



# Exploring ClimateData.ca

Interactive walkthrough of Canada's national climate data portal

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Environment and  
Climate Change Canada

Environnement et  
Changement climatique Canada



CLIMAtlantic



PACIFIC CLIMATE  
IMPACTS CONSORTIUM



ClimateWest



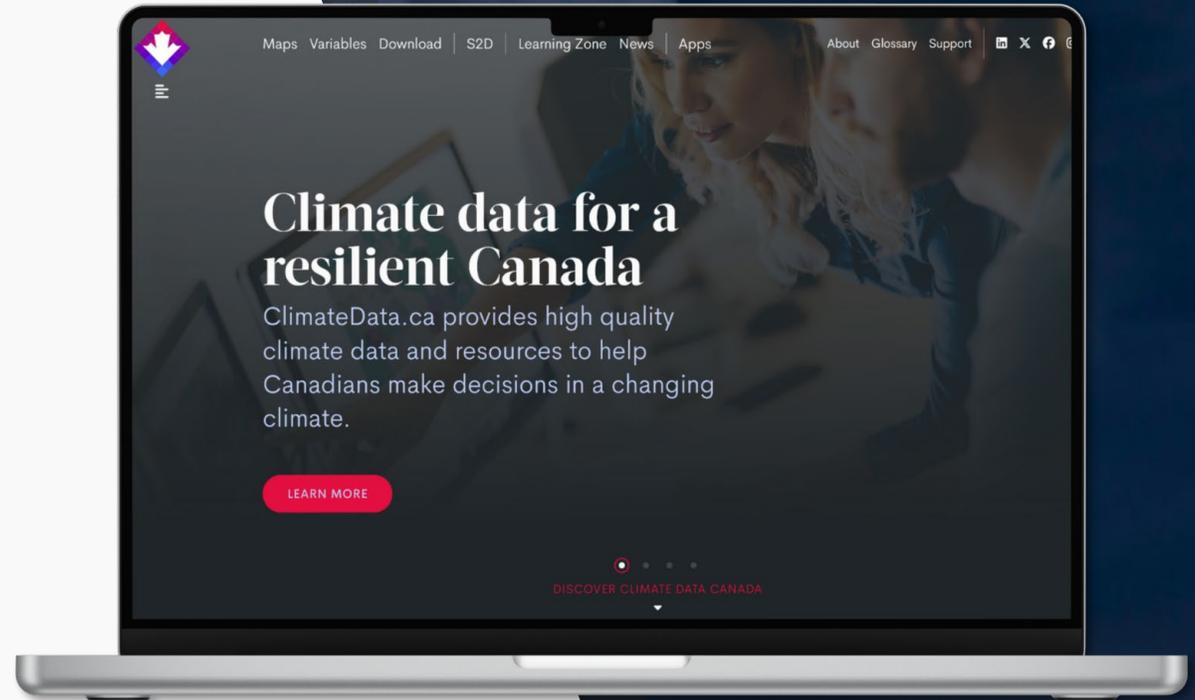
Prairie  
Climate Centre



# Get to know ClimateData.ca

Climate data is only powerful when people can understand and apply it

- **High-resolution future climate data**
  - 6x10km grid
  - A range of emissions pathways
  - More than 35 climate variables
- **Historical climate data**
  - Weather station observations from the Meteorological Service of Canada
  - Adjusted and Homogenized Canadian Climate Data (AHCCD)



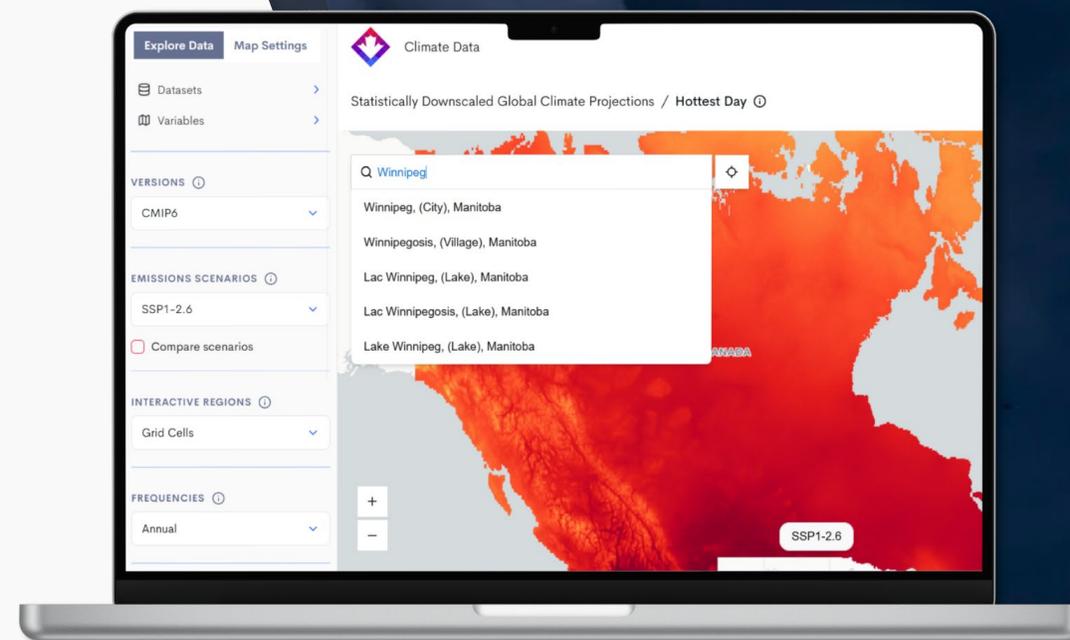
Further reading: [About the project](#)



## Find your community

Search by location, browse different future climate variables, explore the learning zone, and more!

- Visit [ClimateData.ca](https://ClimateData.ca) and navigate to the [Maps](#) page
- Use the Search Bar at the top of the map to enter a city or town in Canada—perhaps where you live, study, or conduct research
- **NEW** You can now also search by latitude and longitude
- *Search by postal code will be added soon*



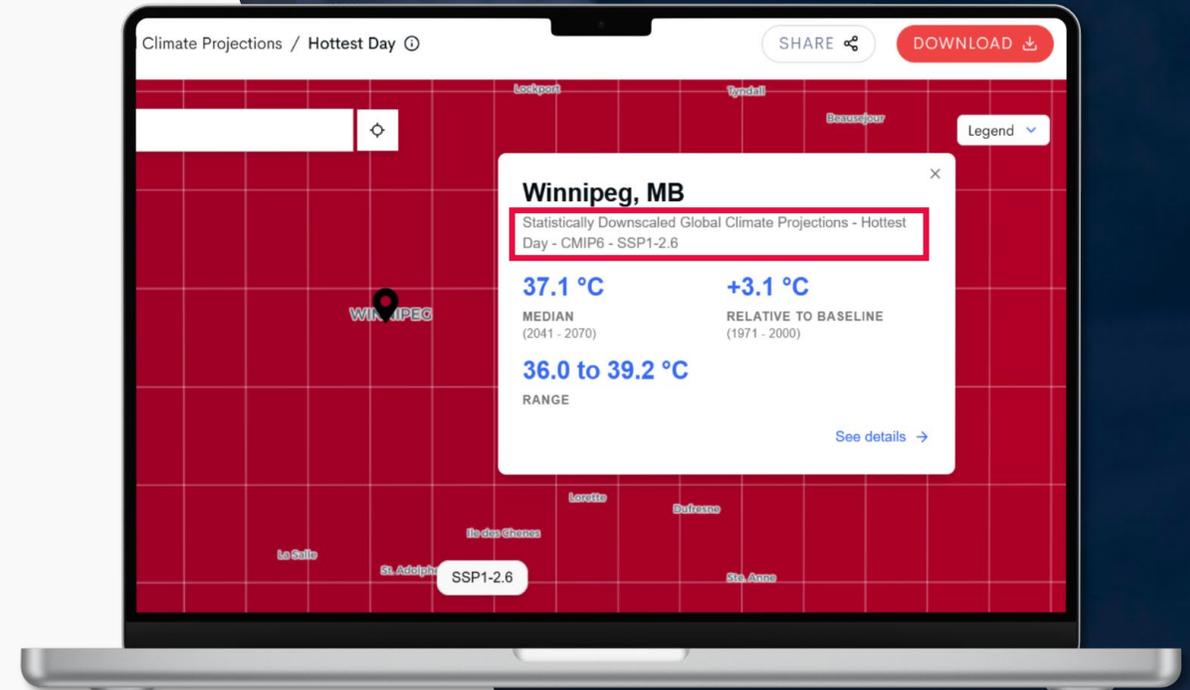
Further learning: “Why use climate data for planning?”

# Explore the pop-up information



## The pop-up title tells you four things:

- 1. Dataset** – By default, you’re seeing data from the *Statistically Downscaled Global Climate Projections* (the M6 dataset)
  - This uses advanced methods to translate coarse global climate model results into high-resolution (~6 x 10 km) data across Canada
- 2. Variable** – The specific climate measure being displayed.
  - By default, it’s “Hottest Day,” but you can choose from many others. Use the ⓘ icon at the top of the map to read about each

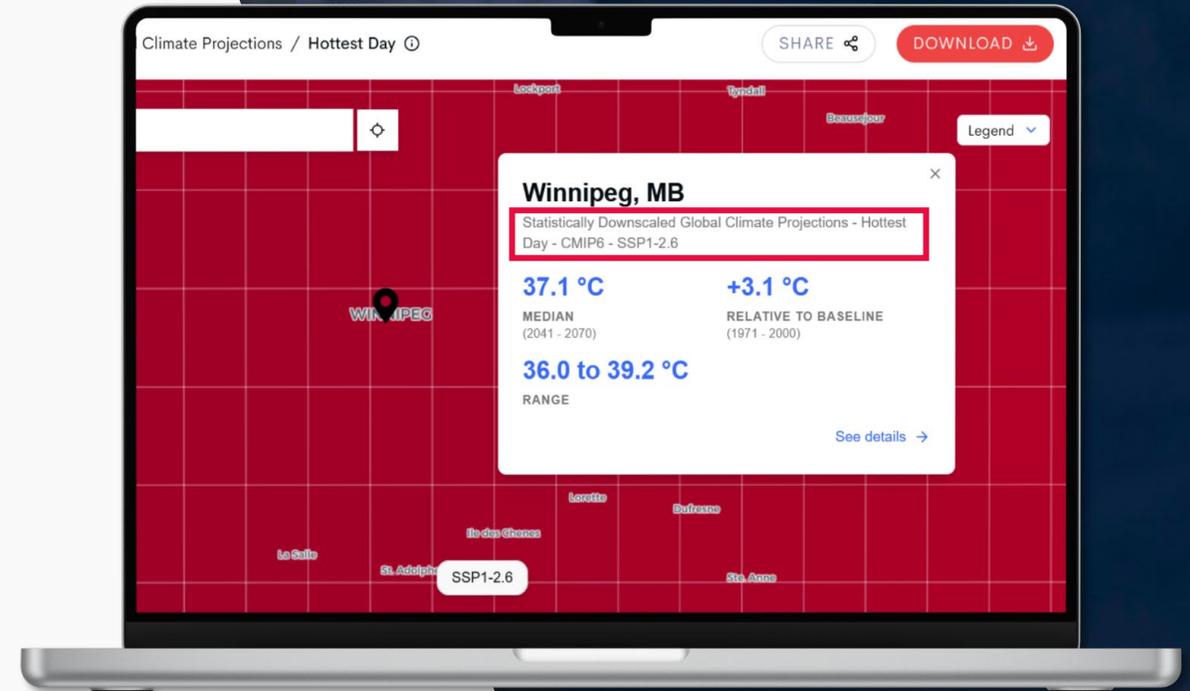


Further reading: “Introduction to the Canadian Downscaled Climate Scenarios-Multivariate dataset for CMIP6 (CanDCS-M6)”

# Explore the pop-up information

The pop-up title tells you four things:

3. **Version** – The climate model generation being used
  - Currently, CMIP6 is the default
4. **Scenario** – The greenhouse gas pathway being represented
  - By default, SSP1-2.6 (a low-emissions future) is shown, but you can switch to higher-emissions futures



Further reading: “Understanding Shared Socio-economic Pathways (SSPs)”

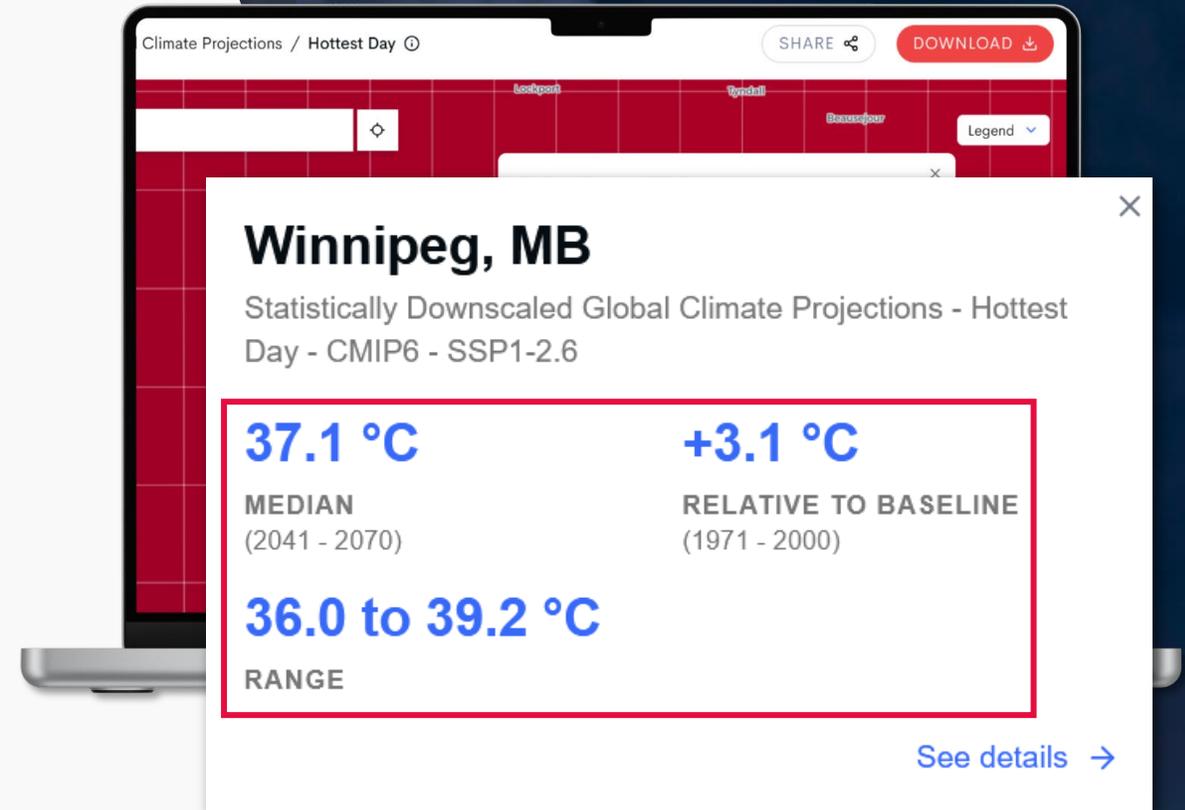
# Explore the pop-up information

## The pop-up numbers show:

- **Median** – The middle value from 26 climate models (an “ensemble”), averaged over 30 years (e.g., 2041–2070)
- **Range** – The spread across models, shown by the 10th–90th percentile
- **Change from baseline** – How the future period compares to 1971–2000



Further reading: “Understanding Multi-Model Ensembles”



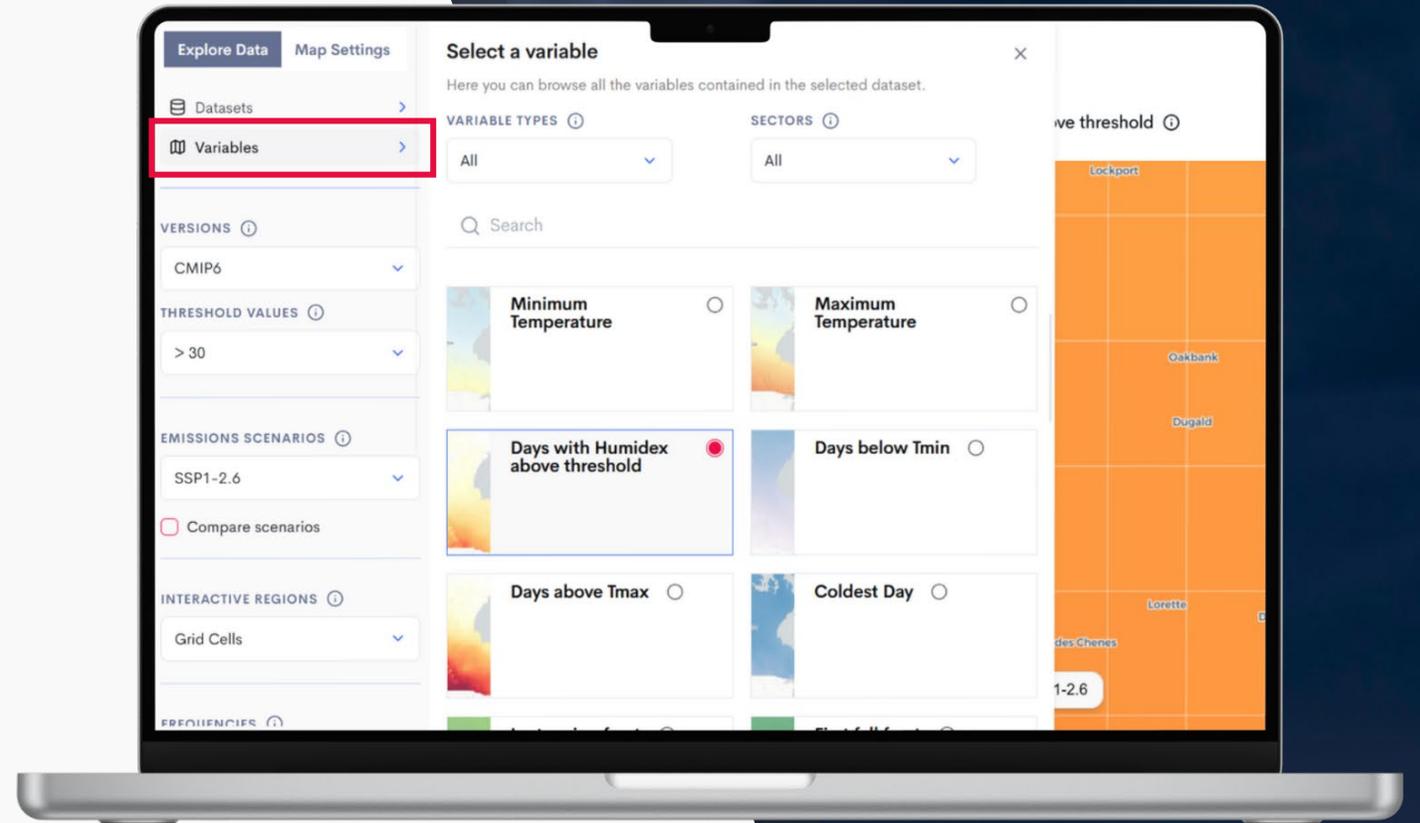
# Find variables of interest

## Variables Menu

Here are some of the variables that you can find on ClimateData.ca.

Follow the link below to:

- Visualize these variables
- Download data
- Analyze data



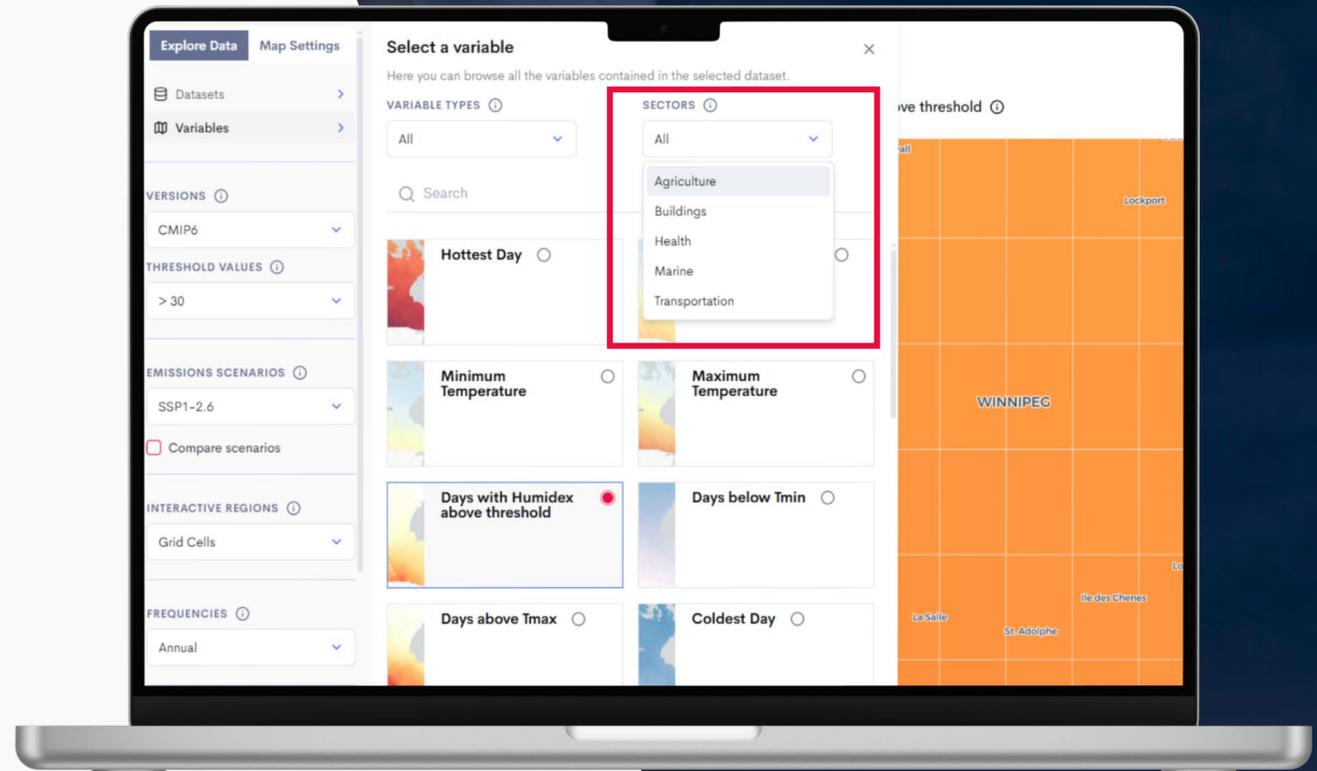
Further reading: “ClimateData.ca: Variables”

# Explore variables



## Explore changes in your community

- It's easy to find variables that suit your needs
- For example, the *Statistically Downscaled Climate Projections* dataset includes more than 35 variables
- Variables are searchable by keyword, or browse by variable type or sector, such as agriculture, buildings, finance, health, marine, or transportation



Further reading: “ClimateData.ca: Variables”

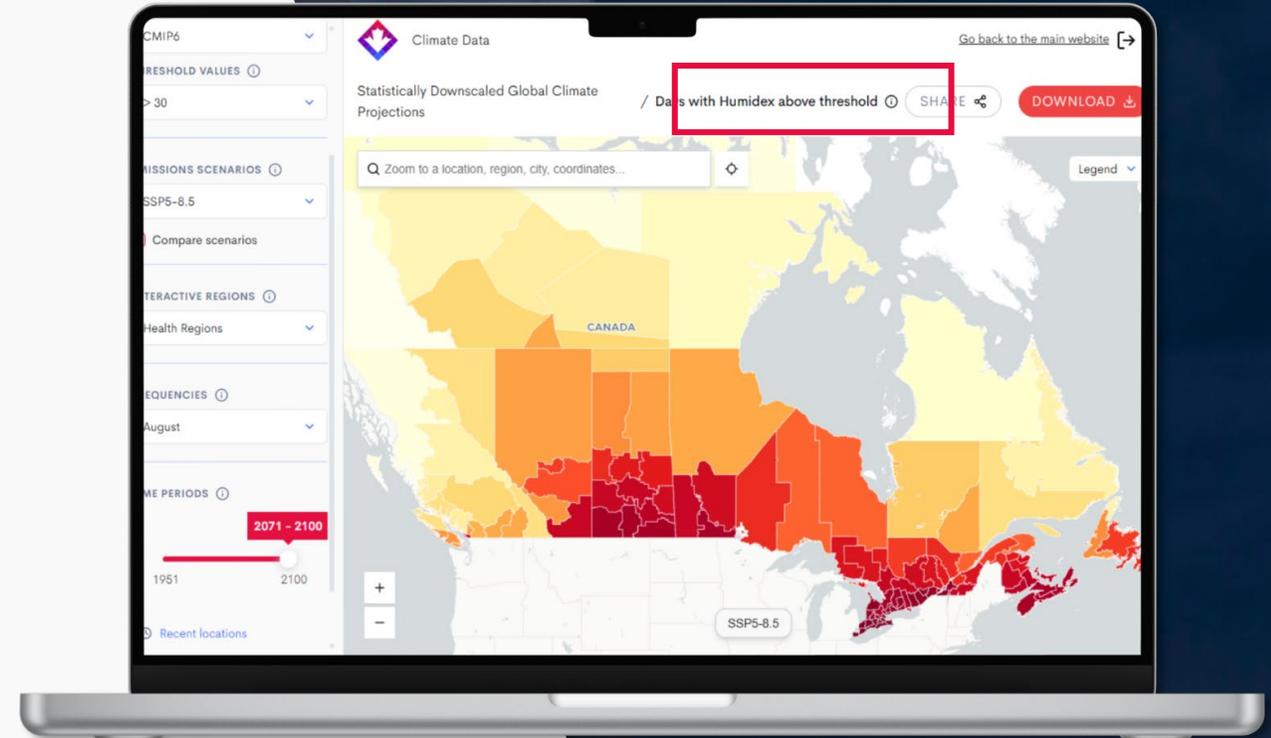
# Explore variables



## For example: Humidex projections

- Humidex combines the effects of temperature and humidity into a single value to indicate how hot and humid conditions feel to the average person
- It combines air temperature and humidity, which provides a more accurate indication of heat stress than temperature alone
- From the **Variables** menu, select **Days with Humidex above threshold**

 **Reflect:** Why might Humidex be a better measure of heat-related risk than temperature alone?



Further reading: “New and Noteworthy: Humidex Projections”

# Explore dimensions of change

## Choose an emissions scenario

- We use “emissions scenarios” to explore possible futures
- Because many of the drivers of climate change—such as future energy use, land management, technological advances, and climate policy—are uncertain, climate projections must account for multiple possible futures
- To do this, climate scientists use a set of standardized pathways called Shared Socioeconomic Pathways (SSPs)

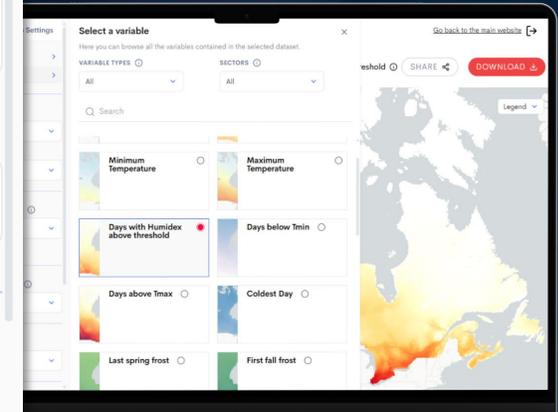


Further reading: “Understanding Shared Socioeconomic Pathways (SSPs)”



The screenshot shows a web interface for selecting climate data. It includes sections for 'Datasets', 'Variables', 'VERSIONS', 'THRESHOLD VALUES', and 'EMISSIONS SCENARIOS'. The 'EMISSIONS SCENARIOS' section is highlighted with a red box and contains a dropdown menu with the following options:

Scenario	Status
SSP1-2.6	Selected (blue arrow)
SSP1-2.6	Checked (checkmark)
SSP2-4.5	Available
SSP5-8.5	Available

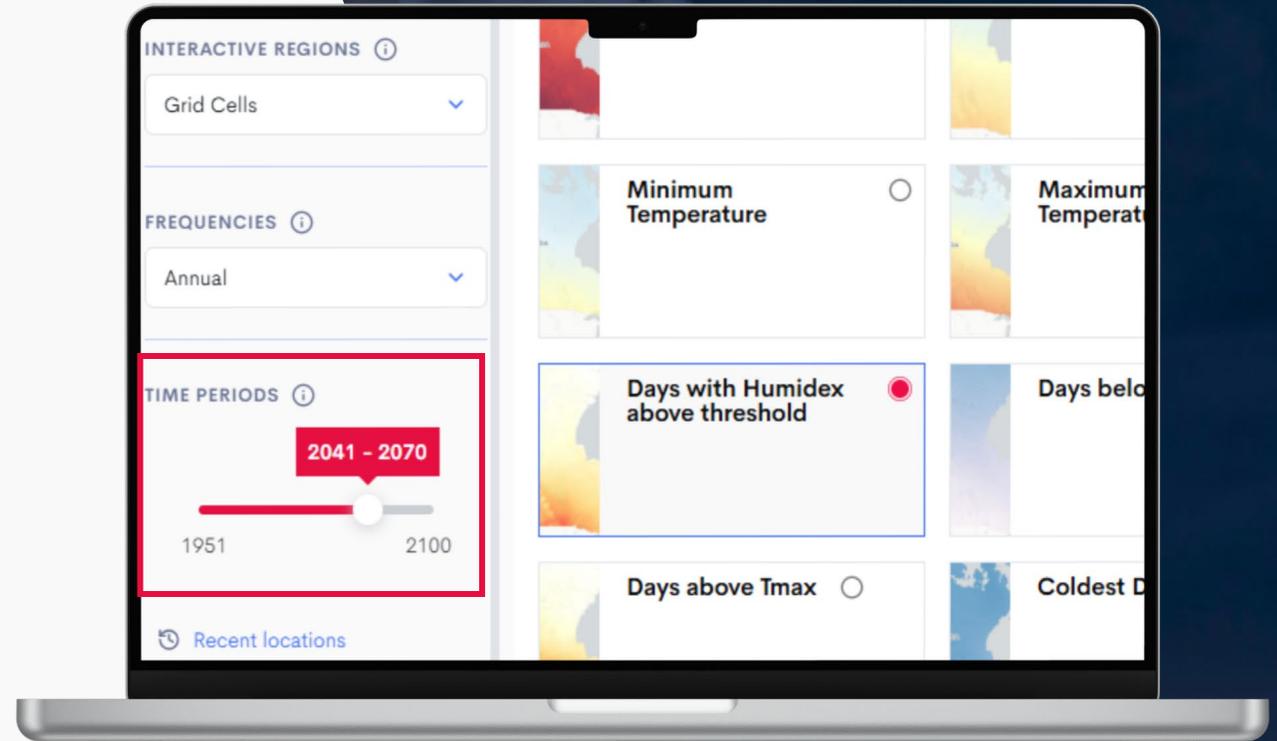


# Explore dimensions of change



## Choose a time period

- ClimateData.ca allows you to compare time periods for any of the climate variables and indices available on the Map page
- 1971-2000 is used as the reference period against which future climate is compared



Further reading: “Importance of using 30 years of data”

# Customize the map

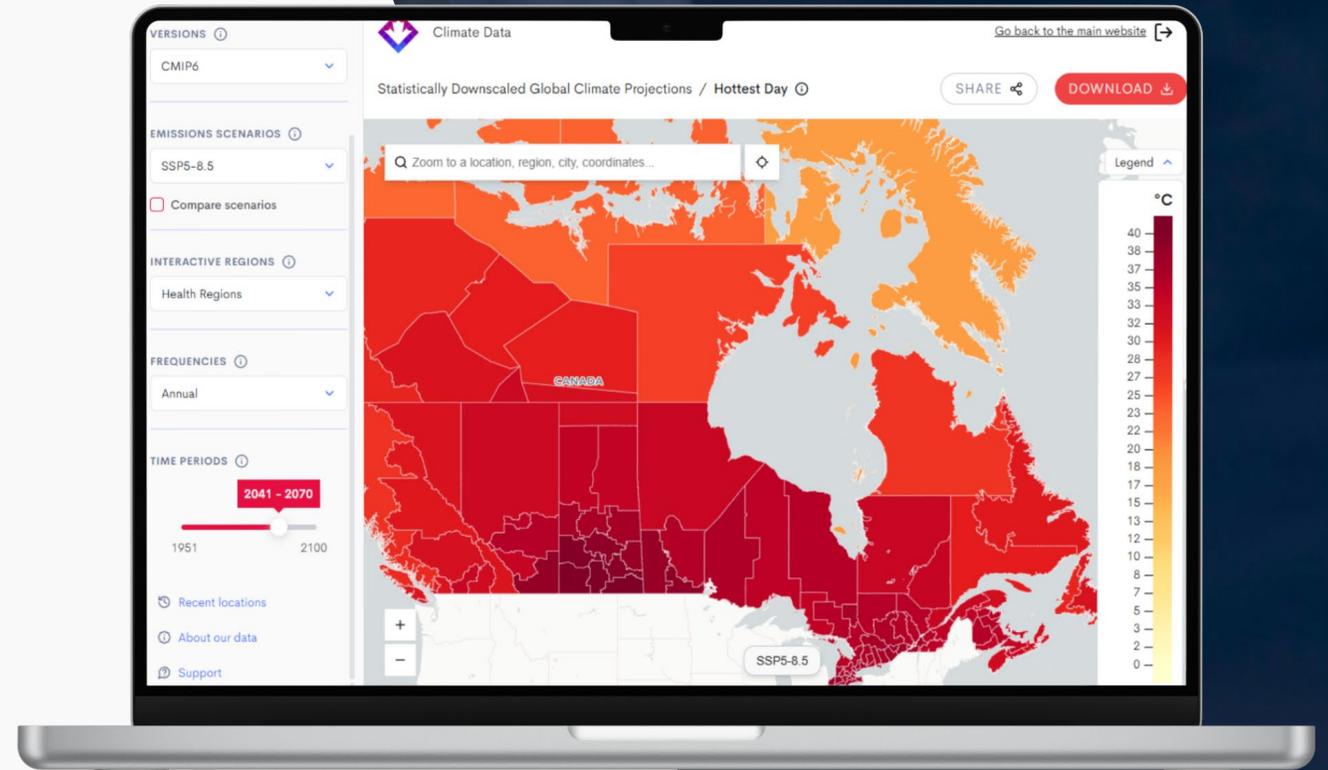


## E.g.: View by Health Region

- View climate data for a number of health-related variables analysed at the level of health regions

## Explore examples of health region-level analyses:

- “Case Study: Extreme heat waves in Québec” discusses various monitoring, planning and response activities that have been implemented to ensure prevention of health impacts and improve emergency preparedness



Further reading: “Case study: Extreme heat waves in Québec”

# Customize output

## Download page

So far, you've been working with pre-set variables. But what if you want to define your own?

The Download page allows you to set custom climate thresholds and explore how extremes are projected to change over time

- Choose data set
- Select locations (including health regions)
- Customize variables
- Choose a timeframe
- Select advanced options



Further reading: “Deciphering your data downloads”



The screenshot shows a web interface for 'Climate Data'. At the top, there's a navigation bar with a logo and a link to 'Go back to the main website'. Below that is a progress indicator with steps 1 through 7, where step 2 is currently active. The main heading is 'Step 2: Select a variable', followed by a sub-heading: 'Select a variable contained in the dataset previously selected. Use the filters below to narrow down the list of variables.' On the right side, there's a 'Summary' box containing the text 'DATASET Statistically Downscaled Global Climate Projections'. A large red modal window is overlaid on the page, containing the following text:

**Download image from viewport**

Your export will showcase your various data options. The map position will be the one you see on your screen.

**DOWNLOAD** ↓

**Need control over your own data?**

Head over to the download section where you can select multiple grid cells and personalize more data options.

[Go to Download Section](#) ↗

# Customize thresholds



E.g.: Humidex >36°C

- From the [Maps page](#), click the “**Download**” button, then click on the “**Go to Download Section**” option
- In the Download tool, set your options. Input a custom **Daily Maximum Humidex Threshold (HXMax)** value, as shown in the screenshot
- Complete the rest of the steps and then enter the email address you want the data delivered to
- Depending on the type of calculation, the analysis could take anywhere from 5 to 15 minutes to run

Step 3: Set your variable options

Set options to adjust your variable to your needs.

VERSIONS OF THE DATASET ⓘ

CMIP6

DAILY MAXIMUM HUMIDEX THRESHOLD (HXMAX) ⓘ

Set the daily maximum Humidex (HXMax) value that must be exceeded for a day to be included in the analysis.

36

NEXT STEP

Summary

DATASET  
Statistically Downscaled  
Global Climate Projections

VARIABLE  
Days with Humidex above  
threshold



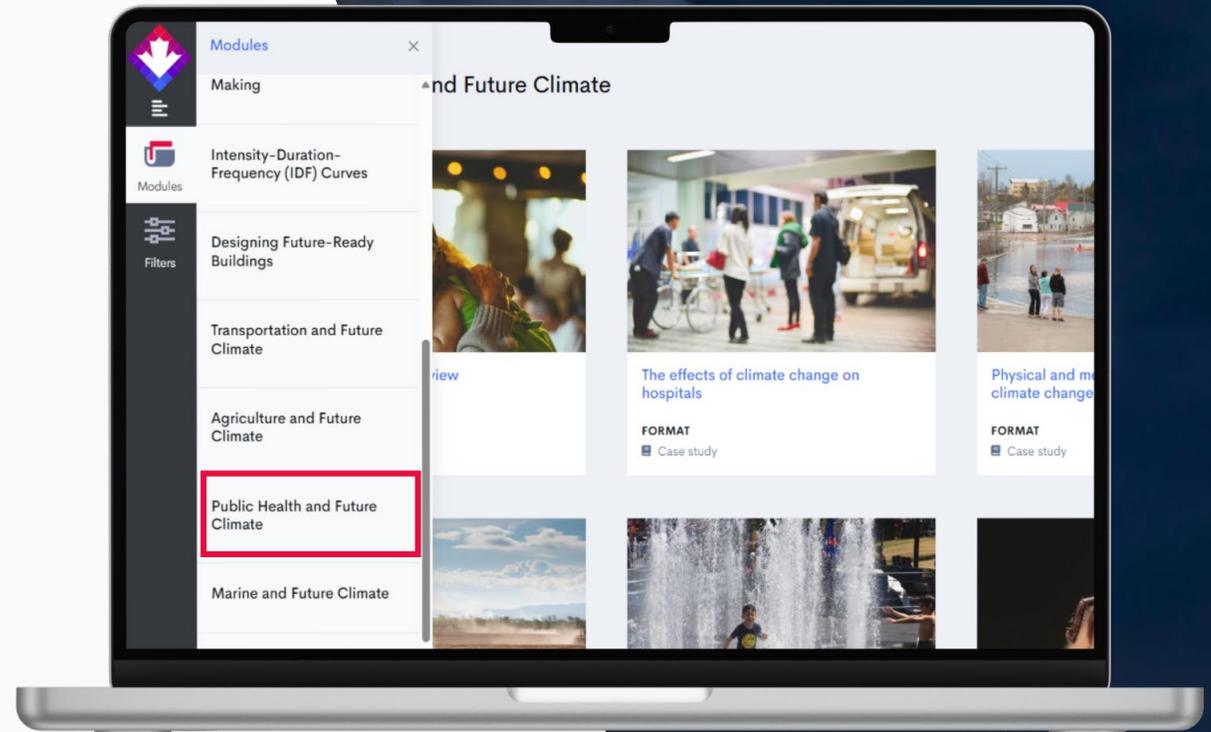
Further learning: “Download Climate Data”

# From data to decisions



## E.g.: Health Sector

- Once you've reviewed your Download results, navigate to the [Learning Zone](#) and check out the [Health Content](#) filter
- It contains real-world case studies on climate and health, including how public health authorities have used this data to plan for extreme heat events
- The [News](#) page also has resources for different sectors, including articles co-authored by Health Canada, and a roundup of variables and tools that are relevant to health professionals



Further learning: “Public Health and Climate Change Module”



**Thank you!**

**We hope this deepened your understanding  
of how to use ClimateData.ca.**

Reach out with any questions to  
[ccsc-cccs@ec.gc.ca](mailto:ccsc-cccs@ec.gc.ca)

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