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

# CLIMATOLOGICAL SUMMARY

STATION Harrisville, Michigan

LATITUDE 44° 39'
LONGITUDE 83° 18'
ELEV. (GROUND) 647 Feet

MEANS AND EXTREMES FOR PERIOD 1932 - 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) | 30 | 30 | 30 | 30 | | 30 | | 30 | 30 | 30 | | 30 | 30 | | 30 | | 30 | 30 | 30 | 30 | 30 | |
| JANUARY | 30.0 | 14.5 | 22.3 | 56 | 1950 | -19 | 1951 | 1300 | 1.78 | 1.51 | 1940 | 15.1 | 35.5 | 1951 | 11.0 | 1947 | 5 | 0 | 18 | 30 | 4 | JANUARY |
| FEBRUARY | 30.9 | 13.6 | 22.3 | 56 | 1932 | -24 | 1959 | 1250 | 1.72 | 1.90 | 1950 | 14.4 | 38.7 | 1950 | 13.0 | 1950 | 5 | 0 | 16 | 28 | 4 | FEBRUARY |
| MARCH | 37.5 | 20.0 | 28.8 | 78 | 1945+ | -15 | 1943 | 1100 | 1.91 | 1.57 | 1947 | 10.8 | 26.4 | 1952 | 12.0 | 1947 | 5 | 0 | 9 | 28 | 1 | MARCH |
| APRIL | 50.5 | 31.2 | 40.9 | 85 | 1957+ | 3 | 1954 | 720 | 2.35 | 2.16 | 1952 | 2.1 | 12.5 | 1952 | 8.0 | 1952 | 6 | 0 | 1 | 17 | 0 | APRIL |
| MAY | 62.0 | 40.1 | 51.1 | 92 | 1949 | 20 | 1945 | 430 | 3.00 | 2.78 | 1937 | 0.2 | 3.0 | 1961+ | 2.5 | 1935 | 7 | * | 0 | 5 | 0 | MAY |
| JUNE | 72.6 | 50.8 | 61.7 | 99 | 1934 | 25 | 1946 | 150 | 2.56 | 1.70 | 1943 | 0.0 | 0.0 | | 0.0 | | 6 | 1 | 0 | * | 0 | JUNE |
| JULY | 78.0 | 56.5 | 67.3 | 105 | 1936 | 34 | 1948 | 50 | 2.58 | 3.06 | 1951 | 0.0 | 0.0 | | 0.0 | | 6 | 2 | 0 | 0 | 0 | JULY |
| AUGUST | 77.1 | 56.3 | 66.7 | 102 | 1948 | 37 | 1934 | 60 | 2.91 | 1.90 | 1955 | 0.0 | 0.0 | | 0.0 | | 6 | 2 | 0 | 0 | 0 | AUGUST |
| SEPTEMBER | 69.6 | 49.4 | 59.5 | 100 | 1953 | 27 | 1942 | 200 | 3.13 | 2.03 | 1947 | 0.0 | 0.0 | | 0.0 | | 7 | 1 | 0 | 1 | 0 | SEPTEMBER |
| OCTOBER | 59.1 | 39.6 | 49.4 | 83 | 1956+ | 17 | 1936 | 470 | 2.43 | 1.89 | 1951 | 0.2 | 2.7 | 1952 | 1.5 | 1952+ | 6 | 0 | 0 | 7 | 0 | OCTOBER |
| NOVEMBER | 44.2 | 29.1 | 36.7 | 78 | 1950 | -3 | 1950+ | 850 | 2.29 | 1.97 | 1944 | 5.1 | 30.5 | 1951 | 8.4 | 1944 | 6 | 0 | 3 | 20 | * | NOVEMBER |
| DECEMBER | 33.0 | 19.1 | 26.1 | 60 | 1953 | -11 | 1933 | 1180 | 1.75 | 1.82 | 1942 | 11.3 | 32.5 | 1951 | 7.5 | 1955+ | 5 | 0 | 14 | 29 | 1 | DECEMBER |
| Year | 53.7 | 35.0 | 44.4 | 105 | July 1936 | -24 | Feb. 1959 | 7760 | 28.41 | 3.06 | July 1951 | 59.2 | 38.7 | Feb. 1950 | 13.0 | Feb. 1950 | 70 | 6 | 61 | 165 | 10 | 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 HARRISVILLE, MICHIGAN

Harrisville is located in northeastern Lower Michigan on the shore of Lake Huron, north of Saginaw Bay and about thirty miles north northeast of Tawas City. The topography is level to hilly and the soil is mostly sand of low fertility. The area is mostly wooded and very little farming is done.

The climate in the Harrisville area is influenced considerably by the nearness of Lake Huron especially when the wind is from an easterly direction. The influence of Lake Michigan is diminished because of the distance, but it still has some effect when the wind is from the prevailing westerly direction. Lake influence tends to modify the climate, having a warming effect in the wintertime and a cooling effect in the summertime. Also greater cloudiness and snow showers are caused by warmth and moisture added to the air in crossing the lake during late fall and early winter.

Available weather data for the Harrisville area show that the highest temperature ever recorded here was 107° on August 13, 1918 and the coldest temperature ever recorded was 28° below zero on February 5, 1918. Temperatures have reached the 100° mark or higher in only four years out of the last thirty. Days with 90° or above average six per summer. At the other extreme, temperatures fall to zero or below on an average of ten times during a winter. A mean temperature of 6.6° in February, 1904 makes this the coldest month of record, and July, 1921 is the warmest month of record with a mean temperature of 74.8°. The average dates of the last freezing temperature in the spring and the first in the fall are May 20th and October 5th respectively.

Precipitation is heaviest during the summer season and averages 58% of the annual total during the six months April - September. The heaviest average rainfall is in May, 2.78 inches. The greatest amount of precipitation ever received in one month during the period of record is 11.31 inches in August, 1882. The least monthly amount ever recorded is 0.09 inch in May, 1891. Hourly precipitation of 1.1 inches or more and two hourly precipitation of 1.2 inches or more can be expected with a frequency of about once in two years. Hourly precipitation of as much as 1.9 inches or more will occur once in about 25 years. Twenty four hourly totals of 3.5 inches or more will occur once in about twenty five years and 4.0 inches or more in twenty four hours will occur once in about fifty years.

Snowfall averages 59.2 inches on an annual basis. Measurable amounts have been recorded on eight of the twelve months but the usual number of months with measurable amounts are six. There is considerable variation in total snowfall from year to year. Largest amount received in the thirty year period from 1932 to 1961 was 148.5 inches during the 1951-52 season. The smallest amount was 22.1 inches in the 1932-33 season. The most usual amount is between fifty and seventy inches.

Cloudiness is greatest in late fall and early winter and least in late spring and summer. Reports from the Weather Bureau Office in Alpena, Michigan (nearest First Order Weather Bureau Office) show an average of two clear days, seven partly cloudy days and twenty two cloudy days in December while July has an average of eleven clear days, thirteen partly cloudy days and only seven cloudy days. Sunshine percentage of possible ranges from 22% in December to 70% in July. The highest wind ever recorded in the general area is 61 MPH from the southwest in November, 1940.

Degree day data is provided as an index of heating requirements for buildings. For example; October averages 470 degree days and September 200 degree days, which means that during an average October fuel necessary for heating will be over twice that required for September. Degree days for a single month 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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Weather Bureau Office
East Lansing, Michigan

M 82.2/73
U587c1
20-20
Mich., Harrisville

Total Precipitation (Inches)

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1932 | 1.90 | 1.67 | .58 | 2.17 | 4.81 | 1.02 | 1.94 | 3.90 | 1.50 | 7.63 | 1.12 | 1.73 | 29.97 |
| 1933 | .75 | 1.94 | 1.64 | 3.67 | 4.54 | 1.95 | 1.45 | .16 | 3.11 | 4.28 | 1.28 | 2.26 | 27.03 |
| 1934 | .81 | .57 | 1.65 | 1.37 | .42 | 2.39 | 1.43 | 2.28 | 4.57 | 1.33 | 2.96 | .91 | 20.69 |
| 1935 | .96 | 1.10 | 1.96 | .70 | .73 | 3.01 | 2.68 | 2.87 | 2.48 | 1.83 | 1.75 | .79 | 20.86 |
| 1936 | .80 | 1.09 | .91 | 1.34 | 2.46 | 1.41 | .93 | 1.93 | 3.86 | 2.99 | 1.48 | 1.74 | 20.94 |
| 1937 | 1.76 | 1.22 | .20 | 2.88 | 3.78 | 2.04 | 1.53 | 1.62 | 5.98 | 2.34 | 1.70 | .50 | 25.55 |
| 1938 | 2.56 | 2.83 | 1.72 | .60 | 3.07 | 1.04 | 1.08 | 7.32 | 2.37 | .79 | 1.06 | 2.11 | 26.55 |
| 1939 | 1.82 | 2.51 | 1.09 | 2.41 | 3.76 | 3.71 | 1.17 | 5.78 | 2.97 | 1.85 | .52 | 1.28 | 28.87 |
| 1940 | 2.04 | .57 | .56 | 1.42 | 2.93 | 3.67 | 2.47 | 4.91 | 3.50 | 2.55 | 2.60 | 1.91 | 29.13 |
| 1941 | 1.76 | .71 | .96 | 2.48 | 3.45 | .90 | 2.58 | 2.54 | 3.85 | 4.74 | 3.32 | .66 | 27.95 |
| 1942 | 1.01 | .34 | 2.60 | .78 | 5.90 | 3.09 | 2.81 | 1.95 | 5.17 | 1.58 | 1.41 | 2.75 | 29.39 |
| 1943 | 1.56 | 1.69 | 3.47 | 2.37 | 2.23 | 3.09 | 3.49 | 1.77 | 2.12 | 1.73 | 2.66 | .87 | 27.05 |
| 1944 | .52 | 1.10 | 1.99 | 1.27 | 1.46 | 5.13 | 2.71 | 3.11 | 2.69 | .92 | 4.32 | .47 | 25.69 |
| 1945 | 1.22 | .98 | .56 | 1.98 | 6.09 | 4.52 | 2.47 | 1.07 | 2.89 | 3.34 | 1.96 | 2.02 | 29.10 |
| 1946 | 2.47 | 1.24 | .92 | .66 | 2.85 | 1.64 | .95 | 1.13 | 2.62 | .48 | 2.48 | 2.59 | 20.03 |
| 1947 | 2.06 | .91 | 2.84 | 3.26 | 4.39 | 1.73 | 2.42 | 2.74 | 5.08 | .88 | 1.42 | .60 | 28.33 |
| 1948 | 1.08 | 1.86 | 4.14 | 2.33 | 2.39 | 2.86 | 2.41 | .87 | 1.10 | .94 | 3.01 | 1.68 | 24.67 |
| 1949 | 2.97 | 2.19 | 1.38 | 1.67 | 1.42 | 3.14 | .96 | 2.48 | 3.86 | 1.10 | 2.37 | 2.90 | 26.44 |
| 1950 | 3.95 | 5.24 | 3.17 | 2.55 | 1.61 | 3.03 | 2.82 | 3.56 | 4.47 | 1.95 | 2.44 | 2.79 | 37.58 |
| 1951 | 3.53 | 3.07 | 2.34 | 4.53 | 1.47 | 2.35 | 7.58 | 3.03 | 3.55 | 6.11 | 3.36 | 3.47 | 44.39 |
| 1952 | 4.25 | 2.25 | 3.56 | 4.16 | 1.59 | 2.62 | 6.06 | 3.72 | 1.79 | .43 | 2.80 | 2.82 | 36.05 |
| 1953 | 2.13 | 2.38 | 3.43 | 2.35 | 6.35 | 1.72 | 4.14 | 3.45 | 3.40 | 1.81 | 2.17 | 1.58 | 34.91 |
| 1954 | 3.18 | 2.04 | 2.97 | 4.24 | 3.15 | 4.40 | 1.24 | 3.93 | 2.90 | 5.69 | 3.48 | 2.79 | 40.01 |
| 1955 | 2.05 | 2.49 | 1.97 | 2.46 | 4.17 | 1.02 | 1.63 | 3.85 | .39 | 3.05 | 1.92 | 2.06 | 27.06 |
| 1956 | .60 | 1.55 | 1.77 | 3.19 | 2.50 | 1.75 | 2.89 | 4.85 | 1.56 | .54 | 1.52 | 1.60 | 24.32 |
| 1957 | 1.07 | .63 | 1.42 | 3.13 | 2.34 | 4.60 | 4.19 | 1.35 | 2.71 | 2.83 | 2.52 | 1.86 | 28.65 |
| 1958 | 1.62 | 1.12 | .58 | 1.21 | .91 | 2.24 | 2.63 | 1.93 | 2.56 | 2.87 | 2.72 | .73 | 21.12 |
| 1959 | 1.27 | 2.23 | 2.44 | 5.10 | 3.31 | .78 | 3.27 | 4.88 | 4.13 | 3.97 | 3.71 | 3.44 | 38.53 |
| 1960 | 1.59 | 2.06 | 1.26 | 2.39 | 4.47 | 3.00 | 3.15 | 1.68 | 2.06 | 1.43 | 2.30 | .60 | 25.99 |
| 1961 | .20 | 2.07 | 3.34 | 1.75 | 1.49 | 2.85 | 2.22 | 2.49 | 4.80 | .81 | 2.35 | 1.05 | 25.42 |

STATION HISTORY

Weather records were taken here for a short time in 1879. Observations began again in 1888 and continued until 1923 with instruments installed at a boathouse but exact location unknown. In 1924 the station was moved to the State Fish Hatchery, two blocks south of the Harrisville Post Office and remained there until 1946. In 1947, it was moved north to a location 1.2 miles north of the Post Office and in 1955 it was moved to the City Water Works, one half mile west northwest of the Post Office.

Average Temperature (°F)

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1932 | 33.1 | 27.3 | 26.2 | 37.6 | 50.8 | 61.0 | 67.3 | 67.6 | 58.9 | 48.4 | 34.5 | 26.4 | 44.9 |
| 1933 | 28.7 | 21.2 | 29.3 | 40.1 | 52.0 | 64.2 | 68.1 | 64.6 | 62.5 | 47.1 | 30.4 | 22.8 | 44.3 |
| 1934 | 25.2 | 11.5 | 24.0 | 39.5 | 55.0 | 63.0 | 66.9 | 62.5 | 60.5 | 48.3 | 40.0 | 24.2 | 43.4 |
| 1935 | 20.2 | 21.8 | 32.4 | 39.0 | 45.4 | 59.4 | 70.9 | 66.4 | 56.9 | 48.2 | 37.1 | 22.3 | 43.3 |
| 1936 | 20.0 | 11.9 | 31.1 | 35.9 | 50.3 | 58.5 | 68.6 | 65.7 | 60.8 | 46.4 | 32.7 | 30.5 | 42.7 |
| 1937 | 25.3 | 25.7 | 26.9 | 40.7 | 53.0 | 61.5 | 68.6 | 69.7 | 59.1 | 44.8 | 36.1 | 25.0 | 44.7 |
| 1938 | 19.8 | 25.1 | 34.9 | 43.4 | 50.0 | 60.5 | 67.4 | 70.4 | 58.5 | 50.8 | 39.4 | 28.3 | 45.7 |
| 1939 | 24.7 | 20.6 | 26.5 | 38.4 | 52.5 | 61.0 | 67.0 | 67.7 | 60.0 | 47.9 | 37.1 | 31.5 | 44.6 |
| 1940 | 19.4 | 24.9 | 25.3 | 36.7 | 51.3 | 60.7 | 67.3 | 65.9 | 59.6 | 48.6 | 35.2 | 28.1 | 43.6 |
| 1941 | 22.6 | 23.2 | 25.1 | 45.5 | 55.8 | 64.5 | 68.9 | 65.8 | 62.6 | 50.5 | 40.2 | 31.0 | 46.3 |
| 1942 | 22.7 | 21.0 | 32.2 | 47.1 | 51.4 | 60.5 | 66.2 | 66.3 | 58.0 | 49.1 | 36.1 | 23.8 | 44.5 |
| 1943 | 18.5 | 23.8 | 25.1 | 37.2 | 48.4 | 65.4 | 66.8 | 67.0 | 57.9 | 47.4 | 34.8 | 25.9 | 43.2 |
| 1944 | 28.7 | 24.2 | 27.3 | 36.5 | 54.0 | 63.1 | 66.7 | 68.1 | 59.6 | 48.1 | 39.0 | 22.4 | 44.8 |
| 1945 | 16.3 | 22.8 | 39.3 | 45.2 | 47.4 | 59.3 | 64.3 | 66.5 | 59.4 | 48.1 | 38.5 | 22.9 | 44.2 |
| 1946 | 22.3 | 20.3 | 37.3 | 45.0 | 49.0 | 59.0 | 65.7 | 62.6 | 59.6 | 52.5 | 36.2 | 22.5 | 44.3 |
| 1947 | 20.3 | 16.2 | 23.7 | 36.9 | 46.7 | 59.1 | 67.4 | 71.1 | 60.1 | 56.0 | 34.5 | 25.8 | 43.2 |
| 1948 | 16.8 | 20.2 | 28.8 | 43.5 | 48.8 | 62.0 | 67.2 | 67.7 | 62.3 | 48.6 | 42.6 | 28.5 | 44.8 |
| 1949 | 27.6 | 26.0 | 30.1 | 42.6 | 52.4 | 65.5 | 70.7 | 69.3 | 57.4 | 52.7 | 34.7 | 28.8 | 46.5 |
| 1950 | 26.8 | 22.2 | 25.0 | 35.5 | 49.8 | 63.5 | 65.2 | 63.6 | 56.6 | 52.6 | 36.0 | 24.0 | 43.4 |
| 1951 | 20.9 | 22.6 | 30.1 | 41.6 | 55.1 | 60.6 | 67.0 | 63.2 | 57.4 | 49.9 | 29.7 | 24.6 | 43.6 |
| 1952 | 24.1 | 25.3 | 28.3 | 44.5 | 50.6 | 64.3 | 70.3 | 65.9 | 61.6 | 45.2 | 38.8 | 32.2 | 45.9 |
| 1953 | 26.2 | 25.7 | 31.2 | 39.0 | 52.3 | 63.6 | 67.8 | 68.2 | 60.3 | 51.4 | 41.8 | 30.4 | 46.5 |
| 1954 | 20.5 | 29.9 | 27.5 | 42.5 | 49.0 | 63.6 | 66.0 | 65.3 | 60.4 | 50.6 | 39.2 | 25.4 | 45.0 |
| 1955 | 21.1 | 22.4 | 28.5 | 47.0 | 54.8 | 62.6 | 71.0 | 71.4 | 59.5 | 51.9 | 34.3 | 22.7 | 45.6 |
| 1956 | 22.4 | 22.8 | 26.1 | 39.2 | 49.7 | 62.3 | 64.1 | 65.2 | 54.8 | 52.4 | 36.7 | 28.3 | 43.7 |
| 1957 | 16.7 | 25.7 | 28.7 | 43.1 | 51.0 | 60.7 | 66.2 | 64.4 | 57.9 | 46.8 | 37.8 | 28.8 | 44.0 |
| 1958 | 21.8 | 17.4 | 31.9 | 42.5 | 50.5 | 57.0 | 64.5 | 66.5 | 59.4 | 50.8 | 38.7 | 18.0 | 43.3 |
| 1959 | 15.9 | 16.9 | 26.8 | 41.8 | 54.8 | 64.8 | 67.7 | 71.0 | 61.8 | 47.5 | 31.5 | 29.7 | 44.2 |
| 1960 | 22.3 | 23.3 | 22.7 | 41.3 | 52.0 | 59.7 | 64.5 | 65.4 | 59.5 | 48.3 | 40.0 | 21.0 | 43.3 |
| 1961 | 16.9 | 25.6 | 31.3 | 38.5 | 48.4 | 61.4 | 67.7 | 66.4 | 63.4 | 50.3 | 35.9 | 26.2 | 44.3 |

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 | 4/18/21 | 05/20 | 6/15/46 | 9/19/29 | 10/05 | 10/22/24 |
| 28° or Lower | 4/11/37 | 05/03 | 6/14/46 | 9/23/42 | 10/25 | 11/24/41 |
| 24° or Lower | 4/02/29 | 04/21 | 5/11/49 | 10/12/36 | 11/05 | 11/25/34 |
| 20° or Lower | 3/20/42 | 04/08 | 4/28/46 | 10/12/36 | 11/16 | 12/19/21 |
| 16° or Lower | 3/13/42 | 04/03 | 4/28/46 | 10/30/25 | 11/25 | 12/21/21 |

Example in using table: The average date of the last temperature of 32° or colder in the spring is May 20th. The earliest date of this event in all springs of the 1921-50 period was April 18, in 1921. The latest date was June 15, 1946. In the fall, 32° or colder occurred for the first time as early as September 19, 1929, and as late as October 22, 1924. The average date is October 5th.