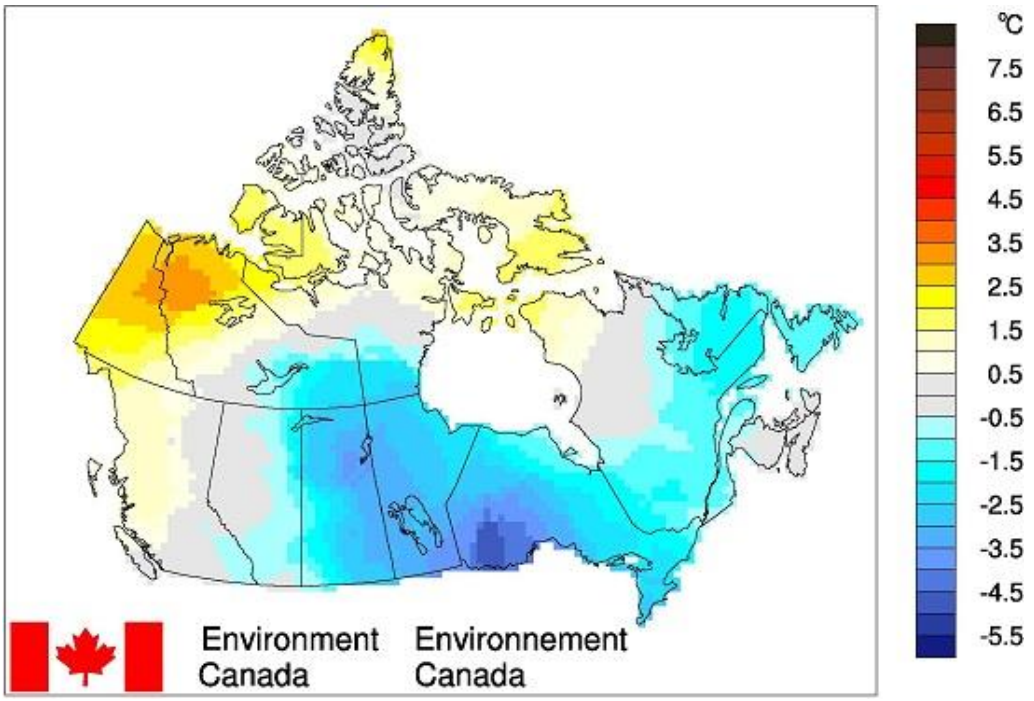
Climate Trends and Variations Bulletin – Winter 2013-2014

This bulletin summarizes recent climate data and presents it in a historical context. It first examines the national temperature, and then highlights interesting regional temperature information. Precipitation is examined in the same manner.

National Temperature

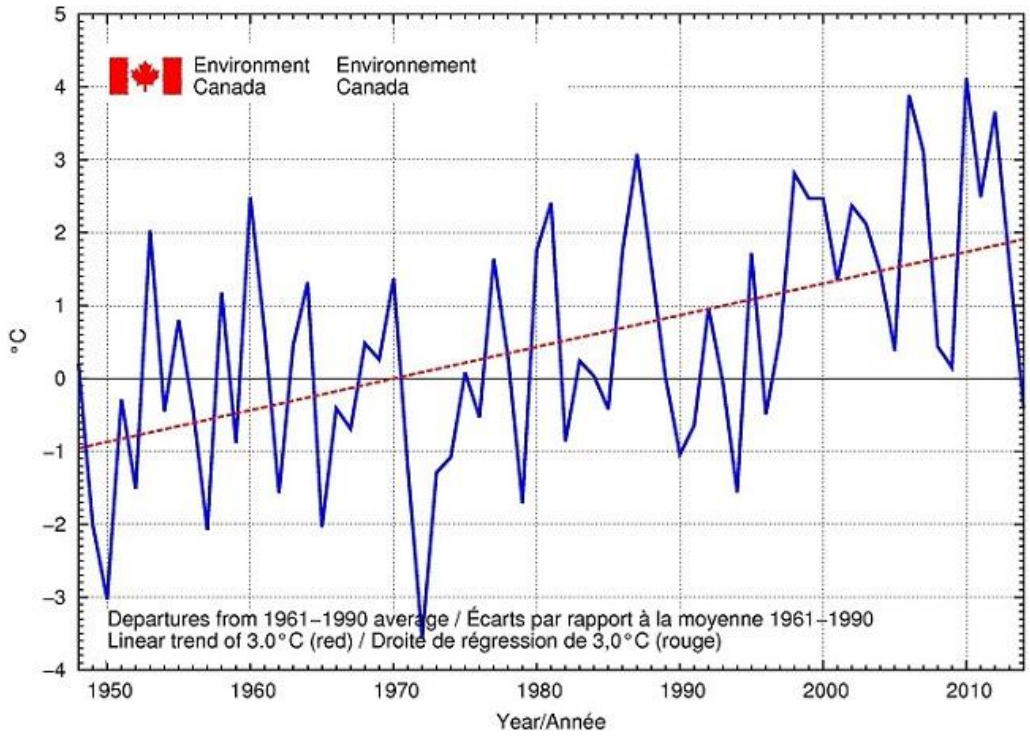
The national average temperature for the winter of 2013-2014 was 0.4°C below the baseline average (defined as the mean over the 1961-1990 reference period), based on preliminary data, which is the 24th coldest observed since nationwide recording began in 1948. The warmest winter on record was 2009-2010, when the national average temperature was 4.1°C above the baseline average. The coldest winter occurred in 1971-1972, when the national average temperature was 3.6°C below the baseline average. The temperature departures map for the winter of 2013-2014 (below) shows that most of Saskatchewan, Manitoba, Ontario, south and eastern Quebec, Newfoundland, and a small area in the south of the Northwest Territories and Nunavut experienced temperatures below the baseline average. Above-average temperatures were most strongly recorded in the Yukon and northern part of the Northwest Territories.

Temperature Departures from the 1961-1990 Average – Winter 2013-2014



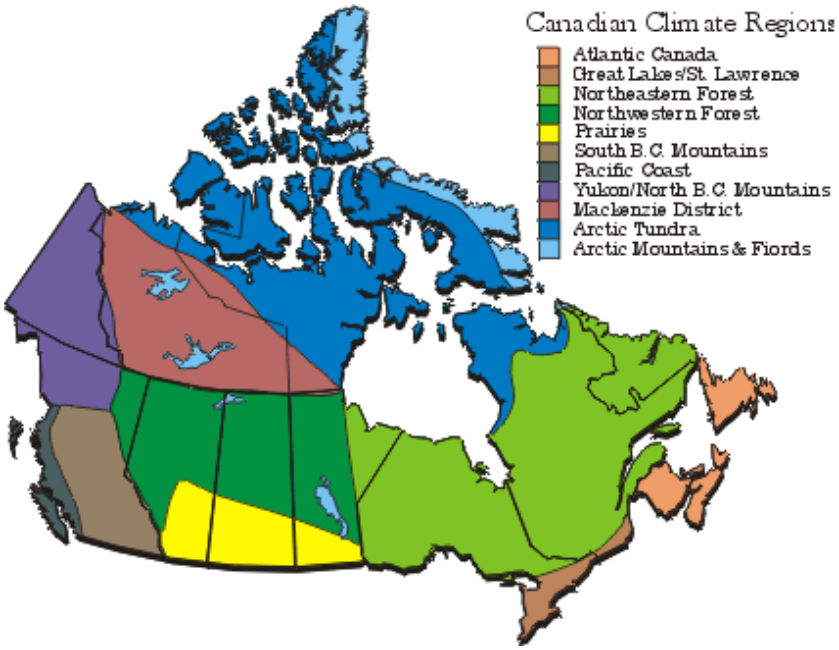
The time series graph below shows that, when averaged across the nation, winter temperatures have fluctuated from year to year over the period 1948-2014. The linear trend indicates that winter temperatures averaged across the nation have warmed by 3.0°C over the past 67 years.

Winter National Temperature Departures and Long-term Trend, 1948-2014



Regional Temperature

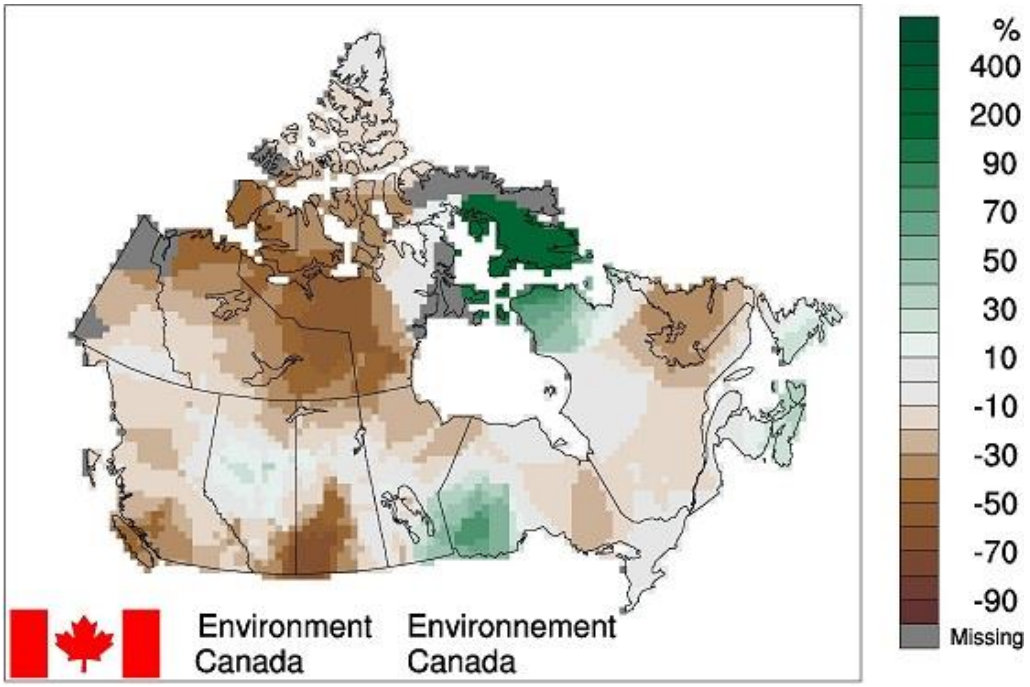
When examined on a regional basis, average winter temperatures for 2013-2014 were among the 10 coldest on record for 2 of the 11 climate regions: the Northeastern Forest (6th coldest at 1.7°C below the baseline average) and the Great Lakes/St. Lawrence Lowlands (8th coldest at 1.8°C below the baseline average). Other regions that experienced winter temperatures considerably colder than the 1961-1990 average are the Northwestern Forest (13th coldest at 1.9°C below average), Prairies (14th coldest at 2.0°C below average) and Atlantic (17th coldest at 0.6°C below average) regions. All 11 climate regions exhibit positive trends in winter temperatures over the 67 years of record. The strongest trend is observed in the Mackenzie District (4.4°C) while the weakest trend is observed for the Atlantic (0.5°C). A table listing the regional and national winter temperature departures and rankings from 1948 and a table that summarizes regional and national trends and extremes are available on request to CTVB@ec.gc.ca.



National Precipitation

The national average precipitation for the winter of 2013-2014 was 9% below the baseline average, based on preliminary data, making it the 15th driest winter since nationwide recording began in 1948. Over the period of record, the wettest winter was 2010-2011 (27% above the baseline average) and the driest was 2012-2013, tied with the winter of 1956-1957 (20% below the baseline average). The precipitation percent departure map for the winter of 2013-2014 (below) shows conditions notably drier than average in southern Saskatchewan, southwestern B.C., eastern Northwest Territories and western Nunavut.

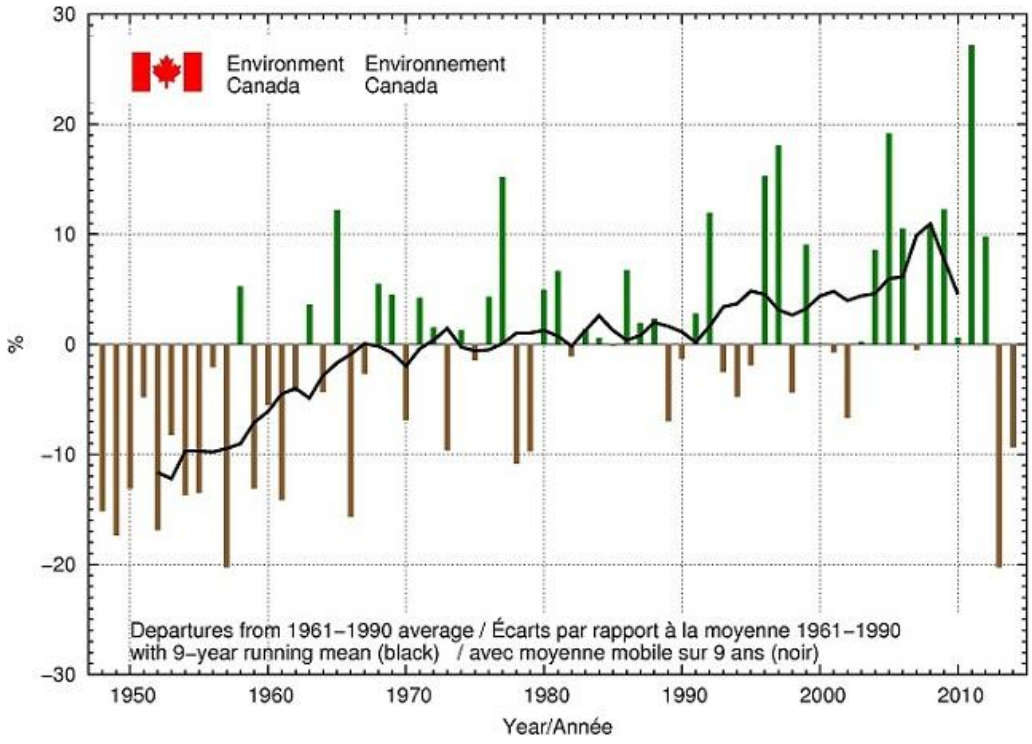
Precipitation Departures from the 1961-1990 Average – Winter 2013-2014



It should be noted that "average" precipitation in northern Canada is generally much less than it is in southern Canada, and hence a percent departure in the north represents much less difference in actual precipitation than the same percentage in the south. The national precipitation rankings are therefore often skewed by the northern departures and do not necessarily represent rankings for the volume of water falling on the country.

The precipitation percent departures graph below shows that, when averaged across the nation, winters have tended to be wetter than the 1961-1990 average since the mid-1970s, although the two most recent winters were drier than average.

Winter National Precipitation Departures with 9-year Running Mean, 1948-2014



Regional Precipitation

Precipitation for winter 2013-2014 was among the 10 driest recorded since 1948 in 2 of the 11 regions: the Mackenzie District (2nd driest at 34% below average) and the Pacific Coast (5th driest at 28% below average). The other regions with winter precipitation notably drier than the 1961-1990 average are the Yukon/North B.C. Mountains (13th driest at 17% below average), the South B.C. Mountains (16th driest at 20% below average) and the Prairies (18th driest at 20% below average). Two regions recorded notably wetter than average conditions for the winter 2013-2014: the Atlantic (4th wettest at 18% above average) and the Arctic Mountains and Fjords (6th wettest at 43% above average) regions. A table listing the regional and national winter precipitation departures and rankings from 1948 and a table that summarizes regional and national extremes are available on request from CTVB@ec.gc.ca.

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