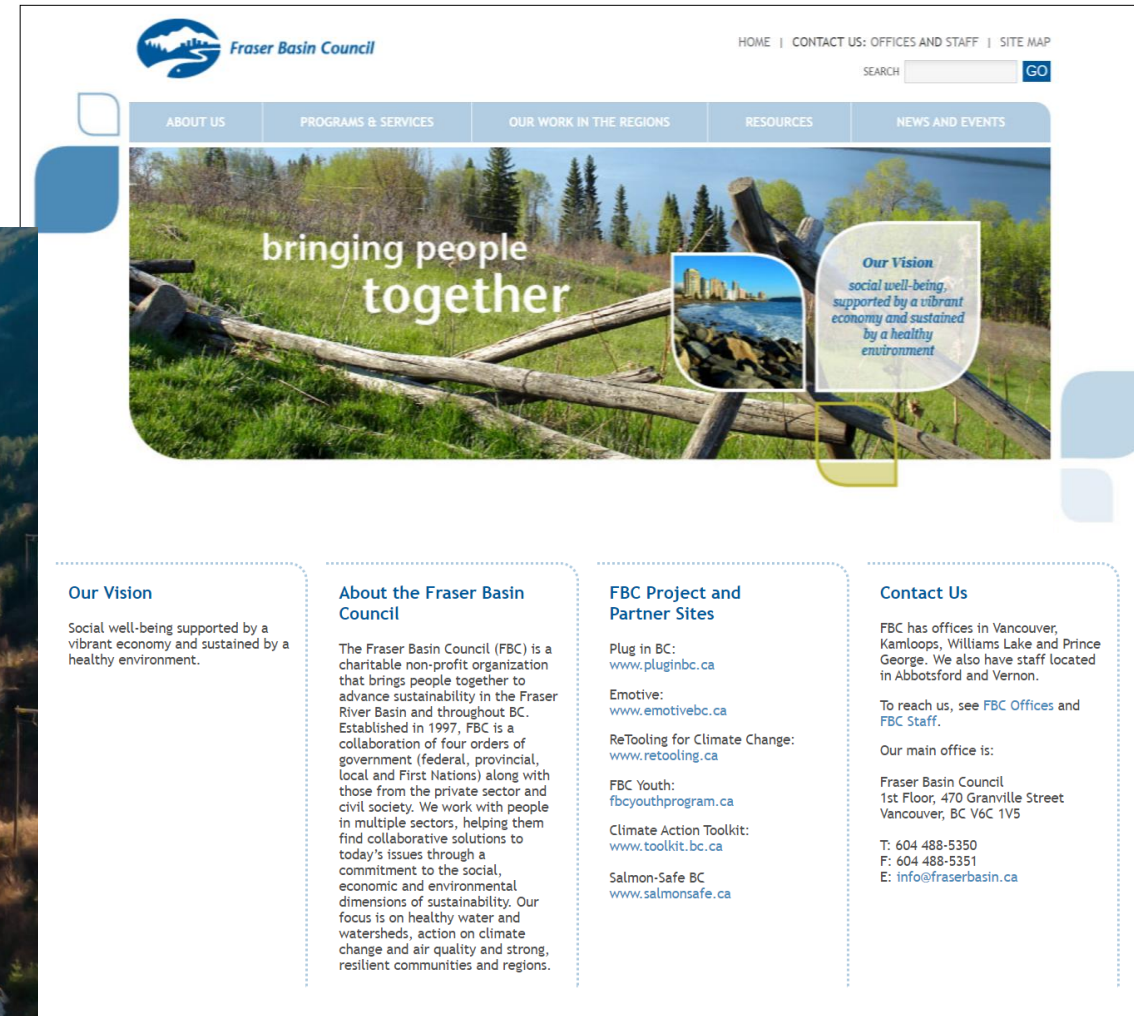


WEBINAR



Canada in a Changing Climate: Advancing our Knowledge for Action

Intro and Overview of the Assessment Process British Columbia Chapter Release

May 18, 2022

Fiona Warren

Knowledge Assessment Manager
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Outline

1. Our assessments and process
2. The Regional Perspectives Report
3. Digital Delivery

Speakers



Jim Vanderwal
Director, Operations & Climate
Change,
Fraser Basin Council



Fiona Warren
Knowledge Assessment Manager,
Natural Resources Canada



Craig Brown
Coordinating Lead Author
Climate Change and Health Lead,
Vancouver Coastal Health



Denni Clement
Ktunaxa Nation & Pinna Sustainability



Luke Sales
Director of Planning, Town of
Qualicum Beach



Harry Nelson
Associate Professor, Faculty of Forestry,
University of British Columbia



Dr. Natalya Melnychuk
Water Policy Advisor, B.C. Ministry of
Land, Water and Resource Stewardship

What are assessments?

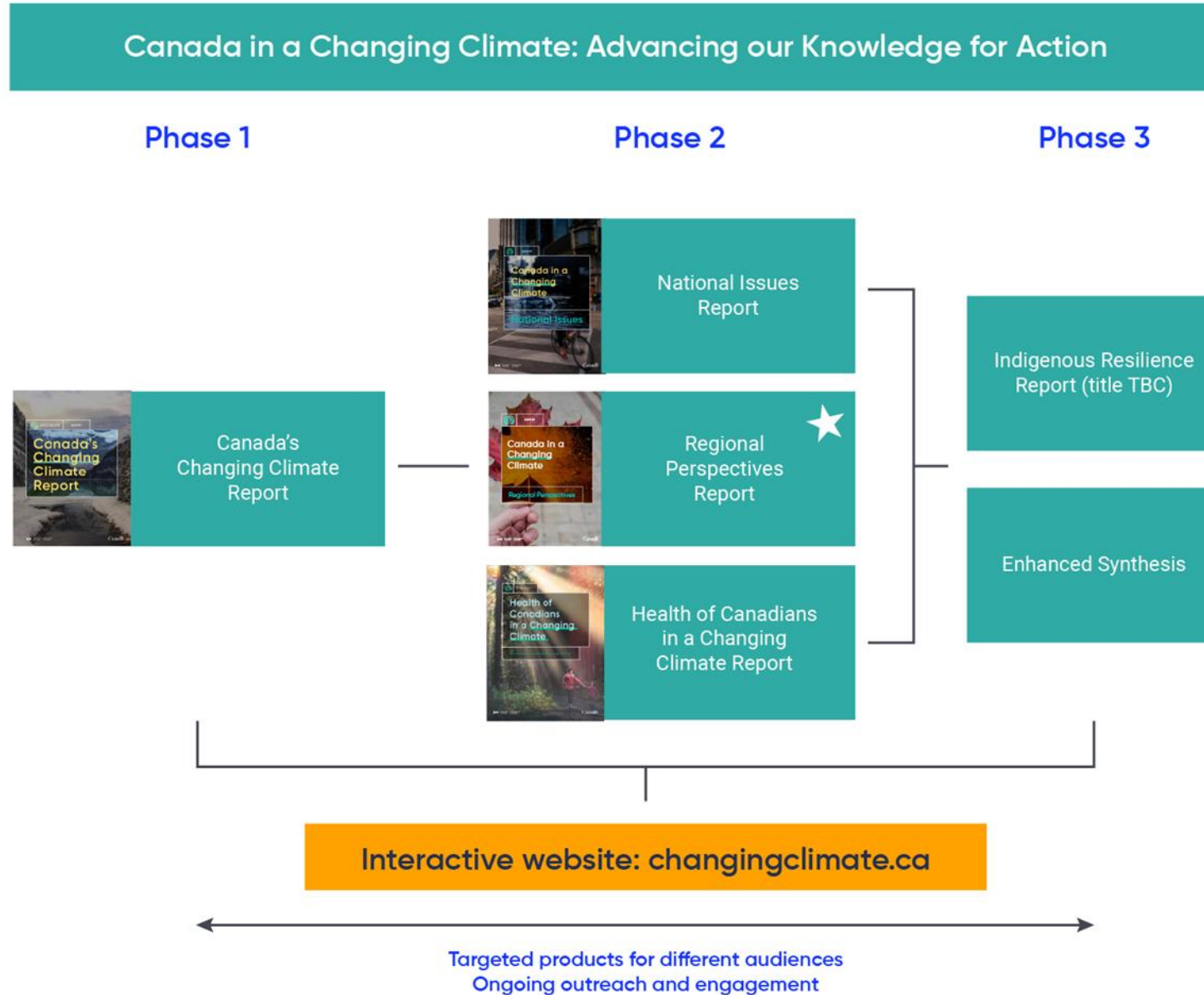
Credible, useful and decision-relevant products that synthesize **existing knowledge** on climate change **risks, opportunities and adaptation**

Assessment goals:

- **raise awareness** of issues
- **provide a foundation** for decision-making
- **build capacity** on adaptation through the assessment development process



Canada in a Changing Climate Reports



The *Regional Perspectives Report*

- Provides regional perspectives on how climate change is impacting our communities, environment and economy, and how we are adapting.
- Includes case stories of adaptation in practice
- Chapters from this report are being released on a rolling basis from 2020 to 2022

Chapter 1 – Atlantic Provinces (*released Dec. 2021*)

Chapter 2 – Quebec

Chapter 3 – Ontario

Chapter 4 – Prairie Provinces (*released Dec. 2020*)

Chapter 5 – British Columbia (*release May 2022*)

Chapter 6 – Northern Canada



Over 230 experts contributed to the *Regional Perspectives Report*



Highlights of what's new in this assessment process

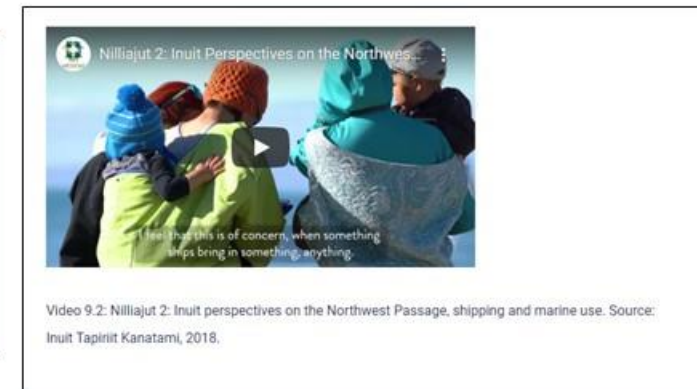
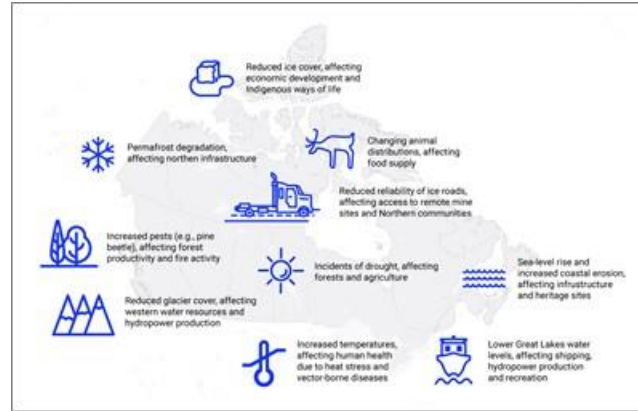
- A **suite of products** (2019-2022 releases), rather than a single report
- Enhanced **engagement and communications** before, during and after release
- **Layers of information** to address needs of different audiences
 - e.g., **Key message approach**, layers of information/tiers, boxes, case stories
- Stronger inclusion of **multiple sources of knowledge**, including Indigenous Knowledge
- Explicitly discuss **knowledge gaps and emerging issues** to establish a baseline
- Fully designed for **digital delivery** (changingclimate.ca)

All reports are being delivered digitally

Key features include:

- Embedded videos;
- Illustrative photos;
- Shareable content;
- Downloadable figures (some interactive);
- Hyperlinks between sections and reports;
- Frequently asked questions; and
- Case Story map.

Interactive website: changingclimate.ca



Chapters also available as accessible PDFs on the [NRCan website](https://www.nrcan.gc.ca) and on changingclimate.ca

Map of Adaptation Actions provides examples of adaptation in practice

An interactive, searchable map with examples of adaptation in practice from a range of sources in Canada, including the National Knowledge Assessment:

- Targeted to decision-makers and adaptation practitioners
- Available at changingclimate.ca/case-studies



For more information

- Visit changingclimate.ca to access the reports, check out the FAQs and share findings
- Visit adaptation.nrcan.gc.ca to learn more about the assessment process
- Questions? Email:
 - NRcan.adaptation.RNCan@Canada.ca
 - Fiona.Warren@nrcan-rncan.gc.ca



Learn more about the assessment process



Reports



Share your Views



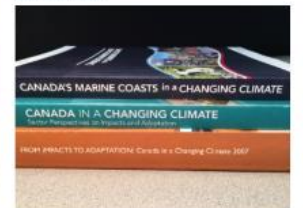
Meet the Team



Follow our Progress



Check out Canada's completed assessments





REPORT

Canada in a Changing Climate

Regional Perspectives



Government
of Canada

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du Canada



CHAPTER 5

British Columbia

REGIONAL PERSPECTIVES REPORT

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Canada

British Columbia Chapter, *Regional Perspectives Report*

- Impacts in British Columbia
- Approach to chapter
 - Broad engagement process
- Recognizing previous work
- Based on section authors and contributing authors
- Areas of focus
 - Coastal and riverine flooding w/ infrastructure and natural solutions
 - Enhancing forest resilience
 - Adaptation in the agriculture sector
 - Indigenous impacts and adaptation
 - Governmental and non-governmental roles in adaptation
 - Existing resources and challenges



British Columbia Chapter, *Regional Perspectives Report*

Key messages

- **Key message 1:** Indigenous Peoples in B.C. are experiencing and adapting to climate change
- **Key message 2:** Climate change brings increasing flood risks
- **Key message 3:** Climate change is impacting British Columbia's forests
- **Key message 4:** Building a climate-ready agriculture sector is critical
- **Key message 5:** Adaptation continues to advance in B.C.

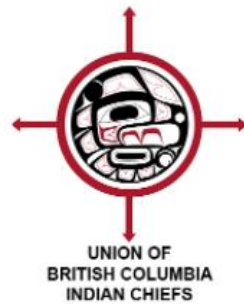


Indigenous Peoples in B.C. are experiencing and adapting to climate change



- First Nations are experiencing impacts of climate change including loss of access to cultural sites and traditional foods and medicines
- Indigenous-led adaptation efforts are emerging across many traditional territories
- More work is needed to develop processes for meaningful engagement with Indigenous Peoples

Indigenous Peoples in B.C. are experiencing and adapting to climate change



FIRST NATIONS LEADERSHIP COUNCIL

Image Source: First Nations Leadership Council Website, 2022
<https://www.bcafn.ca/about-bcafn/our-partners/first-nations-leadership-council>

BC First Nations Climate Change Strategy and Action Plan

- The First Nations Leadership Council (FNLC) has released a First Nations Climate Change Strategy and Action Plan
- Was informed by First Nation priorities and knowledge
- Identifies strategies and actions to:
 - reduce greenhouse gas emissions
 - strengthen Indigenous climate leadership in B.C.
 - reduce vulnerability to impacts
 - build capacity, understanding and resilience in First Nation communities.

Indigenous Youth Climate Art Contest

Sarah Jim, Tseycum First Nation, W̱SÁNEĆ and her artwork "Saltwater Ways"



Climate change brings increasing flood risks



- British Columbia's water resources will see significant changes as the climate warms, with flooding causing some of the most damaging and costly impacts
- Many communities in British Columbia are reducing the risks by proactively planning, designing and implementing flood adaptation projects
- While there are many useful adaptation resources, challenges remain, including
 - complex and often overlapping jurisdictional mandates,
 - long-term uncertainty and trade-offs, and
 - limited human and financial resources.

Climate change brings increasing flood risks



- B.C.'s coastline extends for more than 26,000 km and is a zone of considerable vulnerability to flooding resulting from rising sea levels and storm surges, especially in low-lying areas (pg. 31)
- B.C.'s Lower Mainland contains 600 km of dyking and 100 pump stations (Government of B.C., 2018b). (pg. 35)


Climate change brings increasing flood risks

Atmospheric Rivers

- Narrow bands of concentrated moisture in the atmosphere that enter western Canada from the Pacific Ocean
- Can lead to extreme precipitation events such as those witnessed in November 2021
- Such atmospheric rivers can be up to 1,600 km long and more than 640 km wide and, on average, carry an amount of water equivalent to 25 Mississippi Rivers
- Climate change is likely to increase the strength and frequency of these events in British Columbia's Fraser River Basin

Climate change brings increasing flood risks

Economic loss projections for coastal and riverine systems in the Lower Mainland flood area (Fraser Basin Council, 2016)



Flood Scenario	Residential ¹	Commercial ¹	Industrial ¹	Public/ Institutional Buildings ¹	Interrupted Cargo Shipments ²	Infra- structure ³	Agriculture ⁴	Total
A Coastal (Present Day)	\$5.6 B	\$6.3 B	\$1.6 B	\$720 M	\$3.6 B	\$1.4 B	\$100 M	\$19.3 Billion
B Coastal (Year 2100)	\$7.1 B	\$8.6 B	\$2.6 B	\$910 M	\$3.6 B	\$1.8 B	\$200 M	\$24.7 Billion
C River (Present Day)	\$2.6 B	\$3.8 B	\$1.6 B	\$880 M	\$7.7 B	\$4.6 B	\$1.6 B	\$22.9 Billion
D River (Year 2100)	\$6.6 B	\$7.6 B	\$2.9 B	\$1.2 M	\$7.7 B	\$5.0 B	\$1.6 B	\$32.7 Billion

Climate change brings increasing flood risks

Economic loss projections for coastal and riverine systems in the Lower Mainland flood area (Fraser Basin Council, 2016)

Local governments require:

- more financial support,
- more reliable data and knowledge,
- stronger policies and plans from the federal and provincial levels, and
- additional human resources to improve flood risk management

(Auditor General of British Columbia, 2018) (pg. 38)

Flood								Total
A Coastal (Present Day)								\$19.3 Billion
B Coastal (Year 2100)								\$24.7 Billion
C River (Present Day)	\$2.6 B	\$3.8 B	\$1.6 B	\$880 M	\$7.7 B	\$4.6 B	\$1.6 B	\$22.9 Billion
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Questions?

- Please add questions to the Q&A.
- You can also add a question, and provide your e-mail address in case we do not get to your question here.



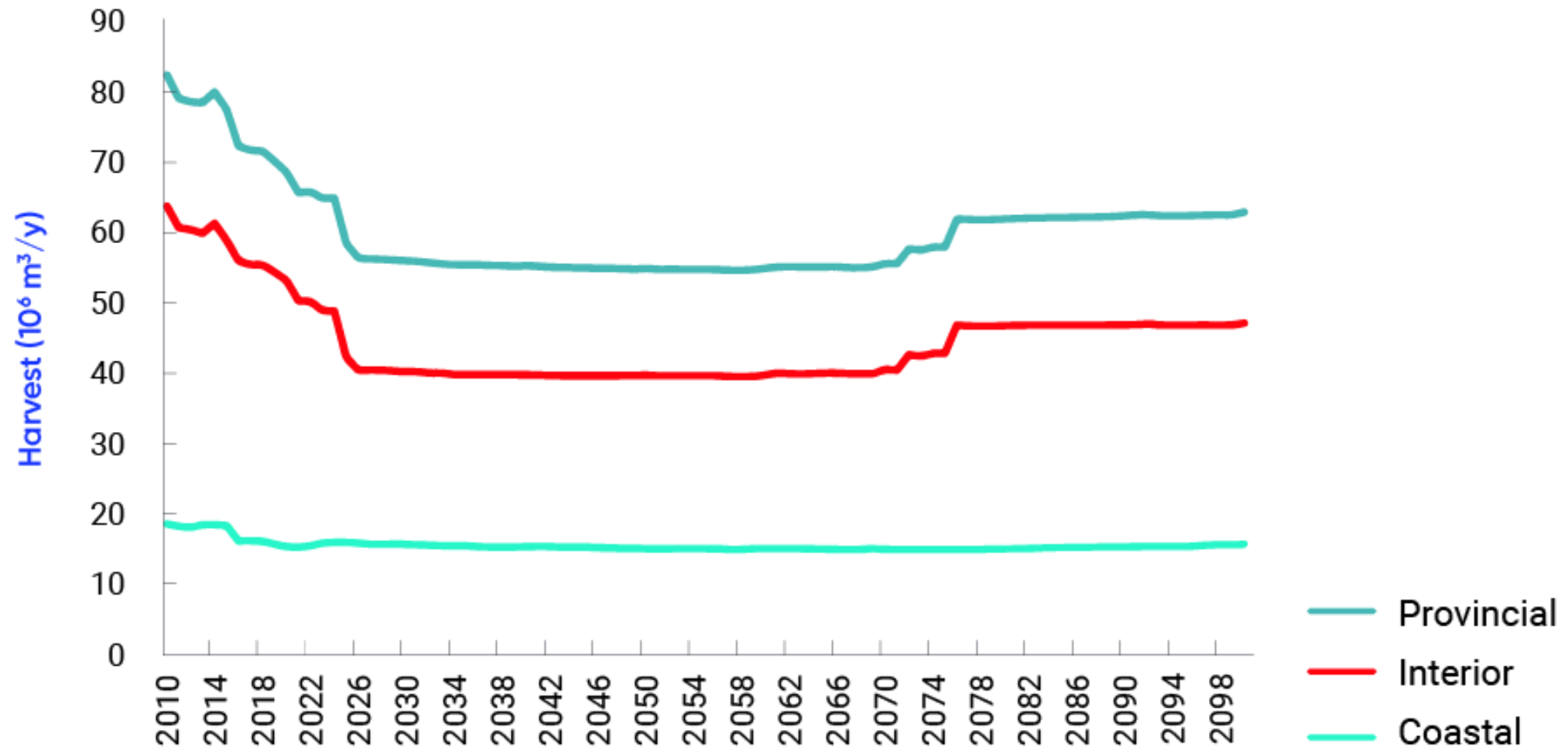
changingclimate.ca

Climate Change is impacting British Columbia's forests

- Impacts to BC forests include increased incidence of wildfire, pest outbreaks, water stress and the introduction of new diseases
- This leads to changes in wildlife habitat, biodiversity, and ecosystem services
- Action to enhance forest resilience is still in the early stages, as policy, operational guidance and the necessary tools are being developed



Climate Change is impacting British Columbia's forests



Climate Change is impacting British Columbia's forests



Photo credit: BC Ministry of Transportation and Infrastructure

Case Story 5.3:

Climate-based seed transfer and climate change informed species selection in B.C.

- Assisted migration can facilitate forest survival and growth under a changing climate
- Two initiatives in BC are:
 - Climate-based Seed Transfer (CBST) project
 - Climate Change Informed Species Selection (CCISS) tool

Case Story 5.4:

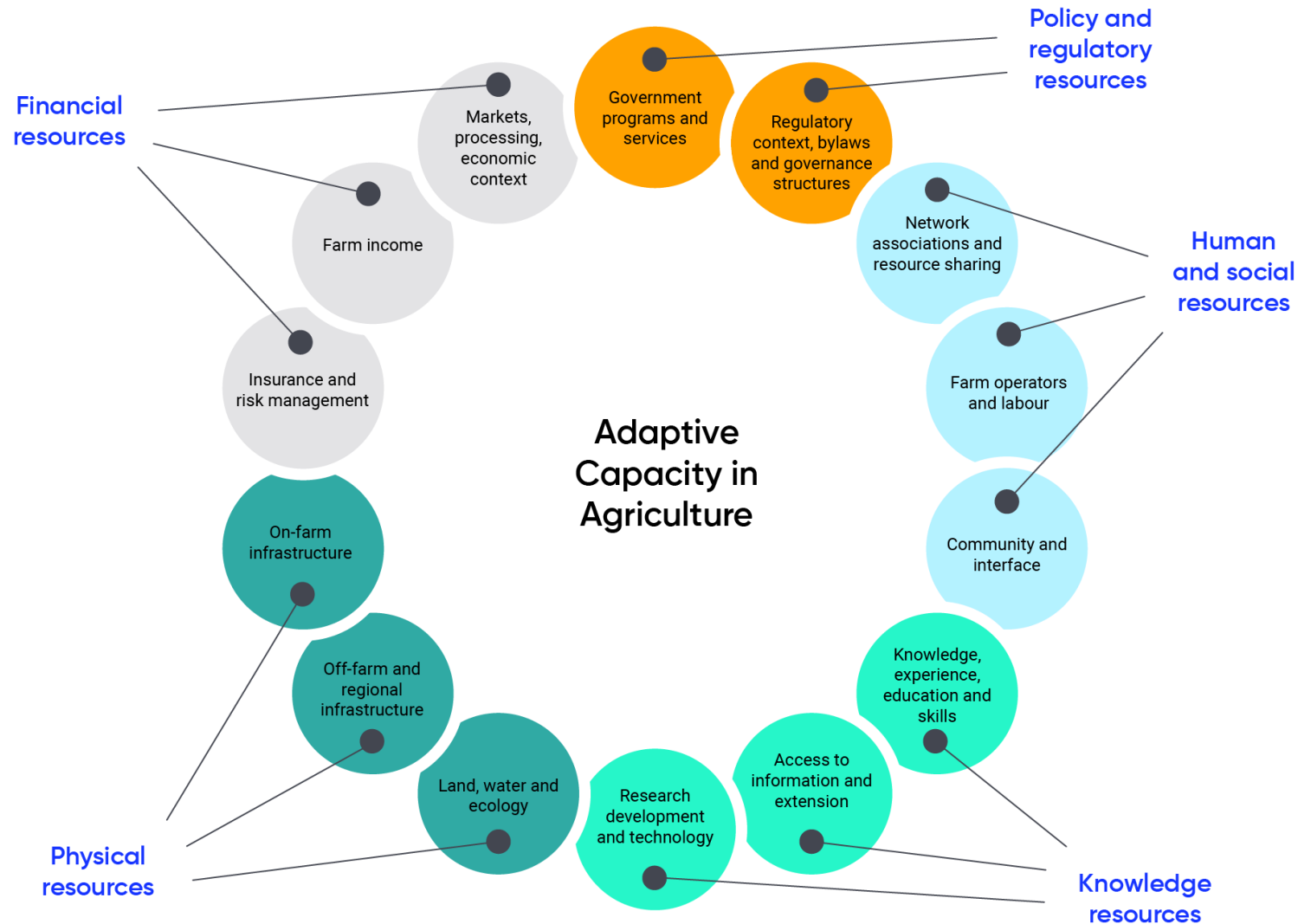
Climate change adaptation and wildfire protection in a community forest

Building a climate-ready agriculture sector is critical



- Climate change impacts are affecting the agricultural sector and impacting food production
- Changes to:
 - Hydrological regimes
 - Range and life-cycle of pests, diseases and invasive species
 - Wildfire frequency and intensity
- Adaptation programming is occurring to support the province's roughly 17,500 farms and includes efforts to create regional plans, to provide funding and to foster collaboration

Building a climate-ready agriculture sector is critical



Building a climate-ready agriculture sector is critical

Agricultural Climate Adaptation Research Network

- Launched in 2017
- Provincial hub to foster collaborative and strategic agricultural adaptation research and extension in British Columbia
- Actions include hosting
 - Educational programming
 - Annual provincial workshops for knowledge mobilization
 - Collaboration among researchers, producers, government and agriculture professionals



Adaptation continues to advance in B.C.



- Climate change adaptation activities—including efforts focused on implementation—are present across most sectors and settings in B.C.
- This work continues to mature, supported by improved access to climate data, decision-support tools, funding, supportive institutions and collaboration
- However, significant gaps remain and it is unclear whether current and proposed efforts will be sufficient given the extent of the risks faced and the costs of implementation

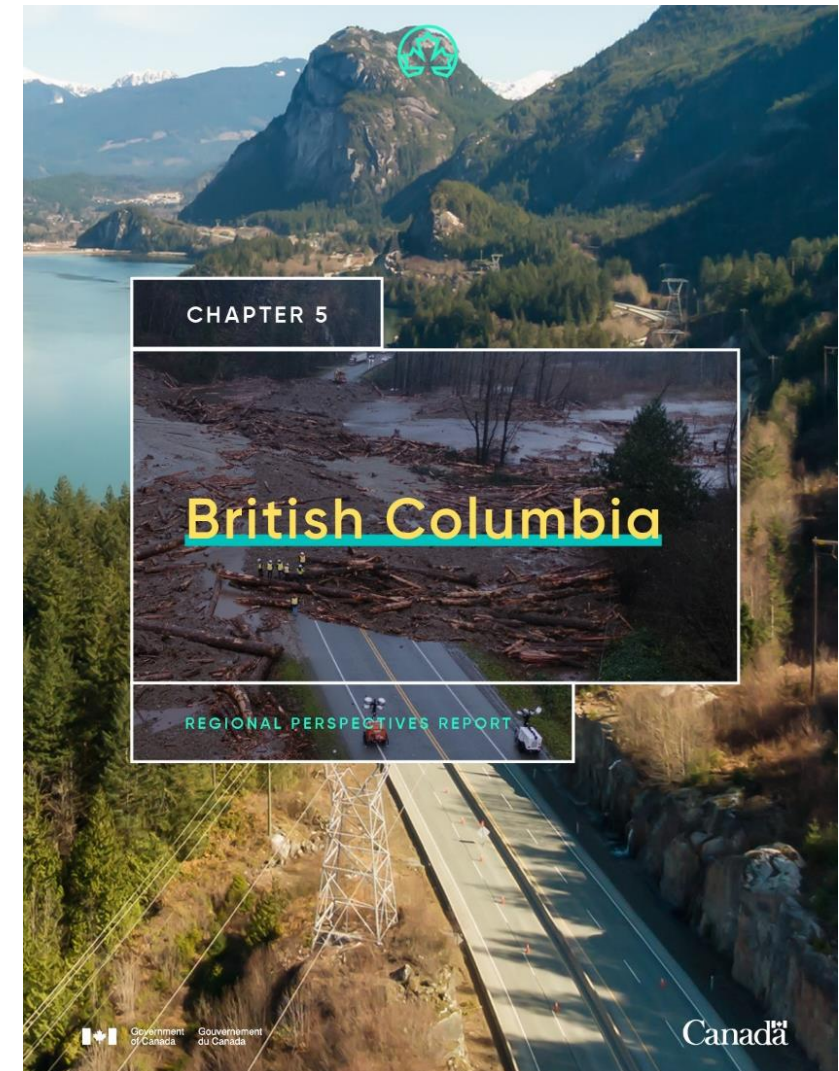
Knowledge Gaps & Emerging Issues

- Tension between reactive emergency management and proactive adaptation (as demonstrated by the 2021 the atmospheric river and heat events)
- Innovation in how financing is secured and distributed in order to meet the often large needs across sectors and scales
 - Regional and sector-based cost and benefit analyses
- The essential role of Indigenous leadership and knowledge in adaptation
- Reconciliation is imperative across all sectors and settings in B.C.



Questions?

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- You can also add a question, and provide your e-mail address in case we do not get to your question here.



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