SUMMER 2024

Climate Trends and Variations Bulletin

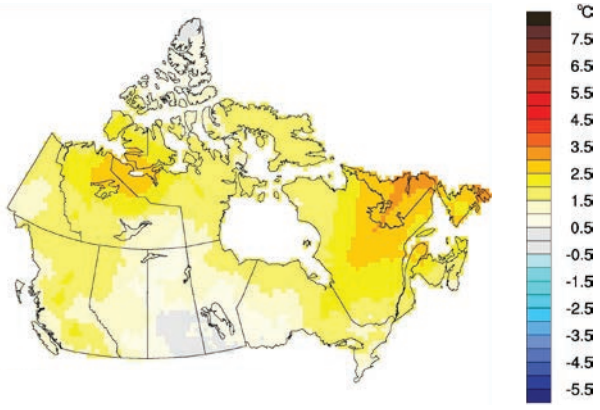
This bulletin summarizes recent climate data and presents it in a historical context. It first examines the national average temperature for the season and then highlights interesting regional temperature information.

Over the past decade, precipitation monitoring technology has evolved and Environment and Climate Change Canada (ECCC) and its partners implemented a transition from manual observations to using automatic precipitation gauges. Extensive data integration is required to link the current precipitation observations to the long term historical manual observations. The update and reporting of historical adjusted precipitation trends and variations will be on temporary hiatus pending the extensive data reconciliation, and will resume thereafter. ECCC remains committed to providing credible climate data to inform adaptation decision-making, while ensuring the necessary data reconciliation occurs as monitoring technology evolves.

National Temperature

The national average temperature for the summer (June–August) of 2024 was 1.7°C above the baseline average (defined as the mean over the 1961–1990 reference period), based on preliminary data, which was the 4th warmest summer since nationwide recording began in 1948. The coldest summer occurred in 1978 when the national average temperature was 1.0°C below the baseline average. The temperature departures map shows that most of Canada experienced temperatures at least 1.0°C above the baseline average, except for small regions in southern Saskatchewan and the high Arctic which experienced temperatures near the baseline average. Significant temperature departures greater than 2.5°C above the baseline average were recorded in central Labrador, eastern Newfoundland, and the northern border between the Northwest Territories and Nunavut. Significant portions of British Columbia, Quebec, the Maritime provinces, Yukon, Nunavut, and the Northwest Territories experienced temperatures at least 2.0°C above the baseline. Meanwhile, the Prairies (Alberta, Saskatchewan, and Manitoba) observed average temperatures about 1.0°C above the baseline. There were no notable national observations of regional temperatures falling below the average of the 1961-1990 reference period.

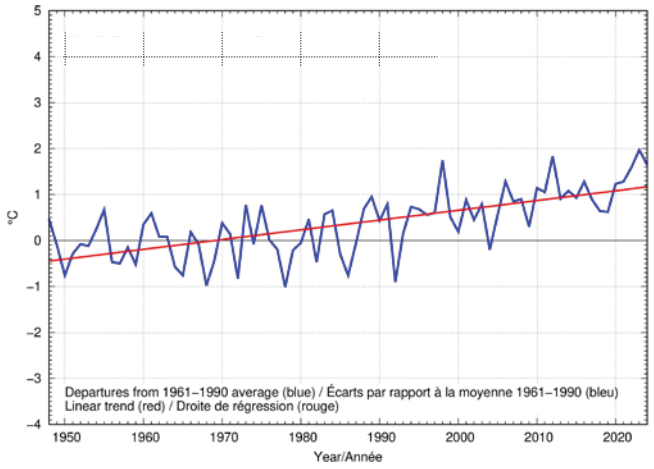
Temperature Departures from the 1961–1990 Average – Summer 2024



Environment and Climate Change Canada
Environnement et Changement climatique Canada
Canada

The time series graph shows that average summer temperatures across the country fluctuated annually over the 1948–2024 period. Apart from 2004, average summer temperatures have remained above the baseline average since 1993. The linear trend indicates that summer temperatures averaged across the nation have warmed by 1.7°C over the past 77 years.

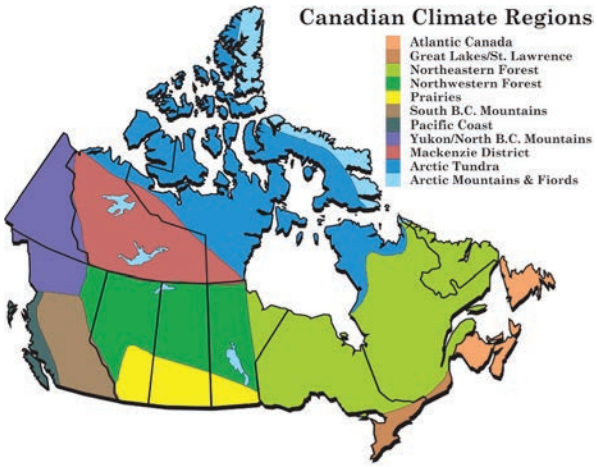
Summer National Temperature Departures and Long-term Trend, 1948–2024



Regional Temperature

Regionally, seven of the eleven climate regions experienced warmer average summer temperatures, ranking among the top 10 warmest since 1948. These regions were, Atlantic Canada (the warmest at 2.3°C above the baseline average); Northeastern Forest (the warmest at 2.0°C above the baseline average); Yukon/North B.C. Mountain (7th warmest at 1.7°C above the baseline average); Northwestern Forest (9th warmest at 1.2°C above the baseline average); South B.C. Mountains (9th warmest at 1.6°C above the baseline average); Mackenzie District (9th warmest at 1.8°C above baseline average); and Arctic Tundra (10th warmest at 1.7°C above the baseline average). None of the eleven climate regions recorded average summer temperatures in 2024 that ranked among the 10 coolest since 1948. All eleven climate regions exhibited positive trends for summer temperatures over the past 77 years. The strongest trend was observed in the Mackenzie District (+2.1°C), while the weakest trend was found in the Prairies region (+1.3°C). A table listing the regional and national temperature departures and rankings from 1948 to 2024 and another table summarizing regional and national trends and extremes summaries are available upon request at btvc-ctvb@ec.gc.ca.

The map of Canadian Climate Regions



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