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no.20

# CLIMATOLOGICAL SUMMARY

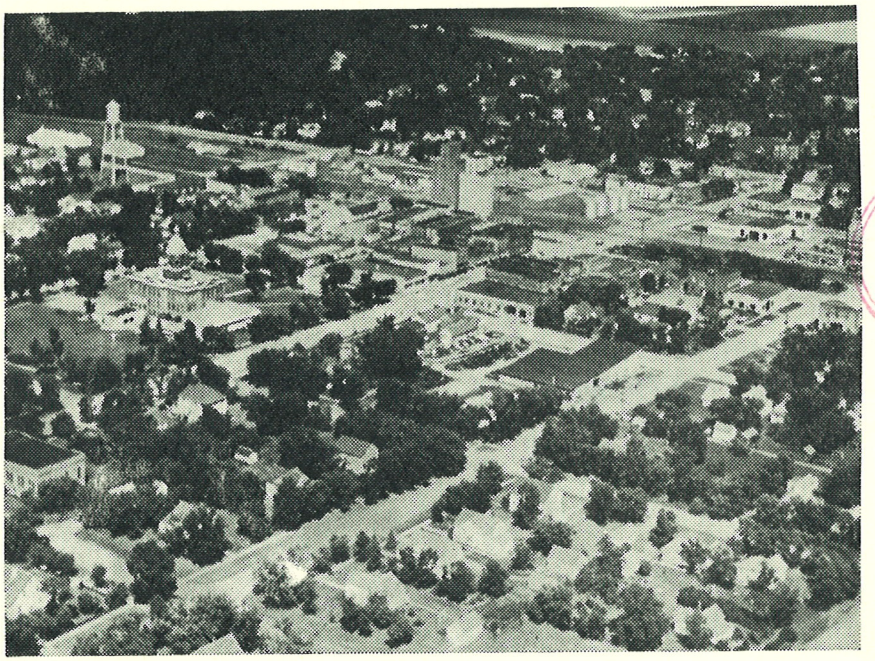
Climatography of the U. S. No. 20 - 32

# Hillsboro, North Dakota

Latitude 47° 24′ N

Longtitude 97° 04′ W

Elevation 901 Feet



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WEATHER BUREAU

HILLSBORO, NORTH DAKOTA

Data Compiled From Official U. S. Weather Bureau Reoords
Prepared by Weather Bureau State Climatologist For North Dakota
In Cooperation With The Northwestern State Bank, Hillsboro, North Dakota

## *Climate of Hillsboro, North Dakota*

Hillsboro, the county seat of Traill County. is located in the east-central portion of the state in the Red River Valley. The surrounding area is flat, fertile farmland. The main cash crops of the area are wheat, barley, flax, potatoes and sugar beets.

This summary of the climate of Hillsboro generally applies to other areas of Traill County also.

Located in the northern plains, Hillsboro has a climate that is continental in its characteristics. The frequent passage of weather systems across the area brings a wide variety of weather in all seasons and wide variations in temperatures from day to day and month to month. Summers are warm and pleasant with sunny days and cool nights. Maximum temperatures during the three summer months of June. July, and August average 81 degrees. Temperatures of 90 degrees or more occur on an average of 17 days per year ranging from 3 in the coolest summers to 46 in 1936. Temperatures in the winter months of December, January, and February average about 10 degrees but maximum temperatures reach 32 degrees or higher on 17 days during these months. During outbreaks of cold, arctic air temperatures drop to zero or below on 54 days each year.

The annual precipitation at Hillsboro is 20.19 inches, of which about 75% falls in the growing season, April through September, and about 45% falls in the months of May, June, and July. Annual precipitation has ranged from over 31 inches in 1916 to about 7 inches in 1936. Summertime precipitation is usually in the form of thundershowers, about 30 thunderstorms are reported each year. June is usually the wettest month of the year but July, 1952, when 12.29 inches of precipitation was measured, is the wettest month on record. Precipitation of .10 inch or more can be expected on an average of 44 days per year and rainfall of 1.00 inch or more per day occurs about twice a year. The likelihood of 1.00 inch or more of rain in a 7-day period is greatest the first part of June when the chance is about once in three years. The likelihood of a dry 7 day period, trace or less, is greatest the first week in November when the chance is one year in two. Intensities of about 1.10 inches in 1 hour, 1.75 inches in 6 hours, and 2.25 inches in 24 hours, can be expected once in two years. About 32 inches of snow can be expected each year in Hillsboro, but snowfall has varied from 4.0 inches in 1957-58 to about 74 inches in 1947-48. The greatest snowfall measured in any month is 26.5 inches in March, 1913. The greatest one-day snowfall is 10.5 inches on November 15, 1947. Measureable snow can be expected one year in 10 in October, one year in two in April, and one year in 7 in May.

Sunshine, wind, and humidity data are not available for Hillsboro but data from Fargo are applicable. The prevailing winds are generally in a northerly direction from January through May and southerly the remainder of the year. The average wind speed is about 14 miles per hour. April and November are slightly windier than the other months. Sunshine average about 57% of the possible amount ranging from 40% in November to 70% in July. About 205 days per year are classified as either clear or partly cloudy. Relative humidity in the summer ranges from about 50% in the late afternoon to about 85% in the early morning and during the winter averages about 75% day and night.

Alfred A. Skrede
State Climatologist
U. S. Weather Bureau
Bismarck, North Dakota

MEANS AND EXTREMES FOR PERIOD 1906 - 1964

| 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 | Max. 32° and below | Min. 32° and below | Min. 0° and below | Month |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (a) | 59 | 59 | 59 | 59 | | 59 | | 30 | 59 | 59 | | 59 | 59 | | 59 | | 59 | 59 | 59 | 59 | 59 | |
| J | 15.6 | -3.6 | 5.8 | 56 | 1942 | -39 | 1916+ | 1810 | 0.53 | 0.80 | 1916 | 6.2 | 23.9 | 1949 | 8.0 | 1950+ | 2 | 0 | 27 | 31 | 19 | J |
| F | 20.9 | 0.9 | 10.8 | 65 | 1958 | -40 | 1936 | 1518 | 0.56 | 1.00 | 1922 | 5.9 | 21.6 | 1947 | 10.0 | 1922 | 2 | 0 | 22 | 28 | 14 | F |
| M | 34.9 | 15.2 | 25.1 | 82 | 1946 | -34 | 1948 | 1265 | 0.72 | 1.03 | 1950 | 5.4 | 26.5 | 1913 | 8.0 | 1943 | 2 | 0 | 13 | 29 | 5 | M |
| A | 53.9 | 30.7 | 42.3 | 92 | 1952 | -2 | 1936 | 687 | 1.74 | 1.89 | 1964 | 2.6 | 12.0 | 1948 | 8.0 | 1948+ | 4 | * | 1 | 18 | * | A |
| M | 68.1 | 41.6 | 54.8 | 105 | 1934 | 15 | 1907 | 326 | 2.74 | 5.90 | 1909 | 0.4 | 6.0 | 1945 | 6.0 | 1945 | 6 | 1 | * | 5 | 0 | M |
| J | 77.0 | 52.2 | 64.7 | 105 | 1933 | 29 | 1910 | 99 | 3.54 | 5.40 | 1939 | 0.0 | 00.0 | | 0.0 | | 7 | 2 | 0 | * | 0 | J |
| J | 83.6 | 57.4 | 70.5 | 115 | 1936 | 39 | 1917 | 22 | 2.89 | 5.05 | 1952 | 0.0 | 00.0 | | 0.0 | | 5 | 6 | 0 | 0 | 0 | J |
| A | 82.0 | 54.8 | 68.5 | 106 | 1947 | 32 | 1928 | 34 | 2.66 | 2.65 | 1919 | 0.0 | 00.0 | | 0.0 | | 5 | 6 | 0 | * | 0 | A |
| S | 71.6 | 45.7 | 58.7 | 100 | 1959+ | 19 | 1942 | 216 | 2.15 | 5.18 | 1957 | T | T | 1956 | T | 1951 | 4 | 2 | 0 | 3 | 0 | S |
| O | 58.1 | 34.4 | 46.3 | 92 | 1922 | -7 | 1919 | 574 | 1.21 | 2.62 | 1961 | 0.4 | 7.0 | 1917 | 6.0 | 1917 | 3 | * | 1 | 13 | * | O |
| N | 36.9 | 19.1 | 28.0 | 72 | 1934 | -27 | 1964 | 1128 | 0.83 | 1.33 | 1952 | 5.1 | 21.7 | 1947 | 10.5 | 1947 | 2 | 0 | 11 | 27 | 3 | N |
| D | 21.5 | 3.6 | 12.7 | 59 | 1941 | -34 | 1933+ | 1593 | 0.62 | 1.00 | 1907 | 5.8 | 18.0 | 1933 | 10.0 | 1907 | 2 | 0 | 24 | 31 | 13 | D |
| Year | 52.0 | 29.3 | 40.7 | 115 | July 1936 | -40 | Feb. 1936 | 9272 | 20.19 | 5.90 | May 1909 | 31.8 | 26.5 | Mar. 1913 | 10.5 | Nov. 1947 | 44 | 17 | 99 | 185 | 54 | Year |

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F For Period 1931-1960

\+ Also on earlier dates, months, or years.

* Less than one half.

Monthly and Seasonal Snowfall

| | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 1906 | | | | | 9.0 | 2.8 | 4.0 | 0 | T | |
| 1906 - 1907 | 0 | 0 | 9.5 | 13.1 | 12.4 | 3.3 | 3.3 | 3.3 | 5.0 | 49.9 |
| 1907 - 1908 | 0 | 0 | 0.3 | 10.8 | 2.3 | 16.9 | 11.6 | T | 0 | 41.9 |
| 1908 - 1909 | 0 | 0 | 6.3 | 4.5 | 6.8 | 2.8 | 4.1 | 0.1 | 0 | 24.6 |
| 1909 - 1910 | 0 | T | 9.5 | 10.1 | 1.6 | 2.7 | 0 | 0 | 0 | 23.9 |
| 1910 - 1911 | 0 | T | 3.4 | 4.0 | 6.1 | 14.0 | T | 9.0 | 0 | 36.5 |
| 1911 - 1912 | 0 | T | 12.5 | 5.4 | 7.0 | 4.0 | 8.0 | T | 0 | 36.9 |
| 1912 - 1913 | T | T | T | 10.0 | 8.0 | 2.0 | 26.5 | 0 | 0 | 46.5 |
| 1913 - 1914 | 0 | T | 3.0 | T | 8.0 | 5.5 | 7.0 | T | 0 | 23.5 |
| 1914 - 1915 | 0 | 0 | 3.5 | 6.5 | 3.5 | 0 | 4.0 | 0 | T | 17.5 |
| 1915 - 1916 | 0 | 0 | 4.0 | 6.0 | 19.5 | 9.5 | 15.5 | 10.0 | 0 | 64.5 |
| 1916 - 1917 | 0 | T | 1.5 | 14.0 | 6.0 | 14.0 | 0.5 | 0 | 0 | 36.0 |
| 1917 - 1918 | 0 | 7.0 | 2.0 | 7.8 | 5.0 | 2.5 | T | T | 0 | 24.3 |
| 1918 - 1919 | 0 | 0 | T | 11.5 | 2.5 | 4.2 | 3.0 | 8.5 | 0 | 29.7 |
| 1919 - 1920 | 0 | 3.0 | 21.2 | 6.0 | 13.0 | 4.0 | 2.5 | T | 0 | 49.7 |
| 1920 - 1921 | 0 | T | 0.5 | 4.5 | 3.0 | 3.0 | 8.5 | T | 0 | 19.5 |
| 1921 - 1922 | 0 | T | 5.9 | 2.5 | 3.3 | 18.0 | 1.0 | 0 | 0 | 30.7 |
| 1922 - 1923 | 0 | T | 5.0 | 5.5 | 3.5 | 2.0 | T | 0.8 | T | 16.8 |
| 1923 - 1924 | 0 | 0 | 0 | 6.5 | 2.0 | 4.0 | 0.5 | 1.5 | 2.9 | 17.4 |
| 1924 - 1925 | 0 | 0 | 1.0 | 1.0 | 0.5 | 7.0 | 5.0 | 0 | 0 | 14.5 |
| 1925 - 1926 | 0 | 0.5 | 2.5 | 3.0 | 6.0 | 4.5 | 5.0 | T | 0 | 21.5 |
| 1926 - 1927 | 0 | 0.5 | 10.5 | 7.0 | 2.5 | 3.5 | 12.5 | 6.0 | 0 | 42.5 |
| 1927 - 1928 | 0 | T | 6.5 | 6.5 | 1.3 | 0 | 9.5 | 7.0 | 0 | 30.8 |
| 1928 - 1929 | 0 | 0 | 0 | 5.0 | 11.5 | 2.5 | T | 1.0 | T | 20.0 |
| 1929 - 1930 | 0 | 0 | 4.3 | 2.3 | 2.0 | 8.0 | 5.0 | 0 | 0 | 21.6 |
| 1930 - 1931 | 0 | 0.5 | 21.3 | 0 | 1.3 | 2.6 | 0 | 0 | 0 | 25.7 |
| 1931 - 1932 | 0 | 0 | 8.6 | 7.0 | 5.5 | 11.0 | 0 | 1.0 | 0 | 33.1 |
| 1932 - 1933 | 0 | 3.0 | 5.0 | 0.8 | 20.0 | 1.0 | 4.0 | 10.0 | 0 | 43.8 |
| 1933 - 1934 | 0 | 2.6 | 11.0 | 18.0 | 0.6 | 0.2 | 2.2 | 2.0 | 0 | 36.6 |
| 1934 - 1935 | 0 | 0 | 6.0 | 5.4 | 3.3 | T | 4.4 | 5.0 | 2.0 | 26.1 |
| 1935 - 1936 | 0 | 2.0 | 9.1 | 5.3 | 5.7 | 10.0 | 3.8 | T | 0 | 35.9 |
| 1936 - 1937 | 0 | 0.6 | 2.8 | 5.0 | 9.0 | 7.0 | 2.0 | 2.0 | 0 | 28.4 |
| 1937 - 1938 | 0 | 0 | 2.0 | 5.0 | 4.0 | 9.0 | 1.0 | 0 | T | 21.0 |
| 1938 - 1939 | 0 | 0 | 8.2 | 5.6 | 5.0 | 11.6 | 2.0 | 1.0 | 0 | 33.4 |
| 1939 - 1940 | 0 | 1.8[e] | 0 | 0.1[e] | T[e] | 9.2[e] | 9.5 | 3.0 | 0 | 23.6[e] |
| 1940 - 1941 | 0 | 0 | 4.8 | 5.2 | 8.9 | 3.0 | 9.8 | 1.2 | 0 | 32.9 |
| 1941 - 1942 | 0 | 1.0 | T | 3.5 | 0.5 | 4.9 | 7.1 | 7.0 | T | 24.0 |
| 1942 - 1943 | T | T | 0.2 | 14.6 | 3.5 | 12.2 | 10.1 | 0 | T | 40.6 |
| 1943 - 1944 | 0 | T | 1.0 | 1.2 | 4.8 | 1.0 | 13.4 | T | 2.2 | 23.6 |
| 1944 - 1945 | 0 | 0 | 5.9 | 2.2 | 6.9 | 7.3 | 2.3 | 2.0 | 6.0 | 32.6 |
| 1945 - 1946 | T | T | 0.5 | 12.0 | 9.4 | 14.1 | 0.2 | 8.0 | T | 44.2 |
| 1946 - 1947 | 0 | T | 6.4 | 8.5 | 3.3 | 7.4 | 4.4 | 12.0 | 0 | 42.0 |
| 1947 - 1948 | 0 | 0 | 21.7 | 5.7 | 2.7 | 21.6 | 13.8 | 8.2 | 0 | 73.7 |
| 1948 - 1949 | 0 | T | 5.0 | 8.4 | 23.9[e] | 9.9 | 0.9 | T | T | 48.1[e] |
| 1949 - 1950 | 0 | T | 3.2[e] | 5.9[e] | 20.4[e] | 3.2[e] | 11.8 | 2.0 | 0 | 46.5[e] |
| 1950 - 1951 | 0 | 2.0 | 5.8[e] | 7.3 | 13.6 | 3.7 | 15.4 | 3.0 | 0 | 50.8[e] |
| 1951 - 1952 | T | 0.2 | 4.7[e] | 13.4 | 12.3 | 3.7 | 3.9 | T | T | 38.2[e] |
| 1952 - 1953 | 0 | T | T | 4.4 | 4.0 | 3.8 | 2.5 | T | 0.3 | 15.0 |
| 1953 - 1954 | T | 0 | 5.0 | 7.6 | 9.3 | 2.0 | 6.5 | T | 0.8 | 31.2 |
| 1954 - 1955 | 0 | T | 2.4[e] | 2.7[e] | 4.0[e] | 13.5 | 13.0 | T | T | 35.6[e] |
| 1955 - 1956 | T | T | 9.0 | 4.5 | 9.0 | 3.0 | 11.0 | 6.0 | 0 | 42.5 |
| 1956 - 1957 | T | 0 | T | 5.5 | 4.0 | 3.0 | 0.5 | 5.5 | 0 | 18.5 |
| 1957 - 1958 | 0 | T | 2.6 | 0.2 | 0.7 | 0.5 | T | T | 0 | 4.0 |
| 1958 - 1959 | 0 | 0 | 14.5 | 1.6[e] | 4.2[e] | 3.0 | T | T | 0 | 23.3[e] |
| 1959 - 1960 | 0 | T | 5.5 | 0.5 | 5.0 | 3.0 | 2.5 | 7.5 | 1.0 | 25.0 |
| 1960 - 1961 | 0 | 0 | 4.0 | 4.4[e] | 1.0 | 2.0 | T | 3.0 | 0 | 14.4[e] |
| 1961 - 1962 | 0 | T | 0.5 | 6.0 | 10.0[e] | 11.0 | 15.0 | 2.0 | 0 | 44.5[e] |
| 1962 - 1963 | 0 | T | 3.0 | 4.2[e] | T | 5.0 | 2.0 | 4.0 | 2.0 | 20.2[e] |
| 1963 - 1964 | 0 | 0 | 1.0 | 4.0[e] | 4.0 | 2.0 | 7.3 | 8.0 | 0 | 26.3[e] |
| 1964 - | 0 | T | 6.0 | 10.0 | | | | | | |

Hillsboro, N. Dak. Climatological Summary
Use the table below in lieu of printed table.

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PROBABILITY OF FREEZE OCCURRENCE IN SPRING

Dates on which chance of last occurrence of indicated temperature (or lower) decreases to

| Temp. (F) | 90% | 75% | 50% | 25% | 10% |
|---|---|---|---|---|---|
| 32 | Apr. 30 | May 7 | May 14 | May 21 | May 28 |
| 28 | Apr. 19 | Apr. 26 | May 3 | May 10 | May 17 |
| 24 | Apr. 9 | Apr. 17 | Apr. 25 | May 3 | May 11 |
| 20 | Mar. 29 | Apr. 6 | Apr. 14 | Apr. 23 | Apr. 30 |
| 16 | Mar. 18 | Mar. 26 | Apr. 4 | Apr. 13 | Apr. 21 |

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In the table "Probability of Freeze Occurrence in Fall" change the word "decreases" to "increases".

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1948 | 3.3 | 4.7 | 16.8 | 42.0 | 56.1 | 63.9 | 71.2 | 69.2 | 65.0 | 48.4 | 25.0 | 10.2 | 40.1 |
| 1949 | 3.8 | 1.9 | 22.3 | 46.5 | 57.1 | 65.7 | 70.7 | 70.8 | 56.4 | 46.0 | 34.1 | 9.7 | 40.4 |
| 1950 | -9.5 | 5.8 | 19.2 | 31.9 | 49.8 | 63.8 | 67.3 | 63.3 | 59.4 | 46.3 | 23.0 | 7.3 | 35.7 |
| 1951 | 1.5 | 12.5 | 16.8 | 39.4 | 57.7 | 60.3 | 68.9 | 64.2 | 54.1 | 42.6 | 20.5 | 6.1 | 37.0 |
| 1952 | 1.3 | 17.1 | 21.3 | 47.7 | 55.7 | 67.1 | 69.5 | 67.5 | 62.3 | 43.6 | 32.3 | 18.5 | 42.0 |
| 1953 | 12.1 | 18.3 | 28.1 | 38.2 | 54.0 | 64.5 | 70.7 | 69.8 | 58.7 | 53.5 | 34.6 | 16.3 | 43.2 |
| 1954 | -1.7 | 27.2 | 25.9 | 41.6 | 50.3 | 64.4 | 71.0 | 67.8 | 57.7 | 45.4 | 35.0 | 19.8 | 42.0 |
| 1955 | 9.3 | 6.2 | 15.9 | 51.5 | 60.8 | 65.1 | 74.3 | 73.0 | 58.9 | 48.4 | 18.9 | 4.9 | 40.6 |
| 1956 | 6.4 | 5.5 | 19.0 | 34.3 | 54.1 | 69.5 | 65.6 | 67.3 | 55.8 | 52.2 | 31.0 | 16.2 | 39.7 |
| 1957 | 3.4 | 12.8 | 27.1 | 42.2 | 56.8 | 62.5 | 74.6 | 68.3 | 56.5 | 46.4 | 29.3 | 22.0 | 41.8 |
| 1958 | 17.7 | 13.5 | 29.9 | 45.3 | 58.2 | 59.6 | 67.1 | 69.0 | 60.2 | 48.6 | 28.9 | 18.0 | 42.3 |
| 1959 | 3.2 | 9.6 | 30.6 | 44.2 | 55.5 | 68.1 | 71.6 | 72.1 | 58.9 | 40.8 | 20.7 | 24.6 | 41.7 |
| 1960 | 9.5 | 12.1 | 16.7 | 40.8 | 55.9 | 63.8 | 71.1 | 70.8 | 61.2 | 48.6 | 30.7 | 10.5 | 41.0 |
| 1961 | 8.2 | 18.1 | 34.0 | 38.5 | 53.6 | 68.5 | 69.6 | 73.3 | 56.3 | 47.8 | 31.2 | 9.0 | 42.3 |
| 1962 | 4.7 | 6.3 | 21.7 | 38.1 | 55.4 | 66.6 | 66.9 | 69.8 | 56.8 | 50.7 | 33.7 | 17.6 | 40.7 |
| 1963 | 4.0 | 12.0 | 33.1 | 44.3 | 54.9 | 68.6 | 72.3 | 69.7 | 62.5 | 57.4 | 34.3 | 7.5 | 43.4 |
| 1964 | 14.4 | 19.1 | 20.5 | 44.6 | 60.0 | 64.2 | 73.1 | 65.6 | 56.2 | | 30.7 | 3.4 | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1949 | 1.08 | .61 | .97 | .12 | 4.25 | 2.64 | 6.95 | .90 | .94 | 3.09 | .54 | 1.18 | 23.27 |
| 1950 | 1.58 | .14 | 2.19 | 1.77 | 4.39 | 3.39 | .96 | 1.31 | 2.86 | .90 | .44 | .50 | 20.43 |
| 1951 | .59 | .23 | 1.22 | .57 | .23 | 2.64 | 1.42 | 4.46 | .96 | .75 | .32 | 1.29 | 14.68 |
| 1952 | 1.01 | .21 | .30 | .73 | .89 | 2.32 | 12.29 | 2.75 | .21 | .07 | 2.18 | .34 | 23.30 |
| 1953 | .19 | .33 | .16 | 3.11 | 2.69 | 10.55 | 1.63 | 3.32 | 2.14 | 1.57 | .60 | .70 | 26.99 |
| 1954 | .72 | .25 | .52 | 1.44 | 1.10 | 5.05 | 1.61 | 1.56 | 2.67 | .36 | .27 | .19 | 15.74 |
| 1955 | .23 | .86 | .72 | .82 | 2.60 | 3.87 | 4.19 | 1.02 | 1.44 | .44 | .84 | .41 | 17.44 |
| 1956 | .83 | .34 | 1.15 | .66 | 2.79 | 2.71 | 2.99 | 3.87 | .80 | 1.38 | 1.87 | .56 | 19.95 |
| 1957 | .39 | .24 | .05 | 1.73 | 1.85 | 4.58 | 3.43 | 1.12 | 7.27 | 1.69 | .92 | .02 | 23.29 |
| 1958 | .05 | .14 | .08 | .82 | 1.71 | 3.37 | 5.11 | 2.56 | 1.45 | .71 | 1.89 | .27 | 18.16 |
| 1959 | .26 | .32 | .16 | .27 | 2.87 | 4.77 | 2.83 | 4.32 | .86 | 3.10 | .64 | .16 | 20.56 |
| 1960 | .37 | .37 | .28 | 1.99 | 1.77 | 3.09 | 4.84 | 4.12 | 1.70 | 2.14 | .33 | .72 | 20.92 |
| 1961 | .11 | .22 | .47 | 1.83 | 1.31 | 1.36 | 4.56 | .40 | 6.22 | 3.12 | .12 | .53 | 20.25 |
| 1962 | .89 | 1.27 | 1.48 | .53 | 5.83 | 3.51 | 5.59 | 2.16 | 3.79 | .52 | .47 | .33 | 26.37 |
| 1963 | .05 | .59 | .27 | 1.97 | 1.84 | 1.65 | 2.18 | 1.84 | .51 | .22 | .16 | .42 | 11.70 |
| 1964 | .35 | .13 | .99 | 3.98 | 1.58 | 4.19 | 4.07 | 3.68 | 1.78 | .31 | .66 | .88 | 22.60 |

PROBABILITY OF FREEZE OCCURRENCE IN SPRING

Dates on which chance of last occurrence of indicated temperature (or lower) decreases to

| Temp. (°F) | 90% | 75% | 50% | 25% | 10% |
|---|---|---|---|---|---|
| 32 | Apr. 30 | May 7 | May 14 | May 27 | May 28 |
| 28 | Apr. 19 | Apr. 26 | May 3 | May 10 | May 28 |
| 24 | Apr. 9 | Apr. 17 | Apr. 25 | May 3 | May 11 |
| 20 | Apr. 1 | Apr. 9 | Apr. 17 | Apr. 26 | May 3 |
| 16 | Mar. 18 | Mar. 26 | Apr. 4 | Apr. 13 | Apr. 21 |

PROBABILITY OF FREEZE OCCURRENCE IN FALL

Dates on which chance of last occurrence of indicated temperature (or lower) decreases to

| Temp. (°F) | 10% | 25% | 50% | 75% | 90% |
|---|---|---|---|---|---|
| 32 | Sept. 12 | Sept. 18 | Sept. 24 | Sept. 30 | Oct. 6 |
| 28 | Sept. 20 | Sept. 26 | Oct. 3. | Oct. 10 | Oct. 16 |
| 24 | Sept. 25 | Oct. 3 | Oct. 11 | Oct. 19 | Oct. 27 |
| 20 | Oct. 9 | Oct. 17 | Oct. 26 | Nov. 4 | Nov. 12 |
| 16 | Oct. 18 | Oct. 26 | Nov. 4 | Nov. 13 | Nov. 21 |

## Average Temperature (F)

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1906 | 11.5 | 7.0 | 20.4 | 48.2 | 52.3 | 64.2 | 69.2 | 67.6 | 64.4 | 44.6 | 26.6 | 6.8 | 40.2 |
| 1907 | -4.6 | 9.6 | 23.2 | 32.8 | 45.6 | 64.4 | 66.2 | 66.2 | 53.8 | 44.0 | 30.4 | 19.0 | 37.6 |
| 1908 | 15.2 | 13.2 | 20.4 | 45.2 | 52.7 | 62.5 | 69.9 | 65.9 | 63.0 | 46.1 | 32.8 | 13.4 | 41.7 |
| 1909 | 4.9 | 9.5 | 25.0 | 35.7 | 53.5 | 65.2 | 69.4 | 70.6 | 60.1 | 45.0 | 27.7 | 6.0 | 39.4 |
| 1910 | 10.8 | 6.6 | 42.1 | 47.8 | 51.1 | 69.4 | 71.8 | 65.8 | 59.0 | 50.6 | 23.8 | 11.4 | 42.5 |
| 1911 | -1.4 | 8.2 | 31.8 | 43.0 | 53.1 | 69.9 | 68.2 | 65.2 | 57.6 | 44.4 | 18.4 | 15.6 | 39.9 |
| 1912 | -7.6 | 11.6 | 20.0 | 46.5 | 57.6 | 62.6 | 69.4 | 64.6 | 55.2 | 46.2 | 32.9 | 18.5 | 39.8 |
| 1913 | 0.6 | 8.0 | 18.1 | 48.6 | 52.6 | 67.8 | 68.6 | 70.8 | 59.2 | 42.0 | 34.6 | 23.1 | 41.2 |
| 1914 | 13.8 | 2.4 | 26.4 | 40.4 | 57.2 | 64.0 | 72.6 | 64.8 | 61.5 | 53.2 | 31.2 | 6.1 | 41.1 |
| 1915 | 4.4 | 18.2 | 25.2 | 51.6 | 52.8 | 58.8 | 65.4 | 65.9 | 58.7 | 48.6 | 28.4 | 15.4 | 41.1 |
| 1916 | -4.8 | 3.5 | 19.2 | 40.1 | 51.8 | 59.1 | 74.0 | 67.0 | 56.4 | 40.8 | 29.8 | 3.1 | 36.7 |
| 1917 | -2.2 | -1.8 | 23.6 | 38.2 | 51.8 | 59.8 | 70.0 | 65.5 | 57.0 | 34.6 | 35.0 | -0.3 | 35.9 |
| 1918 | -2.0 | 11.0 | 35.5 | 42.8 | 54.2 | 63.6 | 65.6 | 69.2 | 51.8 | 47.8 | 30.8 | 15.6 | 40.5 |
| 1919 | 13.9 | 7.9 | 20.6 | 41.6 | 55.6 | 67.1 | 70.7 | 67.4 | 60.8 | 35.2 | 15.2 | 5.0 | 39.4 |
| 1920 | -1.9 | 9.4 | 23.0 | 32.7 | 54.4 | 63.4 | 68.5 | 69.2 | 61.0 | 50.6 | 28.4 | 15.2 | 39.6 |
| 1921 | 14.2 | 18.3 | 24.2 | 43.7 | 55.2 | 68.0 | 72.6 | 67.1 | 59.9 | 46.2 | 20.6 | 14.0 | 42.2 |
| 1922 | 5.0 | 0.6 | 26.7 | 42.4 | 58.4 | 65.5 | 64.8 | 71.0 | 60.8 | 47.6 | 33.3 | 6.3 | 40.4 |
| 1923 | 7.6 | 2.8 | 16.2 | 40.0 | 54.8 | 67.6 | 72.4 | 62.8 | 60.2 | 46.0 | 34.8 | 21.0 | 40.5 |
| 1924 | -0.4 | 20.2 | 29.0 | 43.0 | 47.8 | 61.8 | 67.4 | 66.8 | 56.5 | 52.4 | 28.6 | 1.4 | 39.5 |
| 1925 | 6.7 | 15.5 | 28.6 | 49.3 | 53.9 | 63.6 | 67.9 | 71.2 | 61.3 | 35.2 | 28.2 | 14.2 | 43.3 |
| 1926 | 15.6 | 21.3 | 24.0 | 43.4 | 60.2 | 60.4 | 70.4 | 67.4 | 54.3 | 43.6 | 21.8 | 7.8 | 40.9 |
| 1927 | 10.2 | 14.0 | 31.8 | 43.0 | 51.0 | 64.4 | 68.2 | 66.0 | 60.0 | 47.8 | 23.2 | 1.2 | 40.1 |
| 1928 | 12.8 | 19.5 | 27.5 | 38.2 | 59.7 | 61.0 | 69.8 | 67.4 | 56.2 | 46.2 | 32.7 | 24.4 | 43.0 |
| 1929 | -5.3 | 4.4 | 31.8 | 43.0 | 51.7 | 64.4 | 72.4 | 69.8 | 56.5 | 47.6 | 23.6 | 10.5 | 39.2 |
| 1930 | -1.2 | 21.7 | 26.8 | 47.8 | 53.2 | 66.0 | 73.0 | 71.6 | 56.2 | 41.6 | 27.4 | 17.5 | 41.8 |
| 1931 | 15.4 | 24.8 | 26.0 | 43.0 | 52.8 | 68.4 | 71.6 | 67.1 | 63.3 | 48.4 | 31.0 | 19.3 | 44.3 |
| 1932 | 11.0 | 11.8 | 18.7 | 42.4 | 57.8 | 64.2 | 72.8 | 69.6 | 57.8 | 40.4 | 22.2 | 10.2 | 40.3 |
| 1933 | 9.0 | 7.7 | 25.4 | 41.2 | 55.4 | 72.6 | 72.3 | 69.2 | 62.0 | 42.0 | 23.6 | 6.2 | 40.6 |
| 1934 | 13.2 | 15.3 | 24.4 | 43.8 | 63.2 | 65.8 | 72.1 | 67.8 | 53.8 | 48.5 | 34.2 | 10.6 | 42.7 |
| 1935 | -0.4 | 23.4 | 28.6 | 38.2 | 51.3 | 61.7 | 76.4 | 68.3 | 57.6 | 44.4 | 15.8 | 11.0 | 39.7 |
| 1936 | -7.2 | 12.0 | 23.0 | 35.8 | 61.8 | 66.2 | 80.1 | 72.0 | 62.4 | 42.0 | 25.4 | 13.3 | 38.6 |
| 1937 | -8.0 | 6.0 | 22.3 | 40.8 | 57.9 | 63.6 | 70.8 | 73.7 | 58.8 | 42.6 | 24.7 | 9.5 | 38.6 |
| 1938 | 6.8 | 8.9 | 36.0 | 43.4 | 53.4 | 65.1 | 70.8 | 72.4 | 60.2 | 50.0 | 22.3 | 13.9 | 41.9 |
| 1939 | 9.9 | -3.2 | 20.2 | 39.4 | 61.6 | 63.4 | 73.8 | 72.2 | 62.7 | 40.8 | 35.9 | 27.8 | 42.0 |
| 1940 | 6.6 | 16.9 | 19.8 | 40.2 | 55.4 | 63.3 | 72.3 | 67.7 | 62.8 | 51.7 | 24.2 | 17.8 | 41.6 |
| 1941 | 10.2 | 9.6 | 24.6 | 47.2 | 60.2 | 66.4 | 72.3 | 68.8 | 58.3 | 46.0 | 31.5 | 23.8 | 43.6 |
| 1942 | 18.2 | 12.6 | 33.2 | 47.4 | 52.6 | 62.5 | 68.5 | 68.0 | 54.6 | 47.8 | 27.5 | 8.0 | 41.7 |
| 1943 | -1.0 | 12.8 | 19.0 | 44.4 | 51.4 | 63.2 | 72.6 | 69.0 | 55.8 | 47.8 | 29.6 | 20.4 | 40.4 |
| 1944 | 20.4 | 11.6 | 19.8 | 41.0 | 53.1 | 64.6 | 68.6 | 67.2 | 58.0 | 48.0 | 32.2 | 15.8 | 42.1 |
| 1945 | 10.4 | 15.3 | 35.6 | 39.2 | 48.2 | 60.2 | 68.6 | 68.0 | 56.5 | 44.9 | 25.6 | 7.5 | 40.0 |
| 1946 | 7.8 | 7.4 | 35.4 | 48.4 | 52.6 | 64.5 | 70.8 | 67.0 | 57.2 | 43.4 | 27.8 | 12.4 | 41.2 |
| 1947 | 16.4 | 9.4 | 24.5 | 40.0 | 51.0 | 61.6 | 71.8 | 73.6 | 58.0 | 53.4 | 22.0 | 11.1 | 41.1 |
| 1948 | 3.3 | 4.7 | 16.8 | 42.9 | 56.1 | 63.9 | 71.2 | 69.2 | 65.0 | 48.4 | 29.0 | 10.2 | 40.1 |
| 1949 | 3.8 | 1.9 | 22.3 | 46.5 | 57.1 | 65.7 | 70.7 | 70.8 | 56.4 | 46.0 | 34.1 | 9.7 | 40.4 |
| 1950 | -9.5 | 5.8 | 19.2 | 31.9 | 49.8 | 63.8 | 67.3 | 63.3 | 59.4 | 46.3 | 23.0 | 7.3 | 35.7 |
| 1951 | 1.5 | 12.5 | 16.8 | 39.4 | 57.7 | 60.3 | 68.9 | 64.2 | 54.1 | 42.6 | 20.5 | 6.1 | 37.0 |
| 1952 | 1.3 | 17.1 | 21.3 | 47.7 | 55.7 | 67.1 | 69.5 | 67.5 | 62.3 | 43.6 | 32.3 | 18.5 | 42.0 |
| 1953 | 12.1 | 18.3 | 28.1 | 38.2 | 54.0 | 64.5 | 70.7 | 69.8 | 58.7 | 53.5 | 34.6 | 16.3 | 43.2 |
| 1954 | -1.7 | 27.2 | 25.9 | 41.6 | 50.3 | 64.4 | 71.0 | 67.8 | 57.7 | 45.4 | 35.0 | 19.8 | 42.0 |
| 1955 | 9.3 | 6.2 | 15.9 | 51.5 | 60.8 | 65.1 | 74.3 | 73.0 | 58.9 | 48.4 | 18.9 | 4.9 | 40.6 |
| 1956 | 6.4 | 5.5 | 19.0 | 34.3 | 54.1 | 69.5 | 65.6 | 67.3 | 55.8 | 52.2 | 31.0 | 16.2 | 39.7 |
| 1957 | 3.4 | 12.8 | 27.1 | 42.2 | 56.8 | 62.5 | 74.6 | 68.3 | 56.5 | 46.4 | 29.3 | 22.0 | 41.8 |
| 1958 | 17.7 | 23.5 | 29.9 | 45.3 | 58.2 | 59.6 | 67.1 | 69.0 | 60.2 | 48.6 | 28.9 | 18.0 | 42.3 |
| 1959 | 3.2 | 9.6 | 30.6 | 44.2 | 55.5 | 68.1 | 71.6 | 72.1 | 58.9 | 40.8 | 20.7 | 24.8 | 41.7 |
| 1960 | 9.5 | 12.1 | 16.7 | 40.8 | 55.9 | 63.8 | 71.1 | 70.8 | 61.2 | 48.6 | 30.7 | 10.5 | 41.0 |
| 1961 | 8.2 | 18.1 | 34.0 | 38.5 | 53.6 | 68.5 | 69.6 | 73.3 | 56.3 | 47.8 | 31.2 | 9.0 | 42.3 |
| 1962 | 4.7 | 6.3 | 21.7 | 38.1 | 55.4 | 66.6 | 66.9 | 69.8 | 56.8 | 50.7 | 33.7 | 17.6 | 40.7 |
| 1963 | 4.0 | 12.0 | 33.1 | 44.3 | 54.9 | 65.6 | 72.3 | 69.7 | 62.5 | 57.4 | 34.3 | 7.5 | 43.4 |
| 1964 | 14.4 | 19.1 | 20.5 | 44.6 | 60.0 | 64.2 | 73.1 | 65.6 | 56.2 | | 30.7 | 3.4 | |

## Total Precipitation (Inches)

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1906 | .50 | .28 | .53 | 2.90 | 5.78 | 3.49 | 2.71 | 2.02 | 1.76 | .98 | 2.04 | 1.31 | 24.70 |
| 1907 | 1.24 | .30 | .50 | 1.29 | 1.37 | 3.87 | 3.64 | 3.11 | 2.56 | 1.27 | .09 | 1.28 | 20.52 |
| 1908 | .23 | 2.13 | 1.16 | .75 | 4.14 | 2.74 | 1.46 | 1.80 | .82 | 1.08 | 1.03 | .45 | 17.79 |
| 1909 | .68 | .28 | .46 | 1.81 | 8.27 | 4.19 | 1.69 | 4.76 | 1.73 | .79 | .95 | 2.28 | 27.89 |
| 1910 | .16 | .27 | .58 | 2.09 | .80 | .77 | 1.86 | 1.78 | 3.08 | .48 | .62 | .40 | 12.89 |
| 1911 | .61 | 1.40 | .15 | 2.84 | 6.49 | 2.63 | 2.50 | 3.80 | 1.68 | 1.35 | 1.32 | .54 | 25.31 |
| 1912 | .70 | .40 | .80 | 2.29 | 4.64 | 2.53 | 3.10 | 5.02 | 6.53 | .40 | .02 | 1.08 | 27.51 |
| 1913 | .80 | .20 | 2.75 | 1.09 | 1.38 | 2.50 | 2.22 | 1.54 | 4.25 | 2.97 | .30 | .05 | 20.05 |
| 1914 | .80 | .55 | 1.07 | 3.26 | 1.86 | 5.41 | 4.14 | 3.46 | .47 | 1.17 | .48 | .65 | 23.32 |
| 1915 | .35 | .90 | .47 | 1.66 | 4.35 | 8.75 | 2.36 | 1.34 | 3.16 | .16 | 1.22 | .60 | 25.32 |
| 1916 | 1.95 | .95 | 1.55 | 3.35 | 3.54 | 3.44 | 5.07 | 5.37 | 3.97 | .33 | .15 | 1.94 | 31.61 |
| 1917 | .60 | 1.40 | .05 | 2.03 | .18 | 2.04 | 2.65 | .25 | 2.83 | 1.20 | .20 | .78 | 14.21 |
| 1918 | .50 | .25 | T | 2.93 | 2.69 | 2.20 | 1.22 | 3.50 | .66 | 1.55 | .90 | 1.15 | 17.55 |
| 1919 | .25 | .42 | .67 | 1.21 | 4.19 | 1.88 | 4.01 | 5.65 | .93 | .59 | 2.12 | .60 | 22.52 |
| 1920 | 1.30 | .40 | .30 | .67 | 3.08 | 3.78 | .83 | .65 | 2.96 | .99 | .64 | .45 | 16.05 |
| 1921 | .30 | .30 | .85 | 1.59 | 3.32 | 4.03 | 2.59 | 2.13 | 3.21 | .65 | .59 | .25 | 19.81 |
| 1922 | .33 | 1.80 | .50 | 1.65 | 4.69 | 1.22 | 2.12 | 1.62 | 1.21 | T | 2.60 | .55 | 18.29 |
| 1923 | .35 | .20 | T | 1.18 | 2.07 | 4.00 | 3.35 | 2.03 | 2.10 | T | .63 | .65 | 16.56 |
| 1924 | .20 | .40 | .05 | 3.09 | 1.17 | 2.20 | 2.11 | 1.56 | 2.62 | 2.40 | .10 | .55 | 16.45 |
| 1925 | .05 | .70 | .50 | 2.48 | 2.20 | 8.75 | .78 | 1.30 | 4.33 | .98 | .58 | .30 | 22.95 |
| 1926 | .60 | .45 | .68 | T | 2.15 | 4.24 | 1.16 | 1.35 | 1.50 | 3.11 | 1.42 | .70 | 17.36 |
| 1927 | .25 | .50 | 1.25 | 2.46 | 4.57 | 3.81 | 1.75 | 2.98 | .24 | 1.33 | .65 | .65 | 20.44 |
| 1928 | .13 | .00 | 1.05 | .75 | .41 | 4.47 | 4.35 | 3.74 | 1.46 | .54 | 1.05 | .75 | 18.70 |
| 1929 | 1.15 | .25 | .30 | 2.12 | 2.27 | .60 | 1.91 | .94 | 1.01 | 2.81 | .57 | .21 | 14.14 |
| 1930 | .17 | 1.08 | .42 | .77 | 4.04 | 1.93 | 1.13 | .67 | .40 | 2.95 | 2.40 | .19 | 16.15 |
| 1931 | .13 | .26 | .78 | .05 | 3.40 | 3.04 | 2.69 | 1.64 | 1.84 | 3.09 | 1.49 | .70 | 19.11 |
| 1932 | .55 | 1.06 | .72 | 2.70 | 2.74 | 1.11 | 2.66 | 1.74 | 1.47 | 2.78 | .50 | .08 | 18.11 |
| 1933 | 1.79 | .06 | .60 | 2.11 | 2.92 | 2.86 | 1.83 | 1.23 | 2.71 | .48 | 1.11 | 1.66 | 19.36 |
| 1934 | .18 | .06 | .41 | 1.11 | .79 | 5.04 | 1.66 | 1.70 | .79 | 2.39 | .61 | .44 | 15.18 |
| 1935 | .33 | T | 1.14 | 2.48 | 2.39 | 4.02 | 3.39 | 4.13 | .65 | .24 | .91 | .53 | 20.21 |
| 1936 | .57 | .88 | .70 | .16 | 1.58 | .75 | .06 | .91 | .74 | .14 | .28 | .42 | 7.19 |
| 1937 | .77 | .66 | .14 | 4.38 | 4.37 | 2.74 | 5.61 | 3.18 | 1.66 | .14 | .59 | .47 | 24.71 |
| 1938 | .32 | .78 | .72 | 1.37 | 5.42 | .91 | 2.84 | 1.75 | 1.14 | .52 | .94 | .56 | 17.27 |
| 1939 | .42 | .58 | .19 | .92 | .56 | 8.95 | 1.70 | 1.69 | 2.80 | 1.69 | .06 | .12 | 19.68 |
| 1940 | T | .82 | 1.10 | 1.64 | 1.83 | 1.78 | 3.76 | 4.64 | .14 | 2.09 | .73 | .64 | 19.17 |
| 1941 | .78 | .18 | .85 | 3.81 | 2.10 | 8.13 | 1.58 | 4.78 | 5.68 | .88 | .03 | .20 | 29.00 |
| 1942- | .11 | .26 | 2.22 | 2.12 | 2.86 | 1.68 | 1.57 | 5.44 | 1.41 | .16 | .16 | .78 | 18.77 |
| 1943 | .31 | 1.02 | .69 | 1.95 | 3.24 | 4.17 | 1.53 | 5.09 | .35 | 1.30 | .45 | .15 | 20.25 |
| 1944 | .26 | .10 | 1.29 | .83 | 2.63 | 4.82 | 2.92 | 8.83 | 1.53 | .08 | 2.68 | .14 | 26.11 |
| 1945 | .34 | .42 | 1.04 | 2.15 | 1.80 | 1.18 | 5.22 | 2.80 | 3.43 | .50 | .06 | 1.10 | 20.04 |
| 1946 | .58 | 1.17 | .36 | 1.05 | 2.71 | 4.74 | 1.74 | 1.38 | 6.60 | 1.80 | .74 | .63 | 23.50 |
| 1947 | .22 | .64 | .35 | 3.32 | 1.90 | 4.30 | 1.78 | 3.02 | 2.11 | 1.51 | 1.88 | .33 | 21.36 |
| 1948 | .22 | 1.89 | 1.30 | 1.84 | .99 | 3.61 | 3.41 | 1.12 | .68 | 1.21 | .65 | .66 | 17.58 |
| 1949 | 1.08 | .61 | .97 | .12 | 4.25 | 2.64 | 6.95 | .90 | .94 | 3.09 | .54 | 1.18 | 23.27 |
| 1950 | 1.58 | .14 | 2.19 | 1.77 | 4.39 | 3.39 | .96 | 1.31 | 2.86 | .90 | .44 | .50 | 20.43 |
| 1951 | .59 | .23 | 1.22 | .57 | .23 | 2.64 | 1.42 | 4.46 | .96 | .75 | .32 | 1.29 | 14.68 |
| 1952 | 1.01 | .21 | .30 | .73 | .89 | 2.32 | 12.29 | 2.75 | .21 | .07 | 2.18 | .34 | 23.30 |
| 1953 | .19 | .33 | .16 | 3.11 | 2.69 | 10.55 | 1.63 | 3.32 | 2.14 | 1.57 | .60 | .70 | 26.99 |
| 1954 | .72 | .25 | .52 | 1.44 | 1.10 | 5.05 | 1.61 | 1.56 | 2.67 | .36 | .27 | .19 | 15.74 |
| 1955 | .23 | .86 | .72 | .82 | 2.60 | 3.87 | 4.19 | 1.02 | 1.44 | .44 | .84 | .41 | 17.44 |
| 1956 | .83 | .34 | 1.15 | .66 | 2.79 | 2.71 | 2.99 | 3.87 | .80 | 1.38 | 1.87 | .56 | 19.95 |
| 1957 | .39 | .24 | .05 | 1.73 | 1.85 | 4.58 | 3.43 | 1.12 | 7.27 | 1.69 | .92 | .02 | 23.29 |
| 1958 | .05 | .14 | .08 | .82 | 1.71 | 3.37 | 5.11 | 2.56 | 1.45 | .71 | 1.89 | .27 | 18.16 |
| 1959 | .26 | .32 | .16 | .27 | 2.87 | 4.77 | 2.83 | 4.32 | .86 | 3.10 | .64 | .16 | 20.56 |
| 1960 | .37 | .37 | .28 | 1.99 | 1.77 | 3.09 | 4.04 | 4.12 | 1.70 | 2.14 | .33 | .72 | 20.92 |
| 1961 | .11 | .22 | .47 | 1.83 | 1.31 | 1.36 | 4.56 | .40 | 6.22 | 3.12 | .12 | .53 | 20.25 |
| 1962 | .89 | 1.27 | 1.48 | .53 | 5.83 | 3.51 | 5.59 | 2.16 | 3.79 | .52 | .47 | .33 | 26.37 |
| 1963 | .05 | .59 | .27 | 1.97 | 1.84 | 1.65 | 2.18 | 1.84 | .51 | .22 | .16 | .42 | 11.70 |
| 1964 | .35 | .13 | .99 | 3.98 | 1.58 | 4.19 | 4.07 | 3.68 | 1.78 | .31 | .66 | .88 | 22.60 |

## PROBABILITY OF FREEZE OCCURRENCE IN SPRING

Dates on which chance of last occurrence of indicated temperature (or lower) decreases to

| Temp. (°F) | 90% | 75% | 50% | 25% | 10% |
|---|---|---|---|---|---|
| 32 | Apr. 30 | May 7 | May 14 | May 27 | May 28 |
| 28 | Apr. 19 | Apr. 26 | May 3 | May 10 | May 28 |
| 24 | Apr. 9 | Apr. 17 | Apr. 25 | May 3 | May 11 |
| 20 | Apr. 1 | Apr. 9 | Apr. 17 | Apr. 26 | May 3 |
| 16 | Mar. 18 | Mar. 26 | Apr. 4 | Apr. 13 | Apr. 21 |

## PROBABILITY OF FREEZE OCCURRENCE IN FALL

Dates on which chance of last occurrence of indicated temperature (or lower) decreases to

| Temp. (°F) | 10% | 25% | 50% | 75% | 90% |
|---|---|---|---|---|---|
| 32 | Sept. 12 | Sept. 18 | Sept. 24 | Sept. 30 | Oct. 6 |
| 28 | Sept. 20 | Sept. 26 | Oct. 3. | Oct. 10 | Oct. 16 |
| 24 | Sept. 25 | Oct. 3 | Oct. 11 | Oct. 19 | Oct. 27 |
| 20 | Oct. 9 | Oct. 17 | Oct. 26 | Nov. 4 | Nov. 12 |
| 16 | Oct. 18 | Oct. 26 | Nov. 4 | Nov. 13 | Nov. 21 |

## Monthly Minimum Temperature (F)

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1906 | -29 | -32 | -16 | 23 | 23 | 42 | 49 | 41 | 33 | 17 | -15 | -23 | -32 |
| 1907 | -32 | -38 | -6 | 12 | 15 | 37 | 49 | 38 | 21 | 17 | 2 | -20 | -38 |
| 1908 | -29 | -21 | -20 | 5 | 21 | 36 | 42 | 34 | 28 | 13 | 2 | -19 | -29 |
| 1909 | -34 | -21 | -6 | 11 | 20 | 40 | 48 | 40 | 36 | 15 | -8 | -24 | -34 |
| 1910 | -23 | -22 | 13 | 16 | 23 | 29 | 46 | 35 | 29 | 20 | 0 | -20 | -23 |
| 1911 | -28 | -18 | -7 | 10 | 21 | 43 | 43 | 37 | 28 | 15 | -15 | -20 | -28 |
| 1912 | -39 | -21 | -14 | 21 | 32 | 36 | 39 | 41 | 26 | 17 | 16 | -10 | -39 |
| 1913 | -39 | -25 | -20 | 21 | 27 | 35 | 43 | 49 | 22 | 8 | 9 | -14 | -39 |
| 1914 | -17 | -37 | -9 | 13 | 27 | 38 | 51 | 37 | 31 | 19 | -10 | -26 | -37 |
| 1915 | -36 | -9 | -5 | 18 | 29 | 30 | 42 | 34 | 37 | 24 | -1 | -14 | -36 |
| 1916 | -39 | -38 | -22 | 8 | 20 | 38 | 49 | 39 | 28 | 15 | -3 | -32 | -39 |
| 1917 | -36 | -35 | -31 | 20 | 29 | 30 | 39 | 35 | 20 | 5 | 13 | -34 | -36 |
| 1918 | -33 | -26 | -4 | 13 | 17 | 39 | 42 | 46 | 22 | 25 | 8 | -22 | -33 |
| 1919 | -36 | -24 | -21 | 18 | 28 | 36 | 46 | 42 | 30 | -7 | -18 | -26 | -36 |
| 1920 | -28 | -26 | -19 | 4 | 25 | 38 | 45 | 38 | 24 | 14 | 5 | -21 | -28 |
| 1921 | -18 | -16 | -6 | 18 | 23 | 34 | 49 | 40 | 36 | 25 | -20 | -26 | -26 |
| 1922 | -33 | -30 | -18 | 20 | 37 | 45 | 42 | 40 | 33 | 12 | 12 | -24 | -33 |
| 1923 | -23 | -30 | -20 | 16 | 21 | 40 | 48 | 36 | 23 | 11 | 7 | -22 | -30 |
| 1924 | -34 | -13 | 8 | 18 | 30 | 34 | 42 | 38 | 35 | 30 | 3 | -30 | -34 |
| 1925 | -21 | -24 | -13 | 24 | 24 | 38 | 44 | 41 | 34 | 4 | -4 | -16 | -24 |
| 1926 | -22 | -3 | -9 | 14 | 18 | 39 | 40 | 44 | 23 | 18 | -8 | -22 | -22 |
| 1927 | -27 | -18 | 2 | 20 | 31 | 36 | 45 | 36 | 22 | 25 | -8 | -23 | -27 |
| 1928 | -22 | -12 | -7 | 7 | 27 | 33 | 48 | 32 | 22 | 15 | 6 | -18 | -22 |
| 1929 | -30 | -29 | -6 | 19 | 22 | 35 | 44 | 40 | 19 | 22 | -13 | -22 | -30 |
| 1930 | -31 | -16 | -1 | 17 | 25 | 39 | 44 | 44 | 22 | 10 | -8 | -15 | -31 |
| 1931 | -15 | -14 | 0 | 11 | 19 | 34 | 49 | 33 | 31 | 26 | -1 | -14 | -15 |
| 1932 | -25 | -22 | -12 | 10 | 28 | 44 | 43 | 41 | 33 | 20 | -13 | -18 | -25 |
| 1933 | -12 | -34 | -5 | 17 | 29 | 39 | 45 | 43 | 33 | 13 | -4 | -34 | -34 |
| 1934 | -26 | -16 | -5 | 20 | 26 | 42 | 44 | 34 | 22 | 21 | 10 | -28 | -28 |
| 1935 | -33 | -10 | -1 | 15 | 30 | 33 | 55 | 36 | 25 | 14 | -13 | -24 | -33 |
| 1936 | -38 | -40 | -17 | -2 | 33 | 35 | 45 | 41 | 27 | 1 | -5 | -21 | -40 |
| 1937 | -32 | -29 | -4 | 18 | 30 | 35 | 48 | 45 | 32 | 13 | -12 | -27 | -32 |
| 1938 | -24 | -23 | 1 | 8 | 30 | 36 | 50 | 46 | 25 | 15 | -18 | -26 | -26 |
| 1939 | -24 | -36 | -16 | 8 | 26 | 43 | 49 | 47 | 26 | 15 | 8 | -8 | -36 |
| 1940 | -22 | -12 | -12 | 8 | 30 | 36 | 46 | 42 | 29 | 24 | -7 | -21 | -22 |
| 1941 | -21 | -27 | -10 | 20 | 29 | 39 | 45 | 38 | 30 | 15 | 1 | -10 | -27 |
| 1942 | -24 | -21 | 14 | 6 | 30 | 36 | 43 | 38 | 19 | 16 | -10 | -24 | -24 |
| 1943 | -30 | -24 | -15 | 17 | 22 | 39 | 52 | 44 | 27 | 19 | 8 | -14 | -30 |
| 1944 | -15 | -28 | -14 | 7 | 24 | 40 | 45 | 42 | 34 | 23 | 4 | -18 | -28 |
| 1945 | -22 | -16 | -10 | 21 | 23 | 35 | 41 | 40 | 24 | 12 | -2 | -25 | -25 |
| 1946 | -29 | -28 | -8 | 22 | 19 | 33 | 45 | 43 | 34 | 23 | -5 | -25 | -29 |
| 1947 | -26 | -19 | -1 | 12 | 26 | 38 | 42 | 45 | 24 | 23 | -15 | -22 | -26 |
| 1948 | -38 | -30 | -34 | 3 | 31 | 42 | 48 | 46 | 40 | 16 | -3 | -25 | -38 |
| 1949 | -25 | -26 | -10 | 22 | 28 | 37 | 46 | 43 | 25 | 16 | -2 | -22 | -26 |
| 1950 | -34 | -30 | -24 | 5 | 28 | 36 | 41 | 35 | 37 | 18 | -12 | -23 | -34 |
| 1951 | -34 | -28 | -18 | 20 | 30 | 36 | 43 | 41 | 23 | 6 | -16 | -28 | -34 |
| 1952 | -34 | -18 | -25 | 14 | 29 | 39 | 45 | 44 | 29 | 10 | 28 | -1 | -34 |
| 1953 | -19 | -12 | -8 | 10 | 23 | 31 | 46 | 48 | 30 | 24 | 13 | -20 | -20 |
| 1954 | -32 | -10 | -3 | 0 | 24 | 40 | 40 | 42 | 27 | 19 | 1 | -12 | -32 |
| 1955 | -21 | -27 | -21 | 26 | 23 | 44 | 48 | 44 | 29 | 12 | -19 | -30 | -30 |
| 1956 | -22 | -31 | -22 | 13 | 27 | 35 | 47 | 40 | 27 | 20 | 0 | -20 | -31 |
| 1957 | -27 | -16 | -5 | 9 | 28 | 38 | 56 | 44 | 29 | 19 | 4 | -13 | -27 |
| 1958 | -12 | -22 | 9 | 13 | 20 | 37 | 45 | 43 | 32 | 24 | -20 | -17 | -22 |
| 1959 | -25 | -26 | 0 | 20 | 30 | 42 | 45 | 45 | 26 | 21 | -7 | 5 | -26 |
| 1960 | -23 | -17 | -15 | 14 | 26 | 38 | 46 | 45 | 31 | 18 | -4 | -22 | -23 |
| 1961 | -27 | -17 | 12 | 10 | 22 | 41 | 48 | 45 | 24 | 18 | 4 | -19 | -27 |
| 1962 | -30 | -32 | -30 | 11 | 30 | 40 | 45 | 46 | 29 | 19 | 11 | -16 | -32 |
| 1963 | -27 | -22 | -4 | 16 | 26 | 38 | 50 | 45 | 35 | 25 | 3 | -26 | -27 |
| 1964 | -21 | -16 | -11 | 13 | 33 | 34 | 51 | 37 | 27 | 20 | -27 | -21 | -27 |

## Monthly Maximum Temperature (F)

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1906 | 38 | 38 | 58 | 78 | 93 | 87 | 95 | 99 | 98 | 84 | 56 | 34 | 99 |
| 1907 | 32 | 38 | 52 | 63 | 78 | 90 | 90 | 95 | 79 | 75 | 53 | 46 | 95 |
| 1908 | 44 | 39 | 45 | 90 | 80 | 86 | 95 | 95 | 95 | 80 | 64 | 40 | 95 |
| 1909 | 36 | 33 | 45 | 68 | 84 | 91 | 91 | 93 | 88 | 89 | 68 | 36 | 93 |
| 1910 | 41 | 36 | 78 | 83 | 79 | 98 | 97 | 93 | 81 | 88 | 45 | 37 | 98 |
| 1911 | 29 | 36 | 64 | 85 | 89 | 93 | 95 | 90 | 85 | 79 | 47 | 41 | 95 |
| 1912 | 26 | 42 | 51 | 82 | 87 | 96 | 91 | 92 | 93 | 78 | 56 | 49 | 96 |
| 1913 | 36 | 34 | 53 | 85 | 93 | 95 | 93 | 98 | 90 | 75 | 63 | 53 | 98 |
| 1914 | 46 | 46 | 57 | 69 | 83 | 85 | 94 | 92 | 92 | 88 | 64 | 40 | 94 |
| 1915 | 33 | 39 | 46 | 83 | 80 | 82 | 85 | 90 | 91 | 78 | 57 | 39 | 91 |
| 1916 | 27 | 41 | 46 | 65 | 82 | 81 | 92 | 93 | 87 | 69 | 63 | 52 | 93 |
| 1917 | 40 | 38 | 56 | 55 | 88 | 90 | 106 | 99 | 86 | 72 | 66 | 43 | 106 |
| 1918 | 32 | 49 | 73 | 72 | 93 | 92 | 98 | 99 | 78 | 77 | 64 | 48 | 99 |
| 1919 | 37 | 32 | 44 | 72 | 90 | 90 | 93 | 93 | 92 | 78 | 40 | 39 | 93 |
| 1920 | 31 | 31 | 60 | 58 | 79 | 88 | 91 | 98 | 90 | 88 | 54 | 33 | 98 |
| 1921 | 42 | 44 | 56 | 75 | 87 | 96 | 96 | 91 | 95 | 75 | 62 | 42 | 96 |
| 1922 | 35 | 20 | 52 | 77 | 80 | 92 | 90 | 99 | 96 | 92 | 51 | 38 | 99 |
| 1923 | 40 | 34 | 45 | 78 | 86 | 92 | 94 | 89 | 84 | 75 | 60 | 47 | 94 |
| 1924 | 37 | 45 | 48 | 73 | 78 | 84 | 91 | 94 | 82 | 76 | 65 | 38 | 94 |
| 1925 | 37 | 51 | 69 | 83 | 93 | 89 | 94 | 101 | 95 | 56 | 53 | 41 | 101 |
| 1926 | 43 | 45 | 67 | 86 | 95 | 90 | 94 | 95 | 91 | 71 | 56 | 35 | 95 |
| 1927 | 40 | 40 | 58 | 74 | 75 | 92 | 93 | 92 | 94 | 81 | 53 | 36 | 94 |
| 1928 | 45 | 45 | 65 | 76 | 94 | 87 | 92 | 94 | 90 | 82 | 62 | 47 | 94 |
| 1929 | 28 | 31 | 63 | 74 | 88 | 96 | 105 | 98 | 94 | 76 | 50 | 39 | 105 |
| 1930 | 35 | 50 | 56 | 78 | 93 | 90 | 100 | 101 | 86 | 75 | 52 | 35 | 101 |
| 1931 | 40 | 41 | 45 | 80 | 92 | 98 | 103 | 101 | 99 | 82 | 61 | 38 | 103 |
| 1932 | 34 | 59 | 51 | 71 | 94 | 96 | 103 | 95 | 86 | 76 | 46 | 39 | 103 |
| 1933 | 35 | 49 | 50 | 76 | 84 | 105 | 101 | 97 | 89 | 81 | 71 | 43 | 105 |
| 1934 | 40 | 45 | 57 | 90 | 105 | 90 | 103 | 97 | 90 | 85 | 72 | 39 | 105 |
| 1935 | 37 | 45 | 61 | 67 | 81 | 85 | 97 | 100 | 83 | 76 | 35 | 35 | 100 |
| 1936 | 21 | 25 | 43 | 71 | 94 | 100 | 115 | 101 | 99 | 85 | 56 | 41 | 115 |
| 1937 | 20 | 35 | 42 | 64 | 91 | 90 | 99 | 98 | 92 | 80 | 55 | 38 | 99 |
| 1938 | 37 | 42 | 70 | 81 | 80 | 92 | 99 | 98 | 94 | 85 | 66 | 46 | 99 |
| 1939 | 32 | 40 | 67 | 78 | 99 | 93 | 101 | 98 | 97 | 69 | 64 | 57 | 101 |
| 1940 | 39 | 40 | 37 | 69 | 87 | 95 | 102 | 92 | 90 | 79 | 49 | 40 | 102 |
| 1941 | 38 | 38 | 57 | 81 | 90 | 93 | 100 | 99 | 89 | 72 | 61 | 59 | 100 |
| 1942 | 56 | 34 | 60 | 84 | 82 | 84 | 93 | 96 | 85 | 84 | 62 | 34 | 96 |
| 1943 | 41 | 44 | 63 | 78 | 81 | 92 | 96 | 92 | 83 | 85 | 52 | 50 | 96 |
| 1944 | 52 | 38 | 50 | 70 | 88 | 91 | 92 | 95 | 79 | 80 | 60 | 40 | 95 |
| 1945 | 37 | 41 | 71 | 69 | 79 | 92 | 97 | 95 | 100 | 82 | 57 | 47 | 100 |
| 1946 | 30 | 39 | 82 | 84 | 85 | 92 | 95 | 99 | 85 | 77 | 61 | 43 | 99 |
| 1947 | 47 | 41 | 56 | 82 | 82 | 85 | 97 | 106 | 99 | 89 | 50 | 37 | 106 |
| 1948 | 40 | 36 | 47 | 75 | 94 | 95 | 101 | 100 | 97 | 81 | 53 | 40 | 101 |
| 1949 | 41 | 33 | 44 | 85 | 83 | 92 | 97 | 100 | 86 | 81 | 68 | 40 | 100 |
| 1950 | 24 | 34 | 44 | 67 | 84 | 100 | 92 | 90 | 91 | 79 | 66 | | 100 |
| 1951 | 34 | 37 | 42 | 80 | 85 | 85 | 97 | 99 | 85 | 82 | 49 | 39 | 99 |
| 1952 | 42 | 39 | 51 | 92 | 91 | 95 | 94 | 98 | 96 | 73 | 62 | 38 | 98 |
| 1953 | 39 | 44 | 54 | 72 | 87 | 91 | 91 | 96 | 92 | 86 | 70 | 41 | 96 |
| 1954 | 39 | 43 | 47 | 75 | 84 | 92 | 97 | 92 | 88 | 72 | 63 | 43 | 97 |
| 1955 | 29 | 37 | 54 | 82 | 94 | 90 | 97 | 100 | 92 | 84 | 57 | 35 | 100 |
| 1956 | 37 | 35 | 43 | 70 | 85 | 97 | 88 | 95 | 91 | 85 | 62 | 50 | 97 |
| 1957 | 33 | 40 | 59 | 84 | 83 | 85 | 98 | 93 | 86 | 79 | 54 | 45 | 98 |
| 1958 | 49 | 65 | 58 | 78 | 90 | 88 | 93 | 101 | 89 | 80 | 64 | 42 | 101 |
| 1959 | 34 | 39 | 58 | 79 | 95 | 99 | 96 | 100 | 100 | 74 | 51 | 42 | 100 |
| 1960 | 37 | 40 | 46 | 73 | 88 | 88 | 97 | 94 | 96 | 83 | 57 | 38 | 97 |
| 1961 | 42 | 45 | 66 | 70 | 89 | 95 | 95 | 99 | 91 | 85 | 58 | 36 | 99 |
| 1962 | 40 | 44 | 39 | 85 | 81 | 89 | 86 | 95 | 86 | 82 | 55 | 55 | 95 |
| 1963 | 42 | 54 | 81 | 78 | 88 | 94 | 98 | 95 | 90 | 90 | 62 | 42 | 98 |
| 1964 | 42 | 48 | 54 | 75 | 99 | 94 | 96 | 97 | 89 | | 66 | 29 | 99 |

## STATION HISTORY

A climatological substation was established in Hillsboro, North Dakota in November, 1905. Its exact location is unknown until it was moved to its present location 0.2 mile east of the post office in March, 1940. Instruments consist of a maximum thermometer, a minimum thermometer and an 8 inch rain gage. Instruments are exposed over sod under standard regulations.

Observers at the Hillsboro location have been:

| | | | |
|---|---|---|---|
| M. H. Norman | November 1905 | to | November 1910 |
| F. E. Mayall | December 1910 | to | May 1929 |
| G. Havland | June 1929 | to | May 1934 |
| Lyle George | June 1934 | to | March 1940 |
| Alfred Jahnke | March 1940 | to | Present |