

U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
 IN COOPERATION WITH CONSUMERS POWER COMPANY
 CLIMATOGRAPHY OF THE UNITED STATES NO. 20 - 20

LATITUDE 41° 57' N
 LONGITUDE 85° 00' W
 ELEV. (GROUND) 984 Feet

CLIMATOLOGICAL SUMMARY

STATION COLDWATER, MICHIGAN

MEANS AND EXTREMES FOR PERIOD 1927 - 1956

Month	Temperature (°F)									** Mean degree days	Precipitation Totals (Inches)							Mean number of days						Month
	Means			Extremes			Mean	Greatest daily	Year		Snow, Sleet				Precip. .10 inch or more	Temperatures		90° and above	32° and below	32° and below	0° and below			
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest					Year	Mean	Maximum monthly	Year		Greatest daily	Year					Max.	Min.	
	(a)																							
JANUARY	33.3	18.2	25.8	67	1930	-18	1930	1180	1.93	1.54	1932	7.0	28.0	1939	10.0	1939	5	0	14	29	3	JANUARY		
FEBRUARY	35.4	18.8	27.1	67	1950	-22	1929	1120	1.72	2.52	1954	7.1	17.0	1936	7.0	1932	5	0	11	26	2	FEBRUARY		
MARCH	44.7	26.2	35.5	80	1933	-10	1943	890	2.45	1.83	1949	5.9	20.5	1934	8.0	1934	6	0	5	24	*	MARCH		
APRIL	58.0	36.4	47.2	86	1942+	14	1940	520	3.28	3.07	1950	1.5	10.0	1938	10.0	1938	7	0	*	11	0	APRIL		
MAY	69.6	47.1	58.4	92	1929	25	1943	240	3.75	1.98	1943	T	T	1947+	T	1947+	8	*	0	2	0	MAY		
JUNE	79.6	57.3	68.4	102	1934	34	1929+	60	4.24	3.02	1937	0	0		0		8	3	0	0	0	JUNE		
JULY	84.9	61.1	73.1	108	1934	40	1941	10	3.62	3.40	1943	0	0		0		5	7	0	0	0	JULY		
AUGUST	82.9	58.8	70.9	100	1936	37	1946	20	2.81	3.06	1942	0	0		0		5	6	0	0	0	AUGUST		
SEPTEMBER	75.8	52.2	64.1	99	1933	27	1951+	110	3.17	3.00	1927	0	0		0		6	2	0	1	0	SEPTEMBER		
OCTOBER	64.2	42.1	53.2	89	1951	20	1928	370	2.47	1.52	1954	T	T	1943+	T	1943+	5	0	0	6	0	OCTOBER		
NOVEMBER	47.4	31.2	39.3	78	1930	-4	1950	770	2.44	1.40	1935	3.8	13.2	1955	7.0	1955+	6	0	3	7	*	NOVEMBER		
DECEMBER	35.6	21.7	28.7	67	1932	-10	1951	1100	1.78	2.00	1932	6.7	22.8	1951	7.5	1951	5	0	12	27	1	DECEMBER		
Year	59.3	39.6	49.3	108	JULY 1934	FEB. 1929	-22	6390	33.63	3.40	1943	32.0	28.0	1939	10.0	1939+	71	18	45	133	6	Year		

(a) Average length of record, years.

+ Also on earlier dates, months, or years.

T Trace, an amount too small to measure.

* Less than one half.

** Base 65°F

CLIMATE OF COLDWATER, MICHIGAN

Coldwater is in the south-central section of Lower Michigan, thirteen miles north of the Ohio border. The surface of the ground in the Coldwater area is gently rolling, and the soil is mostly sandy loam.

The inland, southerly location of Coldwater, away from the Lakes, lessens the lake influence to some extent, but this influence still has a considerable effect in moderating the climate. Prevailing westerly winds are cooled in the summer and warmed in the winter as they cross Lake Michigan. However, winds from a southerly direction come over long land surfaces, unaffected by the lake waters, so there is variation from a modified maritime to continental climate.

Available weather data for the Coldwater area show that the highest temperature ever recorded here was 108° on July 24, 1934, and the lowest of record was -22° on February 20, 1929. Winters average six days with temperatures reaching zero or lower. About one out of ten winters does not have a temperature as low as zero. At the other temperature extremes, 100° or higher is recorded in about one summer out of five, and days with 90° or above average eighteen per summer.

On the basis of mean temperature, January 1920, with a mean temperature of 15.5°, was the coldest of record, and July 1934, with a mean temperature of 78.9°, was the warmest. The average dates of the last freezing temperature in the spring and the first in the fall are May 10th and October 6th, respectively.

Precipitation is heaviest during the growing months or "crop season," averaging 62% of the annual total during the six months April-September. Heaviest precipitation is in June when the average is 4.24". The month with lightest precipitation is February, with an average of 1.72". The greatest monthly record of precipitation is 9.34", in September of 1936, and the driest month of record was September 1904, when only 0.10" was measured. The heaviest intensity of rainfall for a 24 hour period was 5.30" on October 12, 1901.

Snowfall totals 32.0" during an average winter in Coldwater, which is about the same as at other points in south-central and southeastern

Lower Michigan, but only about half that received in the so-called Lake Michigan snow belt along the western side of the Lower Peninsula. Six months of the year have measurable amounts, on the average. February has the heaviest average, 7.1", with January a close second with an average of 7.0". The heaviest recorded for a single day was 10.0" on January 30, 1939 and April 6, 1938.

Cloudiness is greatest in late fall and early winter, and least in spring and summer. This is accentuated, especially late fall cloudiness, by the prevailing westerly air currents passing over Lake Michigan. Temperature contrasts between the colder air and relatively warm water are greater at that time, and the result is the addition of warmth and moisture to the lower layers of the air, causing instability and, later, condensation and cloudiness. Coldwater is not affected by this condition as much as localities near Lake Michigan. However, the entire Lower Peninsula has increased cloudiness from this action during this period of the year, but also enjoys warmer temperatures than would normally occur at this latitude.

Degree day data is provided as an index of heating requirements for buildings. For example, October averages 370 degree days and November, 770, which means that for an average November, fuel necessary for heating will be approximately twice that required for October. Degree days for a single day are obtained by subtracting the mean temperature from 65. The need for the heating of buildings is considered none or slight if a day has an average temperature of 65° or higher.

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Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1927	1.32	0.85	1.80	3.75	3.80	1.90	3.10	1.43	9.33	1.70	5.20	2.50	36.68
1928	1.28	1.32	0.74	3.75	2.59	4.27	3.16	2.45	2.45	1.96	1.73	0.34	25.33
1929	3.57	0.73	2.00	5.55	3.80	3.90	1.30	3.76	3.66	1.19	1.19	1.95	29.62
1930	2.73	1.31	0.90	2.01	2.05	3.40	2.01	0.85	1.46	1.26	1.57	0.30	18.01
1931	0.92	0.94	1.60	1.35	3.81	7.58	1.20	2.61	5.46	1.53	4.52	2.26	33.78
1932	3.81	2.70	2.20	2.33	2.97	4.07	3.77	5.29	5.28	4.15	2.38	3.47	42.42
1933	0.83	2.48	2.36	3.78	4.73	2.91	2.46	1.53	4.23	2.80	0.93	0.98	30.02
1934	1.48	0.22	2.76	2.14	1.84	1.71	1.56	2.91	4.03	2.62	2.62	2.38	24.55
1935	2.31	1.81	2.24	2.60	5.41	4.09	2.26	3.70	1.61	1.43	4.99	0.53	32.68
1936	0.46	1.22	1.47	2.93	1.60	2.58	1.50	1.46	9.34	2.59	2.69	2.01	29.85
1937	2.59	1.33	0.50	4.32	3.84	9.56	4.16	2.13	2.49	1.67	2.40	1.07	36.06
1938	1.03	1.97	1.91	3.03	5.38	5.16	6.94	2.06	0.66	0.52	0.95	2.62	34.27
1939	3.27	4.40	2.90	4.65	1.81	4.44	2.53	2.17	2.17	2.21	0.96	0.77	34.56
1940	1.91	1.75	2.24	2.13	3.92	7.82	2.31	5.57	0.55	2.56	2.94	2.17	35.53
1941	1.88	0.71	1.01	2.46	3.86	4.51	0.61	1.61	1.45	6.43	2.60	1.52	28.05
1942	1.81	1.19	3.75	1.94	2.25	4.18	3.26	6.04	2.00	2.32	2.12	2.13	32.99
1943	1.36	0.70	3.26	2.44	8.52	2.76	6.09	2.10	2.11	1.19	2.43	0.35	33.51
1944	1.32	2.06	3.91	3.52	5.34	2.65	0.83	1.90	1.64	2.14	2.14	1.51	27.51
1945	0.91	1.08	3.34	3.66	5.68	2.78	3.51	4.06	4.62	2.39	1.27	1.30	34.40
1946	0.82	0.96	2.80	1.44	3.35	2.93	0.60	1.96	4.62	2.80	2.79	2.37	25.86
1947	3.08	1.37	2.79	7.69	8.13	4.97	1.89	3.61	4.49	1.65	2.29	2.47	44.43
1948	1.23	2.45	3.83	2.75	4.34	4.02	1.91	2.27	3.89	0.85	3.47	2.33	34.27
1949	3.48	2.57	3.07	1.92	7.76	7.40	3.75	2.28	3.72	1.43	1.43	4.21	42.45
1950	4.61	3.18	3.62	7.76	4.08	6.38	5.17	0.74	5.08	1.30	3.28	1.96	44.50
1951	1.94	3.18	3.18	4.02	3.77	4.53	4.49	2.38	5.27	2.67	3.42	4.02	40.89
1952	2.01	1.28	2.08	3.84	4.39	3.36	4.23	3.27	1.96	1.48	2.73	1.83	32.88
1953	2.43	0.85	2.15	2.65	2.52	2.76	2.76	2.58	2.02	1.19	1.05	1.36	22.85
1954	1.64	4.23	3.92	3.75	2.07	5.69	2.87	3.25	1.91	7.45	2.64	1.75	41.17
1955	1.95	1.66	2.95	1.98	1.89	3.35	3.65	4.20	2.77	5.08	3.33	0.21	33.22
1956	0.89	2.24	2.30	4.36	4.32	2.91	4.95	1.99	0.57	0.30	2.07	1.46	28.36

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1927	24.4	32.9	39.9	46.6	56.5	64.1	71.9	65.4	68.4	55.6	42.4	26.2	49.5
1928	23.4	27.6	34.8	43.4	59.0	61.6	73.2	72.1	59.9	54.2	39.9	26.2	48.3
1929	27.6	19.5	40.4	46.9	55.0	64.4	72.9	68.7	63.2	49.0	35.1	20.6	46.6
1930	21.1	34.8	33.6	47.4	60.3	68.3	74.5	71.3	68.4	50.9	41.9	27.5	50.0
1931	29.4	35.1	34.7	50.9	59.0	70.1	76.0	70.4	68.5	57.6	46.0	34.4	52.7
1932	34.5	32.6	29.7	46.5	56.7	68.9	73.7	72.6	69.3	52.9	35.3	29.9	49.9
1933	34.9	26.8	35.0	49.3	62.1	75.8	75.9	70.5	69.3	50.1	37.4	29.8	51.4
1934	31.9	18.1	30.7	46.6	64.7	77.2	78.9	72.3	66.6	53.7	44.1	26.1	50.9
1935	25.2	42.2	42.2	48.3	53.5	66.5	77.4	73.6	63.7	52.8	39.3	24.1	49.3
1936	20.0	16.1	38.9	44.2	64.5	69.2	78.3	77.1	68.3	53.0	36.5	33.4	50.0
1937	29.7	28.2	32.4	48.7	61.0	68.2	75.0	75.8	64.3	50.7	38.5	28.8	50.0
1938	26.4	33.0	44.2	50.9	59.9	68.2	72.7	73.9	63.6	56.5	41.6	28.2	51.6
1939	27.2	25.8	35.2	43.5	62.0	70.4	72.0	70.8	66.7	53.0	38.0	32.6	49.8
1940	15.4	25.4	28.2	42.8	54.9	68.0	72.3	69.6	60.7	50.0	36.4	24.3	46.5
1941	28.4	23.3	29.7	48.9	61.0	68.2	71.8	70.0	67.2	54.1	41.5	34.9	50.0
1942	24.2	20.9	36.6	52.0	59.1	68.0	71.8	68.4	60.5	51.1	40.2	23.5	48.0
1943	20.9	27.4	32.3	42.4	55.5	71.2	71.3	69.7	59.3	49.0	35.9	23.8	46.7
1944	30.0	28.0	30.4	43.7	64.0	71.4	73.2	73.0	63.9	50.6	41.3	22.9	49.4
1945	17.2	27.7	47.6	49.7	51.6	64.6	69.2	66.0	63.6	50.0	40.9	47.8	47.8
1946	27.0	27.3	47.7	48.5	56.1	66.7	72.4	66.6	64.0	57.0	43.0	31.8	50.7
1947	27.5	19.9	29.0	46.0	53.0	64.3	68.6	76.3	63.9	59.1	34.6	27.6	47.5
1948	17.5	23.7	34.3	50.8	55.1	65.3	71.5	70.0	65.2	47.7	42.8	30.2	47.8
1949	29.2	29.1	35.2	45.9	58.7	70.9	74.8	70.4	57.8	56.6	37.9	31.9	49.9
1950	28.1	25.6	30.5	41.6	59.1	66.7	68.2	68.1	61.7	55.7	35.0	21.8	47.2
1951	27.4	26.9	36.3	45.3	59.9	66.0	70.2	67.2	60.4	54.7	32.4	28.3	47.8
1952	28.2	30.8	34.0	44.4	56.0	71.3	73.6	68.9	62.7	46.4	41.8	28.0	49.5
1953	29.2	31.6	37.8	48.5	60.7	70.9	72.9	70.9	63.5	55.8	42.8	32.3	51.1
1954	26.1	34.1	33.6	51.8	63.7	70.6	70.7	69.1	65.3	54.3	40.1	29.1	49.8
1955	24.8	27.5	35.9	54.3	60.4	65.5	76.6	74.6	64.6	54.3	36.3	26.0	48.5
1956	24.2	27.1	32.9	45.2	57.8	69.5	70.0	69.9	61.4	57.0	40.2	33.7	49.1

STATION HISTORY

Weather records in Coldwater began in July 1868, and continued to July 1871. Other periods of observation are January 1879 to February 1882, and July 1882 to May 1884. These records are stored in the Smithsonian Institute. Details, such as the exact location of the station and exposure of the instruments during these periods, are unknown.

On August 1, 1887, the station was established at the State Public School, and observations were made until October 31, 1888.

Since March 30, 1897, weather observations at Coldwater have been continuous. The station was located near the station house of the L&N Railroad (later NTC) and observations made by railway agents from 1897 to April 30, 1932. This location was 0.2 of a mile south of the Post Office.

On May 1, 1932, the station was moved to a location at the State Public School, 1.5 miles north-northeast of the Post Office. On May 13, 1940, the station was moved to the grounds of the new power plant at the school, and the school name was changed to Coldwater State Home and Training School. The station has remained at this location up to the present time.

DATES OF FREEZING TEMPERATURES IN SPRING AND FALL (1921 - 1950)

Minimum Temperature	Earliest	Last in Spring	Earliest	Latest
32° or lower	4/16/37	5/10	5/18/25	9/11/43
28° or lower	3/28/32	4/24	5/1/26	10/20
24° or lower	3/13/45	4/9	5/1/26	10/7/35
20° or lower	3/4/27 & 42	3/29	4/23/30	10/29/25
16° or lower	2/14/31	3/18	4/15/43	11/7/30

Example in using table: The average date of the last temperature of 32° or colder in the spring is May 10th. The earliest date of this event in all springs of the 1921 - 1950 period was April 16th in 1937. The latest date was May 26th in 1925. In the fall, 32° or colder occurred for the first time as early as September 11 (1943) and as late as October 26 (1936 and 1941). The average date is October 6th.