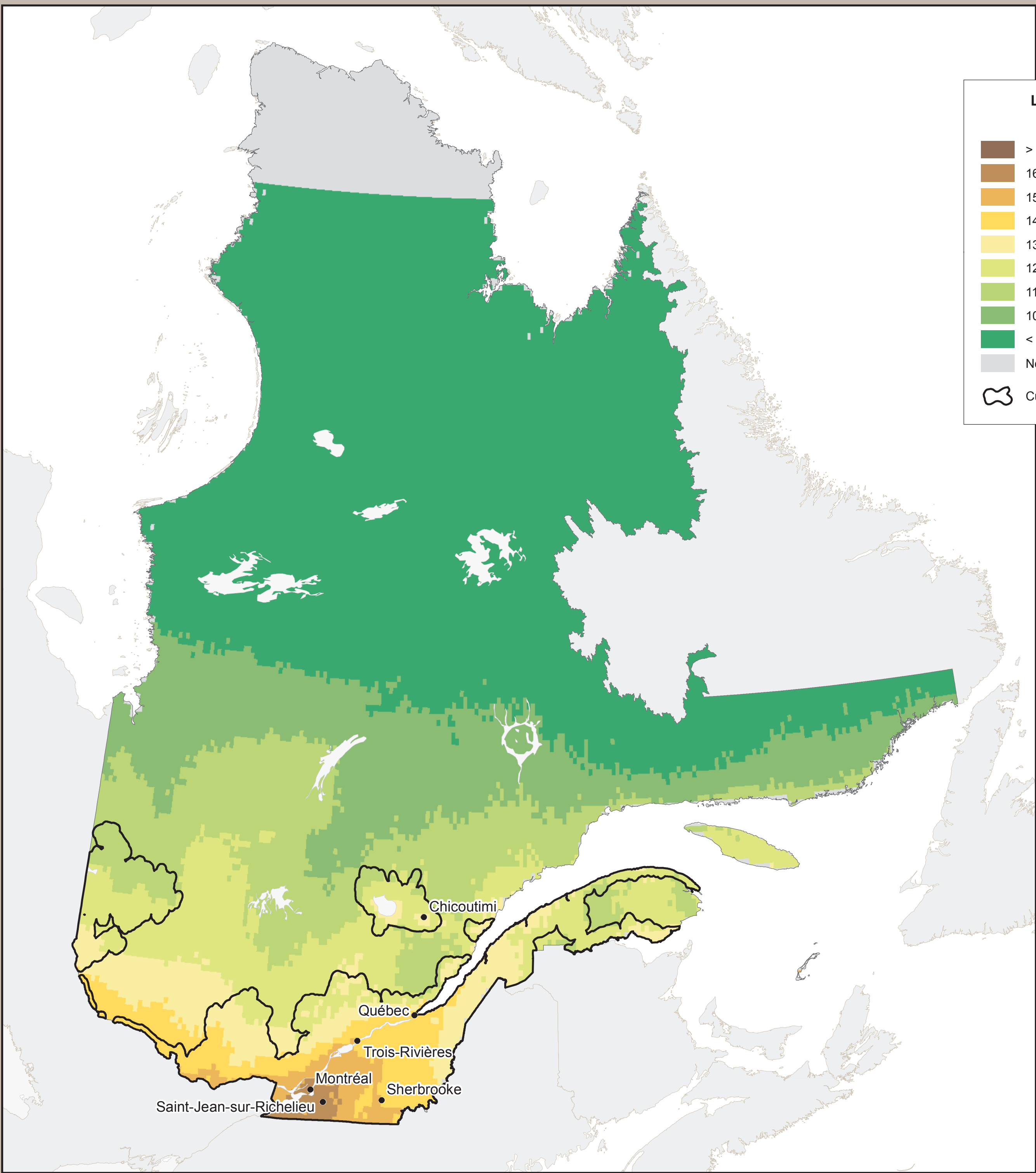## Quebec

Length of Growing Season:

- Measured in days starting from the estimated seeding date (10 days after average daily temperature is above 5°C) until fall frost (minimum daily temperature is 0°C) or until October 31, whichever comes first.
- This is the same time period used to calculate effective growing degree days

Baseline: 1971-2000

Climate Change Scenario: 2010-2039

Length of Growing Season (days)

- > 170
- 160 - 170
- 150 - 160
- 140 - 150
- 130 - 140
- 120 - 130
- 110 - 120
- 100 - 110
- < 100
- No data

Current Agricultural Extent

Chicoutimi
Québec
Trois-Rivières
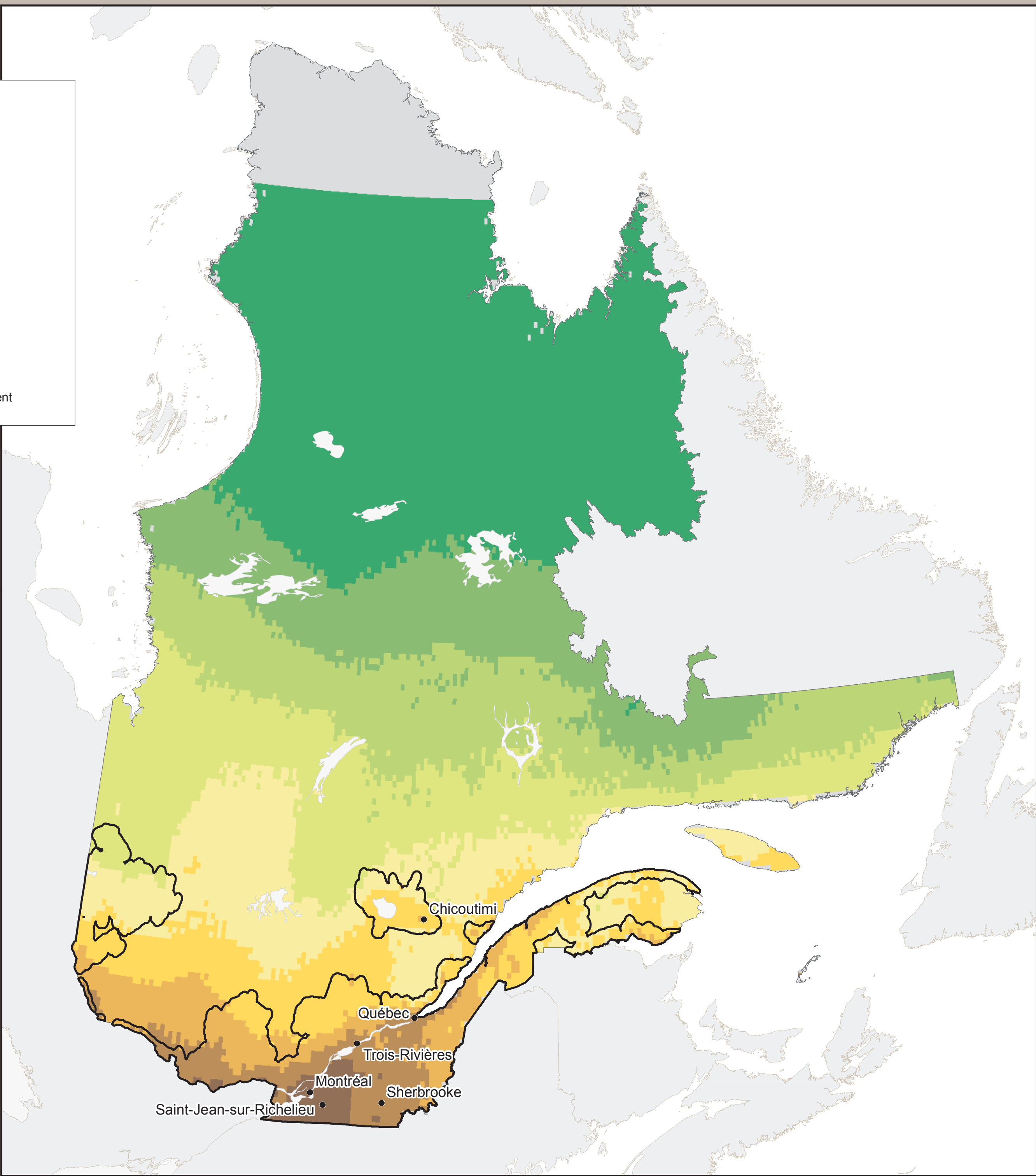Montréal   Sherbrooke
Saint-Jean-sur-Richelieu

Table 1: Summary of Length of Growing Season comparing 1971-2000 to projected climate change in 2010-2039

Length of Growing Season (days)	1971 - 2000 Baseline	2010 - 2039 CGCM 3.1
	Percent of total area	
> 170	0.0	0.8
160 - 170	0.4	2.5
150 - 160	1.1	3.6
140 - 150	2.9	6.9
130 - 140	4.2	10.4
120 - 130	8.9	14.3
110 - 120	12.2	13.0
100 - 110	14.4	11.9
< 100	55.9	36.5

- The CGCM 3.1 model predicts a 1 to 2 degree Celsius increase in monthly average temperatures by 2010-2039, resulting in earlier crop seeding dates, and later fall frost dates.

Climate Data and Future Scenario:

- 30 year average monthly climate data (Tmax, Tmin, ppt) was used to calculate:
  - Effective Growing Degree Days,
  - Moisture Deficits (P-PE) and
  - Length of Growing Season (seeding date until fall frost).
- Baseline data (1971-2000) provided by Natural Resources Canada (Great Lakes Forestry Centre).
- Climate Change Scenario (2010-2039)
  - Global Climate Change Model (GCM) used: Canada's Coupled Global Climate Model (CGCM3.1) developed by the Canadian Centre for Climate Modelling and Analysis.
  - Climate data was spatially interpolated using ANUSPLIN software (2.5° grid interpolated to ~10km grid).

Limitations:

- Represents only a single climate change model result, using the A2 climate change scenario from the Intergovernmental Panel on Climate Change (IPCC).
- Seasonal and inter-seasonal variability in the 30 year average monthly climate data was not considered (e.g. extreme events such as drought and excess spring moisture).

Canada