

7

Tips for choosing and using Western datasets for decision making in the North

Choosing historical datasets

1. Start with a reliable dataset

Where available, Adjusted and Homogenized Canadian Climate Data (AHCCD) provides long-term and high-quality station observations.



Weather station



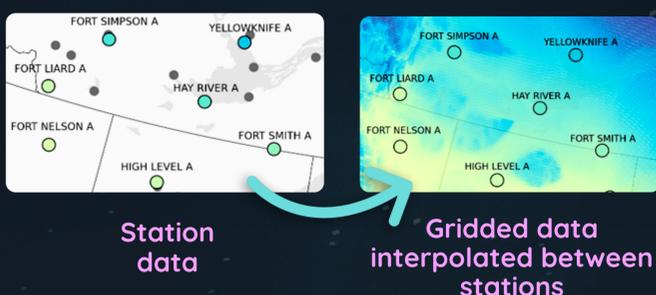
Adjustments to account for any discontinuities



Adjusted climate data

2. Consider gridded data

Gridded datasets fill in the gaps between station observations.



Weather station



Computer model interpolates data



Gridded historical data

3. Look into reanalysis data

Reanalysis uses past observations and weather models to generate more complete climate information (e.g., snowfall).



Weather station



Satellite



Weather model



Reanalysis data

4. Consult downscaled data for both historical and future datasets

Statistical downscaling techniques can add more detail to both historical and future climate model data by using observational data for bias adjustment, increasing the suitability of this data for local-scale use.



Gridded historical data



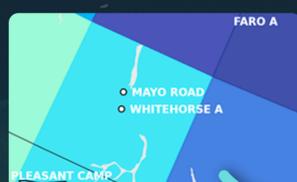
Global climate model



Weather station



Statistically-downscaled climate data



Coarse scale



Fine scale

Historical data alone is no longer sufficient when planning and designing for future climatic conditions

Using future datasets

5. Explore the change

Explore change values, which show the difference between modelled historical and future climate conditions.



Future data



Historical data



Change value

6. Be aware of confidence

The confidence level of climate model outputs depends on how well the model reflects the physical processes behind the climate variable of interest.



Confidence	Most useful for	Variable
High	Direct decision making & planning	Temperature
Medium	General risk assessments	Precipitation
Low	Broad climate assessments	Wind

7. Check out Regional Climate Models

Regional Climate Models (RCMs) provide improved simulation of precipitation and climate extremes as their finer spatial resolution means that topography and some physical climate processes are better represented in the models.



Global climate model



Dynamically downscaled



RCM data