U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
IN COOPERATION WITH Michigan Weather Service
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 — 20

LATITUDE 43°27'
LONGITUDE 83°24'
ELEV. (GROUND) 670'

CLIMATOLOGICAL SUMMARY

STATION Caro, Michigan

MEANS AND EXTREMES FOR PERIOD 1931-1960

Month	Temperature (°F) Means: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	** Mean degree days	Precipitation Totals (Inches): Mean	Greatest daily	Year	Snow, Sleet: Mean	Maximum monthly	Year	Greatest daily	Year	Mean number of days: Precip. .10 inch or more	Temperatures Max.: 90° and above	32° and below	Min.: 32° and below	0° and below	Month
(a)	30	30	30	30		30		30	30	30		30	30		30		30	30	30	30	30	
JANUARY	32.4	15.3	23.9	65	1950+	-20	1959	1250	1.49	1.50	1946	7.6	18.6	1943	10.0	1954	4	0	15	30	4	JANUARY
FEBRUARY	33.5	14.1	23.8	60	1954	-30	1934	1210	1.38	1.55	1954	7.5	18.0	1935	10.0	1935	4	0	12	27	4	FEBRUARY
MARCH	42.4	22.1	32.3	81	1946	-20	1948	990	1.81	2.00	1948	5.4	10.3	1948	8.0	1948	5	0	6	27	1	MARCH
APRIL	57.6	33.3	45.5	90	1948	7	1954	590	2.21	1.34	1956	1.2	6.0	1938	6.0	1938	6	*	*	16	0	APRIL
MAY	69.9	43.5	56.7	93	1931	23	1934	280	2.87	2.04	1935	T	T	1954+	T	1954+	7	1	0	4	0	MAY
JUNE	80.5	53.7	67.1	102	1934	28	1949	70	3.11	1.69	1938	T	T	1953	T	1953	7	4	0	*	0	JUNE
JULY	85.3	57.4	71.4	108	1936	36	1960	10	2.93	2.50	1955+	0	0		0		6	8	0	0	0	JULY
AUGUST	83.4	55.8	69.6	100	1947	33	1934	30	2.93	2.58	1959	0	0		0		6	6	0	0	0	AUGUST
SEPTEMBER	75.2	48.8	62.0	102	1953	21	1942	140	2.90	2.63	1932	0	0		0		6	2	0	1	0	SEPTEMBER
OCTOBER	64.0	39.2	51.6	88	1953+	18	1952+	410	2.58	3.20	1954	0.1	2.0	1943	2.0	1943	6	0	0	8	0	OCTOBER
NOVEMBER	47.7	29.7	38.7	80	1950	-2	1958+	790	2.25	1.90	1943	3.7	16.0	1951	12.0	1951	6	0	2	19	*	NOVEMBER
DECEMBER	35.4	19.7	27.5	66	1941	-14	1960+	1140	1.63	1.50	1945	6.3	14.5	1937	9.0	1937	5	0	12	27	2	DECEMBER
Year	58.9	36.1	47.5	108	July 1936	-30	Feb. 1934	6910	28.09	3.20	Oct. 1954	31.8	18.6	Jan. 1943	12.0	Nov. 1951	68	21	47	159	11	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F

+ Also on earlier dates, months, or years.

* Less than one half.

CLIMATE OF CARO, MICHIGAN

Caro is located in the "Thumb Area" of lower Michigan about 15 miles southeast of Saginaw Bay and 40 miles west of Lake Huron. The topography of the area is undulating to gently rolling. Soil is mostly miami loam to the north and sandy loam to the south. Navy beans are the major crop and are grown extensively. The Thumb area and the Saginaw Valley area in Michigan produce most of the navy beans grown in the United States.

February, 1934, with a mean temperature of 12.8 is the coldest month of record and July, 1955 is the warmest of record, with a mean temperature of 76.0°. The average dates of the last freezing temperature in the spring and the first freezing temperature in the fall are May 22nd and September 25th respectively. Temperatures reach the 90° mark on an average of 21 days a summer and reach the 100° or higher in about one summer out of four. At the other extreme, temperatures fall to zero or lower on an average of eleven times during a winter. Relative humidity figures for Flint (nearest first order Weather Bureau Office) show an annual average of 83% at 1:00 AM; 84% at 7:00 AM; 61% at 1:00 PM and 71% at 7:00 PM.

Precipitation is heaviest during the summer months, averaging 60% of the annual total during the six months April-September period. Heaviest rainfall is in June with an average of 3.11 inches. The greatest total monthly precipitation of record is 8.19 inches recorded in October, 1954. The driest month of record is January, 1945, with a total of 0.16 inch recorded. The greatest 24 hour amount recorded is 3.20 inches on October 3, 1954. Hourly intensity of as much as 1.00 inch occurs with a frequency of once in two years and thunderstorms have a frequency of 32 per year as shown by Weather Bureau records at Flint.

Snowfall averages 31.8 inches per winter season with considerable variation over the years. Seasonal totals in the last thirty years have ranged from 57 inches in 1951 to only 5 inches in 1936. The most usual amount is between 30 and 35 inches.

Cloudiness is greatest in late fall and early winter, while sunshine percentage is highest in the spring and summer. Winds from the northeast quadrant pick up warmth & moisture over Saginaw Bay and Lake Huron during late fall and early winter when the air is considerable colder than the water surface and increased cloudiness, and often light precipitation occurs as this warm, comparatively moist, air rises and condensation occurs as it passes over the area.

Prevailing westerly winds crossing Lake Michigan cause all of the lower Peninsula to have increased cloudiness at this time of year but in the Thumb area this is augmented when the winds are northeasterly due to the nearness of Lake Huron. Flint Weather Bureau records which are quite representative of the Caro area show that November averages 2 clear, 6 partly cloudy and 22 cloudy days. July and August average 8 clear, 13 partly cloudy and 10 cloudy days.

Winds have a prevailing westerly component, eight months out of the year varying from southwest to west-northwest. The other four months have prevailing south winds. There are no months which have an easterly component in the prevailing wind. Average velocity is highest in March, 13.1 MPH and lowest in August 7.9 MPH. Highest wind recorded at Flint (nearest wind measuring point) is 81 MPH from the northwest in May, 1956.

Degree day data is provided as an index of heating requirements for buildings. For example, April averages 590 degree days and February, 1210, which means that for an average February, fuel necessary for heating will be approximately twice that required for April. 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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A. H. Lichmeier
State Climatologist
Weather Bureau Office
East Lansing, Michigan

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	1.20	.81	2.20	1.09	2.03	3.76	2.39	1.03	4.30	.72	3.67	1.89	25.09
1932	3.90	1.17	.62	1.61	3.21	3.30	3.54	3.44	3.87	5.31	1.87	1.92	33.76
1933	1.05	1.36	1.32	2.41	3.80	.79	2.90	1.86	2.67	4.21	2.28	2.13	26.78
1934	.97	.61	1.85	.85	.80	2.00	1.19	2.87	3.54	1.51	2.42	1.25	19.86
1935	1.63	1.66	1.77	.81	4.26	6.68	1.16	2.16	2.51	1.33	4.00	.87	28.84
1936	1.09	1.40	.96	2.78	1.01	1.55	.64	2.01	4.95	2.64	.74	1.81	21.58
1937	1.60	.83	.87	4.00	2.11	3.67	3.01	5.39	3.33	1.64	1.80	1.23	29.48
1938	1.03	3.08	2.58	.72	3.35	3.55	4.00	3.12	1.90	1.12	.32	1.93	26.70
1939	1.51	2.07	1.30	4.33	2.64	3.04	1.74	1.75	2.19	2.48	.51	1.05	24.61
1940	1.05	1.07	1.45	1.89	3.49	4.16	1.14	4.42	1.88	2.89	2.60	2.02	28.06
1941	1.01	.64	.60	1.09	1.20	1.74	3.62	2.75	2.75	6.56	2.86	1.90	26.72
1942	1.40	.96	3.85	.57	5.58	2.62	3.82	2.30	4.58	3.85	2.71	1.95	34.19
1943	1.12	1.60	2.07	2.25	3.99	3.17	2.73	3.80	2.29	1.24	3.43	.49	28.18
1944	1.02	1.17	2.26	1.36	2.66	3.60	2.77	3.65	2.77	.91	2.43	.86	25.46
1945	.16	1.60	1.17	2.48	4.63	5.02	2.71	1.43	6.08	3.32	.75	3.70	33.05
1946	4.34	2.00	2.85	.35	4.35	2.49	1.85	2.05	1.20	1.73	1.55	2.19	26.95
1947	1.54	.18	1.11	3.16	3.46	2.78	2.70	1.83	3.94	.97	1.35	1.31	24.33
1948	.37	1.24	6.82	2.09	2.63	4.35	2.59	2.94	.85	1.91	3.18	.97	29.94
1949	2.45	.91	.67	1.70	1.25	2.45	6.49	2.11	1.83	2.08	1.73	3.56	27.23
1950	1.66	2.73	1.15	2.63	2.48	3.62	6.69	2.34	4.35	2.09	2.73	1.28	33.75
1951	1.78	1.07	2.21	3.68	1.07	2.35	1.60	5.33	2.94	4.27	1.97	1.67	29.94
1952	2.70	.51	1.49	2.85	3.69	1.23	7.02	2.93	2.71	.27	3.65	1.34	30.39
1953	1.31	.88	3.52	3.32	2.89	2.41	3.37	4.67	2.76	2.21	1.50	1.82	30.66
1954	.83	3.66	2.16	2.73	1.35	3.50	1.29	1.74	2.70	8.19	2.33	2.12	32.60
1955	.85	1.42	1.38	1.15	2.99	1.76	3.02	4.34	.79	4.01	2.59	.96	25.26
1956	.79	1.64	2.05	3.73	5.34	1.49	3.27	3.32	.63	.54	1.33	1.24	25.37
1957	.95	1.73	1.20	2.64	3.02	6.02	2.25	.88	3.83	3.25	2.29	1.47	29.53
1958	1.04	.31	.26	1.95	.99	3.55	3.47	3.41	2.99	1.06	2.76	.26	22.05
1959	2.41	1.87	1.83	3.76	3.12	2.74	3.37	6.28	3.13	3.43	3.34	3.45	38.73
1960	1.83	1.29	.71	2.41	2.73	3.93	1.48	1.84	2.59	1.64	2.68	.27	23.40

STATION HISTORY

Weather records in Caro began on January 1, 1928 when a station was established on the Michigan Sugar Company grounds 0.6 mile south-southeast of the Caro post office. On March 19, 1931 the station was moved to the W. N. Clark Company in the south side of Caro. On December 1, 1938 it was moved back to the Michigan Sugar Company and remained there until September 20, 1952 when it was moved to the Caro State Hospital 3.0 miles southwest of the Caro post office and it is located there at the present time (1961).

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	24.7	29.1	30.4	46.8	57.4	68.2	75.5	71.9	68.2	55.6	45.6	34.6	50.7
1932	33.9	31.6	29.2	43.1	57.8	67.8	70.6	70.4	61.0	50.2	36.2	28.1	48.3
1933	32.6	24.4	31.4	45.3	58.7	72.9	73.1	68.0	66.8	49.5	33.9	25.4	48.5
1934	27.8	12.8	27.8	43.0	60.5	71.2	73.1	67.0	63.8	51.1	43.8	25.6	47.3
1935	21.4	21.8	37.2	43.7	51.0	64.0	74.9	70.8	59.9	50.7	38.8	26.7	46.7
1936	21.9	13.0	36.6	40.8	63.4	64.9	73.5	72.4	64.2	50.3	36.6	32.0	47.5
1937	28.3	28.4	30.1	43.7	58.2	67.5	72.3	73.3	62.1	49.0	38.8	24.6	48.0
1938	22.0	29.4	40.1	48.8	58.6	67.1	72.6	73.8	61.0	55.5	42.6	27.9	50.0
1939	25.1	25.7	31.4	43.1	60.8	69.8	74.4	70.6	65.0	50.7	37.5	34.0	49.0
1940	18.2	25.4	28.3	40.7	54.7	64.8	73.2	67.3	61.8	49.9	35.7	28.2	45.7
1941	21.8	22.6	27.2	50.2	58.3	67.6	72.8	67.9	64.8	51.9	40.9	32.8	48.2
1942	22.5	19.5	34.4	49.1	57.4	64.4	70.3	67.8	59.4	50.4	37.2	22.7	46.3
1943	17.9	24.4	29.0	41.1	53.7	69.6	69.6	68.9	57.9	47.4	34.6	24.3	44.9
1944	27.6	24.1	27.6	39.4	59.8	68.3	69.2	69.3	60.2	48.0	39.0	21.4	46.2
1945	15.0	22.5	44.4	47.8	51.8	62.3	67.7	71.6	63.8	51.5	42.0	25.2	47.1
1946	27.0	23.8	45.4	48.3	55.4	66.1	72.4	66.6	64.5	56.6	41.6	28.9	49.7
1947	27.3	19.0	29.0	43.4	53.4	64.9	70.1	75.5	63.3	59.6	34.8	25.8	47.2
1948	17.7	21.0	32.6	50.9	53.6	65.3	71.1	69.1	64.9	48.3	43.1	29.9	47.3
1949	29.2	27.8	36.1	43.5	55.3	69.3	71.3	67.4	56.5	55.9	37.5	29.8	48.3
1950	30.5	23.8	28.4	39.7	57.3	67.7	68.2	66.5	58.4	53.8	35.2	22.6	46.0
1951	22.3	23.8	33.1	43.7	57.8	65.0	69.4	66.0	57.8	53.1	30.7	26.4	45.8
1952	24.4	25.4	31.8	48.0	54.2	70.7	73.0	68.0	61.3	44.7	40.5	32.8	47.9
1953	27.1	29.2	36.1	43.2	57.7	69.0	71.4	69.5	62.0	53.5	43.5	31.9	49.5
1954	22.2	31.2	31.3	49.3	52.0	69.6	69.3	68.3	63.1	52.5	39.6	26.4	47.9
1955	23.0	23.6	32.9	53.1	59.6	66.4	76.0	74.2	61.9	54.3	35.9	24.7	48.8
1956	22.6	22.7	28.8	43.6	54.0	68.2	68.4	68.8	58.6	55.9	40.3	30.7	46.9
1957	18.2	27.0	33.1	48.6	54.5	67.9	70.1	67.7	60.0	48.7	39.3	31.5	47.2
1958	22.8	18.6	34.2	47.2	55.9	62.0	70.1	68.8	61.7	52.0	40.5	19.0	46.1
1959	16.6	19.3	29.4	46.7	62.0	67.4	70.2	73.3	63.6	48.8	33.8	30.7	46.8
1960	24.3	24.1	21.9	48.0	56.9	63.4	68.0	67.7	63.1	49.6	41.3	21.7	45.8

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

	Last in Spring			First in Fall		
Minimum Temperature	Earliest	Average	Latest	Earliest	Average	Latest
32° or Lower	4/22/48	5/22	6/21/40	9/ 3/46	9/25	10/15/48
28° or Lower	4/22/37	5/ 8	5/13/46	9/12/43	10/11	11/15/46
24° or Lower	3/30/37	4/20	5/13/46	9/29/42	10/28	11/26/31
20° or Lower	3/16/47+	4/ 8	4/23/30	10/ 9/29	11/10	12/ 2/48
16° or Lower	3/ 4/42	3/26	4/13/50	11/ 7/30	11/24	12/18/48

Example in using table: The average date of the last temperature of 32° or colder in the spring is May 22nd. The earliest date of this event in all springs of the 1921-1950 period was April 22nd in 1948. The latest date was June 21st in 1940. In the fall, 32° or colder occurred for the first time as early as September 3rd, 1946, and as late as October 15th in 1948. The average date is September 25th.