Environment Canada Imaging Cover Page

Report N.: 

SKP Box Number: 672572447

THE COLDEST PLACE IN ONTARIO

by
G. R. Kendall

The question is frequently asked "What is the coldest place in Ontario". The answer to this question depends on what we mean by coldest. If we mean the coldest most of the time then an appropriate measure ought to be the mean annual temperature. Table I gives values for a few of the colder stations in the province.

TABLE I

ANNUAL MEAN TEMPERATURE (Deg. F.)
(based on the period 1931-1960)

	Station	Mean Annual Temp.	Lat. °	Lat. '		Station	Mean Annual Temp.	Lat. °	Lat. '
1	Winisk*	22.3	55	14	12	Longlac	32.3	49	45
2	Trout Lake	26.5	53	50	13	Graham	32.7	49	16
3	Central Patricia**	29.1	51	30	14	White River	33.0	48	36
4	Lansdowne House	29.4	52	14	15	Quorn	33.1	49	25
5	Moosonee	30.1	51	16	16	Foleyet	33.3	48	15
6	Pickle Lake	30.2	51	27	17	Kapuskasing	33.4	49	25
7	Armstrong	30.9	50	17	18	Ignace	33.7	49	25
8	Abitibi Canyon	31.7	49	53	19	Iroquois Falls	33.8	48	45
9	Nakina	31.7	50	11	20	Cochrane	33.9	49	04
10	Smoky Falls	31.7	50	04	21	Wawaitin	33.9	48	21
11	Hornepayne	32.0	49	14					

* based on 1960 to 1963
** based on 1953 to 1956

The latitude has been added to show that generally the farther north a station is the lower its annual mean temperature. Data for Winisk have not been included despite its short record to represent the extreme northern part of the Province. For the four years sampled it has averaged 4.4 degrees F. lower than the next coldest place Trout Lake. It is reasonable to suppose that more observations will still leave Winisk colder than Trout Lake. Similarly data for Central Patricia have been included as a matter of interest, despite its short record.

For many people "coldest" means "generally coldest in winter". In this case the comparison should be of mean temperatures in the coldest month, which in northern Ontario is January. Table II shows January mean daily temperatures for the stations with the lowest values of this parameter.

.....2

TABLE II

JANUARY MEAN DAILY TEMPERATURES (Deg. F.)
(based on period 1931-1960)

	Station	Jan. Mean Temp.		Station	Jan. Mean Temp.		Station	Jan. Mean Temp.
1	Winisk*	-13.5	10	Longlac	-2.6	19	Ear Falls	0.1
2	Trout Lake	-11.0	11	Graham	-1.7	20	Pagwa	0.6
3	Central Patricia**	- 9.0	12	Ignace	-1.1	21	Foleyet	1.1
4	Lansdowne House	- 7.9	13	Dryden	-0.8	22	Kenora	1.3
5	Pickle Lake	- 6.0	14	Quorn	-0.8	23	Kirkland Lake	1.6
6	Moosonee	- 5.1	15	Kapuskasing	-0.7	24	Emo	1.6
7	Smoky Falls	- 3.5	16	Hornepayne	-0.7	25	Atikokan	1.7
8	Abitibi Canyon	- 3.0	17	Sioux Lookout	-0.4	26	White River	1.7
9	Armstrong	- 2.8	18	Iroquois Falls	-0.1			

*based on 1960 to 1964
**based on 1953 to 1959

Once again Winisk and Central Patricia have been included, despite their short records, for interest. Winisk is colder than any other station, although its margin over Trout Lake is not quite as great as was the case with the mean annual temperatures, probably because the moderating effect of Hudson Bay will give higher temperatures in winter, and lower in summer. The five coldest places of Table I are still the five coldest in Table II, and in almost the same order. Thus for mean temperatures the effect of latitude is still predominant in January as it was for the year as a whole.

It is possible that "coldest" could be taken to refer to the coldest day of the year. By averaging the coldest day over a number of years a value is obtained of the lowest temperature in an average year thus getting a comparative figure not unduly influenced by one exceptional year. Table III shows for a number of cold stations the average of the lowest temperature during the years 1951 to 1960.

TABLE III

MEAN ANNUAL MINIMA (Deg. F.) 1951-60

	Station	Average	No. of Years		Station	Average	No. of Years
1	Central Patricia	-54	5	9	Foleyet	-46	9
2	Armstrong	-49	10	10	Franz	-46	9
3	Graham	-48	10	11	Pickle Lake	-46	5
4	Hornepayne	-48	8	12	Quorn	-45	9
5	Longlac	-48	8	13	Winisk	-45	6
6	Trout Lake	-47	10	14	Lansdowne House	-44	10
7	White River	-47	10	15	Abitibi Canyon	-44	10
8	Atikokan	-46	9	16	Nakina	-44	10

.....3

This time the coldest station turns out to be Central Patricia, the only station among the first five of previous tables to be near the top in this one, while Winisk is now 18th, and Trout Lake 6th. This reflects the influence of radiational cooling on minimum temperatures, which is here great enough to overcome the effect of latitude.

The lowest temperature ever recorded at a station is always a matter of great interest. As a means of comparing one station with another it leaves something to be desired unless observations for the same years are considered. Table IV gives the lowest temperature ever recorded at the coldest stations in Ontario from this point of view.

TABLE IV

LOWEST TEMPERATURES ON RECORD (Deg. F.)

	Station	Lowest Temp.	Date	Years of Observations
1	Iroquois Falls	-73	Jan. 23, 1935	1913 - 1962
2	Central Patricia	-65	Jan. 5, 1959	1953 - 1959
3	Hornepayne	-63	Jan. 23, 1935	1917 - 1962
4	White River	-61	Jan. 23, 1935	1886 - 1962
5	Ingolf	-60	Feb. 7, 1933	1928 - 1941
6	Franz	-59	Jan. 23, 1935	1918 - 1960
7	Oba	-59	Jan. 23, 1935	1926 - 1938
8	Armstrong	-58	Jan. 29, 1957	1930 - 1962
9	Heaslip	-58	Jan. 10, 1942	1928 - 1962
10	Longlac	-58	Dec. 30, 1953	1921 - 1962
11	Waboose Dam	-58	Jan. 29, 1946	1941 - 1956

In the case of Longlac and Waboose Dam the low temperatures given in the table were equalled on a subsequent occasion. The table shows that January 23, 1935 was the coldest on record at a number of stations and for this reason has a good claim to be called the coldest day.

Climatology Division,
Meteorological Branch,
315 Bloor Street, West
Toronto 5, Ontario.

July 31, 1964.