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WEATHER BUREAU

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

CLIMATOLOGICAL SUMMARY

STATION Manistique, Michigan

LATITUDE 45° 59'
LONGITUDE 86° 15'
ELEV. (GROUND) 621 Feet

MEANS AND EXTREMES FOR PERIOD 1938 - 1961

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)	24	24	24	24		24		24	24	24		24	24		24		24	24	24	24	24	
JANUARY	27.2	10.6	18.9	47	1942	-22	1951+	1400	1.34	1.02	1938	15.1	42.1	1940	12.2	1940	4	0	22	31	6	JANUARY
FEBRUARY	29.5	10.8	20.2	52	1946	-24	1959+	1310	1.27	0.90	1953	13.2	31.5	1938	15.0	1938	4	0	17	28	5	FEBRUARY
MARCH	37.0	17.2	27.1	68	1946	-20	1948	1150	1.85	1.28	1946	13.0	41.8	1939	10.4	1939	5	0	10	29	3	MARCH
APRIL	49.8	29.6	39.7	80	1957	1	1954	760	2.40	1.52	1954	3.5	12.2	1945	6.0	1952	6	0	1	20	0	APRIL
MAY	60.7	38.7	49.7	85	1941	19	1956	460	3.26	2.26	1960	0.4	6.0	1954	6.0	1954	8	0	0	6	0	MAY
JUNE	70.5	48.3	59.4	96	1956	27	1956	190	3.64	2.89	1939	T	T	1945	T	1945	7	*	0	1	0	JUNE
JULY	76.9	54.1	65.5	96	1955	32	1947	70	2.81	1.78	1940						6	1	0	*	0	JULY
AUGUST	76.1	54.4	65.3	101	1955	32	1950	80	3.09	2.34	1960						6	1	0	*	0	AUGUST
SEPTEMBER	66.5	47.5	57.0	90	1939	25	1957+	250	3.42	1.95	1959	T	1.0	1942	1.0	1942	7	*	0	2	0	SEPTEMBER
OCTOBER	57.1	38.6	47.9	84	1943	19	1939	520	2.45	1.76	1942	2.2	12.0	1943	11.0	1943	6	0	*	8	0	OCTOBER
NOVEMBER	43.0	27.5	35.3	68	1946	-4	1955	900	2.42	1.65	1945	8.0	17.6	1951	8.0	1938	6	0	3	22	*	NOVEMBER
DECEMBER	31.4	16.5	24.0	58	1939	-13	1960+	1250	1.62	1.01	1940	13.8	25.5	1955	10.0	1946	5	0	17	29	3	DECEMBER
Year	52.1	32.8	42.5	101	Aug. 1955	-24	Feb. 1959+	8340	29.57	2.89	June 1939	69.2	42.1	Jan. 1940	15.0	Feb. 1938	70	2	70	176	17	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 MANISTIQUE, MICHIGAN

Manistique is located in Michigans Upper Peninsula on the north end of Lake Michigan. This area is a low plain, quite level, with sand knolls and ridges. The soil is mostly sand and loamy sand with some peat and muck spots and is of low fertility. Most of the land is not cleared.

The climate in the Manistique area is modified by Lake Michigan to the south and Lake Superior to the north. Lake Superior influence is diminished by the approximate forty mile distance of Manistique from that lake while Lake Michigan influence is strongest with winds from the southeast quadrant, which is not the prevailing direction.

The available weather data for the Manistique area show that the highest temperature ever recorded here is 101° on August 19, 1955. The lowest of record is 28° below zero on February 10, 1899. Temperatures reach the 90° mark on an average of two times per summer and seldom reach 100°. At the other extreme, temperatures fall to zero or lower on an average of seventeen days during a winter season.

On the basis of mean temperature, February, 1899, with a mean temperature of 8.2° is the coldest of record and July, 1955 with a mean of 71.3° is the warmest of record. The average dates of the last freezing temperature in the spring and the first in the fall are May 24th and September 24th, respectively.

Precipitation is heaviest during the growing months or "crop season", averaging 63% of the annual total during the six months April - September. Heaviest rainfall is in June which has an average of 3.64 inches. Driest month is February with an average amount of 1.27 inches. The wettest single month of record is June, 1943 when 10.47 inches of rain fell. Hourly amounts of as much as one inch; and two hourly amounts of as much as one and two tenths inches may be expected about once in two years. Twenty four hour amounts of as much as two and one half to three inches occur about once in 10 years and twenty-four hour amounts of four inches occur about once in 50 years.

Snowfall averages 69.2 inches per year with considerable year to year variation. Seasonal totals have varied from as much as 126 inches in 1938 to as little as 26 inches in 1948. The most frequent amount is between 70 and 80 inches. Seven months of the year usually have measurable snow amounts. Measurable snow has been recorded on nine of the months.

Cloudiness is greatest in late fall and early winter while sunshine percentage is highest in the spring and summer. Records at Escanaba (nearest first order Weather Bureau Office) show an average of 5 clear, 6 partly cloudy and 19 cloudy days in November while July shows an average of 11 clear days, 12 partly cloudy and 8 cloudy days. Sunshine percentage of possible varies from 34% in November to 66% in July. Escanaba wind records show the highest wind ever to be recorded there is 68 MPH from the north in March, 1948. Average wind velocity ranges from 9.1 MPH in July to 11.1 MPH in March & April. Thunderstorms average 33 per summer season.

Degree day data is provided as an index of heating requirements for buildings. For example, April averages 760 degree days and January 1400, which means that for an average April, fuel necessary for heating will be about half that required for January. Degree days for a single day are obtained by subtracting the mean temperature from 65°. The need for heating of buildings is considered none or slight if a day has an average temperature of 65° or higher.

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State Climatologist
Weather Bureau Office
East Lansing, Michigan

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Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1938	3.16	2.76	2.66	1.56	2.44	1.97	1.40	2.97	3.32	1.67	2.02	2.63	28.56
1939	2.49	2.36	3.45	2.21	2.17	5.13	0.67	2.95	4.14	1.92	0.91	2.13	30.53
1940	2.33	1.35	1.24	1.69	3.44	4.41	2.54	2.10	1.99	2.92	3.10	1.85	28.96
1941	1.32	1.11	0.73	0.87	3.83	2.49	3.01	4.03	4.97	4.73	2.20	2.97	32.26
1942	0.87	0.57	2.70	0.76	3.09	1.66	2.53	1.09	7.13	3.07	2.18	2.73	28.38
1943	0.78	2.22	3.48	1.32	4.39	10.47	0.87	3.01	1.48	3.63	2.74	0.62	35.01
1944	0.72	0.76	1.66	1.55	3.00	6.21	2.91	1.83	6.56	1.77	2.36	1.92	31.25
1945	1.64	2.34	1.18	3.31	3.26	2.44	2.28	2.36	2.78	1.90	3.91	0.95	28.35
1946	1.24	0.79	1.33	0.81	2.72	4.48	3.25	3.81	2.30	2.20	2.41	1.74	27.08
1947	0.82	1.26	0.95	3.23	4.32	2.71	1.40	0.80	2.31	0.44	1.26	0.62	20.12
1948	1.61	1.50	1.64	2.84	0.87	2.06	1.66	3.05	0.80	1.23	4.68	0.65	22.59
1949	1.75	0.68	1.65	0.72	3.19	4.08	5.36	1.71	2.56	2.45	2.18	0.73	27.06
1950	2.57	0.49	2.56	2.87	2.04	2.61	2.80	2.10	1.36	2.51	1.91	1.88	25.70
1951	1.09	1.98	4.69	2.17	3.98	3.70	6.22	3.47	4.71	4.18	1.50	1.98	39.67
1952	1.58	0.27	1.68	2.73	2.62	2.46	6.32	6.03	1.22	0.35	2.03	1.49	28.78
1953	1.31	2.43	1.89	4.71	2.83	4.15	3.89	3.06	2.12	1.47	1.64	2.05	31.55
1954	0.84	1.80	1.27	5.34	2.49	5.34	1.92	1.91	8.07	3.52	1.33	0.43	34.26
1955	0.92	0.74	1.90	2.31	3.13	1.81	1.38	3.42	1.60	3.97	2.25	2.17	25.60
1956	0.92	0.56	1.64	2.08	3.50	4.45	3.10	4.01	3.40	0.44	2.75	1.41	28.26
1957	0.74	1.08	0.90	3.01	4.47	1.45	2.31	3.01	4.40	2.26	4.51	1.81	29.95
1958	0.87	0.60	0.60	2.82	1.75	2.79	3.14	5.95	2.16	1.41	2.66	1.68	26.43
1959	0.57	0.82	1.61	2.29	4.62	2.46	2.82	6.40	5.67	5.61	1.90	1.27	36.04
1960	1.60	0.84	0.76	5.23	8.31	3.56	3.56	3.87	3.42	2.36	3.08	0.59	37.18
1961	0.36	1.18	2.20	1.05	1.85	4.37	2.09	1.24	3.72	2.88	2.52	2.64	26.10

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1938	16.7	20.7	30.0	41.5	52.7	61.1	67.2	68.8	56.7	50.0	35.8	24.6	43.8
1939	20.9	14.2	23.0	36.2	51.1	61.4	67.6	66.4	57.4	44.2	35.1	29.7	42.3
1940	16.0	22.0	23.3	37.8	49.4	58.7	66.4	65.2	59.6	47.6	33.0	25.4	42.0
1941	20.4	22.1	26.0	44.9	54.7	63.1	66.7	64.5	58.8	47.8	36.7	28.1	44.5
1942	19.1	20.6	37.1	46.1	50.2	61.3	65.0	65.5	55.6	47.5	33.9	19.8	43.5
1943	15.6	19.3	21.0	36.0	49.9	62.3	68.1	65.6	54.6	46.7	32.3	23.2	41.2
1944	26.7	21.9	26.3	39.1	54.5	61.5	65.9	66.8	57.8	47.0	37.6	21.5	43.9
1945	12.2	18.7	35.4	39.1	45.6	58.5	64.0	67.5	58.6	46.4	36.2	22.8	42.1
1946	22.0	19.3	38.5	40.9	49.2	59.1	65.8	64.4	57.2	52.2	39.2	25.1	44.4
1947	22.9	19.7	28.3	36.4	45.0	56.9	65.7	67.9	60.4	55.2	37.9	24.1	43.4
1948	12.6	16.6	24.7	42.0	47.9	59.5	65.3	65.3	60.9	46.4	39.0	25.3	42.1
1949	22.9	21.5	27.9	41.8	50.3	62.5	67.7	67.3	54.0	50.6	35.2	26.0	44.0
1950	19.7	19.5	22.5	33.0	48.0	55.4	61.4	58.2	54.8	49.6	31.8	21.2	39.6
1951	19.6	20.9	27.2	40.2	53.4	56.8	64.1	60.5	54.7	46.9	29.5	22.2	41.3
1952	21.8	24.2	26.2	43.2	51.2	60.2	66.2	63.5	57.2	42.9	37.6	29.5	43.6
1953	24.4	22.7	30.2	38.4	49.1	59.8	66.0	66.4	57.8	49.5	39.3	27.6	44.3
1954	17.2	28.2	25.9	38.6	45.3	60.2	64.2	62.6	55.1	46.1	38.3	23.5	42.1
1955	19.3	19.3	24.5	45.1	51.8	61.2	71.3	70.2	56.5	49.1	30.8	19.9	43.3
1956	20.7	19.8	23.2	36.5	45.6	60.5	62.1	63.7	52.7	50.0	34.6	23.9	41.1
1957	12.0	19.6	25.6	37.7	48.2	58.0	65.7	64.0	54.3	45.6	34.4	25.1	40.9
1958	21.8	16.2	30.4	39.9	47.3	53.0	62.5	62.7	55.1	48.6	35.7	15.5	40.7
1959	12.7	12.0	23.8	38.5	51.6	59.3	64.1	68.7	59.0	44.1	28.1	28.3	40.9
1960	21.1	21.1	19.9	40.8	52.3	57.7	63.4	65.6	58.8	46.9	38.0	20.2	42.2
1961	15.3	23.7	30.0	38.9	47.9	58.4	65.8	65.6	61.2	47.8	36.3	22.7	42.8

STATION HISTORY

This station was established in 1896 and operated until 1903. No records were made between 1903 and 1918. In October of 1918, the station was activated again with partial records until April, 1920 when it was closed. In May, 1937 station was again put into operation and was located five miles north of the Manistique Post Office. In 1944 it was moved to a location two and one half miles north of the post office. In 1945 it was moved to the city fire department five blocks west of the post office, and in 1947 it was moved to the city water works, one half mile northwest of the post office and later moved to the pumping station one and three tenths miles northwest of the post office. It is located there at present (1962).

DATES OF FREEZING TEMPERATURES IN THE SPRING AND FALL (1937 - 1950)

Minimum Temperature	Earliest	Average	Latest	Earliest	Average	Latest
32° or Lower	5/11/40	5/24	6/ 9/41	9/11/43	9/24	10/16/40
28° or Lower	4/21/48	5/10	5/28/49	9/24/39	10/11	10/26/50
24° or Lower	4/12/46	4/25	5/13/43	10/13/37	11/ 1	11/23/41
20° or Lower	3/24/42	4/ 9	4/19/47	10/13/37	11/11	12/ 1/48
16° or Lower	3/11/46	4/ 2	4/15/43*	11/10/45	11/21	12/11/39

*Also in 1947.

Example in using table: The average date of the last temperature of 32° or colder in the spring is May 24th. The earliest date of this event in all springs of the 1937 1950 period was May 11th in 1940. The latest date was June 9th in 1941. In the fall, 32° or colder occurred for the first time as early as September 11th in 1943 and as late as October 16, 1940. The average date is September 24th.