Energy, Mines and Resources Canada / Énergie, Mines et Ressources Canada

THE NATIONAL ATLAS OF CANADA 5th EDITION

CANADA

TEMPERATURE-JANUARY AND JULY

Produced by the Geographical Services Division, Surveys and Mapping Branch, Energy, Mines and Resources Canada. Printed 1985.

Copies of this map may be obtained from the Canada Map Office, Energy, Mines and Resources Canada, Ottawa, or your nearest map dealer. Quote MCR 4058.

Des exemplaires de cette carte sont disponibles en français. Précisez MCR 4058F.

Lambert Conformal Conic Projection. Standard Parallels 49°N and 77°N;
Modified Polyconic Projection. North of Latitude 80°

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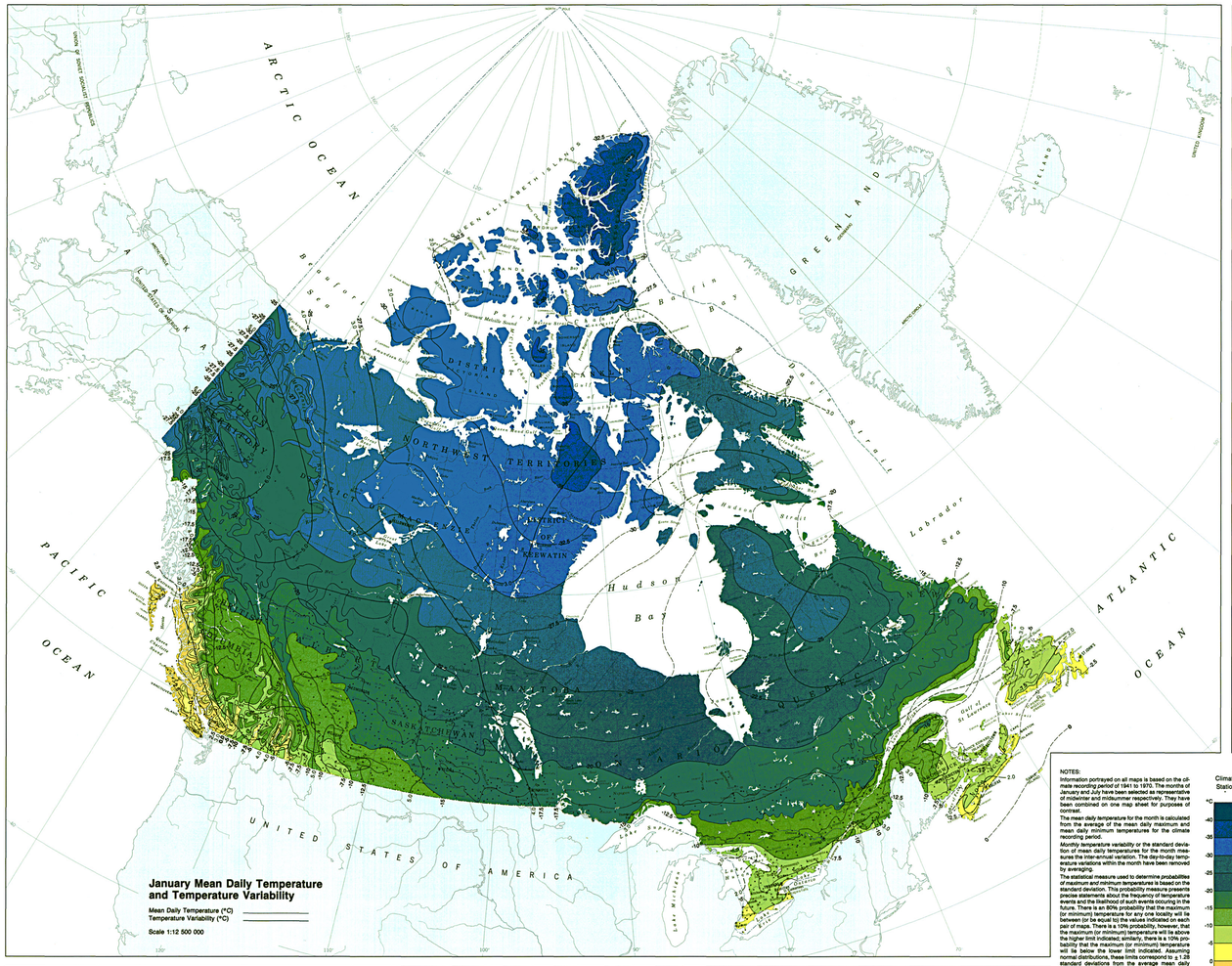
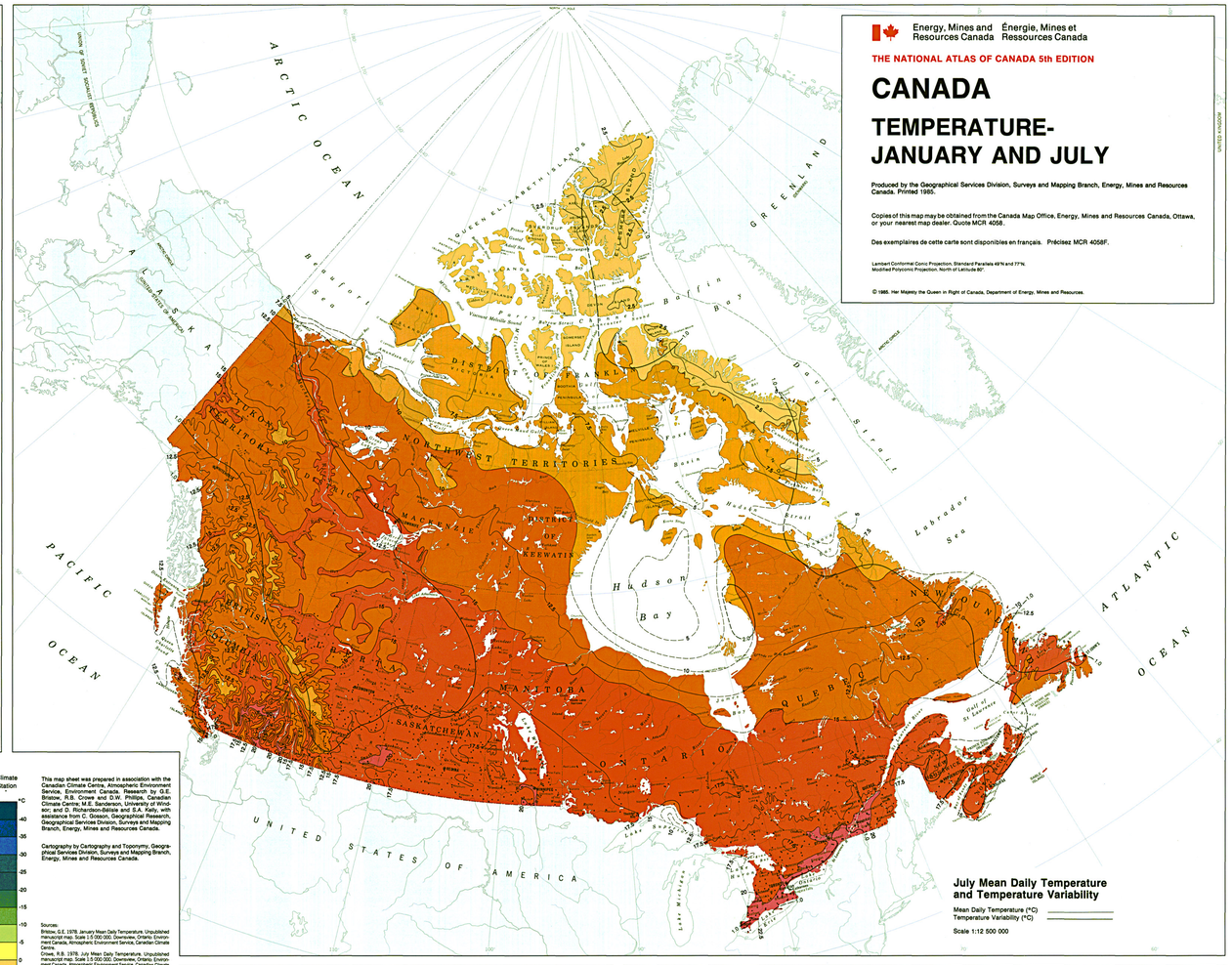


January Mean Daily Temperature and Temperature Variability

Mean Daily Temperature (°C) _____
Temperature Variability (°C) _____

Scale 1:12 500 000



July Mean Daily Temperature and Temperature Variability

Mean Daily Temperature (°C) _____
Temperature Variability (°C) _____

Scale 1:12 500 000

NOTES:

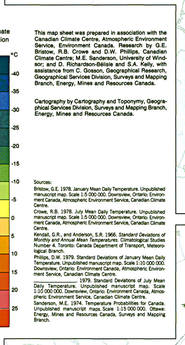
Information portrayed on all maps is based on the *climate recording period* of 1941 to 1970. The months of January and July have been selected as representative of midwinter and midsummer respectively. They have been combined on one map sheet for purposes of contrast.

The *mean daily temperature* for the month is calculated from the average of the mean daily maximum and mean daily minimum temperatures for the climate recording period.

Monthly temperature variability or the standard deviation of mean daily temperatures for the month measures the inter-annual variation. The day-to-day temperature variations within the month have been removed by averaging.

The statistical measure used to determine *probabilities of maximum and minimum temperatures* is based on the standard deviation. This probability measure presents precise statements about the frequency of temperature events and the likelihood of such events occuring in the future. There is an 80% probability that the maximum temperature will be equal to or less than the value indicated on each pair of maps. There is a 10% probability, however, that the maximum (or minimum) temperature will be above the higher limit indicated; similarly, there is a 10% probability that the maximum (or minimum) temperature will be below the lower limit indicated. Assuming normal distributions, these limits correspond to ± 1.28 standard deviations from the average mean daily maximum (or minimum) temperature.

Because of constraints on isarithmic interpolation imposed by the uneven and often sparse distribution of climate stations, the density of the station network can be used as an index of isotherm reliability. Isotherms are most representative in areas of uniform flat terrain. Significant local deviations from the pattern indicated should be expected as terrain irregularity increases. Abrupt changes in climatic characteristics occur in mountainous regions in response to significant variations of elevation, aspect, and slope, over short distances. In areas of mountainous terrain, isotherms are representative of valley conditions only. A discontinuous line symbol is used over water bodies to indicate approximate values.



This map sheet was prepared in association with the Canadian Climate Centre, Atmospheric Environment Service, Environment Canada. Research by G.E. Bristow, R.B. Crowe and D.W. Phillips, Canadian Climate Centre; J.E. Kendal, Atmospheric Environment Service; and D. Richardson-Bélisle and S.A. Kelly, with assistance from C. Gosson, Geographical Research, Geographical Services Division, Surveys and Mapping Branch, Energy, Mines and Resources Canada.

Cartography by Cartography and Toponymy, Geographical Services Division, Surveys and Mapping Branch, Energy, Mines and Resources Canada.

Sources:

Bristow, G.E. 1978. January Mean Daily Temperature. Unpublished manuscript map. Scale 1:5 000 000. Downsview, Ontario: Environment Canada, Atmospheric Environment Service, Canadian Climate Centre.

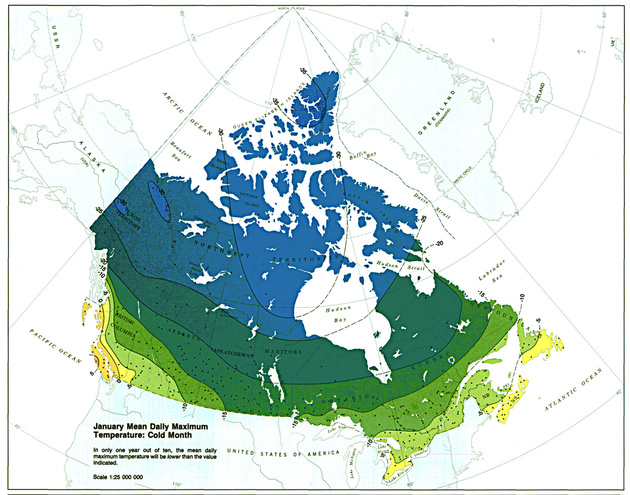
Crowe, R.B. 1978. July Mean Daily Temperature. Unpublished manuscript map. Scale 1:5 000 000. Downsview, Ontario: Environment Canada, Atmospheric Environment Service, Canadian Climate Centre.

Kendal, G.R., and Anderson, S.R. 1966. *Standard Deviations of Monthly and Annual Mean Temperatures.* Climatological Studies Number 4. Toronto: Canada Department of Transport, Meteorological Branch.

Phillips, D.W. 1979. Standard Deviations of January Mean Daily Temperature. Unpublished manuscript map. Scale 1:10 000 000. Downsview, Ontario: Environment Canada, Atmospheric Environment Service, Canadian Climate Centre.

_____ 1979. Standard Deviations of July Mean Daily Temperature. Unpublished manuscript map. Scale 1:10 000 000. Downsview, Ontario: Environment Canada, Atmospheric Environment Service, Canadian Climate Centre.

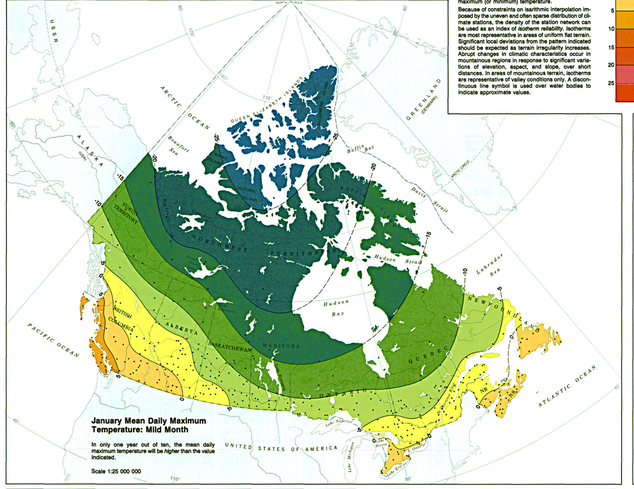
Richardson-Bélisle, D. 1984. Climatic Regions of Canada. Unpublished manuscript maps. Scale 1:10 000 000. Ottawa: Energy, Mines and Resources Canada, Surveys and Mapping Branch.



January Mean Daily Maximum Temperature: Cold Month

In only one year out of ten, the mean daily maximum temperature will be *lower* than the value indicated.

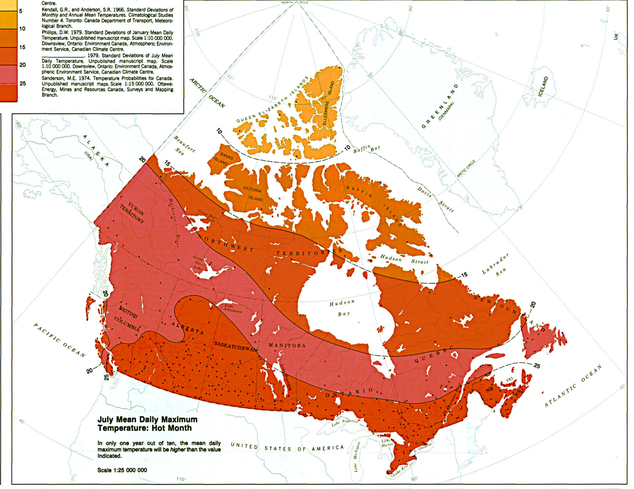
Scale 1:25 000 000



January Mean Daily Maximum Temperature: Mild Month

In only one year out of ten, the mean daily maximum temperature will be *higher* than the value indicated.

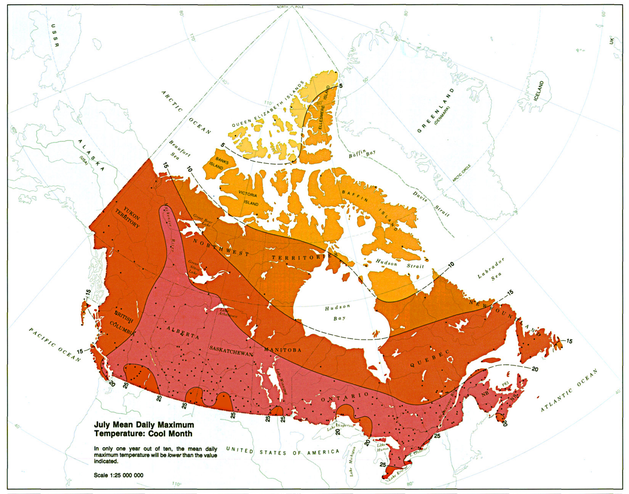
Scale 1:25 000 000



July Mean Daily Maximum Temperature: Hot Month

In only one year out of ten, the mean daily maximum temperature will be *higher* than the value indicated.

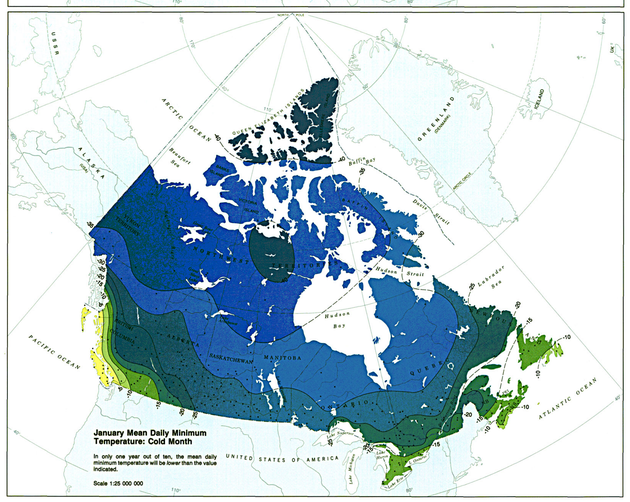
Scale 1:25 000 000



July Mean Daily Maximum Temperature: Cool Month

In only one year out of ten, the mean daily maximum temperature will be *lower* than the value indicated.

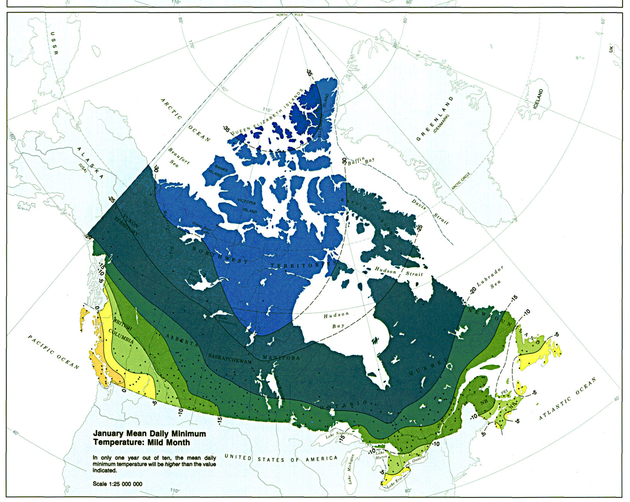
Scale 1:25 000 000



January Mean Daily Minimum Temperature: Cold Month

In only one year out of ten, the mean daily minimum temperature will be *lower* than the value indicated.

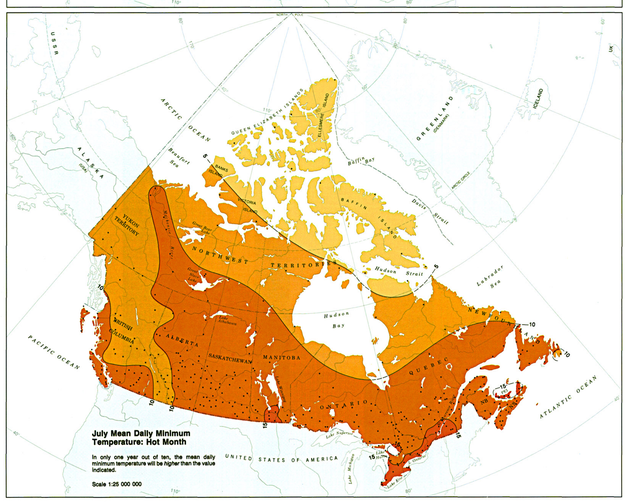
Scale 1:25 000 000



January Mean Daily Minimum Temperature: Mild Month

In only one year out of ten, the mean daily minimum temperature will be *higher* than the value indicated.

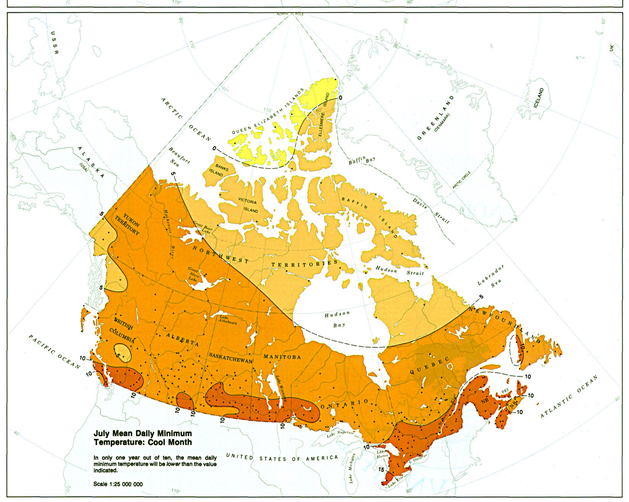
Scale 1:25 000 000



July Mean Daily Minimum Temperature: Hot Month

In only one year out of ten, the mean daily minimum temperature will be *higher* than the value indicated.

Scale 1:25 000 000



July Mean Daily Minimum Temperature: Cool Month

In only one year out of ten, the mean daily minimum temperature will be *lower* than the value indicated.

Scale 1:25 000 000

Canada