



Report Overview

NATIONAL ISSUES REPORT



Government
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Canada

Introduction

Canada's changing climate is causing deep and lasting impacts on our society, economy and environment. Higher temperatures, shifting rainfall patterns, extreme weather events and rising sea levels are just some of the changes already affecting many aspects of our lives. Changes in climate will persist and, in many cases, will intensify over the coming decades. Understanding these impacts is necessary to reduce risks, build resilience and support sound decision-making.

In 2017, the Government of Canada launched the National Knowledge Assessment process, *Canada in a Changing Climate: Advancing our Knowledge for Action*. This multi-year, collaborative initiative is delivering a series of authoritative reports (see Figure O.1) that focus on how and why Canada's climate is changing, the impacts of these changes and how we are adapting.

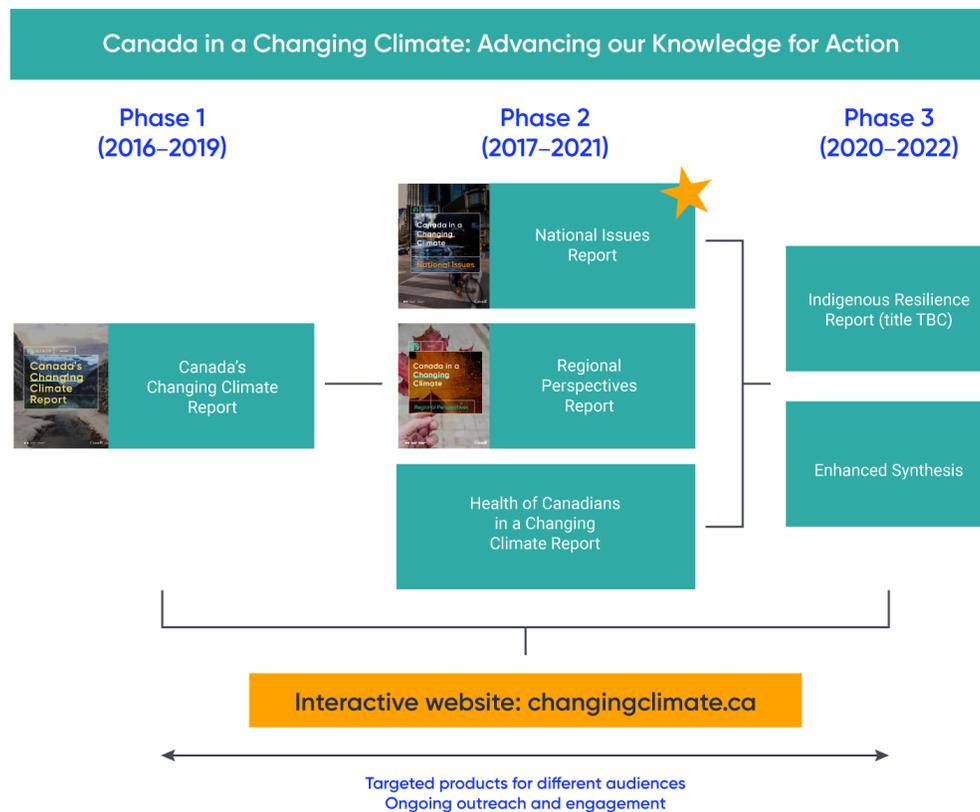


Figure O.1: An overview of the products being produced under *Canada in a Changing Climate: Advancing our Knowledge for Action*. Natural Resources Canada is leading the process and depends on the collaboration of a broad partnership of subject-matter experts and assessment users, including from all orders of government, Indigenous organizations, universities, professional and non-governmental groups, and the private sector. To learn more about the assessment process, visit adaptation.nrcan.gc.ca.



The first report in the series, [Canada's Changing Climate Report](#) (CCCR), was released in 2019. It assessed Canada's changing climate, covering observed and projected changes in temperature, precipitation, snow, ice, permafrost and freshwater availability, including changes in Canada's three oceans (see Box O.1).

Box O.1: Headline Statements from *Canada's Changing Climate Report*

[Canada's Changing Climate Report](#) included 10 headline statements that tell a concise story about the changing climate in Canada. The statements are summarized below:

1. Canada's climate has warmed and will warm further in the future, driven by human influence.
2. Both past and future warming in Canada is, on average, about double the magnitude of global warming.
3. Oceans surrounding Canada have warmed, and have become more acidic and less oxygenated, which is consistent with observed global ocean changes over the past century.
4. The effects of widespread warming are evident in many parts of Canada and are projected to intensify in the future.
5. Precipitation is projected to increase for most of Canada, on average, although summer rainfall may decrease in some areas.
6. The seasonal availability of freshwater is changing, with an increased risk of water supply shortages in summer.
7. A warmer climate will intensify some weather extremes in the future.
8. Canadian areas of the Arctic and Atlantic Oceans have experienced longer and more widespread sea-ice-free conditions.
9. Coastal flooding is expected to increase in many areas of Canada due to local sea level rise.
10. The rate and magnitude of climate change under high versus low emission scenarios project two very different futures for Canada.

Note: The full [Headline Statements](#) can be found at changingclimate.ca, and each statement is cross-referenced to specific sections in chapters of the main report, where supporting evidence can be found. There is high confidence or more associated with each of these statements, which are consistent with, and draw on, the Key Messages in the chapters.

The [National Issues Report](#) builds on the CCCR, providing answers to questions such as:

- What do these changes in climate mean for those living in Canada?



- How can we adapt to increase resilience, reduce risks and costs, and take advantage of potential opportunities?
- Where have we made progress on addressing climate change impacts and adaptation?
- Where do gaps in knowledge and action remain?

The [National Issues Report](#) focuses on climate change impacts and adaptation issues that are of national importance or that are best understood through an integrated, pan-Canadian perspective. It is structured around the main elements of sustainability—society, the environment and the economy—and includes a chapter on international dimensions.

Key findings of the *National Issues Report*

1. **Communities of all sizes across the country are experiencing the impacts of climate change on their infrastructure, health and well-being, cultures and economies.** Local action to reduce climate-related risks is increasing, although limited capacity is challenging the ability of many communities to act (see [Cities and Towns](#) chapter; [Rural and Remote Communities](#) chapter).
2. **Changes in climate are threatening the vital services that Canada's ecosystems provide and are negatively impacting our water resources.** Effective coordination, cooperation and adaptive management, as well as conservation efforts, can help to reduce impacts. Nature-based approaches to adaptation that maintain or restore ecosystems, such as wetlands, are a cost-effective and sustainable means of moderating climate change impacts and building resilience (see [Ecosystem Services](#) chapter; [Water Resources](#) chapter; [Cities and Towns](#) chapter).
3. **While climate change will bring some potential benefits, overall it will impose increasing economic costs on Canada.** A changing climate affects all sectors of Canada's economy through impacts on production, operations and/or disruption to supply chains. Disclosure of climate-related risks is emerging as a key driver of adaptation in the private sector (see [Sector Impacts and Adaptation](#) chapter; [Costs and Benefits of Climate Change Impacts and Adaptation](#) chapter; [Climate Disclosure, Litigation and Finance](#) chapter).
4. **We must look beyond our borders when assessing the impacts of a changing climate for Canada.** Climate change impacts occurring elsewhere in the world, as well as the steps that other countries take—or do not take—to adapt, can strongly affect food availability, trade and immigration. These impacts place additional stress on Canada's communities, businesses and government services (see [International Dimensions](#) chapter).
5. **Large gaps remain in our preparedness for climate change, as demonstrated by recent impacts of extreme weather events, such as floods and wildfires.** Accelerating progress on adaptation through rapid and deliberate plans and actions is vital for Canada's economic and social well-being (all chapters).
6. **Lessons on good practices are continuing to emerge and are helping to guide successful**



adaptation. These include empowering strong leadership, collaborating broadly and adopting flexible management approaches. Incorporating diverse perspectives and sources of knowledge, such as Indigenous Knowledge Systems, is also imperative for effective adaptation (all chapters).

Moving forward

As the world responds to the COVID-19 pandemic, new insights are emerging that are relevant to climate change adaptation. Considerable optimism can be derived from the global response. It has shown that once individuals, businesses and governments understand the risks associated with COVID-19, they are willing to make major changes to protect lives and livelihoods, even when faced with uncertainty. It has also demonstrated the importance of action at every level, the advantages that can be achieved through cooperation across multiple levels of government, and the critical role of both the private sector and civil society. It is important to note that the content of the chapters in this report was finalized prior to the start of the pandemic. The chapters therefore do not address the impacts of the pandemic or any potential relationships between climate change and COVID-19.

There is abundant research indicating that current efforts to adapt are insufficient in the face of rapidly accumulating social and economic losses from current and future climate change impacts. The research also demonstrates that the window for taking action to reduce increasingly severe impacts is rapidly closing (Rogelj et al., 2019; IPCC, 2018). Urgent action, supported by strong investments, is needed to both reduce greenhouse gas emissions and to increase resilience to climate change through adaptation. Decisions taken today will determine the degree of future changes and our resilience to climate risks. Evidence-based decisions are imperative for minimizing costs, protecting lives and livelihoods, and ensuring a sustainable future for Canadians.