



Climate data to support the Ring of Fire Regional Assessment Working Group (RAWG)

Canadian Centre for Climate Services

Presentation to Regional Assessment Working Group (RAWG)

May 20, 2026

Our role

CANADIAN CENTRE FOR CLIMATE SERVICES



Increasing awareness and access to climate data



Providing training and guidance



Engaging with users to understand needs

Developing new products collaboratively

Making climate science more actionable!

Complementing Indigenous Knowledge with Western climate data

Indigenous Knowledge Systems are critical for adapting to the changing climate

Since time immemorial, Indigenous Peoples have led as stewards of the lands, waters, and ice. Indigenous Knowledge systems are built upon generations of relating to, observing, understanding, and living off of the land.

Indigenous Peoples and communities have been resilient to changes imposed by colonialism for hundreds of years.

Climate change may introduce additional “unique intangible losses relating to place attachment, culture, and food security” for Indigenous communities, increasing the work required to continue being resilient.

Adapted from [Climate Science 2050](#)



What is climate?

Climate is the **average weather conditions** experienced in a place over **a long period of time (30 years)**.

WEATHER

Tells you what to wear each day



VS

CLIMATE

Tells you what types of clothing to have in your closet



This image shows the difference between weather and climate. Weather tells you what to wear each day, like if you need a jacket or sunglasses. Climate tells you what types of clothes to have in your closet, based on long-term weather patterns in your area.

Where does climate science come from?

Climate data describe temperature, precipitation, and other aspects of the environment observed in the past and projected into the future at a specific location

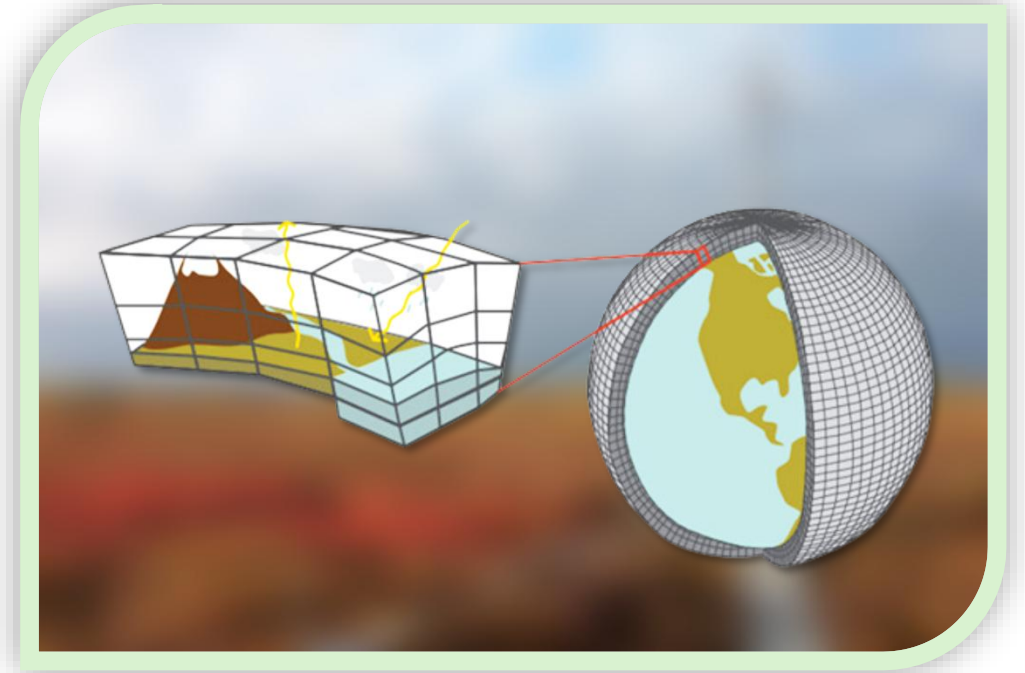


Western climate data consist of:

- **Observations:** Data collected using scientific instruments
- **Models:** Data from computer models about future climate conditions



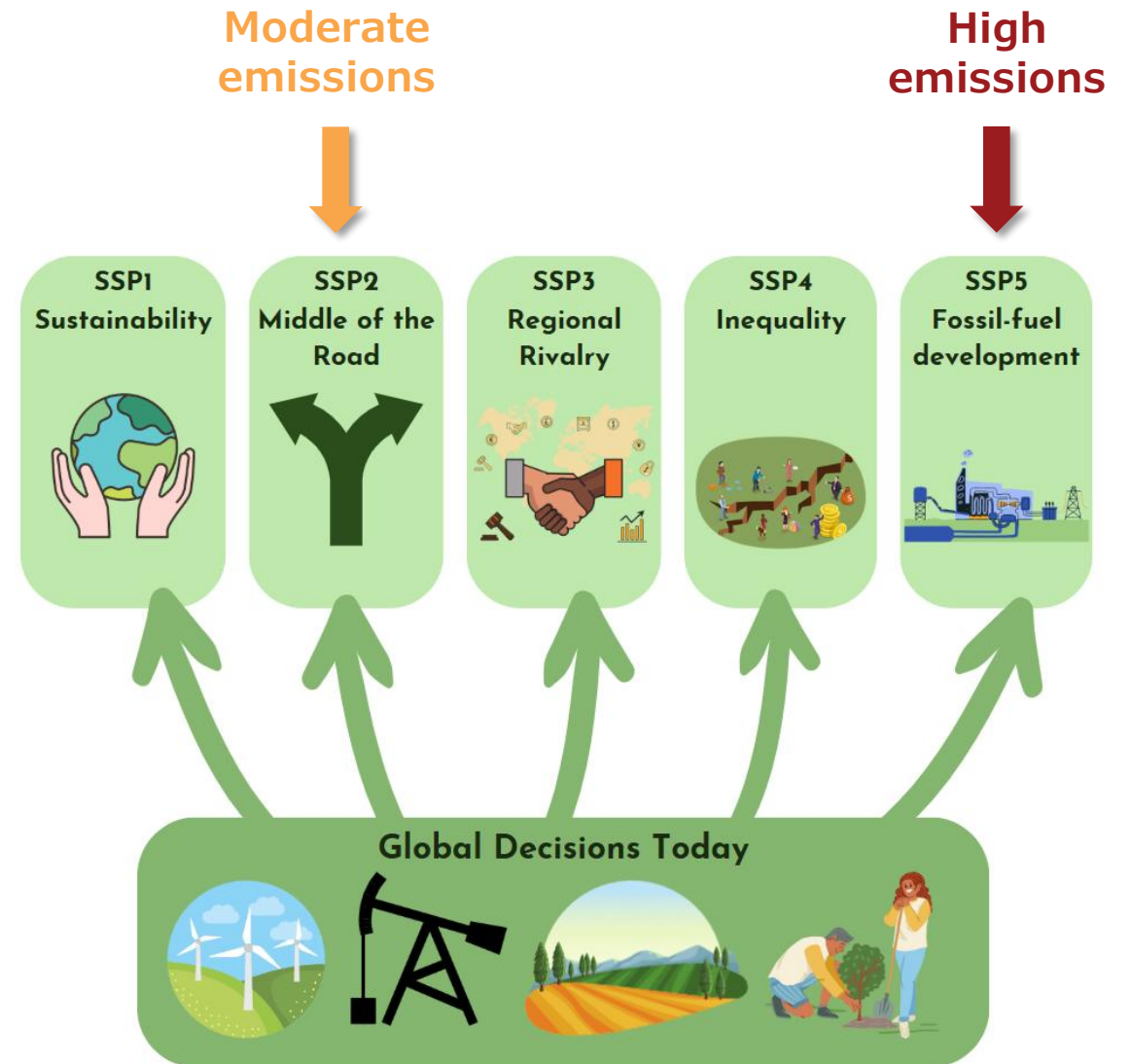
30-years of data are used to distinguish between **natural** year-to-year variability and **long-term changes** in climate



Emissions Scenarios

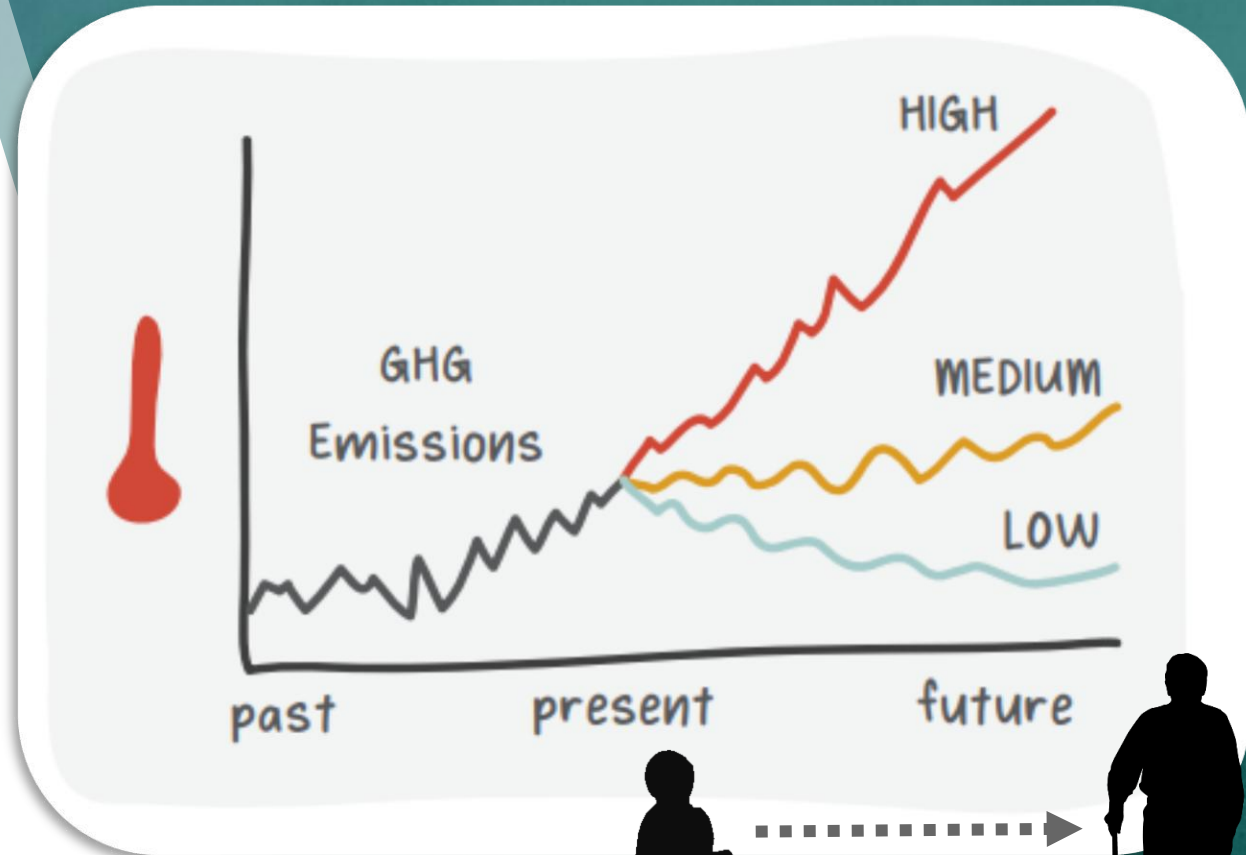
Shared Socioeconomic Pathways (SSP)

- Climate scientists **do not have a crystal ball** to predict the future
- Three commonly modelled pathways are based on **low**, **moderate** or **high** global greenhouse gas emissions
- **Different global choices lead to different future pathways** and different amounts of warming



Future climate, future generations

- Even the low emissions pathway climate will be different from the past climate (locked into some warming)
- **Elders are already seeing impacts**
- Children born today will live through the impacts to the end of this century



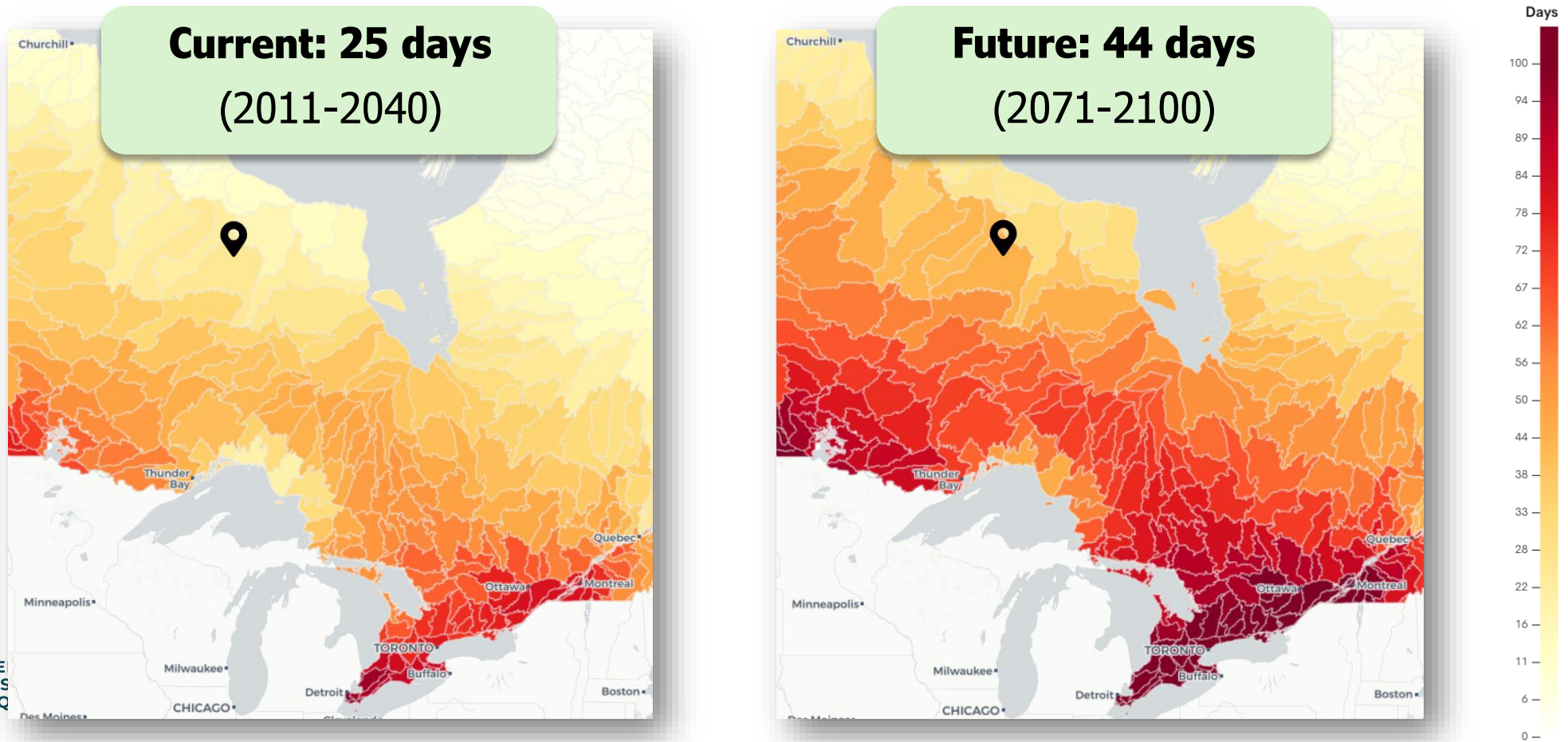


ClimateData.ca

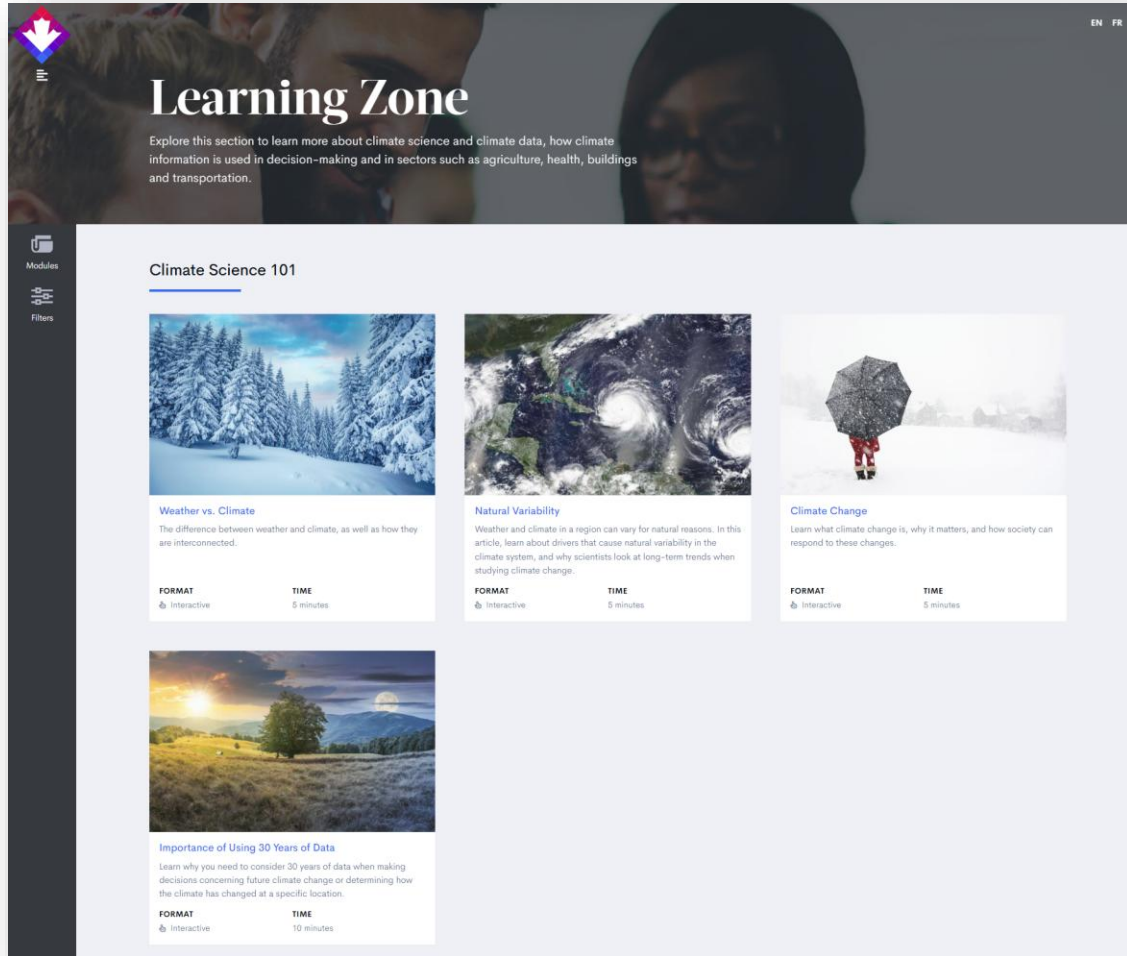
Demo

See maps of the future climate

Number of days hotter than 25 °C
under a moderate emissions scenario (SSP2-4.5)



Check out the Learning Zone



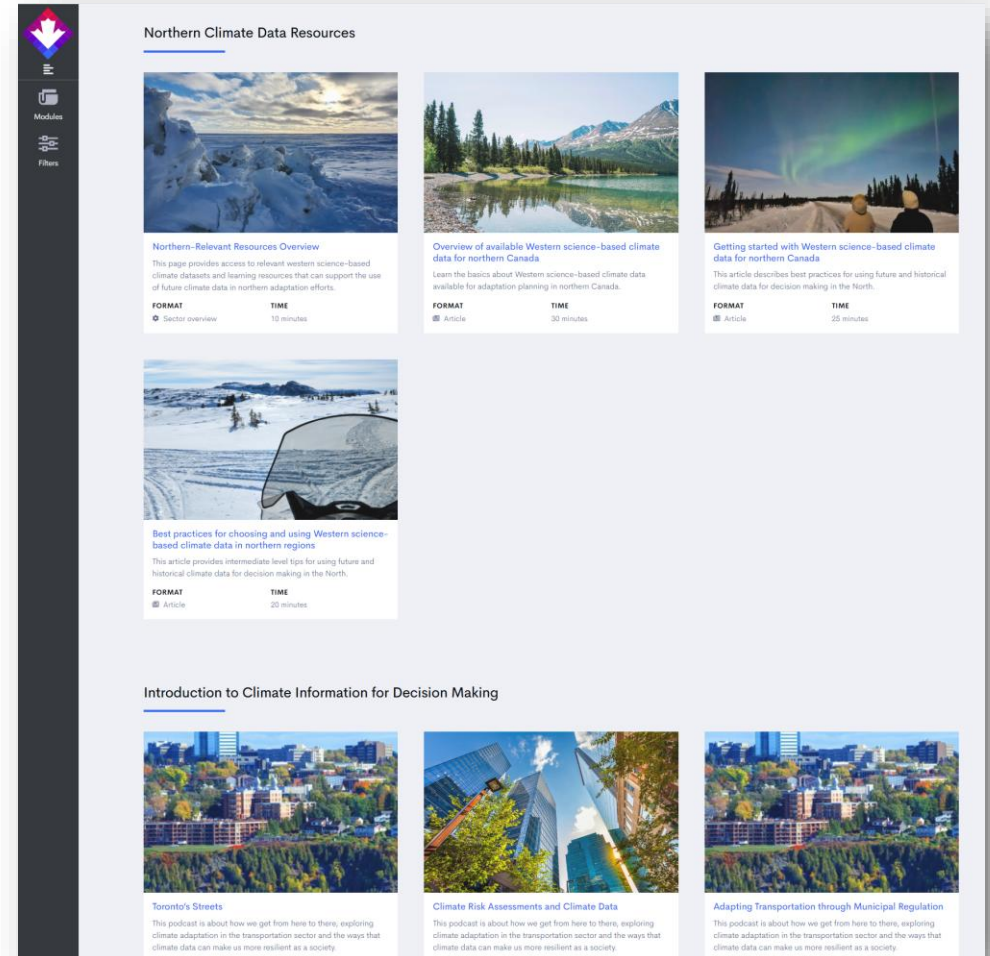
The screenshot shows the 'Learning Zone' homepage. At the top, there is a navigation bar with a Canadian flag icon, a menu icon, and language options 'EN' and 'FR'. The main heading is 'Learning Zone' in a large, bold, dark blue font. Below it, a sub-heading reads: 'Explore this section to learn more about climate science and climate data, how climate information is used in decision-making and in sectors such as agriculture, health, buildings and transportation.' The page features a sidebar on the left with 'Modules' and 'Filters' icons. The main content area is titled 'Climate Science 101' and contains five interactive cards. Each card has a representative image, a title, a brief description, and a 'FORMAT' and 'TIME' section.

Learning Zone

Explore this section to learn more about climate science and climate data, how climate information is used in decision-making and in sectors such as agriculture, health, buildings and transportation.

Climate Science 101

- Weather vs. Climate**
The difference between weather and climate, as well as how they are interconnected.
FORMAT: Interactive | TIME: 5 minutes
- Natural Variability**
Weather and climate in a region can vary for natural reasons. In this article, learn about drivers that cause natural variability in the climate system, and why scientists look at long-term trends when studying climate change.
FORMAT: Interactive | TIME: 5 minutes
- Climate Change**
Learn what climate change is, why it matters, and how society can respond to these changes.
FORMAT: Interactive | TIME: 5 minutes
- Importance of Using 30 Years of Data**
Learn why you need to consider 30 years of data when making decisions concerning future climate change or determining how the climate has changed at a specific location.
FORMAT: Interactive | TIME: 10 minutes



The screenshot shows the 'Northern Climate Data Resources' page. It features a sidebar on the left with a navigation menu and 'Modules' and 'Filters' icons. The main content area is titled 'Northern Climate Data Resources' and contains six article cards. Each card includes a representative image, a title, a brief description, and a 'FORMAT' and 'TIME' section. Below the main content, there is a section titled 'Introduction to Climate Information for Decision Making' which contains three more article cards.

Northern Climate Data Resources

- Northern-Relevant Resources Overview**
This page provides access to relevant western science-based climate datasets and learning resources that can support the use of future climate data in northern adaptation efforts.
FORMAT: Sector overview | TIME: 10 minutes
- Overview of available Western science-based climate data for northern Canada**
Learn the basics about Western science-based climate data available for adaptation planning in northern Canada.
FORMAT: Article | TIME: 30 minutes
- Getting started with Western science-based climate data for northern Canada**
This article describes best practices for using future and historical climate data for decision making in the North.
FORMAT: Article | TIME: 25 minutes
- Best practices for choosing and using Western science-based climate data in northern regions**
This article provides intermediate level tips for using future and historical climate data for decision making in the North.
FORMAT: Article | TIME: 20 minutes

Introduction to Climate Information for Decision Making

- Toronto's Streets**
This podcast is about how we get from here to there, exploring climate adaptation in the transportation sector and the ways that climate data can make us more resilient as a society.
- Climate Risk Assessments and Climate Data**
This podcast is about how we get from here to there, exploring climate adaptation in the transportation sector and the ways that climate data can make us more resilient as a society.
- Adapting Transportation through Municipal Regulation**
This podcast is about how we get from here to there, exploring climate adaptation in the transportation sector and the ways that climate data can make us more resilient as a society.

There are many climate impacts

Flooding

More heavy rain events

Winter flooding from thaw or rain



Drought

Dry land


Low water for travel



Food Security

Changes in fish spawning

Changing migration patterns



Transportation

Shorter winter road season





Ice conditions less predictable



Ecosystems

Shifting habitat for plants and animals

Permafrost thaw



Health

Heat illness




Mental stress



Infrastructure

Damage and power outages

Poor drinking water quality



Wildfire

Damage to the community

Poor air quality



CCCS Support Desk

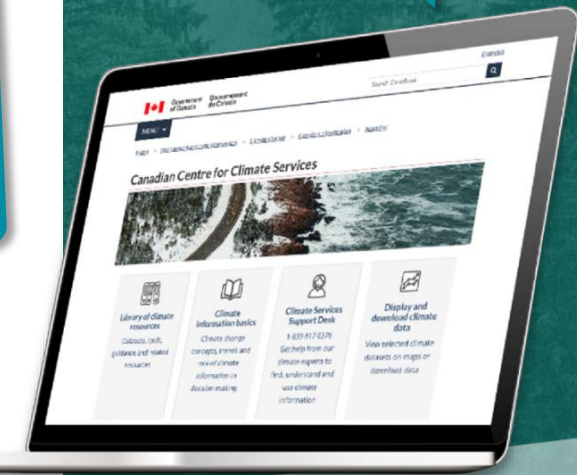
Here to help you find climate data and information

Answer questions about services and available tools:

- Resource navigation and more
- ccsc-cccs@ec.gc.ca

How will climate change affect my fishing?

We need to upgrade a sewer system, how should climate change factor in the design?



Questions? Thank you!



ccsc-cccs@ec.gc.ca

Canada.ca/climate-services

Canada.ca/services-climatiques



Environment and
Climate Change Canada

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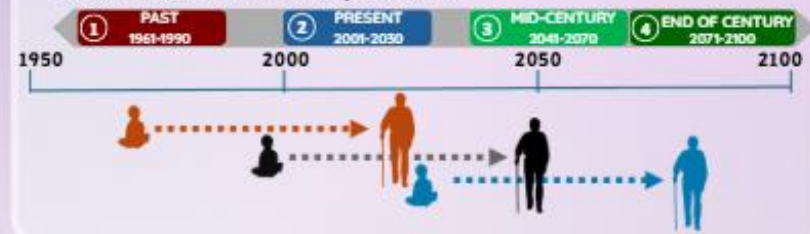
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Canada



Overview of changes in climate for Mistissini

How to read the time periods:



Extreme colds will be warmer



By the end of the century, the coldest night of the year will be about 9 degrees warmer than it is now. The coldest night is already 4 degrees warmer than in the 1970s.

More snow



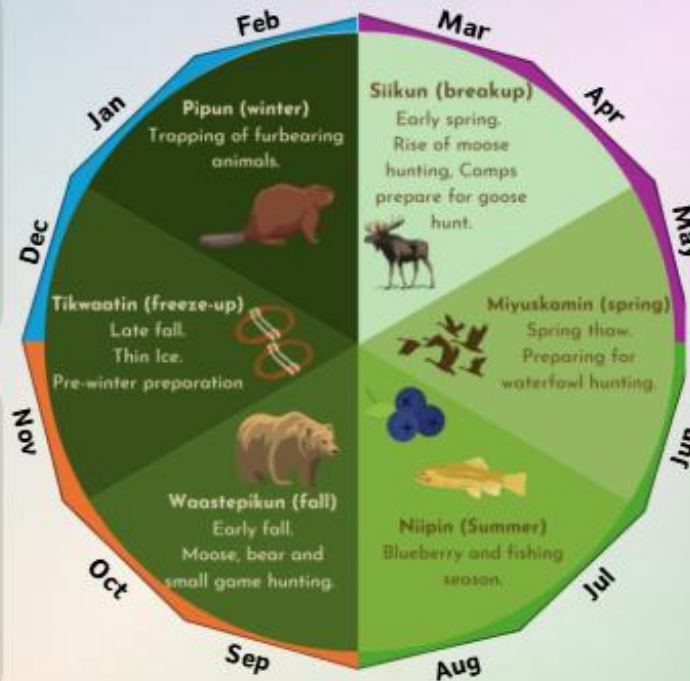
The amount of winter snowfall will increase by 35% by the end of the century, compared to the past.

SWE = Snowfall water equivalent

Later first fall frost



By the end of the century, the first fall frost will be 2 weeks later compared to now.



Earlier last spring frost



By the end of the century, the last spring frost will occur about 2 weeks earlier than it does now. This will mean an earlier start to the growing season.

The hottest days will be hotter



Today's Elders experience the hottest day as two degrees warmer than when they were young. Today's youth will see a hottest day that's 3 degrees warmer in their lifetime.

More rainy days



Elders today see 3 more rainy days (above 10 mm) than in their youth, while today's youth will face 4 more rainy days by the time they become Elders.

Rainiest day will be wetter



The rainiest day will be about 15% wetter than it is now by the end of the century. This could contribute to more flooding.