proposed to provide \$950 million to increase energy efficiency in residential, commercial, and multi-unit buildings. These investments will be delivered by the Federation of Canadian Municipalities through the Green Municipal Fund.

In support of our Clean Energy goal, Budget 2019 proposed to provide \$15.2 million over 5 years, starting in 2019–2020, for a virtual Canadian Centre for Energy Information to improve the overall quality of energy information available to Canadians.

In support of our Clean Energy goal, we will continue to play a leading role in international clean energy initiatives. For example, we will continue to work with the US and other international partners, bilaterally and through multilateral mechanisms such as the Clean Energy Ministerial and Mission Innovation.

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our marine conservation target, we will continue to work with Indigenous peoples and other partners to conserve marine and coastal areas. For example, we will work with the Government of Nunavut and Qikiqtani Inuit Association to explore the potential creation of marine protected areas in the High Arctic Basin or Tuvaijuittuq—the last portion of the Arctic region expected to retain summer sea ice until at least 2050.

In support of our sustainable fisheries target, we will continue to support the rehabilitation of wild salmon stocks by:

- acting on the recommendations of the Cohen Commission on restoring sockeye salmon stocks in the Fraser River, in consultation with Indigenous peoples and the government of British Columbia. This includes implementing our 2018 to 2022 Pacific Wild Salmon Policy Implementation Plan
- implementing the Wild Atlantic Salmon Conservation Policy to restore and maintain healthy wild Atlantic salmon populations
- providing funding to projects through the British Columbia Salmon Restoration and Innovation Fund announced in the 2018 Fall Economic Statement

In support of our Healthy Coasts and Oceans goal and our sustainable fisheries target, we will continue to enhance ocean and freshwater research and monitoring for improved decision making by ensuring effective use of restored funding to freshwater, oceans, fish stocks and aquaculture research programs.

In support of our Healthy Coasts and Oceans goal, we've taken on a leadership role through Canada's G7 presidency and efforts to advance the Ocean Plastics Charter and the Global Ghost Gear Initiative.

In support of our Healthy Coasts and Oceans goal, we will continue to work on formalizing a moratorium on crude oil tanker traffic on British Columbia's North Coast to protect habitats and communities.

In support of our Healthy Coasts and Oceans goal, we will continue to examine the implications of climate change on Arctic marine ecosystems. Through research and monitoring activities, we will improve our understanding of changes occurring in Canada's Arctic and the impact of climate change on species and habitats.

Federal leads:

Fisheries and Oceans Canada Environment and Climate Change Canada Supporting federal organizations:

Parks Canada Agency

Federal lead:

Fisheries and Oceans Canada

Federal lead:

Fisheries and Oceans Canada

Federal leads:

Fisheries and Oceans Canada

Environment and Climate Change Canada

Federal lead:

Transport Canada

Federal leads:

Fisheries and Oceans Canada Environment and Climate Change Canada

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our Healthy Coasts and Oceans goal, we will continue to implement the Oceans Protection Plan, a national \$1.5 billion investment over 5 years, starting in 2017–2018, for building a world-leading marine safety system and strengthening Canada's stewardship of our 3 coasts. For example:

- partnering with coastal communities to develop a user-friendly, web-based Enhanced Maritime Situational Awareness system that will increase access to local maritime information, including vessel traffic, and enhance marine safety for Indigenous partners, coastal communities and stakeholders
- continuing to work with partners on projects aimed at restoring coastal aquatic habitats through the Coastal Restoration Fund
- recent legislative amendments to the Canada Shipping Act, 2001 and the Marine Liability Act strengthen marine environmental protection and responses including by enhancing safeguards to protect marine ecosystems; strengthening the Canadian Coast Guard's authorities to support a more proactive, rapid, and effective response to ship-source pollution incidents; and modernizing the Ship-Source Oil Pollution Fund, including making unlimited compensation available to pay all eligible claims from a single incident
- working with stakeholders and Indigenous and coastal communities in the Arctic and on the West and East coasts on strengthening Canada's environmental response system
- working with Indigenous and coastal communities to collect baseline data on 6 marine ecosystems in Northern and Southern British Columbia, the St. Lawrence, the Bay of Fundy, the South Coast of Newfoundland and the Eastern Arctic to help understand and inform the national cumulative effects of marine shipping framework

Federal lead:

Transport Canada

Supporting federal organizations:

Fisheries and Oceans Canada Environment and Climate Change Canada Natural Resources Canada Parks Canada Agency

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our Healthy Coasts and Oceans goal and the Oceans Protection Plan, we will continue to implement the Budget 2018 commitment to the 5 year \$167.4 million Whales Initiative, and other announced actions, to address key threats to endangered whale populations in Canada. For example, we are:

- addressing the imminent threat facing the Southern Resident killer whale, which includes \$61.5 million over 5 years, starting in 2019–2020, in additional measures announced on October 31, 2018
- continuing to refine and implement seasonal measures to reduce the risk of vessel strikes with the North Atlantic right whale
- working collaboratively to identify and implement measures to reduce underwater noise in the estuary of the St. Lawrence, home to the endangered St. Lawrence Estuary beluga
- implementing an area closure of Sainte-Marguerite Bay of the Saguenay Fjord to provide refuge in an area frequented by St. Lawrence Estuary beluga females and their young
- working with US counterparts, Indigenous groups, industry, and environmental groups to implement immediate measures to reduce vessel traffic impacts on the Southern Resident killer whale, and to identify and investigate longer-term measures to protect and support the recovery of this species
- providing \$1 million annually, starting in 2018, to support expert marine mammal response organizations, with a focus on large whale disentanglement
- investing in research on technologies to reduce underwater noise from vessels and working internationally to advance quiet vessel design and retrofit options

Federal leads:

Fisheries and Oceans Canada Environment and Climate Change Canada Parks Canada Agency Transport Canada PRISTINE LAKES AND RIVERS

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our targets on phosphorus loading to Lake Erie and nutrient pollution in the Lake Winnipeg Basin, we will continue to work with partners to reduce pollution, improve water quality, and restore these ecosystems. For example:

- we will continue to implement the Great Lakes Protection Initiative, which is helping to address the most significant environmental challenges affecting Great Lakes water quality and ecosystem health
- through the Canada-Ontario Lake Erie Action plan, established in February 2018, that includes more than 120 actions to reduce phosphorus loads to Lake Erie
- through the Lake Winnipeg Basin Program, we will continue to conduct and support research, fund projects to reduce nutrient pollution, enhance collaboration and support engagement of Indigenous peoples on freshwater issues in Lake Winnipeg and its basin

In support of our Pristine Lakes and Rivers goal, we will also continue to work with partners to protect and restore other lake and river ecosystems. For example, we will continue to work collaboratively under the Canada-Quebec Agreement on the St. Lawrence 2011–2026 (St. Lawrence Action Plan) on biodiversity conservation, improved water quality and sustainable use of the river.

Federal lead:

Environment and Climate Change Canada

Supporting federal organizations:

Natural Resources Canada Fisheries and Oceans

Federal lead:

SUSTAINABLY MANAGED LANDS AND FORESTS

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our terrestrial ecosystem conservation and health of national parks targets, Canada's Nature Legacy will protect Canada's ecosystems, landscapes and biodiversity through:

- an expanded, strengthened and connected network of protected and conserved lands and inland waters in Canada that will strive to conserve 17% of land and inland waters by 2020, including by managing and expanding federal protected areas
- transitioning the species at risk program from recovery planning to protection and recovery action for up to 230 species at risk (200 terrestrial and 30 aquatic) by addressing priority places, species, and threats
- building relationships and advancing reconciliation with Indigenous peoples recognizing their rights, responsibilities for lands, wildlife stewardship and related cultural activities to deliver conservation outcomes

In support of our terrestrial ecosystem conservation and health of national parks targets, Budget 2018 announced \$1.3 billion over 5 years to support Canada's biodiversity and protect species at risk between 2018 and 2023, including \$500 million toward a new \$1 billion Canada Nature Fund

In support of our terrestrial ecosystem conservation target, we launched the Challenge Fund and the Natural Heritage Conservation Program in fall 2018. The Challenge Fund will provide up to \$175 million for projects that help meet Canada's target of conserving at least 17% of land and inland waters by 2020. Starting in 2018–2019, the \$100 million Natural Heritage Conservation Program will enable a pan-Canadian approach to acquiring private land and private interest in land for the purpose of establishing new protected and conserved areas.

In support of our terrestrial ecosystem conservation target, in fall 2018 28 Indigenous projects were selected for early funding under the Indigenous Guardians Pilot Program. The pilot program provides Indigenous peoples with greater opportunity to exercise responsibility in stewardship of their traditional lands, waters, and ice.

In support of our terrestrial ecosystem conservation target, in October 2018 Edéhzhíe Protected Area became the first Indigenous protected area designated under Budget 2018's Nature Legacy. Located in the traditional Dehcho territory in the southwestern part of the Northwest Territories, Edéhzhíe provides important habitat for species such as boreal woodland caribou and wood bison.

Federal leads:

Environment and Climate Change Canada Parks Canada Agency

Federal leads:

Environment and Climate Change Canada

Parks Canada Agency

Federal lead:

Environment and Climate Change Canada

Federal leads:

Environment and Climate Change Canada

Parks Canada Agency

Federal lead:

SUSTAINABLY MANAGED LANDS AND FORESTS

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our terrestrial ecosystem conservation target, we will continue to work with our partners to establish new protected areas in Canada, including the proposed Thaidene Nëné national park reserve, Manitoba Lowlands national park, and South Okanagan-Similkameen national park reserve.

In support of our Sustainably Managed Lands and Forests goal, Budget 2019 proposed to provide \$251.3 million over 3 years, starting in 2020–2021, to support and grow Canada's forestry sector by extending innovation and diversification programs such as the Forest Innovation Program and Investments in Forest Industry Transformation program.

In support of our Sustainably Managed Lands and Forests goal, in April 2019 Canada hosted the Nature Champions Summit in Montreal to ramp up global action to protect nature. The summit kicked off a series of multilateral meetings focused on building momentum towards 2020, when leaders representing 190 countries will come together for the Conference of the Parties to the Convention on Biological Diversity in China.

Federal leads:

Parks Canada Agency

Federal lead:

Natural Resources Canada

Federal lead:

HEALTHY WILDLIFE POPULATIONS

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our healthy wildlife population goal and targets, we continue implementing the *Species at Risk Act*, which is one of our main strategies for protecting wildlife species at risk. To ensure it is effective, we are working actively with provinces and territories to complete the robust species-at-risk recovery strategies and management plans within the timelines that the Act requires.

In support of our healthy wildlife population goal and targets, Budget 2018 announced the \$1.3 billion Canada's Nature Legacy to support Canada's biodiversity and protect species at risk between 2018 and 2023, including \$500 million toward a \$1 billion Canada Nature Fund.

In support of our healthy wildlife population goal and targets, we will work with provincial and territorial governments to implement the new Pan-Canadian Approach to Transforming Species at Risk Conservation in Canada, including working with partners to implement a shared national set of priority places, species and threats to guide conservation efforts. By working together and through support from Canada's new Nature Fund, this will enable investments and innovative partnerships to advance recovery and protection for a large number of terrestrial and aquatic species at risk throughout the country.

In support of our healthy wildlife population goal and targets, we will work with federal, provincial and territorial partners to implement the new Pan-Canadian Approach to Wildlife Health, and will recommend implementation options for consideration by the Federal-Provincial-Territorial Ministers in 2019.

In February 2019 we launched the Community-Nominated Priority Places for Species at Risk Program. This funding initiative will provide up to \$15.6 million over 4 years, starting in 2019–2020, to support projects in communities that are bringing people together to protect species at risk.

In February 2019 we launched the Canada Nature Fund for Aquatic Species at Risk. This funding initiative will provide up to \$55 million over 5 years, starting in 2018–2019, to support projects that help to recover aquatic species at risk.

Federal leads:

Fisheries and Oceans

Environment and Climate Change Canada

Parks Canada Agency

Federal leads:

Fisheries and Oceans

Environment and Climate Change Canada

Parks Canada Agency

Federal leads:

Fisheries and Oceans

Environment and Climate Change Canada

Supporting federal organizations:

Parks Canada Agency

Federal leads:

Fisheries and Oceans Environment and Climate Change Canada

Federal leads:

Environment and Climate Change Canada

Parks Canada Agency

Federal leads:

Fisheries and Oceans

CLEAN DRINKING WATER

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our commitment to end all long-term drinking water advisories on public systems on reserve by March 2021, we have invested over \$2 billion since 2016 to significantly improve water and wastewater infrastructure on reserve, ensure the proper operation and maintenance of systems, enhance the monitoring and testing of on reserve water and wastewater, and support the training of water and wastewater system operators. Public reporting on progress is available in real-time.

To ensure that communities that have had drinking water advisories lifted continue to have reliable access to safe, clean drinking water, Budget 2019 proposed an additional investment of \$739 million over 5 years, starting in 2019–2020, for First Nation communities to operate and maintain their public drinking water systems.

Federal lead:

Indigenous Services Canada Supporting federal organizations: Health Canada

Federal lead:

Indigenous Services Canada



Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our sustainable agriculture target, we will continue to enhance the competitiveness and resiliency of the agriculture sector through the implementation of the Canadian Agricultural Partnership, which came into effect in April 2018. The Partnership is a 5-year, \$3 billion investment by federal, provincial and territorial governments to strengthen the agriculture, agri-food and agri-based products sector and enhance competitiveness while helping farmers adapt to climate change, conserve water and soil resources, and grow their businesses to meet increasing global food demand sustainably. It sets clear objectives with a focus on:

- growing trade and expanding markets
- the innovative and sustainable growth of the sector
- supporting diversity and a dynamic, evolving sector

In support of our sustainable agriculture target, on February 2019 we announced the Canadian Agricultural Strategic Priorities Program. It is a \$10 million per year program that over 5 years will provide non-repayable contribution funding to facilitate the agricultural sector's ability to address emerging issues and capitalize on opportunities. It will focus on 4 priority areas:

- adoption of new technology
- environmental sustainability
- strategic development and capacity building
- emerging issues

In support of our sustainable aquaculture target, we will move forward with a suite of initiatives to ensure that Canada's aquaculture sector is economically successful and environmentally sustainable, including:

- beginning to develop a federal Aquaculture Act
- creating a single comprehensive set of regulations, the *General* Aquaculture Regulations
- moving toward an area-based approach to aquaculture management
- developing a framework for aquaculture risk management based on the precautionary approach

In support of our agri-food export target, we have launched an Export Diversification Strategy to increase Canadian exports by helping Canadian businesses access new markets.

Federal lead:

Agriculture and Agri-Food Canada

Federal lead:

Agriculture and Agri-Food Canada

Federal lead:

Fisheries and Oceans

Federal lead:

Global Affairs Canada

Supporting federal organizations:

Agriculture and Agri-Food Canada



SUSTAINABLE FOOD

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our Sustainable Food goal, Budget 2019 proposed to provide an additional \$100 million over 5 years, starting in 2019–2020, from the Strategic Innovation Fund to support innovation in the food processing sector. Launched in 2017, the fund attracts and supports high-quality and innovative business investment across the country.

Federal lead:

Innovation, Science and Economic Development

In support of our Sustainable Food goal, we have committed to modernizing regulatory frameworks that impede innovation and growth in agri-food and aquaculture, without compromising Canada's strong health, safety, and environmental protections.

In support of our Sustainable Food goal, we will continue to advance the Agri-Food Economic Strategy Table. Made up of industry representatives, the Table was established in 2017 to identify sector-specific challenges, propose ambitious targets, and outline an actionable plan to realize those targets, which provide bold recommendations to both government and industry.

In support of our Sustainable Food goal, Budget 2019 proposed to provide \$15 million over 5 years for the Northern Isolated Community Food initiative to improve food systems in the North. In the context of the Food Policy for Canada, this initiative will increase food security in a culturally appropriate manner.

In support of our Sustainable Food goal, Canada is working with the US and Mexico through the Commission for Environmental Cooperation to implement the North American Initiative on Food Waste Reduction and Recovery, a collaborative effort that explores opportunities to reduce and recover food waste in North America.

Federal lead:

Canadian Food Inspection Agency

Supporting federal organizations:

Agriculture and Agri-Food Canada

Fisheries and Oceans

Environment and Climate Change Canada

Health Canada

Federal lead:

Innovation, Science and Economic Development

Supporting federal organizations:

Agriculture and Agri-Food Canada

Federal lead:

Canadian Northern Economic Development Agency

Federal lead:

CONNECTING CANADIANS WITH NATURE

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

In support of our target, we will take action to ensure that current and future generations of Canadians have opportunities to experience and connect with nature. For example:

- Budget 2018 announced a historic investment of \$1.3 billion over 5 years to protect Canada's ecosystems, landscapes and biodiversity between 2018 and 2023, including \$500 million toward the Canada Nature Fund
- Investments in Budget 2018 will support the integration of Indigenous views, history and heritage into national parks, marine conservation areas and historic sites

Federal lead:

Environment and Climate Change Canada

Supporting federal organizations:

Jacques Cartier and Champlain Bridges Incorporated Parks Canada Agency) SAFE AND HEALTHY COMMUNITIES

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

Federal leads:

Environment and Climate Change Canada

Health Canada

Supporting federal organizations:

Crown-Indigenous Relations and Northern Affairs Canada

Canada Border Services Agency

Correctional Service Canada

Fisheries and Oceans

Indigenous Services Canada

Jacques Cartier and Champlain Bridges Incorporated

National Capital Commission

National Research Council Canada

Natural Resources Canada

Parks Canada Agency

Public Safety Canada

Public Services and Procurement Canada

Statistics Canada

Treasury Board Secretariat

Transport Canada

Federal Lead:

Environment and Climate Change Canada

Health Canada

In support of our Chemicals Management Plan target, we will continue to implement the third phase of the Chemicals Management Plan, which will address about 1,550 remaining priority chemicals (of the original approximately 4,300) and to assess new substances as they are introduced in Canada and, where required, put controls in place within legislated timelines

In support of our air quality and emissions targets, we will continue to implement the Air Quality Management System, the *Multi-Sector Air Pollutants Regulations*, and corresponding non-regulatory instruments to significantly reduce air emissions that contribute to smog and acid rain.
SAFE AND HEALTHY COMMUNITIES

Key priorities as listed in the 2019 to 2022 Federal Sustainable Development Strategy

Federal Lead:

Environment and Climate Change Canada

Supporting federal organizations:

Canada Border Services Agency

Fisheries and Oceans

Health Canada

Public Services and Procurement Canada

Treasury Board Secretariat

Federal lead:

Crown-Indigenous and Northern Affairs Canada

Supporting federal organizations:

Environment and Climate Change Canada

Natural Resources Canada

Federal lead:

Environment and Climate Change Canada

Supporting federal organizations:

Health Canada

In support of our Safe and Healthy Communities goal, we will continue to remediate federal contaminated sites under the Federal Contaminated Sites Action Plan.

In support of our Safe and Healthy Communities goal, Budget 2019 proposed to provide \$49.9 million over 15 years (\$2.2 billion on a cash basis), starting in 2020–2021, to create the Northern Abandoned Mine Reclamation Program. The program aims to clean up abandoned mines that pose risks to the environment.

In support of our Safe and Healthy Communities goal, we will continue to monitor emissions and atmospheric data to measure the effectiveness of actions to manage levels of harmful substances in the environment.