2 August 2019

ClimateData.ca Webinar Questions Summary

General questions about Climate Services and the Canadian Centre for Climate Services

1. What are the plans for regional hubs?

Climate change impacts vary regionally and the Canadian Centre for Climate Services is working to develop a network of regional climate organizations in Canada to deliver locally relevant information and expertise. We are currently working with established regional climate service providers including the Pacific Climate Impacts Consortium (PCIC) for British Columbia and Ouranos in Québec and are collaborating with provinces and territories to advance the development of regional service providers in the North, the Prairies, and the Atlantic regions.

2. Does an image bank of scenarios illustrating climate change impacts exist? Is it worth considering?

Currently, there is no database of images showing climate change impacts; however, we appreciate all ideas and will take this into consideration. We encourage you to send all suggestions and comments to our Climate Services Support Desk (Email info.cccs-ccsc@canada.ca or Phone: 1-833-517-0376) to help us better understand your needs.

3. For those regions not currently supported by a regional hub, should we contact the Canadian Centre for Climate Services for complex data inquiries?

Yes, please feel free to contact our Climate Services Support Desk (Email info.cccs-ccsc@canada.ca or Phone: 1-833-517-0376) for any complex data inquiries. Even if you have a regional hub, you can still contact the Climate Services Support Desk.

General questions about ClimateData.ca

4. Is climatedata.ca replacing the Climate Data Extractor and Viewer available on the Canadian Centre for Climate Services Website? The Canadian Centre for Climate Services website has changed, where can I find the Climate Data Extractor and Viewer?

ClimateData.ca is not replacing the Climate Data Extractor nor Viewer on the Canadian Centre for Climate Services Website. Many of the datasets available on the Climate Data Extractor and Viewer, including lower resolution CMIP5 datasets for variables such as wind, sea ice and snow, are not available on ClimateData.ca The viewer and extractor are still accessible from the Canadian Centre for Climate Services website at www.canada.ca/climate-services. Click on the Display and download climate data button, scroll down to Climate data from Environment and Climate Change Canada.

Will the data available through ClimateData.ca also be available through the Government of Canada's Open Data portal?

Data offered through ClimateData.ca is available, free of charge, for visualization and download to all Canadians. Publishing the data on the Government of Canada's Open Data portal will be considered as it will facilitate interoperability and discoverability between other climate data portals.

5. Does ClimateData.ca meet Government of Canada web standards?

ClimateData.ca is not a Government of Canada website. It was created by the Computer Research Institute of Montreal in collaboration with the Pacific Impacts Climate Consortium, Ouranos, the Prairie Climate Centre and HabitatSeven. The Canadian Centre for Climate Services supported the project through a contribution agreement. Therefore, there was no requirement to meet Government of Canada web standards; however, the portal does try to adhere to emerging geospatial standards.

6. **How does ClimateData.ca compare in consistency, or are there any concerns with comparing ClimateData.ca with existing portals such as the Ontario Climate Data Portal at http://yorku.ca/ocdp?**

The data on ClimateData.ca is consistent with the statistically downscaled data hosted on the Canadian Centre for Climate Services and data used in the Climate Atlas of Canada. They all use the BCCAQv2 dataset from the Pacific Climate Impacts Consortium. Review of other available climate datasets is ongoing to determine gaps and areas for collaboration. If you have questions about which climate dataset is best for your purposes we encourage you to contact our Climate Services Support Desk (Email info.cccs-ccsc@canada.ca or Phone: 1-833-517-0376).

7. **You mentioned user consultations were conducted to support the development of ClimateData.ca. Is this information available to other Government of Canada departments or the public?**

A survey was circulated to more than 100 users to gather feedback for the health sector module. For the general portal, several key stakeholders were contacted and shown wireframes and design for consideration. Please contact our Climate Services Support Desk (Email info.cccs-ccsc@canada.ca or Phone: 1-833-517-0376) if you are interested in receiving the results of the survey or interested in participating in future consultations.

Data available on ClimateData.ca

8. **Is there information on the site regarding the different emissions scenarios?**

A definition of emission scenarios (RCPs) is included in the Glossary section of ClimateData.ca, there are also plans to develop short training videos that explain the difference between emission scenarios considered in the website. To learn more about emissions scenarios in general, we suggest you visit the Canadian Centre for Climate Services page on Scenarios and Climate models.

9. **What climate scenarios are available? Will all the climate scenarios from the IPCC Fifth Assessment Report be available?**

The climate scenarios available on ClimateData.ca include RCP 2.6, RCP 4.5 and RCP 8.5, which are the emissions scenarios generally used as they provide a good representation of the upper, lower and middle range of projected outcomes.

10. **Are other variables, e.g. humidity, wind, available?**

Currently on ClimateData.ca, projections of climate indices have been calculated using temperature and precipitation values obtained from the statistically downscaled daily climate models (BCCAQv2). More variables will be included in future updates of the website.

In the meantime, you can access other projections, such as CMIP5 from the CCCS viewer and extractor, which includes mean temperature, total precipitation, surface wind speed, sea ice concentration, sea ice thickness and snow depth.

If there are specific variables you are looking for we encourage you to contact our Climate Services Support Desk (Email info.cccs-ccsc@canada.ca or Phone: 1-833-517-0376). If available, the Climate Services Support Desk will help you find what you are looking for, or make a note for the development of future information products.

11. Is daily historical climate data available on ClimateData.ca?

The ANUSPLIN dataset, a gridded observational dataset produced by Natural Resources Canada (NRCan), populates the historical values in the summary box when you search by location (the historical values in the red box). In the future, ANUSPLIN dataset will be added in the Download section of Climatedata.ca.

Historical station data is available under the download section of the website. Select the second option "Station Data", select your stations of interest, data range and then press the red Process button to obtain daily data of several climate variables such as temperature, precipitation, wind, etc.

12. Does the data download include a geospatial component?

Data can be downloaded either at the grid level or from a specific weather station. In the near future, the ability to download data for a specified region will be added and the outputs will be in netCDF format.

13. Do the IDF curves available on ClimateData.ca incorporate climate change and if not are there plans to provide climate-adapted IDF curves? What methodology would be used (e.g., methods similar to Wester University idf-cc-uwo.ca tool)?

The IDF curves available on ClimateData.ca do not incorporate climate change. They are the same IDF curves provided on the Engineering Climate Datasets from ECCC, which were updated on February 2019.

Incorporating climate change into IDF curves is still an emerging field with technical challenges and no commonly accepted methodology. Until that time, ClimateData.ca will continue to provide the most up-to-date IDF curves available based on historical data.

Data analysis methods used for ClimateData.ca

14. Where can I find information on the datasets and methodologies used?

Information on the datasets and methodologies used for ClimateData.ca can be found on the About page under the About Datasets section. Should you require more specific information or a more in-depth version you can contact the Climate Services Support Desk (Email info.cccs-ccsc@canada.ca or Phone: 1-833-517-0376).

15. How was the data downscaled?

The downscaling methods used for ClimateData.ca are described in the About page under the About Datasets section. Projections are available using version 2 of the Bias Correction/Constructed Analogues with Quantile (BCCAQv2) method, a statistical downscaling technique adopted by the Pacific Climate Impacts Consortium. More information can be found on the Pacific Climate Impacts Consortium website

on the Statistically downscaled climate scenarios page under the *Statistical downscaling methods* section of the page.

16. **Is the historical data provided on ClimateData.ca observed data or is it modeled?**

ClimateData.ca provides both modeled and observed temperature and precipitation data. Gridded data represents outputs from climate models while site-specific data is from observational weather stations.

17. **Is the data available consistent across Canada? Even for more remote areas where there are less weather stations?**

On Climatedata.ca, projections are available for all of Canada at an approximate resolution of 10x10 km, including in remote or rural areas where there are fewer weather stations.

18. **How are projections estimated in areas with limited weather stations?**

Climate projections are obtained from climate models through the statistical downscaling method, BCCAQv2. Information on the datasets and downscaling techniques used for ClimateData.ca can be found on the About page under the About Datasets section. More information is also available on the Pacific Climate Impacts Consortium Statistically downscaled climate scenarios page under the *Statistical downscaling methods* section of the page.

19. **The historical data provided is only until 2005, why are more recent data not available? Why is the data available for the climate normals available until 2010?**

The historical data shown on the figures and on the maps are modelled historical data from the BCCAQv2 dataset (the same dataset as the projections) which was downscaled from the Coupled Model Intercomparison Project Phase 5 (CMIP5) dataset. When the World Climate Research Programme proposed CMIP5 in 2008, they decided that all models within the project would end their historical period at 2005 and projections would begin from 2006. To learn more about climate models check out the Scenarios and Climate Models page on the Canadian Centre for Climate Services website.

The climate normals are calculated from weather station data after every decade. From the Environment and Climate Change Canada Canadian Climate Normals page: "At the completion of each decade, Environment and Climate Change Canada updates its Climate Normals for as many locations and as many climatic characteristics as possible. The Climate Normals, Averages and Extremes offered here are based on Canadian climate stations with at least 15 years of data between 1981 to 2010." Normals are also available for the 1971-2000 period, and the 1961-1990 period.

20. **Can the map be viewed at a lower resolution than 10x10?**

Projections available on ClimateData.ca are downscaled to an approximately 10x10km resolution, which is generally a high enough resolution for most purposes.

Future features and suggestions for ClimateData.ca

21. **What other sectors modules will be included?**

The next phase of ClimateData.ca is currently being designed including the selection of new sector modules. If there is a particular sector you are interested in, we encourage you to let us know through our Climate Services Support Desk (Email info.cccs-ccsc@canada.ca or Phone: 1-833-517-0376).

22. Are there plans to be able to select multiple grids to have data for things like watershed regions, habitat areas, ecozones or Provinces and Territories?

Yes, in future updates to ClimateData.ca, you will be able download data by selecting multiple grid cells, and potentially by drawing custom polygons. For other suggestions or comments we encourage you to contact our Climate Services Support Desk (Email info.cccs-ccsc@canada.caor Phone: 1-833-517-0376) to help us better understand your needs.

23. Are there plans to have the data to extend into the U.S to be able to select regions of interest that cross borders?

The current focus is to provide data and information for Canada but we encourage you to send suggestions or comments to our Climate Services Support Desk (Email info.cccs-ccsc@canada.ca or Phone: 1-833-517-0376) to help us better understand your needs.

24. Are there any plans to create an option to batch download all data related to a specific location for all indicators?

There are currently no plans to include this feature but welcome any suggestions and comments. If you have others we encourage you to send them to our Climate Services Support Desk (Email info.cccs-ccsc@canada.ca or Phone: 1-833-517-0376) to help us better understand your needs.

25. Would it be possible to have a public version of the ANUSPLIN code?

For more information about the ANUSPLIN data, check out Natural Resources Canada's Regional, national and international climate modeling page.

26. Will the site include projections for frequency of extreme weather events such as ice storms, tornados, and so on?

Currently, ClimateData.ca provides projections for variables associated with extreme weather including: hottest day, days above maximum temperature thresholds above 25 to 32 ^{o}C, maximum 1-day total precipitation, wet days > 1 to 20 mm, tropical nights > 18 to 22 ^{o}C and Intensity Duration and Frequency Curves. Projecting extreme weather events such as storms is challenging due to current limitations in climate models and the lack of data associated with extreme events, which by their definition are rare. For information about general projected trends in extreme weather events in Canada see Canada's Change Climate Report, Chapter 4.