

## April Mean Daily Minimum and Maximum Temperatures

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### Abstract

Minimum temperatures in April are below freezing for most of Canada. Below-freezing maximum temperatures in April are restricted to northern Canada and the extreme northern portions of Ontario and Quebec adjacent to Hudson Bay. The map shows the mean daily minimum and maximum temperatures for April.

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Minimum temperatures in April are below freezing for most of Canada. Only extreme southern Ontario, extreme southern Nova Scotia and coastal British Columbia have normal minimum temperatures above freezing. This represents a major warming from January values for all of southern Canada, but winter conditions still dominate the north.

Below-freezing maximum temperatures in April are restricted to northern Canada and the extreme northern portions of Ontario and Quebec adjacent to Hudson Bay. Lengthening days and strengthening sunshine bring about a moderation in temperature in all parts of the country. In the high Arctic, maximum temperatures range from -15 to -30°C, so winter is very much present despite the arrival of spring weather across southern Canada.

### Data Source and Methodology

The 1971 to 2000 temperature climate normals were calculated by Environment Canada in a manner consistent with the methodology of the World Meteorological Organization. For temperature, a monthly maximum (minimum) average was computed from the daily maximum (minimum) temperature observations. The normal is a simple arithmetic average of the monthly minimum or maximum temperatures for the specified period. These spatial models have been developed using the thin plate smoothing spline algorithms of ANUSPLIN, which is a mathematically sophisticated approach to generating climate maps at varying spatial and temporal scales. The Canadian Forest Service has been working in partnership with several staff in Environment Canada's Meteorological Service of Canada, the Australian National University (the creator of ANUSPLIN) and others to develop a variety of climate models that cover both Canada and North America.

## Definition of underlined term

**Climate normals:** Climate normals are used to summarize or describe the average climatic conditions of a particular location.

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## Map Sources

### **April Mean Daily Maximum Temperatures (°C)**

The mean daily temperatures for the spring season are represented by the month of April, middle of the spring season and are intended to represent average conditions only, as the weather in any given year during spring would or could vary. The 1971 to 2000 temperature climate normals were calculated by Environment Canada and the monthly maximum average was computed from the daily maximum temperature observations. Spatial models have been developed using the thin plate smoothing spline algorithms of ANUSPLIN by the Canadian Forest Service in partnership with several staff in Environment Canada's Meteorological Service of Canada and the Australian National University (the creator of ANUSPLIN).

### **April Mean Daily Minimum Temperatures (°C)**

The mean daily temperatures for the spring season are represented by the month of April, middle of the spring season and are intended to represent average conditions only, as the weather in any given year during spring would or could vary. The 1971 to 2000 temperature climate normals were calculated by Environment Canada and the monthly minimum average was computed from the daily minimum temperature observations. Spatial models have been developed using the thin plate smoothing spline algorithms of ANUSPLIN by the Canadian Forest Service in partnership with several staff in Environment Canada's Meteorological Service of Canada and the Australian National University (the creator of ANUSPLIN).

## References

Environment Canada. Climate Trends and Variations Bulletin, January to August 1998 (Regional Analysis). [http://www.msccmc.ec.gc.ca/ccrm/bulletin/summer98/spage2\\_e.html](http://www.msccmc.ec.gc.ca/ccrm/bulletin/summer98/spage2_e.html)

Environment Canada. Climate Trends and Variations Bulletin, January to August 1998 Temperature and Precipitation in Historical Perspective (National Overview). [http://www.msc-smc.ec.gc.ca/ccrm/bulletin/summer98/index\\_e.html](http://www.msc-smc.ec.gc.ca/ccrm/bulletin/summer98/index_e.html)

Environment Canada. Meteorological Service of Canada. Climate Trends and Variations Bulletin. [http://www.msc-smc.ec.gc.ca/ccrm/bulletin/disclaim\\_e.cfm](http://www.msc-smc.ec.gc.ca/ccrm/bulletin/disclaim_e.cfm)

Environment Canada. Meteorological Service of Canada. Canada's Top Ten Weather Stories For 2005. [http://www.msc-smc.ec.gc.ca/media/top10/2005\\_e.html](http://www.msc-smc.ec.gc.ca/media/top10/2005_e.html)

Hare, F.K. and M.K. Thomas. 1974. *Climate Canada*. Toronto: Wiley Publishers of Canada Limited. 256pp.

McKenney DW, Papadopol P, Campbell K, Lawrence K, Hutchinson MF. 2006. *Spatial Models of Canadian and North American-Wide 1971/2000 Minimum and Maximum Temperature, Total Precipitation and Derived Bioclimatic Variables*. Sault Ste. Marie (Ontario): Canadian Forest Service Front Line Technical Note no. 106.

Phillips, David. 1990. *The Climates of Canada*. Ottawa: Ministry of Supply and Services, Ottawa. 176pp.

The Australian National University (ANU). Centre for Resource and Environmental Studies. <http://fennerschool.anu.edu.au/publications/software/anuclim.php>

## **Related Web sites (1999 – 2009)**

### **Federal Government**

Environment Canada. Canadian Climate Normal's or Averages 1971-2000  
[http://www.climate.weatheroffice.ec.gc.ca/climate\\_normals/index\\_e.html](http://www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html)

Environment Canada. Canadian Weather at a Glance  
[http://www.weatheroffice.gc.ca/jet\\_stream/index\\_e.html](http://www.weatheroffice.gc.ca/jet_stream/index_e.html)

Environment Canada. Climate Data  
[http://www.climate.weatheroffice.ec.gc.ca/climateData/canada\\_e.html](http://www.climate.weatheroffice.ec.gc.ca/climateData/canada_e.html)

Environment Canada. Meteorological Service of Canada (MSC)  
[http://www.msc-smc.ec.gc.ca/contents\\_e.html](http://www.msc-smc.ec.gc.ca/contents_e.html)

Environment Canada. Meteorological Service of Canada. Weather information for Canada  
[http://www.weatheroffice.gc.ca/canada\\_e.html](http://www.weatheroffice.gc.ca/canada_e.html)

Environment Canada. National climate data and information archive  
[http://www.climate.weatheroffice.ec.gc.ca/Welcome\\_e.html](http://www.climate.weatheroffice.ec.gc.ca/Welcome_e.html)

Natural Resources Canada. Canadian Forest Service. Regional, National and International Climate Modeling  
<http://cfs.nrcan.gc.ca/subsite/glfc-climate>

### **Other**

Australian National University. Centre for Resource and Environmental Studies.

ANUSPLIN

<http://fennerschool.anu.edu.au/publications/software/anusplin.php>

ANUSPLIN is a mathematically sophisticated approach to generating climate maps at varying spatial and temporal scales.

The Weather Network

<http://www.theweathernetwork.com/>

