Community Climate Change Profile

Nelson, BC

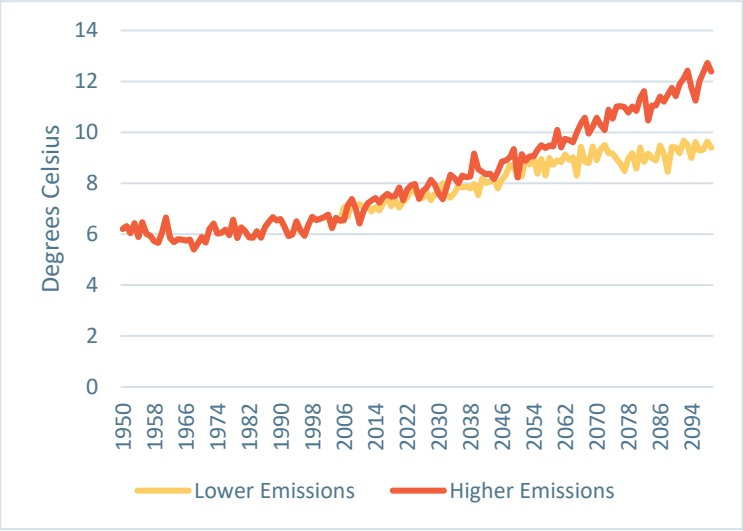
COLUMBIA BASIN CLIMATE SOURCE

Overview of Climate Change in the Columbia Basin

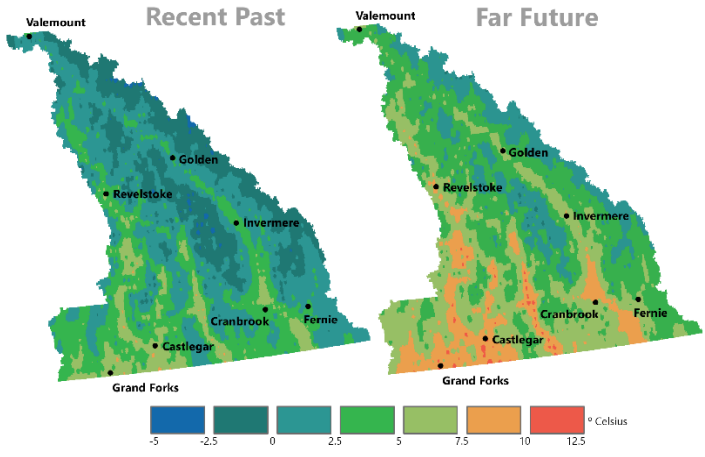
The Canadian Columbia Basin is already experiencing hotter, drier summers, warmer, wetter winters, and more extreme weather, and climate scientists are projecting these trends to continue into the future.[1] Average annual temperatures in the Basin have increased by 1.6°C over the last century, and the rate of warming has increased to 3.1°C per century over the last 5 decades. Annual average precipitation has increased by about 20% since the early 1900s, though the rates vary by location and season. Looking ahead to the 2050s, current climate models are projecting average annual temperatures to be 2.5°C to 3.5°C warmer in Columbia Basin and Boundary communities compared to the recent past (1960s). Winter and summer precipitation are expected to change by as much as +14% and -22% respectively.

Local Data [2]i

Variable	Period	Recent Past (1951-1980)	Near Future (2021-2050)		Far Future (2051-2080)	
			Lower emissions[ii]	Higher emissions[iii]	Lower emissions	Higher emissions
Mean daily temperature (°C)	Annual	4.6	6.4	6.6	7.5	8.5
	Spring	3.9	6.5	6.6	7.2	7.8
	Summer	14.6	16.7	17.0	17.6	19.1
	Fall	4.6	6.4	6.4	7.1	8.2
	Winter	-5.1	-3.2	-2.9	-2.3	-1.6
Total precipitation (mm)	Annual	818.6	825.4	855.7	868.0	868.7
	Spring	184.0	202.1	204.4	209.1	214.2
	Summer	155.7	148.5	156.9	150.9	131.5
	Fall	200.6	213.4	213.7	219.1	223.0
	Winter	277.3	286.6	285.0	286.5	300.9
Days with max temp >25°C (days)	Annual	31.2	49.1	49.2	55.4	68.2
Max 1-day precipitation (mm)	Annual	37.6	37.7	38.9	40.6	43.4
Growing season length (days)	Annual	173.6	200.1	201.9	213.3	220.3



Modeled mean annual temperature for Nelson from 1950 to 2099



Modeled mean annual temperature for Basin-Boundary region; recent past (1951-1980) vs. far future (2051-2080); higher emissions future scenario.

Columbia Basin Climate Source is a one-stop source for climate change information relevant to communities in the Columbia Basin-Boundary region. To explore climate data, maps, or action stories, or to learn more about climate science or projected impacts, visit basinclimatesource.ca

Key Climate Impacts and Opportunities for Action

Housing, Buildings and Infrastructure

Wildfires, flooding, extreme storms, and water shortages all represent threats to the safety and well-being of our communities. These threats are anticipated to become more pronounced with climate change, which will either physically endanger our homes and buildings, or challenge our infrastructure's ability to serve community needs.

- Protect your property from wildfire: https://bit.ly/3R1s8jY
- Make your home or building more efficient: https://bit.ly/3R24XG7
- Be prepared for emergencies: https://bit.ly/3xG7gYD

Economies

Changing weather patterns present risks *and* opportunities for Basin-Boundary businesses and the economy. Most vulnerable are enterprises that cannot adapt successfully to new climate and environmental conditions or transition to a low carbon economy. However, businesses and sectors that can capitalize on the new climate or support a transition away from fossil fuels are well positioned to succeed.

- Make your business more climate-resilient: https://bit.ly/3S5oMgX
- Join small businesses in a pledge to reduce emissions: https://bit.ly/3DGxXAf
- Adapt to climate change on your farm: https://bit.ly/3UoHthr

Nature

As temperature and precipitation patterns shift, ecosystems in the Basin-Boundary region can be expected to change too. This includes more natural disturbances such as wildfire and pests, changes to the water cycle and water availability, and the emergence of new compositions of plant and animal species.

- Prevent the spread of invasive species: https://bit.ly/3Urq4of
- Learn about nature-based solutions to climate change: https://bit.ly/3BE5kkF
- Become a citizen scientist and help monitor ecosystem change: https://bit.ly/2FnCIAv

Quality of Life

Climate change presents a risk to our health and lifestyles. Our physical and mental health will be increasingly challenged by rising temperatures, related impacts (e.g., wildfire smoke), and extreme weather events. Vulnerable individuals - the elderly, young children, those with chronic conditions - are at greater risk. Some cultural, recreation, and lifestyle practices may have to be adapted to new climate and environmental conditions.

- Learn more about climate-related health risks: https://bit.ly/3eY3tzc
- Examine your food habits and reduce related emissions: https://bit.ly/2lVIXDY
- Elect candidates who are serious about climate action: https://bit.ly/3S9a8VW

Local Action Stories

Regional Energy Efficiency Program

This program helps homeowners evaluate their home's energy use, access energy efficiency rebates, and get one on one support from an energy advisor. The program also provides on-bill, low interest financing for energy retrofits.

Neighbours United Deep Canvassing

Deep canvassing brings people together to find common ground on issues where they disagree. Since 2020, Neighbours United has had thousands of non-judgemental conversations around climate change, with the end result being that 1 in 3 people shift beliefs and behaviours in a lasting way.

Business & Climate Advisor

A project of the Nelson and District Chamber of Commerce, the Business and Climate Advisor program emerged from a need identified in the City of Nelson's Nelson Next climate action plan. The advisor works with businesses to tackle energy efficiency, waste diversion, emissions reduction, and collaboratively building community climate resilience.

References

[1] Columbia Basin Trust, "Climate Action in the Columbia Basin," Castlegar, 2017.

[2] Selkirk College (Selkirk Innovates), "Community Climate Datasets (Custom)," 2022.

[i] Figures are median values from an ensemble of 7 global climate models. Community data is based on calculations for a 10x10km grid around location: 49.492, -117.294.
[ii] The SSP2-4.5 (lower emissions) scenario assumes global greenhouse gas emissions stabilize at current levels and then begin to drop around mid century
[iii] The SSP5-8.5 (higher emissions) scenario assumes greenhouse gas emissions roughly double by 2050

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