

Environment Canada Imaging Cover Page

Report N.:



\* C D S - 1 1 - 5 9 \*

SKP Box Number: 672572447

KINCARDINE CLIMATIC DATA

Since the announcement by the Government of the proposed construction of an Atomic Reactor Power Plant at Kincardine, Ontario, the Meteorological Branch has had many requests for climatic data from this area. Although no weather observations have been taken in Kincardine since 1898, there are numerous other reporting stations in Bruce, Grey, and Huron Counties where daily climatological observations are taken. In 1959, the nearest stations where hourly weather observations are observed and recorded are Wiarton 33 miles to the NNE, and Centralia 64 miles to the S.

Table I is entitled "Climatological Data for Building Design in Canada", and lists estimated values for the town of Kincardine. These data have been estimated from maps and climatic data tables for nearby stations and are provided for convenience in using the National Building Code of Canada - 1953.

Table II contains basic climatic data from four nearby stations - Southampton and Goderich are, like Kincardine, located on the lake, while Lucknow is 12 miles inland, and Walkerton 24 miles inland. The average or normal values of temperature and precipitation given in these tables are based on thirty years of record from 1921 to 1950. On the other hand, the extremes are for the total period of record at each station, which is also shown.

Table III shows percentage frequencies of wind direction by months according to the eight cardinal directions. Average wind speeds in miles per hour from each direction for each month are also shown. Data are listed in these tables for Southampton and Centralia.

For those who wish to delve further into the meteorological literature of this part of Ontario, a limited number of copies of a selected bibliography on the climate of the Great Lakes basin of Ontario are available. Other bibliographic material available includes a short reference list to publications concerning the climate of Canada, and an index of temperature and precipitation reporting stations in the Province of Ontario.

During recent years, the Meteorological Branch have been transferring climatic data to punched cards to facilitate processing and project work. Hourly weather data including temperature, wind, humidity, pressure etc., are available in our punched card library from London, Centralia and Wiarton since 1950. In addition, basic daily temperature and precipitation data are now available on punched cards since 1950 for about 35 stations within 50 miles of Kincardine.

Climatological Data for Building Design in Canada

Province: Ontario

Town: Kincardine

Elevation: 650 ft.

Location: Bruce County on Lake Huron

Design Temperatures ( F)	1%	2½%	5%	10%
Winter Dry-bulb	-3	1	5	9
Summer Dry-bulb	88	86	83	80
Annual Degree-days below 65 F (Heating)	7600			
January Mean Minimum Temperature ( F)	15			
Mean Annual Minimum Temperature ( F)	-13			
Record Minimum Temperature ( F)	-30			
July Mean Maximum Temperature ( F)	77			
Mean Annual Maximum Temperature ( F)	90			
Record Maximum Temperature ( F)	98			
Max. 15-minute Rainfall in 10 years (in)	0.95			
Annual Total Precipitation (in)	33.8			
Annual Total Snowfall (in)	100			
Computed Maximum Snow Load (lb./sq.ft.)	70			
Computed Maximum Wind Gust Speed (mi./hr.)	95			

Since no meteorological records have been kept at Kincardine in recent decades these values are estimates based on data from other observing stations in that part of Ontario.

NORMAL AND EXTREME CLIMATIC DATA

GODERICH, ONT. (RIDGECREST)

Normal or average data (1921-1950)

<u>Temperature (°F)</u>	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Mean Daily Max	28.6	28.1	36.7	49.0	62.2	72.7	77.5	75.6	68.8	56.6	43.1	32.2	52.6
Mean Daily Min	16.4	14.3	21.5	31.7	41.7	51.8	57.0	56.0	50.2	40.4	31.2	21.1	36.1
Mean Temp.	22.4	21.2	29.1	40.4	51.9	62.3	67.3	65.8	59.5	48.5	37.1	26.6	44.3

Precipitation (in)

Rainfall	1.07	0.94	1.23	2.16	2.55	3.03	2.97	2.15	3.25	2.92	2.33	1.42	26.02
Snowfall	16.1	11.2	8.3	2.2	0.1	0	0	0	0	0.1	9.4	14.3	61.7
Total Precip.	2.68	2.06	2.06	2.38	2.56	3.03	2.97	2.15	3.25	2.93	3.27	2.85	32.19

Extreme Data - period 1912-1958.

Extreme High	63	59	74	84	87	95	99	98	95	82	70	60	—
Extreme Low	-18	-27	-11	0	18	23	32	34	25	21	0	-18	—
Heaviest Snowfall	40.0	32.0	29.0	9.0	8.0	0	0	0	0	3.5	32.0	43.0	—
" Total Precip.	5.45	7.27	3.65	4.94	5.68	7.63	6.90	6.31	6.36	9.41	5.71	5.81	—

LUCKNOW, ONT.

Normal or Average data (1921-1950)

<u>Temperature (°F)</u>	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Mean Daily Max.	28.2	28.1	36.9	50.8	64.0	74.1	79.3	77.7	70.2	57.7	42.8	31.3	53.4
Mean Daily Min	13.9	11.7	19.2	29.9	40.4	50.0	55.4	54.5	48.1	38.4	29.1	18.8	34.1
Mean Temp.	21.1	19.9	28.0	40.3	52.2	62.1	67.4	66.1	59.1	48.0	36.0	25.1	43.8

Precipitation (in)

Rainfall	0.60	0.45	0.87	1.94	2.68	2.71	3.27	2.14	2.98	2.85	1.99	1.08	23.50
Snowfall	25.5	19.2	13.7	5.1	0.6	0	0	0	0	1.9	13.2	24.0	103.2
Total Precip.	3.15	2.37	2.24	2.45	2.74	2.71	3.27	2.14	2.98	3.04	3.31	3.48	33.80

Extreme Data - period 1886-1958

Extreme High	64	58	78	86	92	96	101	99	97	90	74	65	—
Extreme Low	-26	-34	-25	-12	18	26	32	32	23	10	-9	-23	—
Heaviest Snowfall	62.8	63.5	30.5	17.3	11.3	0	0	0	0.5	19.8	46.5	74.0	—
" Total Precip.	6.62	6.50	4.41	7.45	7.06	6.67	9.63	6.24	7.59	10.34	8.71	8.27	—

NORMAL AND EXTREME CLIMATIC DATA CONT'D:

SOUTHAMPTON, ONT.

Normal or average data (1921-1950)

Temperature (°F)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Mean Daily Max	28.1	27.4	35.7	48.0	59.7	70.0	75.9	75.7	68.8	57.2	43.5	32.2	51.8
Mean Daily Min	14.5	12.7	20.7	31.3	41.1	50.5	56.4	55.8	50.2	40.3	31.0	20.3	35.4
Mean Temp.	21.3	20.0	28.2	39.6	50.4	60.2	66.2	65.8	59.5	48.8	37.2	26.2	43.6

Precipitation (in)

Rainfall	0.65	0.60	1.37	2.14	2.86	2.86	2.57	2.51	3.09	3.07	2.46	1.11	25.29
Snowfall	30.4	22.4	16.5	4.8	0.6	0	0	0	T	0.8	12.2	28.7	116.4
Total Precip.	3.69	2.84	3.02	2.62	2.92	2.86	2.57	2.51	3.09	3.15	3.68	3.98	36.93

Extreme Data - period 1875-1958

Extreme High	66	59	78	82	90	94	97	96	92	86	77	70	—
Extreme Low	-24	-35	-21	-10	22	30	37	34	26	12	-13	-17	—
Heaviest Snowfall	68.1	56.2	36.0	24.0	14.0	0	0	0	0.2	10.2	32.0	69.8	—
" Total Precip.	7.55	5.64	5.55	7.71	6.81	6.71	6.58	7.10	7.19	7.60	7.09	8.86	—

WALKERTON, ONT.

Normal or average data (1921-1950)

Temperature (°F)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Mean Daily Max.	28.1	28.8	37.4	51.7	65.6	76.1	80.8	79.3	71.3	58.9	43.7	31.1	54.3
Mean Daily Min.	14.0	12.2	20.6	31.9	41.4	50.8	54.7	53.4	48.1	38.1	30.2	19.4	34.6
Mean Temp.	21.1	20.5	29.0	41.8	53.5	63.5	67.8	66.3	59.7	48.5	37.0	25.2	44.5

Precipitation (in)

Rainfall	0.74	0.60	1.11	2.03	2.94	3.07	3.10	2.39	3.19	3.17	2.28	0.95	25.57
Snowfall	29.3	19.6	14.8	4.8	0.4	0	0	0	0	1.3	11.3	24.0	105.5
Total Precip.	3.67	2.56	2.59	2.51	2.98	3.07	3.10	2.39	3.19	3.30	3.41	3.35	36.12

Extreme Data - period 1915-1958

Extreme High	61	60	78	87	90	99	102	99	100	89	76	62	—
Extreme Low	-33	-43	-35	4	22	28	34	31	25	10	-13	-23	—
Heaviest Snowfall	98.0	35.0	47.5	18.0	2.0	0	0	0	0	13.0	43.0	43.0	—
" Total Precip.	9.80	5.30	5.48	6.09	7.16	6.53	5.64	5.88	6.65	8.78	6.49	6.35	—

WIND DATA

Station: CENTRALIA (A), Ontario.  
Period : August 1950 - December 1954

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
<u>Percentage Frequency (by directions)</u>													
North %	8	6	4	8	9	6	8	9	7	10	8	4	7
Northeast "	8	8	8	8	7	3	4	6	5	7	5	5	6
East "	10	7	13	18	14	9	8	11	11	10	8	11	11
Southeast "	15	14	17	11	11	21	11	13	14	14	14	11	14
South "	15	14	8	11	12	13	18	18	19	21	22	18	16
Southwest "	16	14	11	11	7	11	12	8	14	14	19	23	13
West "	14	17	18	18	17	20	19	19	18	12	15	16	17
Northwest "	12	18	19	13	19	14	17	14	11	11	8	9	14
Calm "	2	2	2	2	4	3	3	2	1	1	1	3	2

Average Wind Speed in Miles per Hour (by directions)

North %	10.1	9.3	7.8	8.7	7.8	7.0	6.2	6.5	6.9	7.8	8.8	7.4
Northeast "	9.0	10.5	9.0	9.7	7.5	6.1	5.9	6.3	7.5	7.8	11.3	8.6
East "	10.5	10.3	14.5	12.6	10.5	8.9	5.9	6.9	9.9	7.9	9.3	11.2
Southeast "	11.0	14.0	13.5	12.9	11.4	10.3	7.7	8.1	9.9	9.8	12.1	12.1
South "	12.2	13.0	12.4	12.8	11.5	10.4	9.8	8.5	10.5	11.3	12.4	12.3
Southwest "	13.4	14.0	15.4	13.8	10.7	11.8	10.9	9.5	11.9	12.0	15.2	14.6
West "	15.0	14.1	15.5	13.9	12.4	12.1	10.9	11.3	13.9	12.0	15.7	16.8
Northwest "	15.5	14.2	15.3	14.2	11.5	10.5	10.0	10.2	12.1	13.6	14.4	14.4

Average Wind Speed in Miles per Hour

12.2 12.8 13.5 12.4 10.3 10.1 8.9 8.6 10.9 10.4 12.8 12.9 11.3

Station: SOUTHAMPTON, ONT.  
Period : January 1937 - November 1952 (broken)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
<u>Percentage Frequency (by directions)</u>													
North %	11	13	13	17	15	12	15	13	12	13	12	11	13
Northeast "	7	10	9	8	6	5	5	7	7	8	5	5	7
East "	12	11	13	9	12	6	6	7	6	9	9	9	11
Southeast "	13	11	10	10	12	11	8	11	13	11	10	13	11
South "	17	15	16	14	13	15	19	18	18	20	22	19	17
Southwest "	15	13	13	15	15	22	19	20	18	13	16	15	14
West "	11	11	11	11	10	8	11	8	6	8	13	14	11
Northwest "	12	11	11	11	11	11	11	11	11	11	11	11	11

\*NOTE: \* indicates less than 0.5%

MKT:dmp  
November 23, 1959.

Meteorological Branch,  
Toronto, Ontario.