

A close-up photograph of a red fox's face, looking directly at the camera. The fox has orange-brown fur on its head and ears, and white fur on its muzzle and chest. Its eyes are a golden-brown color. The background is a soft, out-of-focus green.

**SUMMARY OF
CANADA'S 6TH
NATIONAL
REPORT TO THE**

**CONVENTION ON
Biological Diversity**

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Summary of Canada's 6th National Report to the Convention on Biological Diversity

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EXECUTIVE SUMMARY

SUMMARY OF CANADA'S 6th NATIONAL REPORT TO THE CONVENTION ON BIOLOGICAL DIVERSITY

Canada is home to globally important biodiversity, including a vast proportion of the world's boreal forests, 20% of its freshwater resources and the longest coastline on the planet, and a diverse range of ecosystems, including temperate rainforests, wetlands, prairies, tundra, and more. These natural spaces provide habitat for a variety of plants and animals, including many that are central to Indigenous traditions and cultures. Canada's biodiversity also provides vital ecosystem services that all Canadians depend on, such as clean air and water, fertile soil, carbon sequestration, and flood mitigation.

Recognizing the vital importance of biodiversity to our economy, environment, and ways of life, Canada is an active participant in the United Nations ***Convention on Biological Diversity*** (CBD). Canada implements its commitments under this Convention through collaborative efforts with federal, provincial, territorial, regional, and municipal governments, Indigenous peoples, industry, academia, non-governmental organizations, and others. In November 2018, Canada submitted its **6th National Report to the CBD**. The 6th National Report takes stock of efforts by Canada's partners in biodiversity conservation.

This summary of Canada's 6th National Report provides an overview of Canada's progress toward meeting the ***2020 Biodiversity Goals and Targets for Canada*** and highlights Canada's contributions to the global ***Strategic Plan for Biodiversity 2011-2020***. For example, conserving biodiversity through protected and other conserved areas is one of the most important ways Canada can conserve biodiversity and after concerted efforts over the past three years,

Canada is now on track to meet its target of conserving 10% of coastal and marine areas by 2020. Progress towards Canada's terrestrial target – which aims to conserve at least 17% of terrestrial areas and inland water by 2020 – has been slower to date. However, major efforts to accelerate this progress have been launched, through both the Pathway to Canada Target 1 process and an unprecedented federal investment of \$1.3 billion in nature conservation, including a \$500 million Canada Nature Fund.

Canada is making steady progress towards its targets related to wetland conservation, sustainable forest management, sustainable aquaculture and agriculture, and controlling invasive alien species. Steady progress is also being made in expanding and improving the scientific information needed to support decision-makers, integrating information about biodiversity into school curricula, connecting Canadians with nature, and incorporating biodiversity considerations into both municipal planning and Canada's national statistical system.

While important steps have been taken by Canadian governments and their partners in recent years, progress has been somewhat slower with regard to the recovery of species at risk, ecosystem-based management of fisheries, and reducing pollution levels in Canadian waters. These will continue to be areas of shared focus in Canada moving forward.

Indigenous cultures and societies are inextricably linked with the land and the water. As such, while Indigenous Knowledge and customary use of biological resources are specifically highlighted under Canada Targets 12 and 15, the knowledge, innovations and practices of Indigenous communities are relevant to all of Canada's biodiversity goals and targets and are therefore highlighted throughout Canada's 6th National Report and in this summary.

INTRODUCTION

CANADA'S GLOBAL CONTRIBUTION TO BIOLOGICAL DIVERSITY

Canada is home to a wide spectrum of significant biodiversity, including a vast proportion of the world's boreal forests, 20% of its freshwater resources, and the longest coastline on the planet. Canada also has a quarter of global wetlands and 25% of remaining global temperate rainforests. These ecosystems are globally significant. They provide habitat for a unique variety of plants and animals, including many that are central to the traditions and cultures of Indigenous peoples.

Canada's biodiversity provides vital ecosystem services that all Canadians depend on. This includes clean air and water, fertile soil, carbon sequestration, and flood and drought mitigation. Biological diversity also provides resilience that helps species and ecosystems adapt to disease and the impacts of climate change over time.

Canada's economy, environment, social and cultural identities are intimately connected with its biodiversity. At the same time, some of Canada's ecosystems are showing signs of stress. According to Canada's most recent national review of ecosystem status, [Canadian Biodiversity: Ecosystem Status and Trends 2010](#), native grasslands have declined dramatically across the country. Wetland loss and degradation continues despite widespread efforts to restore them. Ice and permafrost are disappearing in many parts of the north, with significant potential impacts on species and the habitats they depend on.

CANADA'S INTERNATIONAL COMMITMENTS TO BIOLOGICAL DIVERSITY

In 1992, recognizing the vital importance of biodiversity, countries from around the world signed the United Nations [Convention on](#)

[Biological Diversity](#) (CBD). This international agreement provides a global framework for international action to conserve and support the sustainable use of biological diversity. Canada was the first industrialized nation to ratify the CBD and proudly hosts the CBD's global Secretariat in Montreal.

Parties to the CBD work together to develop global targets and priorities, and to track overall progress towards the goals of the Convention. In 2010, these goals were captured in the [Strategic Plan for Biodiversity 2011-2020](#). This plan also included a series of global targets, commonly referred to as the [Aichi Biodiversity Targets](#).

Parties were encouraged either to adopt the Aichi Targets as national objectives or to develop national targets that contribute to global efforts, tailored to their own circumstances.

CANADA'S APPROACH TO DELIVERING ITS CONVENTION ON BIOLOGICAL DIVERSITY COMMITMENTS

In Canada, responsibility for conserving biodiversity and ensuring the sustainable use of biological resources is shared between all levels of government. As a result, Canada implements the CBD collaboratively. In 1995 Canada's federal, provincial, and territorial governments adopted the [Canadian Biodiversity Strategy](#).

This Strategy recognizes and relies on the contributions of all Canadians, including municipalities, industry, non-government organizations, and Indigenous communities. It provides an overarching national framework for implementing the CBD in Canada, setting the stage for strong intergovernmental and multi-sectoral cooperation. It was followed in 2006 by Canada's [Biodiversity Outcomes Framework](#).

In 2015, governments released the **2020 Biodiversity Goals and Targets for Canada**¹, in response to the CBD 2011-2020 Strategic Plan and its global Aichi Biodiversity Targets. This suite of four goals and nineteen targets reflects Canada's particular context and priorities for biodiversity conservation, and articulates the ways in which Canada will contribute to the achievement of the global Aichi Targets. Canada's goals and targets aim to conserve biodiversity through better land use planning and management, to reduce pressures on biodiversity through more environmentally sustainable management practices across sectors, to ensure that decision-makers have increasingly better information about biodiversity and ecosystem services, and to get Canadians involved by raising awareness and encouraging public participation in conservation.

The goals and targets were developed collaboratively by federal, provincial, and territorial governments, and Indigenous organizations and governments, with input from a diversity of stakeholder groups. They are intended to encourage and promote collective action by all sectors of society. Where possible, the national targets and their indicators are aligned with the **Federal Sustainable Development Strategy** and the **Canadian Environmental Sustainability Indicators** to ensure robust reporting over time.

CANADA'S CONTRIBUTION TO THE AICHI TARGETS INTERNATIONALLY

In addition to domestic efforts to implement the objectives of the CBD, Canada is active internationally to support global implementation of the CBD and the Aichi Targets.

For example, Canada is the sixth largest contributor to the Global Environment Facility (GEF), established in 1992 to support international cooperation on the world's most pressing environmental challenges. Canada has contributed US\$875 million to the GEF since

its inception. To date, the GEF has invested over US\$3.5 billion in approximately 1,300 projects across 155 countries for the conservation of biodiversity, leveraging more than US\$10 billion in additional financing from partners.

Canada is signatory to a range of multilateral and bilateral biodiversity-related conventions and contributes to several international initiatives. These include for example, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Ramsar Convention on Wetlands of International Importance, the Migratory Birds Convention, and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

Canada also has an active program of bilateral partnerships related to the goals and objectives of the CBD. For example, Canada provides bilateral support for sustainable forestry initiatives in developing countries such as Indonesia and Senegal and has provided training to other countries on a range of biodiversity-related issues.

PURPOSE OF THIS REPORT

All Parties to the CBD, including Canada, are required to report once every four years on progress towards meeting the objectives of their national biodiversity strategies and action plans. Canada was the first Party to submit its **6th National Report to the CBD** on November 9, 2018.

The purpose of this document is to provide a summary of Canada's 6th National Report. It highlights examples of concrete steps taken at all levels – federal, provincial, territorial, municipal, Indigenous and community-led – to help inspire and support further action towards these vital conservation goals.

1. Québec acknowledges the *2020 Biodiversity Goals and Targets for Canada*, but develops its own instruments to implement the CBD and to contribute to the achievement of the Aichi Targets. Québec sets its own conservation priorities and timelines, and collaborates with the federal government and the provinces and territories where necessary.

NATIONAL BIODIVERSITY TARGETS – PROGRESS AT A GLANCE

The table below provides an overview of progress towards Canada’s 2020 Biodiversity Targets. Progress was assessed using the following scale:














Goal A. By 2020, Canada’s lands and waters are planned and managed using an ecosystem approach to support biodiversity conservation outcomes at local, regional and national scales.

Target	Description	Progress
Target 1	By 2020, at least 17% of terrestrial areas and inland water, and 10% of coastal and marine areas, are conserved through networks of protected areas and other effective area-based conservation measures.	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Terrestrial</p> </div> <div style="text-align: center;"> <p>Marine</p> </div> </div>
Target 2	By 2020, species that are secure remain secure, and populations of species at risk listed under federal law exhibit trends that are consistent with recovery strategies and management plans.	
Target 3	By 2020, Canada’s wetlands are conserved or enhanced to sustain their ecosystem services through retention, restoration, and management activities.	
Target 4	By 2020, biodiversity considerations are integrated into municipal planning and activities of major municipalities across Canada.	
Target 5	By 2020, the ability of Canadian ecological systems to adapt to climate change is better understood, and priority adaptation measures are underway.	

Goal B. By 2020, direct and indirect pressures as well as cumulative effects on biodiversity are reduced, and production and consumption of Canada’s biological resources are more sustainable.

Target 6	By 2020, continued progress is made on the sustainable management of Canada’s forests.	
Target 7	By 2020, agricultural working landscapes provide a stable or improved level of biodiversity and habitat capacity.	

Target 8	By 2020, all aquaculture in Canada is managed under a science-based regime that promotes the sustainable use of aquatic resources (including marine, freshwater and land based) in ways that conserve biodiversity.	
Target 9	By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches.	
Target 10	By 2020, pollution levels in Canadian waters, including pollution from excess nutrients, are reduced or maintained at levels that support healthy aquatic ecosystems.	
Target 11	By 2020, pathways of invasive alien species introductions are identified, and risk-based intervention or management plans are in place for priority pathways and species.	
Target 12	By 2020, customary use by Aboriginal [Indigenous] peoples of biodiversity resources is maintained, compatible with their conservation and sustainable use.	Unknown
Target 13	By 2020, innovative mechanisms for fostering the conservation and sustainable use of biodiversity are developed and applied.	
Goal C. By 2020, Canadians have adequate and relevant information about biodiversity and ecosystem services to support conservation planning and decision-making.		
Target 14	By 2020, the science base for biodiversity is enhanced and knowledge of biodiversity is better integrated and more accessible.	
Target 15	By 2020, Aboriginal traditional knowledge [Indigenous Knowledge] is respected, promoted and where made available by Aboriginal [Indigenous] peoples, regularly meaningfully and effectively informing biodiversity conservation and management decision-making.	
Target 16	By 2020, Canada has a comprehensive inventory of protected spaces that includes private conservation areas.	
Target 17	By 2020, measures of natural capital related to biodiversity and ecosystem services are developed on a national scale and progress is made in integrating them into Canada's national statistical system.	
Goal D. By 2020, Canadians are informed about the value of nature and more actively engaged in its stewardship.		
Target 18	By 2020, biodiversity is integrated into the elementary and secondary school curricula.	
Target 19	By 2020, more Canadians get out into nature and participate in biodiversity conservation activities.	



NATIONAL BIODIVERSITY TARGETS – PROGRESS HIGHLIGHTS

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CANADA TARGET 1

By 2020, at least 17% of terrestrial areas and inland water, and 10% of coastal and marine areas, are conserved through networks of protected areas and other effective area-based conservation measures.



ABOUT THE TARGET

Canada's natural spaces are vital to our culture, heritage, and economy. Canada's forests, wetlands, prairies, tundra, oceans, and coastal areas provide essential ecosystem services that support human life and well-being.

Conserving these places through protected areas or other types of long-term conservation measures is one of the most important ways Canada can conserve biodiversity. Creating protected and other conserved areas is key to maintaining healthy ecosystems and providing a living, diverse legacy for future generations of Canadians.

Canada has a long and recognized history of protecting nature through the creation of national, provincial, and municipal parks and other conserved areas.

PROGRESS TO DATE

Canada assesses progress towards Target 1 using two core indicators: the percentage of total terrestrial territory (including inland water) conserved in protected areas and other effective area-based conservation measures (OECMs); and, the percentage of total coastal and marine territory conserved in marine protected areas and OECMs.

According to these indicators, Canada is on track to achieve this target in the marine environment, and is making progress – albeit at an insufficient rate – in terrestrial ecosystems. However, governments have recently launched a Pathway to Canada Target 1 initiative, which, combined with recent federal investments, is expected to help accelerate action towards the terrestrial component of Canada Target 1.

Conservation of Terrestrial Areas and Inland Water

Currently, 10.5% of Canada's land and freshwater is protected. As such, the magnitude of the challenge to achieve Target 1 by the end of 2020 is both ambitious and significant.

Because Canada's provincial and territorial governments are responsible for administering many public lands in Canada, achieving Target 1 will depend in part on provincial and territorial efforts. Several provinces and territories are pursuing measures that will contribute to achieving Target 1, including strategies or system plans with area-based conservation targets. For example, Nova Scotia has committed to expanding its protected areas network to cover 13% of the province, and Prince Edward Island has committed to protecting 7% of its area.

In addition, Québec has committed to conserving 17% of its terrestrial areas and inland water and 10% of its marine areas. Québec does not participate directly in the Pathway to Canada Target 1 initiative but contributes to the pan-Canadian effort through this equivalent target.

Canada has made significant advances towards its Target 1 goals with the recent creation of the first Indigenous Protected Area (IPA) funded by the Canada Nature Fund – Edézhzié Protected Area in the Northwest Territories. Edézhzié has been declared an IPA by the Dehcho First Nations and will also be established as a federal National Wildlife Area (NWA) in 2020. It consists of an area of approximately 14,218 km². It is home to species at risk such as woodland caribou and wolverines, provides important migratory bird habitat, and contains the headwaters of three rivers.

Collaborative efforts related to terrestrial areas and inland waters have accelerated since 2016 with the creation of the [Pathway to Canada Target 1](#)

initiative (see *text box*). These efforts will be supported by historic investments in nature conservation announced by the Government of Canada as part of federal Budget 2018. Canada's Nature Legacy investment of \$1.35 billion over 5 years includes a new Canada Nature Fund to support the protection of Canada's ecosystems and biodiversity, including species at risk.

The Nature Fund represents a \$500 million federal investment to be matched by

The **Pathway to Canada Target 1**

initiative aims to accelerate progress toward achieving the terrestrial and inland water components of Canada Target 1. This includes achieving ecological representation, connectivity, areas important for biodiversity and ecosystem services, and effective and equitable management. The Pathway initiative was launched in February 2017 and is co-led by the Government of Canada and the Government of Alberta on behalf of the provinces and territories. The Pathway includes a National Steering Committee with federal, provincial, territorial, and municipal government members, as well as representatives from Indigenous organizations and governments. Several advisory bodies have provided advice to the Pathway, including an Indigenous Circle of Experts, a Local Government Advisory Group, and a National Advisory Panel, which proposed a series of recommendations for how Canada could meet Target 1. In June 2018, federal, provincial, and territorial Ministers reaffirmed their commitment to work together towards Canada Target 1. This commitment was affirmed again with the recent release of ***One with Nature: A Renewed Approach to Land and Freshwater Conservation in Canada***. The report presents pan-Canadian opportunities, jointly developed by federal, provincial and territorial departments and informed by the recommendations of the advisory bodies noted above, to support progress towards achieving Canada Target 1 by the end of 2020.

philanthropic, corporate, not-for-profit, provincial, territorial and other partners. It includes:

1. A Quick Start component that awarded almost \$15 million to help establish 39 near-ready protected and other conserved areas across Canada in 2018-19 to build momentum to Target 1;
2. A Challenge component which anticipates up to \$175 million in federal funding to support the establishment of up to 35 Indigenous Protected and Conserved Areas and other protected and conserved areas, thereby making significant progress towards Canada Target 1 and contributing meaningfully to reconciliation; and
3. The Natural Heritage Conservation Program (NHCP), a funding program providing \$100 million over 4 years to protect ecologically sensitive areas through the securement of private lands and interests across the country. The NHCP will be delivered nationally by an organization that can coordinate local, provincial/territorial, and national conservation organizations.

Conservation of Coastal and Marine Areas

Efforts in recent years to make progress toward the marine and coastal areas component of Target 1 have put Canada on track to meet its 10% target by 2020. Canada has outlined its approach for achieving these milestones through a **five-point plan** to meet its marine conservation targets.

Led by Fisheries and Oceans Canada, this plan includes the following actions:

- » Completing work already underway in creating *Oceans Act* Marine Protected Areas (MPAs), such as the Banc-des-Américains and the Laurentian Channel Areas of Interest;
- » Protecting large areas, including the Pacific Offshore and possible areas in the Arctic, as well as a whole-of-government approach for an Impact and Benefit Agreement for Tallurutiup Imanga/Lancaster Sound National Marine Conservation Area (NMCA);
- » Protecting areas under pressure in five priority bioregions where MPA network development is occurring;

- » Advancing Other Effective Area-Based Conservation Measures; and
- » Establishing MPAs faster and more effectively through the passage of Bill C-55 which amends the *Oceans Act* to broaden the categories of Marine Protected Areas and to provide the minister with the authority to provide interim protection to candidate sites.

The proportion of Canada's marine and coastal territory recognized as conserved has greatly increased in recent years. In 2015 around 1% was conserved. By December 2017, approximately 7.7% (442,926 km²) was conserved, surpassing Canada's interim target to conserve 5% of its marine and coastal area. This increased to approximately 7.9% in June 2018 with the establishment of Scott Islands marine National Wildlife Area.

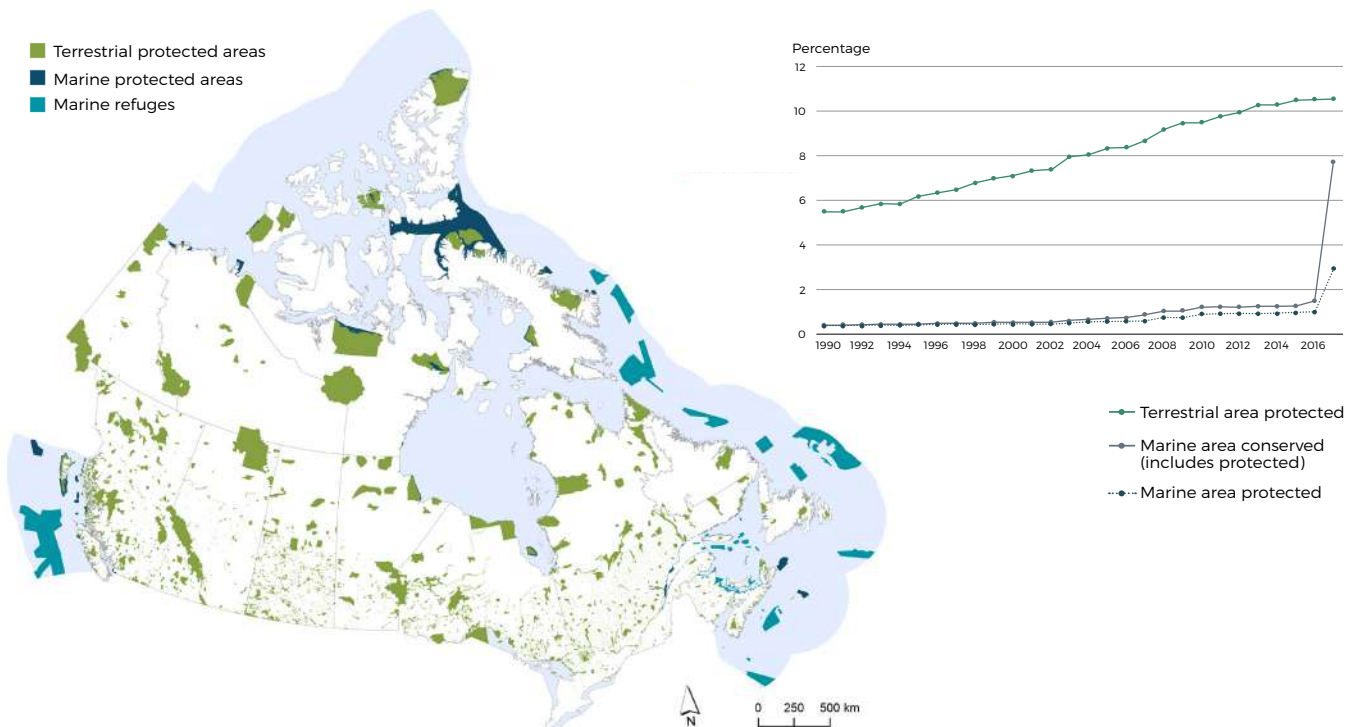
This growth in marine conservation also includes:

- » Anguniaqvia niqiqyuam *Oceans Act* MPA in the Northwest Territories was established in November 2016 and protects approximately 2,358 km² (0.04%) of marine area. The area

was established in cooperation with the Inuvialuit through processes embedded in the Inuvialuit Final Agreement (1984).

- » Western/Emerald Banks Conservation Area is a marine refuge located off of Nova Scotia and conserves approximately 10,234 km² (0.18%) of marine area. All commercial and recreational fisheries using bottom-contact gear and/or gear known to interact with groundfish are prohibited in the marine refuge.
- » Interim protection for Tallurutiup Imanga National Marine Conservation Area (NMCA), in Lancaster Sound, Nunavut was announced in 2017 by the Government of Canada, the Government of Nunavut and the Qikiqtani Inuit Association. The area will be formally established under the Canada National Marine Conservation Areas Act, but in the interim, all mining, petroleum and seismic activities are presently prohibited. The NMCA protects 109,000 km² of Arctic waters, contributing 1.9% to the 10% target, and reflecting the wishes of Inuit communities to protect an area that has sustained their culture for millennia.

Trends in proportion of protected and other conserved areas, Canada, 1990 to 2017



Note: Terrestrial areas include both land and freshwater. Protected areas include only areas recognized under international standards. Conserved areas include protection as well as other effective area-based conservation measures, such as marine refuges.

Source: Canadian Council on Ecological Areas (2017) Conservation Areas Reporting and Tracking System (CARTS), with Québec data used by permission. Data are current as of December 31, 2017 ([Canadian Environmental Sustainability Indicators](#)).

CONTRIBUTION TO GLOBAL AICHI TARGETS

Canada Target 1 is consistent with Aichi Target 11, which aims to ensure that:

“by 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas (especially areas of particular importance for biodiversity and ecosystem services) are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.”

Given the vastness of Canada’s terrestrial and marine territory, Canada’s efforts under the Pathway initiative and in the marine environment will make a significant contribution to the global effort to achieve Aichi Target 11.

Edézhzié Protected Area.

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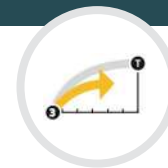
Canada’s efforts will make a significant contribution to the global effort to achieve Aichi Target 11.

”



CANADA TARGET 2

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



ABOUT THE TARGET

Canada is home to a unique variety of plants and animals. These species represent Canada's rich biodiversity and are integral to our natural and cultural heritage.

There are more than 80,000 species in Canada and each plays a key role in maintaining the overall health of our ecosystems. However, the well-being of some of these species is under threat. Canada has over 500 species that are listed under federal law as "at risk", largely as a result of habitat loss and degradation, competition from invasive alien species, and environmental changes resulting from climate change and pollution.

Management of species at risk in Canada is a shared responsibility between federal, provincial, and territorial governments. As a result, governments have signed an **Accord for the Protection of Species at Risk** that guides collaborative efforts to designate species at risk, protect their habitats, develop recovery plans, and implement complementary legislation, regulations, policies and programs.

At the federal level, Canada has had a **Species at Risk Act** (SARA) since 2002. Once a species is listed under this Act, a number of prohibitions apply for endangered, threatened, and extirpated species. Recovery strategies are also required for all of these species listed under the Act. SARA recognizes the essential role of Indigenous peoples in the conservation of wildlife and includes a National Aboriginal Council on Species at Risk.

PROGRESS TO DATE

Canada measures progress towards this target using three indicators: trends in species at risk populations, changes in wildlife species disappearance risks, and trends in the general status of wild species.

The first step in preventing the loss of species is to know which species exist in Canada, where they occur and what their status is. The **General Status of Species in Canada program** aims to do just that, providing Status of Wild Species Reports every 5 years. These reports represent the most comprehensive look at the state of Canada's species and contain general status assessments for a broad cross-section of species, from all provinces, territories and ocean regions. The most recent **2015 Wild Species Report** assessed the conservation status of almost 30,000 different species in Canada. It concluded that 80% of species in Canada are 'secure' or 'apparently secure'. However, 1659 species were identified as potentially at risk in Canada, although most of these species have only a small part of their range in Canada. Results also underlined the presence of a large number of exotic species in Canada, mostly vascular plants. Over 3000 species changed their national rank since the last report 5 years ago, with 449 species having an increased level of risk and 411 having a reduced level of risk. The 2020 Wild Species Report is currently in preparation and is anticipated to cover nearly 40,000 species.

Overall, progress is being made on the recovery of species at risk, although at an insufficient rate to meet Canada Target 2 by the end of 2020. In addition, evidence to support comprehensive reporting against this target is limited, although it is anticipated that more information will become available as recovery strategies are completed and implemented for various species.

Canadian governments have established systems for identifying and recovering species at risk. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) plays a key role in assessing the conservation status of these species. Government agencies across the country also have systems in place for listing species under relevant legislation and subsequently planning and implementing measures aimed at recovering key populations.

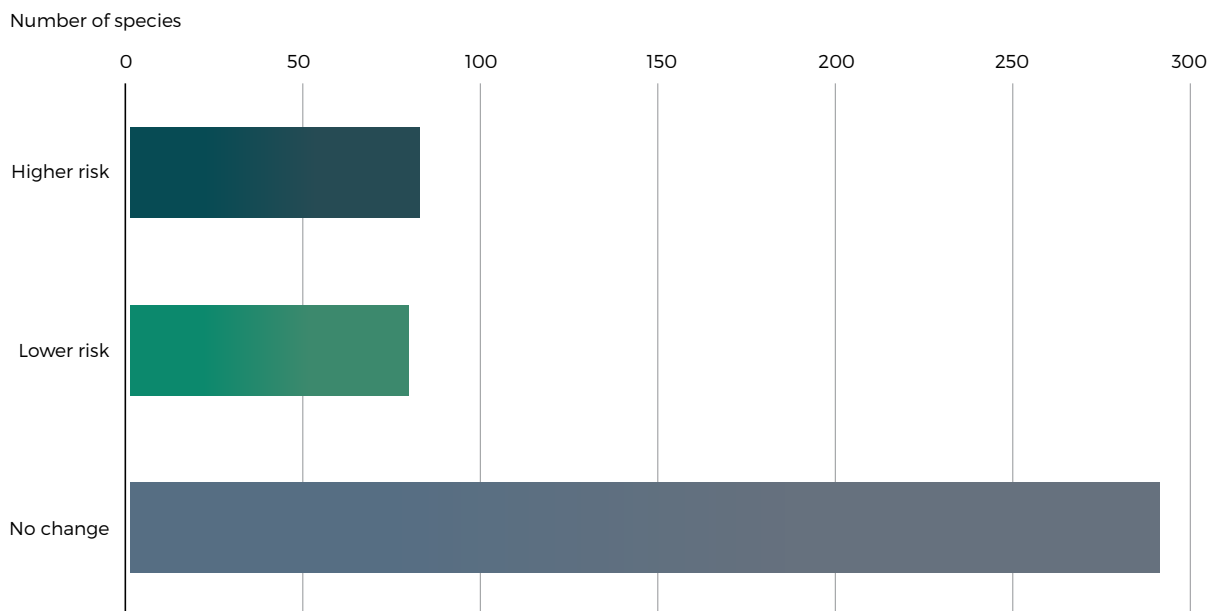
Canada also has a number of stewardship programs that help support these efforts. For example, the federal Habitat Stewardship Program (HSP) is part of Canada's national

strategy for the protection of species at risk. The HSP engages Canadians in conservation actions to benefit wildlife. Between 2013 and 2016, the HSP invested over \$36 million to support more than 500 local species at risk conservation projects, benefitting on average more than 310 species at risk each year. Similar programs exist in several provinces and territories.

In June 2018, federal, provincial and territorial Ministers agreed to continue moving towards a more targeted, multi-species approach to species at risk conservation and established a new set of principles to help guide these efforts. This is expected to accelerate progress towards this target over time.

In addition, Canada's new \$500 million Nature Fund includes funds to support progress on the protection and recovery of species at risk. Over \$200 million of this Fund will be dedicated to advancing this new partnership-based approach to help species at risk focused on priority places, species and threats.

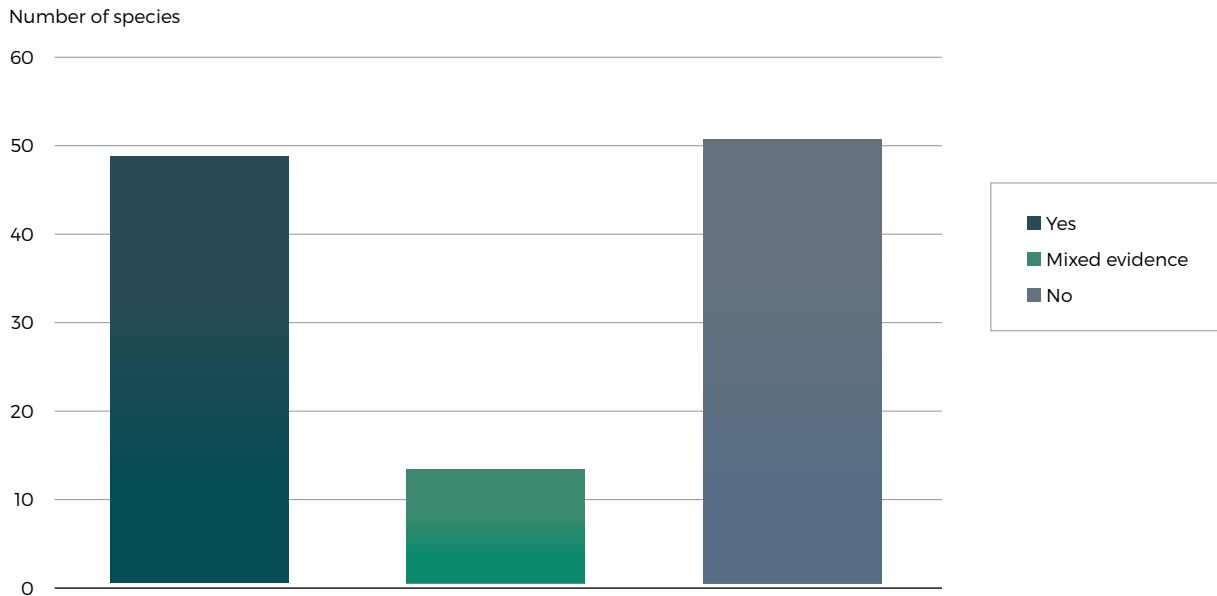
Changes in risk of disappearance of wildlife species from Canada, May 2017



Note: In this analysis, wildlife species refers to a species, subspecies or a genetically or geographically distinct population. Wildlife species disappearance may refer to extinction or extirpation (an extirpated species no longer exists in the wild in Canada).

Source: Committee on the Status of Endangered Wildlife in Canada, May 2017 ([Canadian Environmental Sustainability Indicators](#)).

Are population trends of species at risk consistent with objectives? Canada, May 2017



Note: Categories account for the amount of time that has been available for recovery. Mixed evidence means that there is a mix of positive and negative population trends.

Source: Environment and Climate Change Canada, Fisheries and Oceans Canada, Parks Canada, and the Committee on the Status of Endangered Wildlife in Canada Secretariat (2017) ([Canadian Environmental Sustainability Indicators](#)).

CONTRIBUTION TO GLOBAL AICHI TARGETS

The efforts described above contribute directly to Aichi Target 12, which aims to ensure that, by 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Canada also contributes to global efforts through its participation in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which regulates the legal international trade of wild fauna and flora to help ensure their survival. Canada chairs several CITES committees and is actively involved in a number of key working groups under the Convention.

“
Canada’s new \$500 million Nature Fund includes funds to support progress on the protection and recovery of species at risk.
”

CANADA TARGET 3

By 2020, Canada's wetlands are conserved or enhanced to sustain their ecosystem services through retention, restoration, and management activities.



ABOUT THE TARGET

Wetlands are lands covered or permeated with water, either seasonally or year-round. They include bogs, fens, swamps, marshes and shallow, open waters. Wetlands cover approximately 13% of Canada's land area, representing about 25% of all remaining wetlands in the world.

Wetlands are critically important to nature, as they give rise to many plant species that thrive under wet conditions, as well as to animals and birds that depend on these ecosystems for food and shelter. Fully one third of Canada's species at risk rely on wetlands at some point during their lifecycle. Wetlands also provide vital services such as water filtration, flood and drought control, protecting communities from storm surges, storage of greenhouse gases, and places for recreation and connecting with nature.

Because of their importance, and since many of Canada's wetlands have been lost or degraded, particularly near urban areas, Canadian governments are committed to working together to conserve and enhance wetlands. This will help conserve biodiversity in Canada and support the health and wellbeing of all Canadians.

PROGRESS TO DATE

Overall, Canada is on track to achieve this target, primarily through the work of [the North American Waterfowl Management Plan](#) (NAWMP). NAWMP is an international action plan to conserve waterfowl throughout Canada, the United States of America, and Mexico and is a cornerstone of wetland conservation throughout the continent.

NAWMP brings together conservation partners, including governments, conservation organizations, scientists and private land owners, in

[Habitat Matters](#), an annual report on implementation of NAWMP in Canada, showcases ongoing efforts undertaken by the Habitat and Species Joint Ventures to achieve abundant and resilient waterfowl populations and sustainable landscapes in Canada. These joint ventures focus on critical science needs to inform the management of over 20 species and their related habitats. For example, in 2017, Canadian Intermountain Joint Venture partners – Ducks Unlimited Canada and the Nature Conservancy of Canada – acquired a 36 hectare property along the Okanagan River in British Columbia. The property lies in an expanse of wetlands known as the Osoyoos oxbows. The property contains some of the last remaining marshes in an area that was once a significant chain of wetlands. Plans to restore the land to more natural wetlands are underway. As well, in 2016, in the western boreal forest part of the Prairie Habitat Joint Venture, the Government of Saskatchewan approved a forest company's 20-year forest management plan that includes the protection of habitat for Woodland Caribou and other wildlife totaling approximately 207,000 hectares, of which approximately 80% are wetlands.

support of wetland conservation, restoration and management activities. These partners work primarily through public-private Joint Ventures that integrate planning, science and management for key habitats (Canadian Intermountain, Eastern, Pacific Birds and Prairie) and species (Arctic Goose, Black Duck and Sea Duck).

Since 1986, NAWMP has helped reduce the rate of wetland loss and degradation by protecting and restoring wetlands, establishing conservation agreements, and influencing stewardship activities of landowners, farmers, land managers and conservation agencies.

Since its inception, 8.5 million hectares of wetlands and associated uplands have been retained in Canada, and 6.6 million hectares have been restored and/or managed under the auspices of NAWMP. In the last five years alone, over 550,000 hectares of wetlands and associated uplands were retained and over 1.7 million hectares were restored and/or managed by NAWMP partners. This progress is outlined in the chart below.

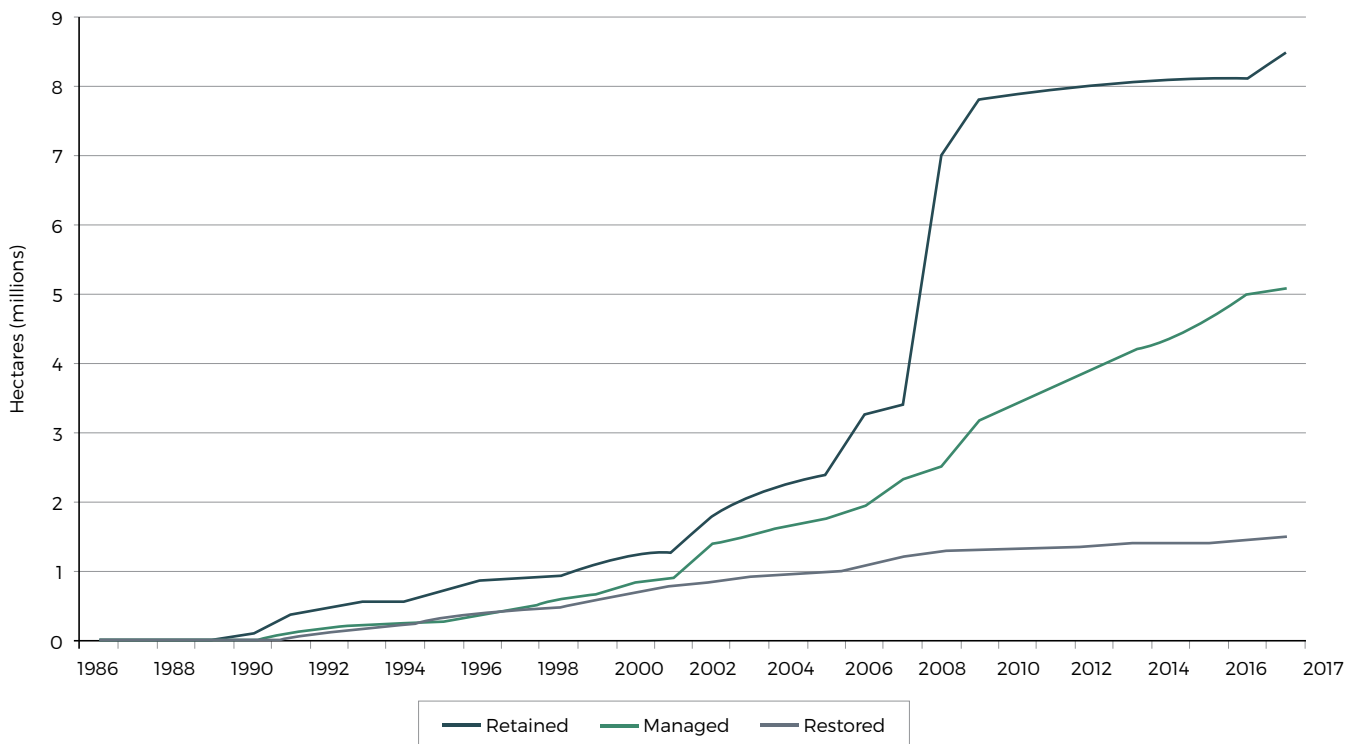
Progress has also been made at the provincial and territorial levels to support enhanced action on wetland conservation. For example, Ontario has introduced a 15-year Wetland Conservation Strategy that aims to increase wetlands and

wetland function in those areas that have experienced the greatest wetland loss by 2030. Manitoba and Québec are also increasing their efforts to restore and conserve wetlands, through new legislation introduced by both jurisdictions.

At the federal level, more than \$40 million was invested by multiple partners between 2014 and 2016 in over 130 wetland restoration, enhancement, and science projects through the National Wetland Conservation Fund. These projects restored more than 1,000 hectares of wetland habitat and associated uplands and enhanced over 318,000 hectares of land, in turn supporting improved water quality for fish, waterfowl and other wildlife.

Despite this progress, more work is required to ensure that rates of wetland degradation and loss are reduced. Ongoing commitment and action by all partners will be key to ensure this vital work continues.

Cumulative area of wetlands and associated uplands conserved in Canada under the North American Waterfowl Management Plan (1986-2017)



Source: Environment and Climate Change Canada

CONTRIBUTION TO GLOBAL AICHI TARGETS

Activities to support wetland conservation in Canada help support achievement of a number of global Aichi targets. In particular, they support Aichi Target 4, sustainable production and consumption; Aichi Target 5, which aims to reduce the rate of loss, degradation and fragmentation of natural habitats; Aichi Target 14, which aims to conserve essential ecosystems services including services related to water; and Target 15, which aims to support ecosystem resilience and the restoration of degraded ecosystems.

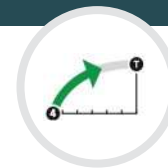
Canada also participates in the Ramsar Convention on Wetlands, which provides an international framework for action on wetlands all over the world, especially those that provide waterfowl habitat. [Canada's 2018 report to the Ramsar Convention](#) outlines progress towards the Convention's goals over the past three years.

Great Blue Heron, Lake Magog, Quebec.
© iStock.



CANADA TARGET 4

By 2020, biodiversity considerations are integrated into municipal planning and activities of major municipalities across Canada.



ABOUT THE TARGET

Canada is an increasingly urbanized nation. By 2015, almost 80 percent of Canadians were living in large urban areas known as Census Metropolitan Areas (CMAs). At the same time, Canada's cities are expanding in size—the total area of land in Canada's CMAs almost doubled between 1971 and 2001.

While CMAs represent a relatively small portion of Canada's total area, they are often located in places rich in biodiversity, such as coastal areas, river valleys, and lake shores. As such, the impact of habitat loss or degradation in these areas can be significant.

Maintaining and restoring ecosystems in urban areas can offset some of these losses, and provide other important benefits. Urban green spaces can help provide cleaner air, buffer increasingly extreme climate events, and provide opportunities for environmental education and recreation. Enhancing urban biodiversity can also provide habitat for pollinators like bees, butterflies and hummingbirds, and for other birds and species that help to control pest insects.

Municipal governments are uniquely positioned to play a significant role in developing and implementing biodiversity solutions. This target aims to encourage these efforts across the country, in partnership with local organizations, provincial governments, and federal departments and agencies.

PROGRESS TO DATE

Overall, progress is being made across the country towards this target. Progress is assessed



Urban Park, Toronto, Ontario. © iStock.

by looking at the number of medium and large population centres that have developed biodiversity conservation strategies, and the number that have biodiversity objectives incorporated into their municipal planning documents.

There is a small but growing number of municipalities across the country working to integrate biodiversity considerations into their planning, policies, and major activities. For example²:

- » *Delta, British Columbia* has developed a Birds and Biodiversity Conservation Strategy, in partnership with local naturalists, the agricultural community, and federal and provincial agencies;

2. Please see the supplementary report on **Canada Target 4**, appended to Canada's 6th National Report to the CBD for information about several more examples.

- » *Saint-Anne-de-Bellevue, Québec* has incorporated a Natural Spaces section into their sustainable development plan, to protect biodiversity and natural spaces; and
- » *Halifax, Nova Scotia* is implementing an Urban Forest Master Plan to enhance tree density throughout the municipality.

In 2017, ICLEI – Local Governments for Sustainability Canada (see text box) administered a survey on biodiversity efforts in medium and large municipalities across the country.

In total, 46 medium and large Canadian municipalities responded to the survey. 51% indicated that they either have a dedicated biodiversity policy or strategy or have one in development. 91% indicated

they have biodiversity objectives contained within their municipal planning documents. While direct comparisons are not possible, these results suggest progress since a similar survey was conducted in 2014.

These results are encouraging, with several cities reporting that they are taking significant steps. However, the survey represents a relatively small sample of all Canadian municipalities and it is not clear to what extent Canada's smaller municipalities in particular are also systematically integrating of biodiversity considerations into local planning. Sharing information on best practices in developing and implementing municipal biodiversity strategies and action plans, continuing collaboration with federal, provincial and territorial partners, as well as securing resources and training can provide opportunities for municipalities to make additional advances in restoring urban ecosystems, maintaining natural infrastructure, connecting residents with nature, and supporting local stewardship initiatives.

ICLEI – Local Governments for Sustainability is a not-for-profit, non-government organization that works with local governments to raise awareness and build capacity to address biodiversity concerns at the local level. In Canada, ICLEI has been working with Canadian municipalities since 2009 to raise awareness of biodiversity issues, profile champions and stewards of biodiversity, and to create a platform for sharing ideas and best practices. For example, ICLEI has developed *biodiverCITIES: A Primer on Nature in Cities* (2014) and a *Handbook for Municipal Biodiversity Planning and Management* (2015).

CONTRIBUTION TO GLOBAL AICHI TARGETS

Action to integrate biodiversity considerations into municipal planning helps support achievement of Aichi Target 2 which aims to ensure that, by 2020, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Point Pelee National Park, Ontario.
© iStock.



CANADA TARGET 5

By 2020, the ability of Canadian ecological systems to adapt to climate change is better understood, and priority adaptation measures are underway.



ABOUT THE TARGET

Wide-ranging effects of climate change are already being observed in Canada. Average annual temperatures are increasing, along with changes in the frequency and severity of extreme weather events and natural disturbances such as fire.

These changes are affecting biodiversity and ecological systems across the country. This includes shifts in the distribution, productivity and abundance of species, as well as altered patterns of migration and breeding of many species. In addition, climate change exacerbates existing threats to biodiversity, such as habitat loss and the introduction and spread of invasive alien species.

To address these growing challenges, and to ensure that ecological systems are more resilient to climate impacts, all levels of government are working together to better understand key vulnerabilities of natural systems, to assess if and how these ecosystems will adapt, and to prioritize actions that support resilience. In partnership with academia and non-governmental organizations, governments are also working to develop effective adaptive measures including tools and guidance to address the most pressing impacts on priority areas and species of concern.

PROGRESS TO DATE

Broad and sustained efforts are underway at the federal, provincial, territorial and municipal levels to support action towards Canada Target 5. This includes scientific assessments on the vulnerability of ecological systems and



Expedition vessel, Arctic ocean. © iStock.

biodiversity, as well as land use and management plans for key ecosystems, and decision-support tools for various sectors and regions.

The Government of Canada has undertaken four major science-based risk assessments covering four large aquatic basins (the Pacific Ocean, Arctic Ocean, Atlantic Ocean and Canada's inland waters). These assessments focus on climate change projections and associated impacts on aquatic ecosystems and federal infrastructure. They also include national-scale assessments of climate change impacts on Canada's economic sectors and its coasts. The Government of Canada has also launched a five-year project to assess the vulnerability of biodiversity in wetlands in the Great Lakes region to climate change.

Further, the Government of Canada is supporting long-term monitoring and research on selected wildlife species to help model and understand the potential impacts of climate change on their distribution and abundance. For example, a number of bird population monitoring and research programs have been supported, and research specific to key species such as boreal caribou, native bees and other pollinators has been undertaken.

A number of funding programs have been established to support these efforts. For example, the Indigenous Community-based Climate Monitoring Program supports community-led monitoring of key indicators such as wildlife and vegetation.

Decision-support tools developed by the Government of Canada include tailored climate and weather information for the agricultural sector, tools for forest management (see *text box*), as well as ocean and freshwater observations to help advance understanding and generate models to assist in responding to emergencies such as oil spills.

Adaptation tools have been developed jointly with other levels of government through Canada's Climate Change Adaptation Platform, which includes representatives from governments, industry, Indigenous, professional, and not-for-profit organizations.

Provinces and territories are working on a range of reports and assessments consistent with Canada Target 5. For example, Alberta has examined the impacts of climate change on its forests and forest ecosystems, while Nunavut is conducting research on seabed habitats in the Arctic.

Provinces and territories are developing land use and development plans that aim to consider adaptation needs for species and areas of greatest concern. For example, New Brunswick's climate change action plan integrates ecosystem services into its land use planning approaches, while climate change adaptation and mitigation measures will be incorporated

The Canadian Forest Service has developed a range of **Forest Change Adaptation Tools** to assess and manage climate-related risks and adaptation options. This includes updated Plant Hardiness Zone Maps to provide insights about what can grow where, reflecting shifts consistent with climate change. As well, a range of frameworks, guidebooks and tools help forest management practitioners better understand sources of vulnerability and potential ways to adapt. As an example, Canada's National Forest Inventory monitors Canada's forests on an ongoing basis to provide a continuous record of forest change. In addition, several multi-stakeholder forums exist to share knowledge and information on climate change adaptation to support resilient forest ecosystems, including the online Forestry Adaptation Community of Practice and the national Forestry Adaptation Working Group.

into the Northwest Territories (NWT) Land Use and Sustainability Framework. In addition, Indigenous governments are actively engaged in the development of new legislation in the NWT for the establishment of conserved and protected areas, which may consider climate change impacts and adaptation on a regional basis.

Provinces and territories are developing decision-support tools that help incorporate adaptation considerations into decisions at all levels. For example, Alberta's Biodiversity Management and Climate Change Adaptation project is providing knowledge and tools to support the management of Alberta's biodiversity in a changing climate. British Columbia is also supporting adaptation-related tools such as stand establishment decision aids and seed transfer systems.

There are many initiatives underway in municipalities across Canada to better understand and adapt ecological systems to the impacts of climate change. These range from technical reports to strategic plans. For example, Vancouver's Park Board has developed a series of strategies that aim to protect and restore natural areas, species, and ecological processes in the face of climate change.

Municipal decision-support tools are emerging. As noted under Canada Target 4, ICLEI Canada and the Toronto and Region Conservation Authority have launched both a primer and a guidebook on urban biodiversity. The non-profit organization Ouranos has developed decision-making tools to

facilitate adaptation and promote its integration into the conservation of biodiversity and environmental management and planning at all levels.

CONTRIBUTION TO GLOBAL AICHI TARGETS

The activities outlined above all contribute to the achievement of Aichi Target 19, which seeks to ensure that by 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Canada Geese migration, Québec.
© iStock.



FEATURE: CONTRIBUTION OF INDIGENOUS PEOPLES TO ACHIEVEMENT OF THE TARGETS

Indigenous peoples have profoundly unique knowledge and experiences of the marine and terrestrial ecosystems that Canada has committed to conserve through the 2020 Biodiversity Goals and Targets for Canada. Respectful partnerships with Indigenous peoples therefore lie at the heart of Canada's ability to meet both its domestic goals and international commitments.

In particular, achieving each of Canada's 19 biodiversity targets by 2020 will depend on full, effective, and meaningful collaboration between federal, provincial, and territorial governments and First Nations, Inuit and Métis governments and peoples, including women. As such, while Indigenous Knowledge and customary use of biological resources are specifically highlighted under Canada Targets 12 and 15, the knowledge, innovations and practices of Indigenous communities are relevant to all of Canada's biodiversity goals and targets.

Indigenous Knowledge

Indigenous peoples have had cultural relationships with Canada's lands and waters for thousands of years. These relationships give rise to deep expertise and traditional knowledge about the ecosystems upon which we depend and how they should be managed.

Indigenous Knowledge (IK) can play a vital role in understanding biodiversity and how individuals and communities interact with nature, and in developing strategies for its protection and sustainable use. As such, IK is key to informing Canadian biodiversity strategies, land use plans, the designation of protected areas, and species assessments. Federal initiatives such as the *Boreal*

Caribou Recovery Strategy under the *Species at Risk Act* are designed to ensure that IK informs decision-making. Indigenous Knowledge is also increasingly incorporated into management and decision-making related to land and marine protected areas.

Provinces and territories are also incorporating IK in their policies and programs. For example, IK informed the development of Alberta's water management framework, while Ontario's new *Wetland Conservation Strategy* describes steps to build local tools to learn from traditional ecological knowledge related to wetlands.

Indigenous Governance

In Canada, there are 25 modern treaties with Indigenous peoples. These modern treaties establish and provide certainty with respect to self-government, laying out Indigenous law-making powers and equipping them to develop and deliver programs and services that are tailored to the unique needs of their communities. Modern treaties have allowed federal, provincial, territorial and Indigenous governments to establish cooperative management regimes for the conservation and sustainable use of renewable and non-renewable resources. Through these negotiated cooperative agreements, Indigenous peoples are assuming increased responsibility for the management of biodiversity in Canada.

As a result, Indigenous peoples use, govern, and conserve their traditional territories in accordance with their systems, laws, and values.



In addition, a growing number of Indigenous communities protect and manage land and marine resources through Indigenous Guardians programs, which have existed in Canada for several decades. These programs recognize the intimate connection between Indigenous peoples and the environment and can generate a wide range of benefits at the community level in addition to environmental stewardship.

Participation

Federal, provincial and territorial governments recognize the importance of ensuring that Indigenous peoples, including First Nation, Inuit, and Métis women, are involved in decision making related to biodiversity, and recognize and support Indigenous rights, responsibilities, authorities and priorities in conservation.

Indigenous representatives participate in international decision-making by providing guidance in Canada's preparation for meetings of the Convention on Biological Diversity and as members of the Canadian delegation to meetings. Participation by Indigenous peoples in biodiversity-related strategies and decision-making processes is also facilitated in part through federal funding for Indigenous partners. For example, the federal government provides funding to support engagement and input into the development and implementation of policies and programs related to conservation, wildlife and biodiversity from the Assembly of First Nations, Inuit Tapiriit Kanatami, the Métis National Council, the Native Women's Association of Canada, and the Congress of Aboriginal Peoples.

Other federal funding programs include the Aboriginal Fund for Species at Risk, which provides incentives for Indigenous groups to recover species at risk and protect their habitats. This Fund invested almost \$11 million in species at risk projects between 2013 and 2016. A number of Indigenous groups have also received funding from the National Wetland Conservation Fund, which supported the restoration of wetlands and engages communities in wetland stewardship.

Indigenous peoples are actively involved in the Pathway to Target 1 process highlighted in Target 1. The Pathway process recognizes the critical importance of Indigenous leadership in identifying and managing protected areas. As a result, Indigenous organizations and governments are full participants on the Pathway's National Steering Committee. An Indigenous Circle of Experts (ICE) was established to advise the Pathway process on how to advance both reconciliation with Indigenous peoples and Canada's biodiversity goals. The ICE completed its work and provided recommendations to governments on the establishment of Indigenous Protected and Conserved Areas in March 2018.



The knowledge, innovations and practices of Indigenous communities are relevant to all of Canada's biodiversity goals and targets.



CANADA TARGET 6

By 2020, continued progress is made on the sustainable management of Canada's forests.



ABOUT THE TARGET

Forests are essential to biodiversity in Canada, as well as to the health and wellbeing of its communities, economy, and environment. As stewards of 9% of the world's forests, including a vast portion of the world's boreal forest, Canada has a major role to play in ensuring that our forests remain in a healthy state and are managed in a sustainable manner.

Close to one-third of Canadians – and 70% of Indigenous peoples in Canada – live in or adjacent to forested areas. The Canadian forest industry accounted for 211,075 direct jobs in 2016 and is one of the largest employers of Indigenous people in the country. Sustainably managed forests support these communities while also responding to domestic and international consumer expectations for sustainably sourced products.

Canada is recognized as a leader in sustainable forest management; however, continued progress is critical to ensure ongoing social, economic and environmental benefits. For example, Canada's forests provide habitat to many species, along with key ecosystem services including air and water filtration and carbon sequestration, which are particularly important in the face of climate change.

PROGRESS TO DATE

Progress towards Canada Target 6 is measured using criteria and indicators established by the Montreal Process (as reported in the [State of Canada's Forests](#) annual reports). These indicators are aligned with the Global Core Set of Forest Indicators agreed to by the international community. These include changes in forest area, the overall area and volume of forests harvested, and the area of forest under independently verified

Canada's boreal forest resources are a major part of the country's cultural and economic wealth, and can be an important contributor to a low carbon economy. To better understand the natural processes and drivers of change in the boreal, Natural Resources Canada led an initiative involving more than 60 scientists who reviewed more than 4000 science publications to produce the **Boreal Forest Research Synthesis**. The conclusions are presented in 11 articles, which together provide a comprehensive summary of the scientific evidence regarding the impacts of human development, resource use and climate change on terrestrial and aquatic ecosystems in the boreal zone of Canada. This synthesis provides integrated knowledge to those responsible for managing boreal ecosystems and natural resource development.

certification schemes. Based on an assessment against these criteria, Canada is on track to achieve Canada Target 6.

All levels of government have a role to play in helping achieve this target. Provincial governments set harvest limits within their jurisdictions, guide the development of long-term forest management plans, and regulate forest management practices on the ground.

The federal government provides scientific research and tools such as the National Forest Inventory, supportive procurement policies, and funding to support transformative technologies within the sector that help it continually improve economic and environmental performance.

Overall, Canada's forest area is quite stable, having decreased by 0.1% between 2011 and 2016. While deforestation (the permanent conversion of forests to non-forest land uses such as agriculture) does occur in Canada, its rate is low – < 0.02% of total forest area per year – and continues to decline. Almost 7% of Canada's forests lie within protected areas. Canada also has a sizeable area of forest defined as "unmanaged", equal to roughly one-third of the total forest area. This is forest that is not subject to direct human impacts such as harvest, fire and insect management, or protection. Most of the unmanaged forest is located in northern and remote areas.

At the same time, harvesting has increased by 13% since 2011, (after a decrease of over 39% between 2004 and 2009) largely due to an increase in global demand for forest products. Harvested lands in Canada continue to represent less than half of 1% of Canada's overall forest landmass each year, and forest regeneration is required after harvesting. The level of the timber harvest is, on average, more than 30% below the wood supply deemed sustainable by provincial and territorial regimes.

Approximately 65% of Canada's total forest area is considered to be managed, with 91% of these lands being subject to long-term management plans. In addition, the area of forest land in Canada covered by independently verified certification schemes – which complement provincial, territorial and federal regulatory regimes – increased by 11% from 2011 to 2016.

All areas harvested on provincial Crown lands are required by law to be successfully regenerated. While specific requirements differ on a jurisdiction-by-jurisdiction basis, they

typically address key attributes such as species composition, age class and forest type. The trend in the area of forest land regenerated through both planting and seeding generally follows the trend in harvesting, and 11% more forested land was planted and seeded in 2015 than in 2011.

CONTRIBUTION TO GLOBAL AICHI TARGETS

Canada Target 6 contributes to a number of global Aichi targets, including Aichi Targets 4 (sustainable production and consumption), 5 (reducing habitat loss), and 7 (sustainable management of areas under agriculture, aquaculture and forestry). They are directly related to the Global Core Set of Forest Indicators developed by the Food and Agriculture Organization (FAO) of the United Nations (UN), as well as the UN Sustainable Development Goals, which include sustainable forest management.

Canada is active in a number of global initiatives such as the International Model Forest Network and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Canada also has formal and informal forest-related agreements with the People's Republic of China, the Republic of Korea, Chile, Mexico, Indonesia and others.

Canada also contributes to a number of forest-related multilateral initiatives such as the Green Climate Fund, the Forest Carbon Partnership Facility, the BioCarbon Fund Technical Assistance and Capacity Building Trust Fund, and forest-related initiatives under the Global Environment Facility (GEF).

Canada's boreal forest.
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CANADA TARGET 7

By 2020, agricultural working landscapes provide a stable or improved level of biodiversity and habitat capacity.



ABOUT THE TARGET

Agricultural production is inextricably linked to the ecosystem services that biodiversity provides, such as nutrient cycling, soil formation, water purification and pollination. Agricultural areas in Canada often contain important habitat types for wildlife, including cropland, pastures, grasslands, and wetlands.

Changes in the capacity of Canada's agricultural lands to support habitat for wildlife species are generally associated with shifts in land use between those more or less favourable for wildlife.

Further effort to improve biodiversity on agricultural lands is key to sustaining natural systems, maintaining water quality and quantity, supporting pollinators, improving wildlife habitat and making these lands better able to recover and adapt to environmental stresses such as drought.

PROGRESS TO DATE

Overall, Canada is making steady progress towards Canada Target 7. One of the key indicators used to assess progress on agricultural working landscapes is the Wildlife Habitat Capacity on Farmland Indicator. This indicator provides a multi-species assessment tool to understand trends in the capacity of agricultural landscapes to provide habitat. This information can then be used to avoid further habitat degradation and encourage improvements where possible.

Recently Agriculture and Agri-Food Canada has developed a national, earth observation-based version of the **Wildlife Habitat Capacity on Agricultural Land** indicator. Using this data, which is collected annually, allows for quicker

reporting turnover and better tracking of land cover (habitat) change and its potential impact on wildlife biodiversity.

An assessment using this method found that, between 2011 and 2017, potential wildlife habitat capacity remained stable on almost 94% of the Canadian agricultural landscape and increased on 3%. Where decreases in capacity were identified (on roughly 3% of agricultural lands), these were associated with increases in annual crops, expanding urban footprints, and agricultural expansion resulting in the loss of shrub and woodlands.

Another important tool to support biodiversity within agricultural working landscapes is the Environmental Farm Plan (EFP). Environmental farm planning is a voluntary, confidential self-assessment tool designed to help farmers enhance their environmental management.

The **Species at Risk Partnerships on Agricultural Lands** (SARPAL) initiative works with the agricultural community to facilitate recovery of species at risk on agricultural lands through voluntary stewardship actions. SARPAL focuses on commercially-farmed lands containing individuals, residences, or critical habitat of Species at Risk Act-listed species. It has three main elements: agreements / contracts, beneficial management practices, and funding for producers. For example, in Saskatchewan, SARPAL projects support the application of cattle grazing practices that are beneficial to the habitat of several species at risk, including the Greater Sage Grouse.

With support from experts, farmers create an EFP, which includes a list of on-farm agri-environmental risks and an action plan detailing the beneficial management practices (BMPs) required to mitigate those risks.

Typically, farmers with a completed EFP are then eligible for funding to reduce these risks and implement applicable BMPs. This funding is cost-shared under Canada's federal-provincial-territorial agricultural policy framework, the Canadian Agricultural Partnership. Eligible BMPs typically include establishing or managing riparian buffers and woodlots; converting marginal cropland to permanent cover; planting or maintaining shelterbelts and hedgerows; delaying haying; and conserving wetland, wetland buffers, and natural and semi-natural lands – all of which directly or indirectly support biodiversity on agricultural lands.

While more recent statistics were not available in time for inclusion in Canada's 6th National Report, the 2011 Farm Environmental Management Survey found that 35% of farms in Canada had a formal written EFP, which accounts for 50% of Canada's agricultural lands. Of these farms,

95% had either fully or partially implemented the practices recommended in their EFP.

CONTRIBUTION TO GLOBAL AICHI TARGETS

Efforts to enhance biodiversity on agricultural lands in Canada helps contribute to the global Aichi targets in several important ways. For example, they contribute to Aichi Target 5, which aims to ensure that, by 2020, the rate of loss of natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

In addition, efforts to reduce the rates of habitat loss, degradation and fragmentation in agricultural landscapes help achieve Aichi Target 7, which is focused on ensuring that, by 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Canadian agricultural land.
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CANADA TARGET 8

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



ABOUT THE TARGET

Aquaculture refers to the cultivation of aquatic species for commercial harvest, processing, sale and consumption. Canada's aquaculture industry is increasingly important to the national economy. Operations have been established in almost every province and territory, including in many rural and coastal areas and Indigenous communities.

Ongoing efforts, in partnership with different levels of government, industry, and Indigenous groups, are essential to ensure the health of ecosystems in which aquaculture takes place. A science-based regime that ensures environmental impacts are mitigated through effective regulation and management is also key. These efforts will help foster a sustainable and innovative industry that remains globally competitive and contributes to Canada's biodiversity goals.

PROGRESS TO DATE

Canada's approach to moving towards a science-based aquaculture regime by 2020 consists of establishing a regulatory framework that is supported by the best available science advice. To this end, Canada renewed the Sustainable Aquaculture Program in 2013 and allocated \$54 million over five years for ongoing regulatory reforms and aquaculture science research. This funding was renewed again in 2018 with a \$22 million, two-year commitment.

These investments have supported scientific research, including assessments of the impact of aquaculture on the abundance and diversity of wild Fraser River Sockeye Salmon in British Columbia, as well as work on shellfish production capacity in Prince Edward Island (*see text box*).

Research has also informed the development of the first national regulations for aquaculture. Known as the Aquaculture Activities Regulations, these regulations under the federal *Fisheries Act* contain provisions that support pollution prevention and are intended to minimize incidental harm to fish and fish habitat from aquaculture activities.

Canada has increased its investment in aquaculture science research under the **Program for Aquaculture Regulatory Research**, which funds research that advances the understanding of interactions between aquaculture and the aquatic environment and supports the development of a regulatory framework that both protects biodiversity and helps increase seafood production. Under this program, scientific and regulatory tools have been developed or updated to address the environmental impacts of aquaculture. The research projects respond to regionally-specific issues that arise from aquaculture activities or those that are found to be the most relevant for improving farm-level management. For example, one 2015 project in Lake Diefenbaker, Saskatchewan assessed the potential impacts of cage farms on wild fish populations with the goal of contributing to the development of regulatory standards and assessment methods. Another ongoing project in the Gulf of St. Lawrence aims to describe the extent and effect of interactions between mussel aquaculture activities and adult lobsters, including: the movement of lobsters within and around mussel aquaculture sites, their availability to the fishery, and the influence of mussel aquaculture on the condition of the lobsters.

Regulations and standards developed for aquaculture are enforced primarily through aquaculture license conditions. An operator is required to implement farm management plans that include, among other things, management of diseases and parasites, the prevention of farmed fish escapes into the environment, environmental monitoring, and the prevention of deleterious substance deposits into fish bearing waters. Compliance rates (assessed on the basis of charges laid) were 98% from 2011-2014 and then increased to 100% in 2015-2017³.

Other relevant tools to promote the sustainable use of aquatic resources and biodiversity conservation include the 2017 National Code on Introductions and Transfers, which regulates intentional movement of live aquatic organisms (i.e. fish, shellfish and plants) from one waterbody to another. This Code helps minimize the risks of unintentionally spreading diseases or pests, altering the genetic makeup of native species, or otherwise negatively impacting surrounding ecosystems.

In addition, a public reporting system is being established to demonstrate Canada's commitment and the industry's responsibility to sustainable seafood production. The aquaculture industry is also taking steps to demonstrate their commitment to Canada's biodiversity

targets by adopting third-party certification. Certification demonstrates that an operator meets comprehensive environmental and food safety standards. Currently, all major salmon farming companies in Canada, as well as some mussel and feed companies, have achieved various levels of certification.

CONTRIBUTION TO GLOBAL AICHI TARGETS

Efforts to ensure that aquaculture in Canada is sustainably managed and that it supports biodiversity conservation helps address several global targets. For example, this work directly supports sustainable production consistent with Aichi Target 4, which calls for governments, business and stakeholders at all levels to take steps to achieve plans for sustainable production and consumption and to ensure that their impacts on natural resources are well within safe ecological limits.

This work also helps contribute to achievement of global Aichi Target 7, which aims to ensure that, by 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

3. Please note that the methodology associated with calculating this indicator is currently under review. If all violations detected during site inspections (including those of lower severity where no charges were laid) are included, the rate of compliance was 83% in 2017-18. This method provides greater granularity and transparency on industry compliance with aquaculture regulations and standards.

Aquaculture operation in Canada.
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CANADA TARGET 9

By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches.



OVERVIEW OF TARGET

Canada's fisheries have long provided a variety of socio-economic benefits to Canadians, such as sustenance, employment, recreation, and access to traditional foods.

However, unsustainable fishing practices can compromise biodiversity, as well as the long-term well-being of the environment and the communities who depend on them.

In order to ensure that these benefits persist, it is important to protect and promote healthy marine and freshwater ecosystems by avoiding destructive fishing practices, managing bycatch, recovering depleted stocks, and preventing overfishing.

PROGRESS TO DATE

Canada tracks progress towards Target 9 by assessing both the status of major fish stocks and the harvest of these fish stocks.

The primary source of evidence for these assessments is the annual *Sustainability Survey for Fisheries*. The survey collects information on: the status of the major stocks; whether harvests are considered sustainable; and, progress in applying precautionary approaches and managing bycatch. The survey is informed by Stock Assessment Reports and Research Documents which are peer reviewed.

Survey results suggest that Canada is generally on track to achieve Canada Target 9 for major fish stocks. However, while catch data are generally comprehensive, details on bycatch species are not well understood. Further, the **Sustainable Fisheries Framework** policies (see text box) focus primarily on managing risks at the single fishery level and not on managing risks from all fisheries and stocks within a defined ecosystem.

Additional work is therefore required to articulate a methodology to manage fisheries and stocks using ecosystem-based approaches. Efforts are also required to take account of the role of forage species in an ecosystem when setting the allowable catch on a forage fish population.

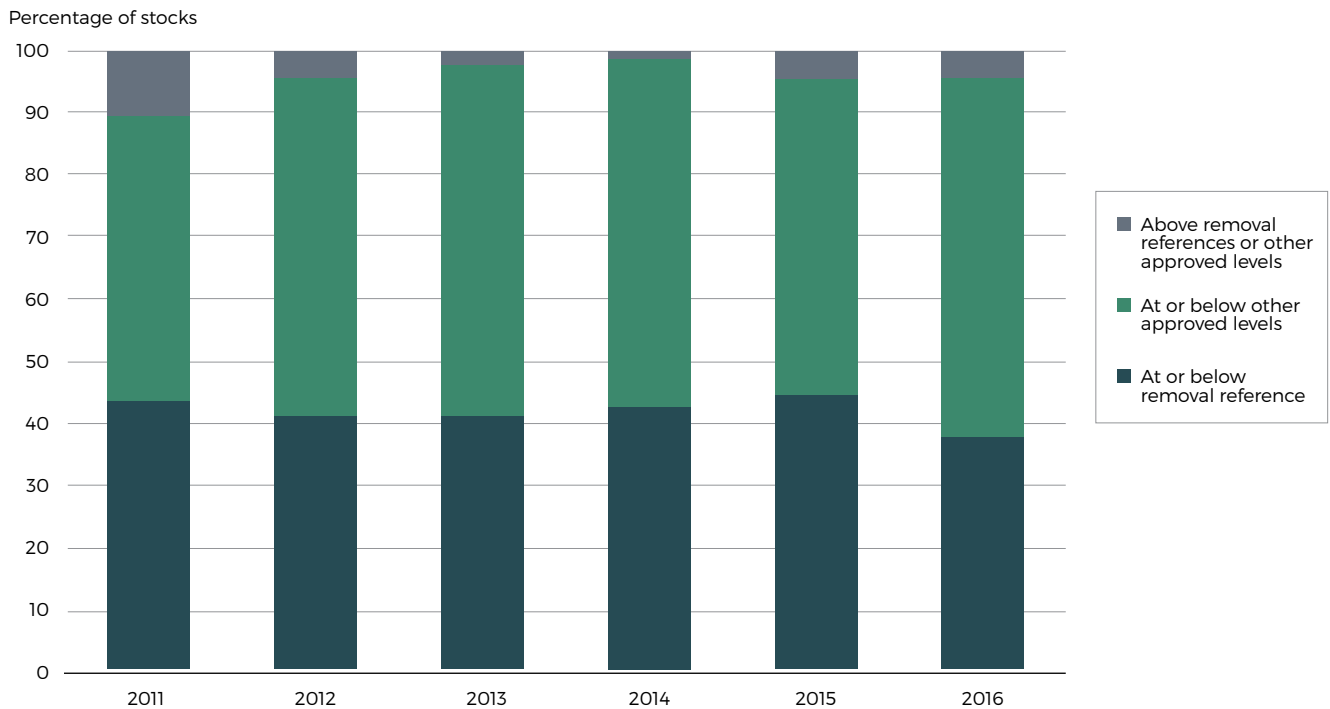
Canada's Sustainable Fisheries Framework

is the national policy framework for managing fisheries to support the conservation and sustainable use of marine resources. Within this Framework, individual policies are designed to mitigate the risks that fisheries may pose to target species, bycatch, benthic habitat and other ecosystem components. The policies are applied to fisheries using the best available science information and progress is monitored and assessed. Overall, the Sustainable Fisheries Framework provides the foundation of an ecosystem and precautionary approach to fisheries management in Canada.

Where the survey determines that a fish stock's abundance has declined to a critical level (a specified biological threshold), a plan must be put in place that is aimed at rebuilding the stock to healthier levels. In 2017, Canada committed to completing rebuilding plans for 19 priority fish stocks over four years. Rebuilding fish stocks will contribute to increasing and maintaining the biodiversity of Canada's marine fish resources. Recognizing that this commitment requires ongoing and incremental action, in Fall 2018 the Government of Canada announced additional funding to support the implementation of stock assessment and rebuilding efforts for priority fish stocks under a renewed *Fisheries Act*.

Canada has made substantial progress in managing fishery impacts on marine benthic habitat areas through fishery closures. Many of Canada's fisheries area closures have also been identified as other effective area-based conservation measures contributing to Canada Target 1 and Aichi Target 11.

Harvest of major stocks relative to approved levels, Canada, 2011 to 2016



Note: The removal reference is a harvest rate that is estimated to be biologically sustainable, based on an analytical assessment of historical stock productivity data. When removal references are not available, other approved levels are established. Comparisons between years should be made with caution as the list of major stocks has changed.

Source: Fisheries and Oceans Canada (2017) Sustainability Survey for Fisheries ([Canadian Environmental Sustainability Indicators](#))

CONTRIBUTION TO GLOBAL AICHI TARGETS

The measures described above help to achieve Aichi Target 6, which aims to ensure that all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches.

Canada also participates in a number of international fora aimed at supporting global sustainability in fisheries management. For example, Canada participates in multiple Regional Fisheries Management Organizations as well as the North Pacific Fisheries Commission, and is an observer to other commissions, including the North Atlantic Marine Mammal Commission and the International Whaling Commission.

Canada is a member of the Food and Agriculture Organization Committee on Fisheries, which makes recommendations to governments, regional fishery bodies, non-governmental organizations, fish-workers, and the international community on international fisheries and aquaculture issues. Canada is also in the process of ratifying the 2009 Agreement on Port State Measures Agreement to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, which sets global minimum standards for actions that port States must take when a foreign vessel, known or suspected to have engaged in or supported illegal, unreported and unregulated fishing, seeks to enter port to land catch or use port services.

CANADA TARGET 10

By 2020, pollution levels in Canadian waters, including pollution from excess nutrients, are reduced or maintained at levels that support healthy aquatic ecosystems.



ABOUT THE TARGET

Water quality is critical to healthy lakes, rivers and marine ecosystems. Clean water provides essential habitat for aquatic plants and animals, is necessary for human survival, supports many commercial and industrial uses, and is at the heart of many recreational activities.

Pollution enters water bodies in a number of ways, including industrial and municipal discharge, runoff, spills, and deposition of airborne pollutants. In addition, certain nutrients that are important for aquatic ecosystem health can become pollutants at elevated levels. For example, when substances such as nitrates and phosphates are added to an aquatic system, excessive growth of aquatic plants and algae, leading to algal blooms, can occur.

As such, action is needed to reduce pollution to Canadian waters in order to support aquatic biodiversity, protect Canada's water resources, and ensure that essential ecosystem services that people depend on like clean water remain available across the country.

PROGRESS TO DATE

Canada is making progress towards Canada Target 10, although more slowly than anticipated. At the national level, Canada tracks changes in water quality using a variety of indicators. An assessment of the [**national freshwater quality indicator**](#) shows that over 80% of sites across the country are within fair-good-excellent categories. Changes in freshwater quality were not detected for most sites, while improving quality was found for 10% of sites and roughly the same or more were deteriorating.

Similar outcomes are found regionally. One particular area of focus related to Target 10 is

The **Canada-U.S. Great Lakes Water Quality Agreement** is an important binational framework to restore, protect and conserve water quality and ecosystem health in the shared Great Lakes water basin. Through the Agreement, Canada and the U.S. have agreed to cooperative and coordinated action on key environmental challenges of shared concern. For example, in 2016, Canada and the U.S. established targets to reduce the loading of phosphorus into Lake Erie and committed to developing domestic action plans to achieve these targets by 2018. The two countries are working collaboratively to reduce chemicals of mutual concern, such as mercury and flame retardants, and are making progress on the management of contaminated sediment in Areas of Concern. In addition, binational Lakewide Action and Management Plans are issued every five years to restore and protect each of the Great Lakes. Canada invests tens of millions of dollars in regional and national programs that support Great Lakes restoration and protection. This includes an additional \$44.84 million announced in 2017 for the Great Lakes Protection Initiative.

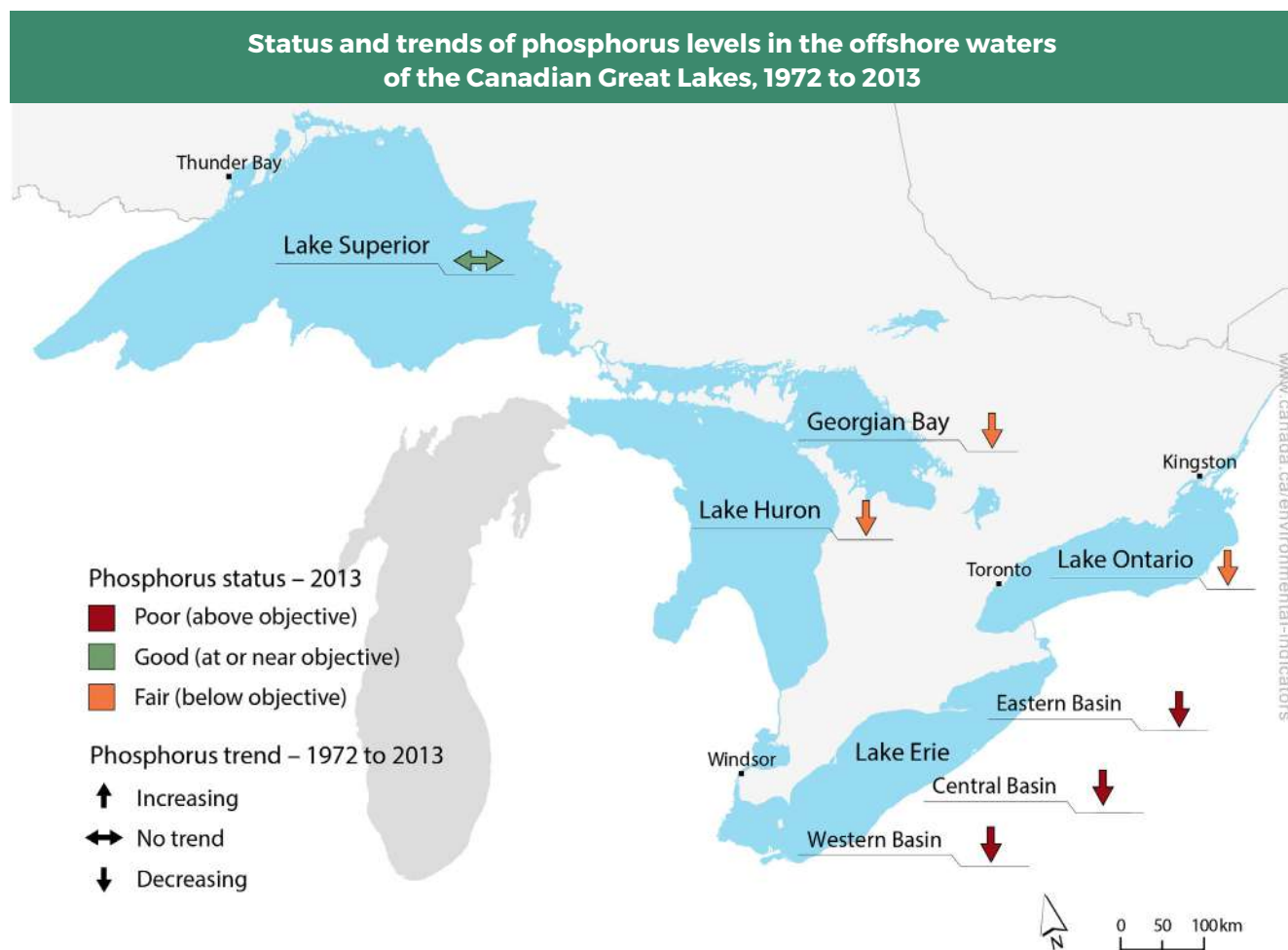
phosphorus levels in the Great Lakes, as well as in the St. Lawrence River. In the Great Lakes, progress has been mixed: phosphorus levels in Lake Erie are too high but decreasing; in Lake Superior the levels are good and stable; while in Lake Huron, Lake Ontario and Georgian Bay, phosphorus levels are too low and depleting. Levels of both phosphorous and nitrogen in the St. Lawrence River are mostly too high.

Canada is making major investments in regional and national programs in order to support restoration and water quality, particularly in the Great Lakes (see text box). For example, the Great Lakes Protection Initiative received an additional \$44.84 million through Budget 2017, while the federal government and the provincial government of Ontario recently developed a joint Domestic Action Plan to reduce phosphorus loads in Lake Erie.

Other contributing Canadian policies include ongoing efforts to reduce acid deposition and avoid critical loads of acidity that lead to long-term harmful effects on ecosystems and biodiversity.

CONTRIBUTION TO GLOBAL AICHI TARGETS

Action towards Canada Target 10 helps contribute to the achievement of Aichi Target 8, which calls for pollution, including from excess nutrients, to be brought to levels that are not detrimental to ecosystem function and biodiversity by 2020.



Note: Water quality in the offshore regions of a lake is considered good when it can support a healthy food web. Lakes where phosphorus levels are below objectives and negative impacts to the offshore food web have been observed are given a classification of fair. Where phosphorus levels are above a lake's phosphorus objectives, lakes are classified as poor. Long-term trends to explore how phosphorus levels in the offshore areas of the lakes have changed since 1972 were assessed using linear regression.

Source: Environment and Climate Change Canada (2016) Great Lakes Surveillance Program ([Canadian Environmental Sustainability Indicators](#)).

CANADA TARGET 11

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



ABOUT THE TARGET

According to the International Union for Conservation of Nature, invasive alien species (IAS) are the most significant threat to biodiversity after habitat loss. IAS are species of plants, animals, and micro-organisms relocated to environments outside of their typical habitat. Some of the best-known examples in Canada include purple loosestrife, Dutch elm disease, green crab, zebra mussel, and emerald ash borer.

Invasive species are often introduced through imported goods, as stowaways on the bottom of ships, or via disease in wildlife. Because they often have no natural predators in their new environments, their populations can grow unchecked and cause significant damage to the habitats and food sources of native species, as well as negatively impacting regional economies, recreational activities, and local communities.

There are a growing number of invasive species in Canada. In 2015, roughly one-quarter of all vascular plants were exotic, as well as multiple species of insects, birds, mammals, and freshwater fish. As such, there is an urgent need to improve our understanding of these species and their movements, and to avoid their introduction and spread.

PROGRESS TO DATE

Canada is on track to achieve Target 11 as a result of collective efforts by all governments to identify high priority pathways of invasive species into Canada, improve national and regional regulatory frameworks, and introduce education and outreach efforts to reduce the introduction and spread of IAS.

In general, pathways for the introduction of IAS in Canada are now well understood. For

example, ballast water is considered a priority pathway for aquatic invasive species. As a result, 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.

Since 2014, Canada has continually strengthened its national regulatory framework to prevent and control invasive species (see text box).

The **Aquatic Invasive Species Regulations**

have been established to provide a suite of regulatory tools under the federal *Fisheries Act*. These regulations aim to prevent the introduction of aquatic invasive species into Canadian waters and to control and manage their establishment and spread, once introduced. These regulations complement existing federal, provincial, and territorial authorities and are updated regularly. Many jurisdictions also have strategies and/or regulations to prevent, detect, respond to and eradicate invasive species (e.g., Manitoba, British Columbia, Alberta, Ontario, Québec). These include, for example, mandatory watercraft inspection programs and public education programs that target boaters (e.g., "Clean Drain Dry") and the anglers/aquarium industry (e.g., "Don't let it Loose") to curb the spread of aquatic invasive species. Provinces and territories, along with the Great Lakes States, are also working together through collaborative frameworks to stop the spread of aquatic invasive species across borders.

National plans are also being developed for priority species such as Asian carp, emerald ash borer and zebra mussels, while research is underway to inform the development of biological control strategies for established invasive alien species.

A number of federal agencies work together on IAS. For example, the Canadian Food Inspection Agency works to mitigate risks to Canadian plant resources from imported shipments. In addition, the Canada Border Services Agency performs critical functions such as inspection of materials (e.g. wood packaging, goods in the presence of soil), export certification of key products, and works with domestic and international partners to address risks associated with shipping.

Provincial and territorial governments are also acting to address invasive alien species. A number of these governments – including Ontario, Manitoba and Québec – have passed legislation or regulations to address invasive species. In addition, Ontario and British Columbia have introduced strategic plans to enhance their early detection and rapid response capabilities.

A number of regional efforts complement these initiatives. For example, the *Western Inter-Provincial-Territorial Agreement for Coordinated Regional Defense Against Invasive Species* was signed by British Columbia, Alberta, Saskatchewan, Manitoba and Yukon in 2016. In addition, Canada and the United States updated the *Great Lakes Water Quality Agreement* in 2012 to add new provisions to address aquatic invasive species, including early detection and rapid response, a ballast water discharge program, and risk assessments to identify high-risk species.

National-level cooperation continues to be strong on this issue. Most recently, in 2017, federal, provincial and territorial Ministers responsible for Conservation, Wildlife and Biodiversity approved the establishment of a permanent National Committee on Invasive Alien Species who will work to improve IAS prevention and management in Canada.

Multi-sectoral and multi-stakeholder councils have been established in most provinces and territories. The Canadian Council on Invasive



Public poster directed at protecting the water quality of Québec's lakes and rivers.

© Agence de Bassin Versant des 7.

Species has been active in increasing national and regional outreach and education to change behaviour and close pathways to prevent the spread of invasive species. These include efforts aimed at boaters, anglers, and the pet/aquarium industry.

However, more work is needed moving forward. IAS remain a serious threat to Canada's biodiversity, economy and human health. Sustained and enhanced efforts are needed to improve surveillance, diagnostics and emergency response, to fully implement intervention and management plans, and to address emerging pathways for cross-border dispersal from the United States.

CONTRIBUTION TO GLOBAL TARGETS

Canada's domestic efforts on IAS help contribute to Aichi Target 9, which states that, by 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Canada also collaborates with a number of international phytosanitary organizations and trading partners to reduce risks of IAS introduction from imported products, and to ensure harmonized standards and guidelines are in place. Increased international engagement, cooperation and awareness of invasive species and compliance with policies and regulations are integral to ensuring that invasive species are managed at a global scale.

CANADA TARGET 12

By 2020, customary use by Aboriginal [Indigenous] peoples of biodiversity resources is maintained, compatible with their conservation and sustainable use.

Unknown

ABOUT THE TARGET

For thousands of years, Indigenous peoples in Canada have depended on the land and water to meet their physical, social, cultural and spiritual needs. Indigenous peoples continue to have intimate cultural relationships with these ecosystems through customary activities such as hunting, fishing and trapping.

Customary use of biological resources is protected by Aboriginal and Treaty rights, which are recognized and affirmed by Section 35 of the *Canada Constitution Act*. Modern treaties covering over 50% of Canada's land mass also recognize the role of Indigenous peoples in wildlife harvesting, the establishment and management of national parks and conservation areas, and natural resource management. A growing number of agreements with Crown governments enable Indigenous communities to assume management of biological resources, including decisions over customary use.

Canada Target 12 and the indicators used to report on progress were developed in collaboration with representatives of First Nations, Inuit and Métis governments and organizations.

PROGRESS TO DATE

At the time of reporting there was limited available data to assess clear progress towards Canada Target 12. However, information from a range of sources confirms that First Nations, Inuit, and Métis are actively involved in multiple activities that promote customary practices compatible with conservation and sustainable use of biodiversity. Among these are various types of food harvesting, instruction on customary skills and Knowledge, and ecosystem management practices.

One of the indicators associated with this target is the number of households participating in

traditional activities. Results from the most recent **Aboriginal Peoples Survey**, a key data source, were not yet released before completion of Canada's 6th National Report to the CBD. However, the *First Nations Food, Nutrition, and Environment Study* conducted by the University of Ottawa, Université de Montréal and the Assembly of First Nations, shows that on average and across several provinces, 65% of on-reserve First Nations households participate in traditional harvesting activities.

While data was not available for Inuit or Métis populations, results from the **First Nations Regional Health Survey**, released by the First Nations Information Governance Centre in 2018, suggest that there has been a slight decline in the rate of participation in traditional activities among on-reserve First Nations households. For instance, 18% of survey participants reported hunting or trapping in the three months prior to the survey, compared to 22% in 2010. Similar trends were reported for fishing, canoeing, and berry picking.

At the same time, the *First Nations Regional Health Survey* results suggest that on-reserve First Nations households are increasingly consuming traditional foods such as large land-based animals, freshwater fish, game birds, berries and bannock. In its most recent survey, 96% of adults reported having recently consumed traditional foods, compared to 85% in 2010. The survey found similar consumption patterns among on-reserve youth and children.

New data should become available in the near future for Inuit populations. Both the Nunavik and Inuit Health Surveys will provide information on traditional food consumption in Inuit regions.

Case studies are highly valuable sources of information for reporting on Canada Target 12. A number of important initiatives aimed at maintaining and increasing customary use have been identified and documented through

case studies⁴. For example, the Nuluq Project addresses the Inuit food insecurity crisis by promoting community-based initiatives which support the consumption of food derived from the land.

Other initiatives focus on passing down teachings from one generation to the next in order to maintain or revive ancient cultural practices. In Nova Scotia, First Nations apprentices can learn how to build a traditional birch bark Mik'maq canoe over a six-week long course at Milbrook's Cultural Centre. In Manitoba, the Manitoba Métis Federation hosts flower beadwork circles and bison hide tanning workshops to encourage continued participation in these activities.

In addition, there are numerous examples of collaboration between the Government of Canada and Indigenous peoples in support of land and resource management, including recovery of species at risk. Through Indigenous-led Guardians programs (see text box) and other initiatives such as the restoration of clam gardens by the Coast Salish peoples, Indigenous peoples are continuing to play a critical role as stewards of the land and water.

CONTRIBUTION TO GLOBAL AICHI TARGETS

Progress in this area contributes to the achievement of Aichi Target 18, which calls for respect for traditional knowledge, innovations and practices of Indigenous and local communities.

In addition, Canada plays an active role internationally to promote the participation of Indigenous peoples in the Convention on Biological Diversity (CBD). Canada also regularly engages Indigenous peoples in CBD meetings by seeking their input in the preparation of Canadian positions on issues and by encouraging Indigenous participation in Canadian delegations to these meetings.

There are many **Indigenous Guardians programs** across the country. These programs empower Indigenous communities to manage their lands, waters, and ice according to traditional, or customary, laws and values. Guardians are employed as the “eyes and ears on the ground” to monitor ecological health, maintain cultural sites and protect sensitive areas and species. For example, Lutsel K'e Dene First Nation has established the Ni hat'ni Dene “Dene Watching the Land” program to support stewardship in the proposed Thaidene Nene National Park Reserve. The Ni hat'ni Dene work in all seasons as stewards of the land. This includes monitoring ecological health, maintaining integrity of cultural sites, providing interpretive services, and transmitting knowledge to younger generations. In 2017, the federal government announced funding of \$25 million over 5 years to support an **Indigenous Guardians Pilot Program**. The Pilot Program's objective is to contribute to nature conservation, build partnerships with Indigenous peoples, and advance reconciliation. Separate funding streams for First Nations, Inuit, and the Métis Nation are intended to provide the ‘seeds’ required to help develop a national network, bolster existing guardians programs, and prepare Indigenous Nations and communities to launch additional Indigenous Guardians programs.

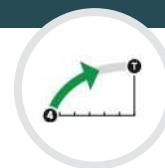
4. Please see the supplementary report on **Canada Target 12**, appended to Canada's 6th National Report for the full suite of case studies.

Indigenous Hunting Camp.
© Pat Kane.



CANADA TARGET 13

By 2020, innovative mechanisms for fostering the conservation and sustainable use of biodiversity are developed and applied.



ABOUT THE TARGET

Successfully safeguarding biodiversity requires a broad range of strategies and tools that can drive innovation and foster partnerships with diverse groups across Canada. This can include collaborative or multi-sectoral approaches to biodiversity conservation. It can also include the use of economic instruments as incentives to encourage meaningful conservation practices by land owners, or to discourage practices that have detrimental impacts to ecosystems.

Canada has a strong record of innovation and experience in broadening the conservation “toolbox” to achieve biodiversity goals. Efforts to meet Canada Target 13 will accelerate these efforts and encourage their widespread adoption across the country.

PROGRESS TO DATE

Canada is on track to meet this target. A range of innovative mechanisms are being applied by federal, provincial, territorial, municipal, and Indigenous governments, industry organizations and non-government organizations. They are often characterized by partnerships among levels of government and various organizations and groups.

Several examples of innovative mechanisms are summarized below⁵.

1. Revenue generation mechanisms such as municipal levies and revolving funds.

Emerging models include new revenue generation mechanisms, such as green bonds. A green bond is a debt security issued to raise capital to support action to address key environmental issues such as climate change or biodiversity

The **Municipal Natural Assets Initiative** (MNAI) helps local governments ‘account’ for nature. It provides expertise to identify, value, and account for natural assets such as wetlands, in municipal financial planning and asset management programs. Pilot projects in diverse municipalities across Canada have shown that these natural assets provide equivalent services to engineered alternatives and are resilient in the face of climate change or intensified development. For example, the aquifer in the Town of Gibsons, British Columbia provides natural water storage and filtration, while delivering drinking water so pure it meets health standards without any chemical treatment.

conservation. The City of Ottawa’s Green Bond Fund, created in 2017, is the first municipal green bond fund issued in Canada. While early revenues will be invested in Ottawa’s light rail transit project (intended in part to reduce city-wide transportation-related greenhouse gas emissions), it is anticipated that in the longer-term, revenues will be invested in projects such as forest and wetland restoration.

2. Conservation offsets such as habitat banking and water quality trading.

Conservation offsets are mechanisms through which adverse impacts of development activities can be offset through or compensated by mitigation activities. For example, the Lake Simcoe Region Conservation Authority has

5. Please see the supplementary report on **Canada Target 13**, appended to Canada’s 6th National Report, for the full suite of case studies at the local, regional and national levels.

established a water quality trading initiative to help meet its goals related to storm-water related phosphorus discharge. Where the Authority's zero discharge goal is not achievable on a particular site in the watershed, offsets may be pursued such as engineered wetlands, streambank restoration, or other low impact development technologies.

3. Tax instruments such as financial incentives and cost-share programs.

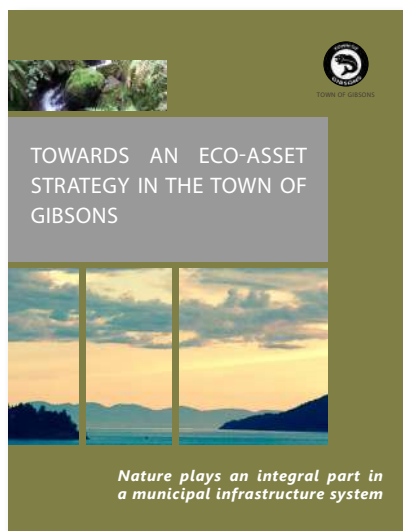
Several tax incentive programs are in place to encourage protection of private land. The Natural Area Protection Tax Exemption Program (NAPTEP), for example, is a tax exemption mechanism administered by British Columbia's Islands Trust, that provides landowners with an annual 65% exemption on property taxes for qualifying natural areas of their private property that are protected with a NAPTEP conservation covenant.

4. Land use and conservation planning tools.

A number of innovative planning tools are being implemented across the country, such as the Haida Gwaii Marine Plan, which was co-developed by the Council of the Haida Nation and the Province of British Columbia to demonstrate how to achieve sustainable economic development through an ecosystem-based management approach. The spatial component of the plan includes zoning for protection of the area's rich ecological, cultural, and social values. Many Indigenous communities are pursuing similar land or marine use planning initiatives. For example, the Sahtu Dene First Nation have created a comprehensive land use plan which includes areas for protection, based on ecological and cultural values, as well as general use zones.

5. Voluntary/multi-stakeholder initiatives.

Voluntary mechanisms such as certification programs for the forestry industry provide a



Front cover of report: *Towards an Eco-Asset Strategy in the Town of Gibsons*. © **Town of Gibsons**.

market-driven, voluntary incentive for resource users to commit to sustainable management. Mistik Management Inc., for example, is an Indigenous owned and co-controlled corporation that manages a 1.9M ha Forest Management Agreement area in the boreal forests of northwest Saskatchewan. Its commitment and adherence to the international voluntary standards of the Forest Stewardship Council have delivered significant biodiversity conservation, sustainable use, social and economic outcomes for the Indigenous communities of that landscape.

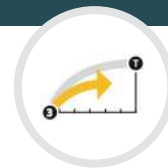
6. Other policies and programs (see text box for an example).

CONTRIBUTION TO GLOBAL AICHI TARGETS

Progress on Canada Target 13 also helps to achieve a number of global targets, including Aichi Target 3, which calls for positive incentives to support biodiversity conservation, and Aichi Target 4, which aims to ensure that governments, business and stakeholders implement plans for sustainable production and consumption.

CANADA TARGET 14

By 2020, the science base for biodiversity is enhanced and knowledge of biodiversity is better integrated and more accessible.



ABOUT THE TARGET

Information from multiple perspectives, including Indigenous Knowledge, improves our understanding of biodiversity and ecosystems, their processes, vulnerabilities, and trends. Accurate, timely, and accessible information is essential to enable Canada to effectively conserve biodiversity and mitigate the impacts of biodiversity loss.

Ongoing research and improved monitoring capacity are vital to deepening our understanding of biodiversity. Advances in a range of fields – from remote sensing to geographic information systems to bioinformatics – offer unprecedented potential for developing and sharing data, and set the stage for a new wave of knowledge innovation in partnership with Indigenous governments, universities and citizen scientists.

PROGRESS TO DATE

Overall, Canada is making progress towards Canada Target 14. The science base related to biodiversity continues to grow, as evidenced by indicators such as the number of publications of relevant scientific literature, enhancement of biodiversity databases, and increasing availability of biodiversity-related data online.

A Web of Science search of the terms “biodiversity” and “Canada” found almost 3,700 scientific papers published between 2011 and 2018.

Several recent research initiatives illustrate progress toward the target, including mapping and classification exercises like the Ontario Biodiversity Atlas (*see text box*) and taxonomic work of Canada’s museums, remote sensing projects like BioSpace, and genetic barcoding initiatives like the *Barcode of Life Data System*.

At the end of 2017, major Canadian museum collections contained more than 26 million taxonomically-classified specimens from Canadian locations that are available for scientific use, an increase of more than 4 million since

The **Ontario Biodiversity Atlas** provides detailed information on important species and habitats. The Atlas highlights areas that have multiple and overlapping biodiversity values to show wildlife managers where targeted conservation actions could have the greatest impact. The Atlas identifies High Value Biodiversity Areas (HBVAs), places that contain the highest quality habitat for species at risk and migratory birds, across southern and central Ontario. The Biodiversity Atlas can help governments and non-government partners better understand the distribution of species and habitats and support decisions regarding habitat protection, restoration, and stewardship activities.

2013. Over 30% of these specimens now have digitized information available, an increase from just under 23% in 2013.

BioSpace—Biodiversity monitoring with earth observation data—is a joint project of the Canadian Forest Service and the Canadian Space Agency. It uses remote sensing technology to observe the landscape, gather data on biodiversity, and monitor changes.

The Government of Canada developed an online geospatial mapping platform called OpenMaps to support decision-making and land use planning. This tool integrates many different base layers, and will continue to expand with the addition of biodiversity data such as land cover data.

Canada leads in the development and dissemination of genetic barcoding information, and hosts the *Barcode of Life Data System* database. This system contains barcoding sequences for over 6.4 million specimens across more than 282 thousand species. Over 2 million of these specimens, representing more than 31 thousand species, are Canadian records.

Canadian governments partner with universities across the country to advance biodiversity science and research. One among several partnerships is the Centre for Wildlife Ecology, a collaboration between Simon Fraser University and the Government of Canada. Its mission is to foster high quality, graduate training and research, to conduct basic and applied research in wildlife ecology, and to provide knowledge and personnel that will help the Government of Canada meet the challenges of conservation in the 21st century.

There is a growing number of biodiversity monitoring and research programs across the country that are contributing information to national or provincial web portals.

The largest international web portal related to biodiversity information is the Global Biodiversity Information Facility, which holds nearly 1 billion records globally. In 2018, this includes 44.4 million records related to biodiversity in Canada, drawn from more than 1000 different sources. More than 80% of the Facility's data comes from eBird, which brings together observations from birders related to

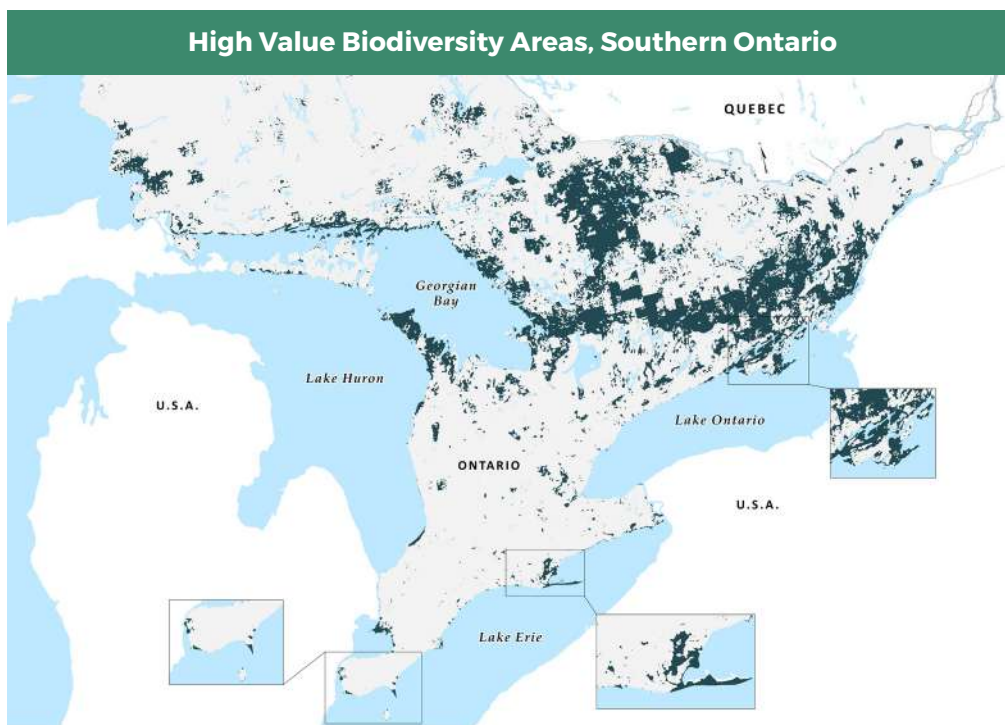
the distribution and abundance of birds in Canada. Data from iNaturalist, another citizen science-based program, are also included in Global Biodiversity Information Facility.

NatureCounts is a Canadian biodiversity web portal, managed by Bird Studies Canada. This includes hundreds of datasets from several biodiversity monitoring programs, predominantly for birds. NatureCounts is a node of the Avian Knowledge Network, a broad biodiversity portal for bird data that integrates data from more than 850 programs, largely in the Americas.

While the examples above illustrate a growing volume of biodiversity-related information, further work is required to determine to what extent these are helping to address key biodiversity policy needs.

CONTRIBUTION TO GLOBAL AICHI TARGET

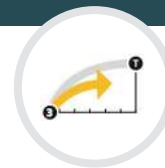
Progress on Canada Target 14 contributes to progress on global Target 19, which aims to improve knowledge relating to biodiversity.



Source: High Value Habitats and High Value Biodiversity Areas - Biodiversity Atlas, Canadian Wildlife Service - Ontario Region. **Environment Climate Change Canada.**

CANADA TARGET 15

By 2020, Aboriginal traditional knowledge [Indigenous Knowledge] is respected, promoted and where made available by Aboriginal [Indigenous] peoples, regularly meaningfully and effectively informing biodiversity conservation and management decision-making.



ABOUT THE TARGET

Indigenous peoples hold unique Knowledge of biodiversity and ecosystems, based on thousands of years of direct experience and observation shared from one generation to the next. This relationship is reflected in cultural and spiritual traditions as well as in ongoing customary activities involving the sustainable harvest of biological resources.

The incorporation of this valuable Indigenous Knowledge (IK) into decision-making is critical to the success of Canada's biodiversity programs. Indigenous Knowledge and western science can provide complementary perspectives that both benefit biodiversity conservation in Canada.

Canada Target 15 and the indicators used to report on progress were developed in collaboration with representatives of First Nations, Inuit and Métis governments and organizations.

PROGRESS TO DATE

While it is difficult to assess progress towards Canada Target 15 in a comprehensive manner, mechanisms have been identified across the country that can or are being used to integrate IK into decision-making.

Since 2014, the Government of Canada has compiled information on mechanisms, processes and procedures in place to integrate IK into decision-making. The most recent assessment found 147 discrete mechanisms illustrating the breadth of situations in which IK is explicitly recognized. These include wildlife management boards, species assessment and recovery strategies, as well as environmental impact assessment, legislation, policies and processes.

A scoping study, including case studies to assess mechanisms and governance structures through which IK can inform biodiversity conservation and management decision-making, was completed to support reporting on progress towards Canada Target 15⁶. Notable examples include the IK Subcommittee on the Status of Endangered Wildlife in Canada, which helps to acquire and integrate IK into COSEWIC's status assessment process; and, the Nunavut Wildlife Management Board (see text box).

A key mechanism for incorporating IK into decision making is the **Nunavut Wildlife Management Board**, whereby partners work together to combine knowledge and understanding of wildlife managers, users, and the public to make decisions concerning the management of wildlife in Nunavut. Established in 1994, this co-management board's mission is to conserve wildlife through the application of Inuit Qaujimagatuqangit (the Inuit term for Indigenous Knowledge) and scientific knowledge for the long-term benefit of all Nunavut residents while fully respecting Inuit harvesting rights and priorities.

These case studies suggest that Canada is increasingly developing methods to include IK in biodiversity-related decision-making. At the same time, additional work is needed to ensure Indigenous perspectives are reflected and that knowledge holders themselves participate in decision-making processes.

6. Please see the supplementary report on **Canada Target 15**, appended to Canada's 6th National Report, for the full suite of case studies.

Indigenous languages also play a key role in the maintenance and acquisition of IK. As such, trends in linguistic diversity and the number of speakers of these languages are considered in measuring progress towards this target.

The 2016 Canada Census suggests that there has been an increase in the number of speakers of Indigenous languages among First Nations, Métis, and Inuit populations. However, this increase has not kept pace with growing population sizes, suggesting an overall decrease in the percentage of Indigenous peoples able to speak their languages. More comprehensive information on these trends will be available with the release of results from the most recent Aboriginal Peoples Survey conducted by Statistics Canada.

The Government of Canada is taking significant action to support the preservation and revitalization of Indigenous languages. For example, in 2016, the government announced that it will enact an *Indigenous Languages Act* to preserve, promote and revitalize these languages. In 2017, the Government of Canada committed to invest \$89.9 million to support Indigenous languages and cultures through community-based projects. Funding will also be provided to support the digitization of Indigenous languages and oral histories.

CONTRIBUTION TO GLOBAL AICHI TARGETS

Activities supporting progress towards Canada Target 15 also contribute directly to Aichi Target 18, that by 2020, the traditional knowledge, innovations and practices of Indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of Indigenous and local communities, at all relevant levels.

Canada participates internationally in a number of relevant discussions and activities that support the Aichi targets. This includes efforts led by the Commission for Environmental Cooperation (CEC), a partnership between Canada, Mexico, and the United States, which aims to foster conservation, protection and enhancement of the shared North American environment. The CEC recently created a roster of experts on Traditional Ecological Knowledge to provide advice to the Council on opportunities to apply this knowledge to the CEC's operations and activities.

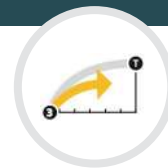
Saoyú-?ehdacho Cooperative Management Board meets during the 2015 Knowledge Camp on the peninsula of Saoyú on Sautú-Great Bear Lake -in the Northwest Territories.

© Fritz Mueller / @Parks Canada / Saoyú-?ehdacho National Historic Site of Canada.



CANADA TARGET 16

By 2020, Canada has a comprehensive inventory of protected spaces that includes private conservation areas.



ABOUT THE TARGET

There are currently thousands of protected and other conserved areas across Canada. Some are managed by federal, provincial, territorial, regional or municipal governments, others are directly managed or co-managed by Indigenous governments, and others are administered privately by individuals, land trusts, or other conservation organizations.

Canada tracks information including the number and area of federal, provincial, and territorial protected areas and of some privately protected areas. However, this does not reflect the full diversity of conservation measures that may contribute to Canada's biodiversity goals.

The Canadian Protected and Conserved Areas Database (CPCAD) is a comprehensive inventory of protected and other conserved areas in Canada. CPCAD is complemented by the Québec Registre des aires protégées and both databases are used to populate "Protected Planet" – the World Database of Protected Areas. Environment and Climate Change Canada (ECCC) manages CPCAD on behalf of federal, provincial and territorial governments. CPCAD was developed in collaboration with a broad range of partners. The database will help support tracking of collective conservation efforts across the country and, in particular, will help reporting on progress toward Canada Target 1. This information will also help conservation managers identify gaps in conservation efforts and have a better understanding how well protected and other conserved areas are functioning as an ecologically connected network.

PROGRESS TO DATE

The Canadian Protected and Conserved Areas Database (CPCAD) is a national database containing details on protected areas from

federal, provincial, and territorial protected area agencies. This database uses the International Union for Conservation of Nature system of protected areas definitions, management categories, and governance types, which facilitates comparisons between national systems as well as national-level reporting and mapping.

An increasingly comprehensive centralized inventory of protected and other conserved areas is enabling more precise reporting.

Methodological improvements to **Canada's national protected and conserved areas database** include 2014 updates to Canada's ecological framework (which divides Canada into ecological zones), based on new information about the boundaries between ecosystems. This updated framework will enable better analysis and reporting of the percent of each ecozone that is protected.

In addition, the official area of Canada's ocean estate was updated in 2015. This revision has resulted in a better estimate of the percent of Canada's coastal and marine areas conserved and more accurate reporting on Canada's progress toward its 10% coastal and marine target (*see Canada Target 1*).

At the same time, the database and associated procedures have been updated, both to allow for more accurate reporting and to prepare for anticipated changes in how protected and other conserved areas are recognized in Canada. New information that will be tracked as a result of these changes include other effective area-based conservation measures, management regimes, and the status of sub-surface rights.

Efforts to continually improve Canada's ability to report on protected and other conserved areas have resulted in new methodologies being incorporated into the system over the last several years (see text box). Furthermore, as part of the Pathway to Canada Target 1 initiative (see Canada Target 1), a joint working group including Indigenous organizations, land trust organizations, and municipalities is examining Canada's approach to recognizing protected and other conserved areas. This includes exploring ways that Canada can accurately report on privately conserved areas and Indigenous Protected and Conserved Areas as well as other effective area-based conservation measures (OECMs)⁷, consistent with commitments under Canada Target 1.

Once completed, this information will form the basis of annual updates on **Canada's conserved areas** as well as the **Canadian Protected Areas Status Report**, which is published once every five years.

CONTRIBUTION TO GLOBAL AICHI TARGETS

Work under Canada Target 16 to develop a more comprehensive inventory of protected and conserved areas helps contribute to achievement of Aichi Target 19, which aims to improve knowledge related to biodiversity, including status and trends.

Canada's terrestrial and marine ecozones



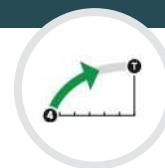
Note: Canada has 18 terrestrial ecozones, 12 marine ecozones, and 1 freshwater ecozone (Great Lakes).

Source: Environment and Climate Change Canada.

7. Some areas outside recognised protected area networks also contribute to the effective *in-situ* conservation of biodiversity. These include territories and areas governed by all four governance types, i.e., by governments, private actors, Indigenous peoples and local communities, and shared governance. See section on Canada Target 1 for more information on protected and conserved areas in Canada.

CANADA TARGET 17

By 2020, measures of natural capital related to biodiversity and ecosystem services are developed on a national scale and progress is made in integrating them into Canada's national statistical system.



ABOUT THE TARGET

“Natural capital” and “ecosystem services” are terms used to characterize how the natural environment supports human well-being. Natural capital refers to ecosystem structures as “stocks” of resources that provide flows of goods and services that human societies depend on, including so-called “ecosystem services” such as flood mitigation and water purification.

Understanding these natural capital assets and the ecosystem services they generate provides important contextual information to decision-makers at all levels. However, while these assets and services are critical to human health and wellbeing, they have not traditionally been accounted for in national statistical systems. Doing so can help reduce biodiversity loss and degradation over time.

PROGRESS TO DATE

Major strides have been made in achieving Canada Target 17 since 2011. Since that time, Canada has begun to develop a system for measuring ecosystem assets and services, informed by the United Nations System of Environmental and Economic Accounts Experimental Ecosystem Accounts (UN SEEA-EEA). The UN SEEA-EEA defines how countries can measure natural capital and ecosystem services using a range of monetary, physical, and condition-based measures.

In addition, Statistics Canada continues to work on incorporating an increasing body of ecosystem-related data and elements of natural capital within the national statistics system. This includes releasing data through Statistics Canada's online database, as well as publishing tables, charts, maps and analysis in its annual report: *Human Activity*

and the Environment. Recently, this report has focused on (1) landscape change in and around Canadian census metropolitan areas,

In early 2017, the federal, provincial, and territorial governments of Canada collaboratively published a comprehensive technical guide entitled the ***Ecosystem Services Toolkit: Completing and Using Ecosystem Service Assessment for Decision-Making: An Interdisciplinary Toolkit for Managers and Analysts***. This toolkit is a practical, step-by-step guide on how to consider and incorporate ecosystem services in a variety of different policy contexts such as spatial planning, environmental assessment, and wildlife management. The toolkit is designed to enhance users' understanding of ecosystem services and to support analysis and decision-making by:

- » outlining reasons for using an ecosystem services lens;
- » guiding users through the six steps of an ecosystem services assessment;
- » offering advice on how to address ecosystem services considerations in various policy and decision-making contexts;
- » providing innovative tools, advice and resources to support assessment and analysis; and,
- » illustrating the uses of ecosystem services assessment with Canadian examples.

The Ecosystem Services Toolkit supports Target 17 by providing governments and others with tools to gather data on biodiversity and ecosystem services so that they can be integrated into statistical, planning, and other systems at various scales.

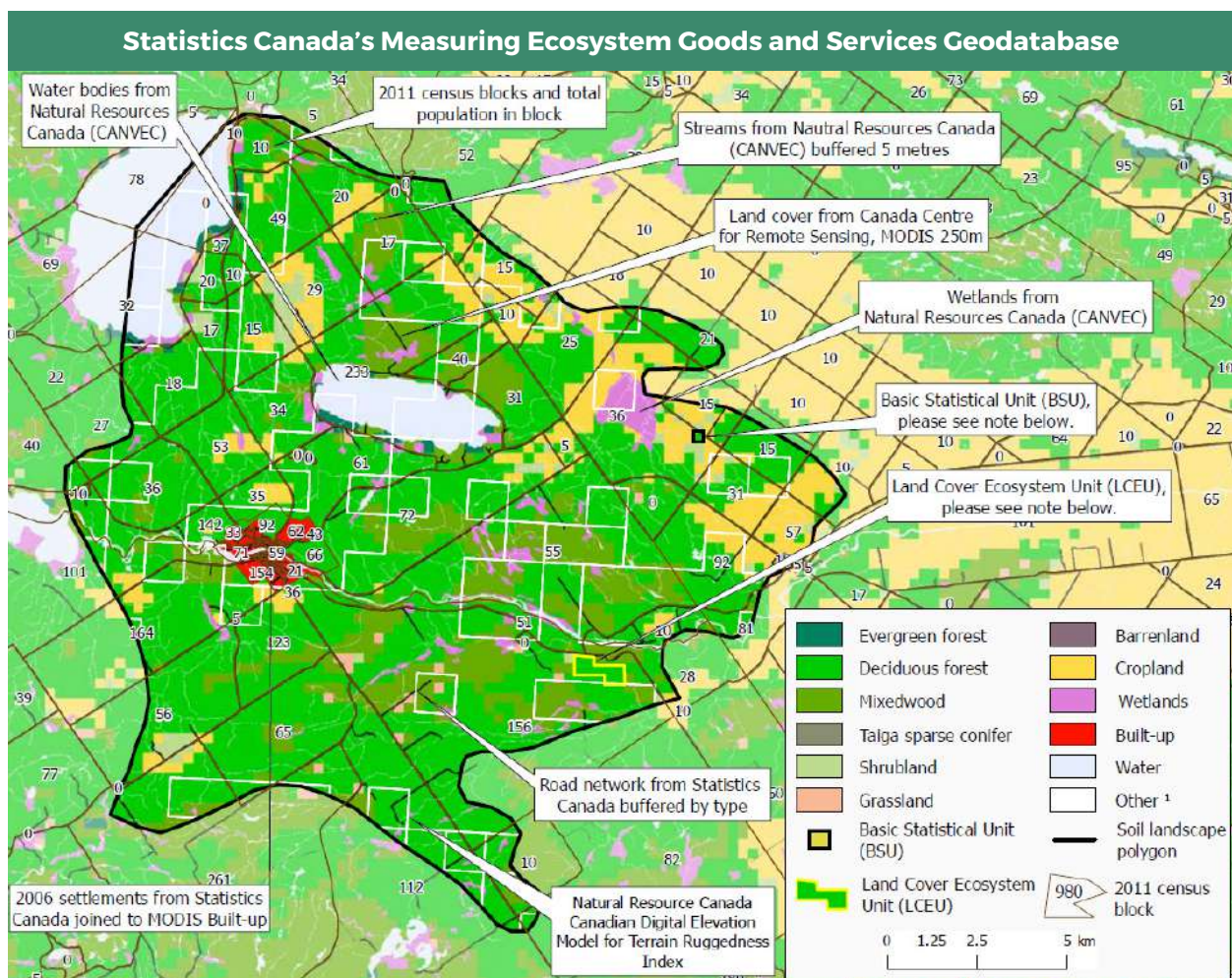
(2) freshwater supply, use, and condition of freshwater ecosystems, (3) agriculture in Canada, and (4) forests in Canada.

Some provincial governments, such as Alberta, are explicitly integrating diverse values of ecosystem services into regional land use plans and policies. Federal, provincial and territorial governments have also collaborated to develop and publish a detailed technical guide to ecosystem services assessment to build capacity for incorporating these values into decision-making processes (see text box).

CONTRIBUTION TO GLOBAL AICHI TARGETS

Progress towards Canada Target 17 directly contributes to Aichi Target 2, by helping ensure that ecosystem services are incorporated into reporting and decision-making frameworks at the federal, provincial/territorial, and municipal levels.

Canada also contributes to global efforts in a number of ways. Canada is actively involved in the revision of the UN SEEA-EEA and participates in the work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Canadian officials have provided training in national environmental accounting to other countries such as China, Malaysia and Chile.



Note: This map illustrates how different geographic and statistical data such as land cover type, development, and elevation, along with information such as climatic and socio-economic data, can be aggregated to represent ecosystems spatially within a statistical accounting system.

Source: Natural Resources Canada, 2012, Canada 250m Land Cover Time Series 2000-2011, Earth Sciences Sector, Canada Centre for Remote Sensing, ftp://ftp.ccrs.nrcan.gc.ca/ad/Pouliot/LCTS/LCTS_V1/ (accessed May 8, 2013). Natural Resources Canada, 2012, CanVec, Earth Sciences Sector, Mapping Information Branch, Centre for Topographic Information, www.geogratis.gc.ca (accessed March 1, 2012). Statistics Canada, 2011, Road Network File, 2011, Catalogue no. 92-500-X. Natural Resources Canada, 2000, Canadian Digital Elevation Data, Earth Sciences Sector, Centre for Topographic Information, www.geobase.ca/geobase/en/data/cded/index.html (accessed September 12, 2013). Statistics Canada, 2011 Census of Population, Statistics Canada, Environment Accounts and Statistics Division, 2013, special tabulation.

1. Combines Canada Centre for Remote Sensing (CCRS) land cover codes for snow and ice.

CANADA TARGET 18

By 2020, biodiversity is integrated into the elementary and secondary school curricula.



ABOUT THE TARGET

Catalyzing the next generation of conservation leaders requires educating young people about biodiversity, including its importance to human health and wellbeing, and what can be done to conserve and use it more sustainably. Mainstreaming an understanding of the importance of biodiversity can help create a culture of appreciation, conservation, and action over time.

This target focuses on a key avenue for teaching Canada's young people about biodiversity: integrating biodiversity into formal education systems. Incorporating biodiversity education into provincial and territorial curriculum – through science, art, physical education and other subjects – can be complemented by partnerships with Canadian zoos, aquariums, museums, outdoor education centres and conservation organizations.

PROGRESS TO DATE

Canada is on track to meet Target 18. All 10 provinces and territories that participated in a 2018 survey reported that biodiversity values have been incorporated into elementary and secondary school curricula. Further, many reported that key concepts and terms related to biodiversity are taught across all grade levels.

Specific topics that were identified as part of school curricula include: the science of the diversity of life (e.g., habitats and communities); the role of living things within ecosystems (e.g., food webs); human impacts on biodiversity (e.g., invasive species and habitat loss); economic utility of biodiversity (e.g., ecosystem services); and, socio-cultural perspectives and the role of governments.

Through 3-year funding for **Engaging Canadian Kids in Wildlife Conservation**, Environment and Climate Change Canada is helping organizations to educate and engage children aged 6 to 12 about Canadian wildlife conservation, the protection of Canada's biodiversity, and key threats to biodiversity such as climate change. In particular, this funding supports programming designed to: (1) increase kids' knowledge and awareness of Canada's wildlife, including threats to wildlife and habitat, and how to conserve and recover species at risk; (2) provide kids with opportunities to get involved in activities that help conserve nature; and (3) inspire kids to be active stewards of the natural world.

In addition to these classroom activities, governments across the country partner with a variety of non-governmental organizations in the design and delivery of education and awareness programs (*see text boxes*).

Canadians have a high degree of awareness of the importance of nature. The 2014 report on results of the *Canadian Nature Survey* revealed that over 90% of Canadian adults were aware of specific ecosystem services that nature provides such as clean air and water, fertile soil, places for recreation, and pollination. In addition, 24% of Canadian adults – 6.4 million people – indicated that they participate in voluntary nature conservation activities, such as citizen science (when members of the general public participate in the collection and analysis of data).

A 2015 national public opinion poll found that 89% of Canadians agree that preventing the extinction of wild plants and animals in Canada is important. A separate poll of Canadian children ages 8-11 found that 85% of those surveyed said it was 'very important' to do things to protect the environment. Species extinction was identified by the majority of kids (69%) as the environmental issue of greatest importance to them.

CONTRIBUTION TO GLOBAL AICHI TARGETS

Actions taken to advance Canada Target 18 also contribute to Aichi Target 1, which aims to ensure that people are aware of the values of biodiversity and steps they can take to conserve and use it sustainably.

Canada is also actively involved in a number of international initiatives related to Aichi Target 1. For example, Canada co-leads the global **#NatureForAll** initiative, which aims to build broad-based public and cross-sectoral support and action for biodiversity conservation around the world. #NatureForAll brings together more than 230 organizations focused on inspiring love, support, and action for biodiversity conservation around the world. #NatureForAll is based

The **Ontario Children's Outdoor Charter** aims to get children outside to discover and connect with the wonders of nature. The Charter is an awareness initiative that encourages children to explore and experience Ontario's biodiversity by participating in 12 recommended activities: follow a trail, explore a park, harvest something to eat, swim in a lake, paddle a canoe, play in the snow, build an outdoor fort, visit a farm, camp under the stars, go fishing, observe plants and wildlife, and create an outdoor adventure. It features an activity passport for kids to use to record their outdoor activities, and a poster to promote the initiative. The idea is that children who connect with nature grow up caring for the Earth and helping to conserve biodiversity.

on the knowledge that personal experiences with the natural world provide powerful benefits for individual and societal health, well-being, and resilience; and, are the foundation for the lifelong support of and commitment to biodiversity conservation.

Children learning about biodiversity.
© iStock.



CANADA TARGET 19

By 2020, more Canadians get out into nature and participate in biodiversity conservation activities.



ABOUT THE TARGET

Spending time in nature is a favourite pastime for many Canadians. This includes visiting parks and wilderness areas, participating in wildlife monitoring programs, and engaging in other nature-related activities.

Involvement in nature-based activities can increase personal connections with the natural world and encourage an understanding of the importance and beauty of nature. It can also lead to greater involvement in biodiversity conservation efforts. This in turn will help Canada achieve its biodiversity goals, in partnership with Indigenous peoples, conservation organizations, industry, and youth.

PROGRESS TO DATE

Overall, Canada is on track to achieve Target 19. Based on information from various surveys, monitoring programs, and parks agencies, more Canadians appear to be getting out into nature and participating in biodiversity conservation.

For example, the 2015 biennial *Households and Environment Survey* found that 76% of Canadian households reported that they had recently visited a nearby park or greenspace. This is up from 72% of Canadian households as reported in both 2011 and 2013.

In addition, the 2012 *Canadian Nature Survey* found that 89% of Canadian adults participated in at least one of over 30 different nature-based activities, such as relaxing in nature, hiking, or gardening. The survey also found that 24% of Canadian adults participated in nature conservation activities, and 15% of Canadian adults participated in citizen science efforts such as monitoring (see text box).

NatureWatch is an umbrella for several citizen-based monitoring programs including FrogWatch, IceWatch, PlantWatch, Wormwatch, the recently launched MilkweedWatch and soon-to-be launched Arctic Wildlife Watch. Since 2000, NatureWatch has been engaging Canadians in collecting information on nature to better understand the changing environment. A new mobile-friendly website was launched in 2014 with enhanced tools for identifying species and mapping user observations. As well, the program has expanded its reach through partnerships with the National Hockey League, eco-tourism companies, Inuit youth groups, primary school teachers, Scouts Canada and the Canadian Museum of Science and Technology. Students and researchers use NatureWatch data for scientific purposes, and the program encourages Canadians of all ages to connect with Canada's natural environment.

The number of Canadians participating in voluntary citizen-science monitoring programs appears to be increasing. Annual participation in initiatives such as the Breeding Bird Survey and Christmas Bird Counts suggests that there has been both an overall increase in participation as well as an increase in effort (such as submitting a checklist in addition to participating in a count) since 2011. The number of observations submitted to iNaturalist also increased dramatically in 2017, thanks to a country-wide push to promote participation in bioblitzes as part of Canada's 150th anniversary celebrations.

Park visitation rates across the country also show an overall increase in recent years. From 2012 to 2016, visitation increased in 7 out of 8 park systems reporting (and remained stable in the 8th). In addition, as part of its celebration of the 150th anniversary of Confederation, the Government of Canada offered free admission to all of Canada's National Parks, National Historic Sites and National Marine Conservation Areas. More than 8 million Discovery Passes, which granted unlimited entry to these sites, were in circulation in 2017. Visitation for 2017 reached 27.2 million (an 11% increase over the previous year) while associated social media campaigns throughout the year reached 20 million people.

CONTRIBUTION TO GLOBAL AICHI TARGETS

Efforts leading to progress on Canada Target 19 all contribute to Aichi Target 1 (by 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably) and to Aichi Target 4 (which aims to involve stakeholders in biodiversity conservation efforts).

Canada also contributes to global efforts through its participation and leadership in the global #NatureForAll initiative profiled under Canada Target 18. #NatureForAll partners are working together to scale up the reach and impact of successful programming that raises awareness and engages people in activities to experience and connect with nature.

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FEATURE: Global Strategy FOR PLANT CONSERVATION

Overview

The *Global Strategy for Plant Conservation* (GSPC) was developed under the CBD to raise awareness of the threats faced by plants worldwide and to provide a policy framework for action. The Strategy includes 16 global targets to be achieved by 2020.

Canada's Approach

Several of Canada's national biodiversity targets contribute to achieving the GSPC. Canada's 2020 targets correspond directly with 11 of the 16 global targets in the GSPC while also covering a number of areas beyond those addressed in the Global Strategy.

Progress Highlights

Canada is contributing to the global targets for plant conservation through a range of initiatives.

For example, Canada is compiling an online flora of all known plants, and contributes to the **Flora of North America** project, which includes roughly 2/3 of Canada's flora to date. Information on plant species is also available on the **Species at Risk Public Registry**. The status of wild species in Canada, including flora, are assessed every 5 years and important conservation information is made available to the public and to decision-makers as part of the **Wild**

Species reports. For example, while about 70% of ranked vascular plant species are ranked as 'secure', this group has the largest number of species at risk, with 1,157 species.

To advance plant conservation, Canada has robust efforts in place to address threats associated with invasive alien species, and is an active participant in the CITES Convention. CITES includes a specific focus on addressing illegal harvest and illegal international trade in plant species.

In addition, many protected area planning processes underway across Canada include consideration of ecological representation, including plant species. Botanical gardens and arboreta are also actively involved in protecting natural areas – at least 1,630 hectares of natural areas are managed by botanical gardens in Canada.

Canada works to support education and public awareness of plant diversity through efforts to integrate biodiversity considerations into school curricula, support citizen monitoring programs like PlantWatch, and connect botanical gardens and other organizations to national, regional and international networks. Canada also supports efforts by Indigenous communities to protect, preserve, transmit and use Indigenous Knowledge related to plant resources.



For more information, please visit

biodivcanada.ca