U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
IN COOPERATION WITH THE FIRST NATIONAL BANK OF MARSHALL
Marshall, Minn
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 — 21

CLIMATOLOGICAL SUMMARY

LATITUDE 44° 27'
LONGITUDE 95° 47'
ELEV. (GROUND) 1165 Feet

STATION MARSHALL, MINNESOTA

MEANS AND EXTREMES FOR PERIOD 1936-1963

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)	28	28	28	28		28		13	28	28		28	28		28		28	28	28	28	28	
Jan.	22.1	3.4	12.8	61	1944	-32	1936	1621	0.52	1.13	1944	6.1	14.2	1953	7.0	1937	2	0	23	31	14	Jan.
Feb.	26.5	7.5	17.0	60	1958	-36	1936	1297	0.87	1.25	1944	9.8	32.3	1952	16.0	1952	2	0	18	28	10	Feb.
Mar.	37.8	20.2	29.0	83	1939	-24	1962	1149	1.58	1.67	1946	10.8	35.0	1951	15.0	1949	4	0	11	27	2	Mar.
Apr.	54.2	34.3	44.3	90	1960	4	1936	593	2.27	1.60	1937	3.2	12.5	1947	12.0	1947	5	*	1	14	0	Apr.
May	69.4	46.5	58.0	96	1939	22	1946	237	3.45	2.27	1946	0.1	2.5	1944	1.5	1944	7	1	0	2	0	May
June	78.2	57.0	67.6	102	1937	32	1946	49	4.60	8.07	1957	0	0	-	0	-	7	3	0	*	0	June
July	84.6	61.5	73.1	107	1936	44	1941	8	3.67	3.25	1943	0	0	-	0	-	6	7	0	0	0	July
Aug.	83.0	60.2	71.6	106	1936	38	1935	12	2.75	2.19	1955	0	0	-	0	-	6	7	0	0	0	Aug.
Sep.	73.2	50.2	61.7	100	1939	22	1942	166	2.34	3.44	1955	T	1.1	1942	1.1	1942	4	2	0	1	0	Sep.
Oct.	62.4	39.7	51.1	93	1938	11	1936	432	1.30	1.80	1941	0.3	3.0	1937	3.0	1937	3	*	*	7	0	Oct.
Nov.	41.8	23.5	32.7	80	1938	-11	1937	938	1.13	1.88	1948	6.2	24.0	1948	14.0	1948+	3	0	8	24	1	Nov.
Dec.	28.7	11.1	19.9	73	1939	-23	1955	1397	0.67	1.92	1959	6.8	17.4	1945	8.0	1955	2	0	18	30	7	Dec.
Year	55.2	34.6	44.9	107	1936	-36	1936	7899	25.15	8.07	1957	43.3	35.0	1951	16.0	1952	51	20	79	164	34	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 MARSHALL, MINNESOTA

Marshall, county seat of Lyon County is located in southwestern Minnesota. The surrounding topography is a gently rolling glacial plain interspersed with the shallow valleys of the Cottonwood, Yellow Medicine and Redwood Rivers. The latter stream flows through the City of Marshall and has, at times, caused severe flooding. The severity of flooding to be expected has been lessened recently by diverting part of the river flow around the city. Since Lyon County has but little topographic relief there are no marked climatic regions and this summary can be considered as typical of the entire county.

Marshall has a continental type climate which means the summers are warm. This is also the times of greatest precipitation. Winters are cold and precipitation, in the form of snow, is generally light. The fall and spring months are transitional seasons with fewer extremes of temperature than during the summer and winter.

The Gulf of Mexico is the principal source of moisture for this area, much of which falls as thunderstorm type rains. About 17 inches, or 67 per cent of the annual precipitation, falls during the months of May through September. Precipitation of 0.01 inch or more can be expected on about 100 days a year, 5 of which will have amounts in excess of one inch. Rainfall intensities of 1.25 inches in one hour can be expected to recur once in two years. The greatest 24 hour rain of record was on June 17, 1957 when 8.07 inches fell. Extensive flooding occurred in Marshall as a result of this rain. Tornadoes are infrequent with only 8 reported in Lyon County during the period 1916-1963.

The first snowfall of any significance usually occurs in early November and the last in mid-April. Annual totals have ranged from 70.5 inches in 1952 to 18.5 inches in 1958.

Summertime temperature for the three months of June, July and August averages 70.8°F. A temperature of 100°F is not common with only 16 occurrences reported during the 38 years of record. July of 1936, with an average temperature of 81.8°F, is the warmest month of record.

The mean temperature of the winter months of December, January and February is 16.6°F. Outbreaks of cold Canadian air move through the area periodically and most winters experience one or two days with readings of 20 below or lower. Cold spells are not prolonged as a return of warmer southerly air moderate the cold after a day or so.

Wind, humidity and cloud observations are not made at Marshall but are made at the Weather Bureau Airport Station at Sioux Falls, South Dakota, 80 miles to the southwest. The following information, based on the Sioux Falls record, can be considered as representative of conditions in Lyon County. The mean wind speed is 11 miles per hour with the highest monthly mean speed 13.2 mph in April. From November through May the prevailing direction is northwesterly and southerly during the remaining months. Noontime humidity averages 56 per cent ranging 50 per cent in May, August and September to 65 per cent in March. During an average year there are 103 clear days, 107 partly cloudy and 155 cloudy days.

The latest occurrence in the spring of a temperature of 32°F or lower is June 2 and the earliest in the fall September 19. The following table gives the likelihood and the dates of occurrence for critical temperatures to occur on, or after, a given date in the spring and on, or before, a given date in the fall.

AFTER DATE IN SPRING

Temperatures	20%	50%	80%
32° or below	May 16	May 7	April 28
24° or below	April 26	April 17	April 7
16° or below	April 7	March 29	March 20
40° or below	June 6	May 29	May 20
50° or below		June 19	

BEFORE DATE IN FALL

32° or below	Sept. 24	Oct. 1	Oct. 10
24° or below	Oct. 14	Oct. 23	Nov. 3
16° or below	Oct. 29	Nov. 8	Nov. 18
40° or below	Sept. 5	Sept. 13	Sept. 21
50° or below		July 21	

Number of days between 50% Probability: 32°F-146 days; 24°F-188 days; 16°F-223 days; 40°F-106 days; 50°F-31 days.

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Weather Bureau Office
Minneapolis, Minnesota

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1936	0.6	-4.7	30.8	41.0	63.6	66.9	81.8	74.6	66.2	46.2	29.7	21.4	43.2
1937	2.2	13.8	26.7	41.6	60.0	65.6	75.2	76.6	63.1	46.2	30.4	14.6	43.0
1938	12.3	16.8	36.2	46.6	55.1	68.2	74.1	74.6	66.0	57.8	30.2	22.7	46.7
1939	19.6	9.0	31.4	44.4	66.0	69.1	75.0	71.0	65.4	48.4	39.6	29.9	47.4
1940	6.4	18.6	25.0	42.5	56.0	67.3	74.7	67.7	65.0	55.5	26.0	23.8	44.0
1941	16.9	16.0	28.6	49.2	62.4	67.0	72.6	71.4	62.0	50.3	34.8	25.8	46.4
1942	21.0	20.4	34.2	51.0	54.2	64.9	70.3	69.4	56.0	49.0	33.7	14.6	44.9
1943	5.5	21.0	24.6	45.4	53.8	67.6	73.8	70.4	56.8	49.0	29.2	23.6	43.4
1944	27.5	19.8	23.9	41.2	60.8	68.4	70.5	68.8	60.6	51.0	35.6	21.0	45.8
1945	17.2	21.0	39.8	43.6	52.3	61.2	70.7	70.8	59.6	50.4	30.8	11.7	44.1
1946	15.5	18.2	40.8	51.3	54.6	67.0	72.4	68.3	59.8	49.2	31.0	21.6	45.8
1947	22.6	13.5	27.9	40.6	52.4	63.2	72.9	77.2	62.2	56.1	26.1	17.2	44.3
1948	10.8	14.4	26.8	50.4	58.1	65.0	74.0	71.5	66.2	49.7	33.2	18.3	44.9
1949	11.3	13.8	29.6	47.6	62.2	70.8	75.1	74.3	59.1	51.1	39.9	19.6	46.2
1950	4.5	19 6	25.0	37.2	54.2	68.7	69.8	67.2	62.8	53.7	28.2	14.5	42.1
1951	10.3	21.9	18 2	40 9	60.3	62.7	70.8	68.1	56.7	47.8	27.7	14.0	41.6
1952	12.1	23.4	22.7	48.6	58.1	70.2	73.2	70.1	64.2	46.2	35.9	23.1	45.6
1953	17.0	21.0	31.9	40.8	57.0	70.1	71.9	73.0	61.9	57.0	38.9	21.4	46.8
1954	9.3	33.3	28.0	47.7	53.5	69.6	74.8	70.2	61.2	47.4	40.0	24.3	46.6
1955	17.5	12.8	27.9	54.4	64.1	66.8	77.7	75.7	62.1	52.5	24.8	11.3	45.6
1956	12.1	14.8	26.8	41.3	58.7	73.4	69.1	70.6	60.2	57.5	33.4	25.4	45.3
1957	10.0	21.9	31.2	46.1	56.6	66.8	77.2	69.8	59.0	48.8	32.7	26.9	45.6
1958	22.6	14.6	29.6	46.2	61.1	62.7	70.3	72.1	64.1	52.5	35.1	15.8	45.6
1959	9.5	12.9	34.5	45.0	58.9	71.9	73.4	75.3	62.5	43.0	23.3	29.5	45.0
1960	12.4	15.9	16.7	45.3	56.6	65.8	72.7	71.7	63.6	51.1	35.2	18.0	43.8
1961	14.9	22.9	34.8	39.7	54.7	69.4	71.0	73.0	60.4	50.7	33.1	14.7	44.9
1962	10.5	15.3	23.6	42.6	61.1	66.8	68.9	71.3	58.6	52.5	37.4	20.8	44.1
1963	5.3	15.0	34.6	49.2	57.0	71.4	72.9	71.0	63.4	59.7	38.3	12.0	45.8

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1936	0.64	2.10	1.75	1.20	2.82	2.61	0.18	2.58	1.18	0.38	0.72	1.10	17.26
1937	1.18	0.68	2.75	4.83	2.39	5.06	1.27	2.73	0.92	1.08	0.30	1.20	24.39
1938	0.42	0.88	2.03	2.83	5.78	2.92	4.26	1.80	1.44	0.15	1.60	0.56	24.67
1939	0.75	1.03	0.57	1.98	2.70	6.45	3.86	2.09	0.75	0.88	0.02	0.27	21.35
1940	0.14	0.56	2.45	1.63	1.00	4.75	1.61	6.37	1.34	3.21	2.44	0.83	26.33
1941	0.59	0.57	0.62	3.16	3.45	5.75	2.85	0.97	2.25	4.43	0.48	0.59	25.71
1942	0.07	0.23	2.79	1.00	6.01	4.31	3.74	1.51	4.72	0.45	0.32	0.43	25.58
1943	0.69	0.40	1.35	0.67	2.96	6.80	8.04	3.32	2.54	1.41	2.21	T	30.39
1944	1.16	1.35	0.91	2.84	5.33	3.44	2.57	4.71	1.56	0.33	1.36	0.03	25.59
1945	0.23	1.17	1.17	1.52	4.01	4.12	3.41	2.11	2.50	0.44	1.28	1.61	23.57
1946	0.30	0.77	3.34	0.58	5.11	5.07	4.70	0.62	6.29	3.18	1.33	0.24	31.53
1947	0.78	0.35	0.39	4.54	1.68	9.64	0.60	2.37	1.37	1.48	2.65	0.50	26.35
1948	0.10	1.48	0.52	3.45	2.28	3.87	2.33	1.20	2.12	1.11	2.94	0.18	21.58
1949	1.02	0.03	3.45	1.05	2.50	2.80	4.88	0.57	2.75	1.75	0.25	0.54	21.59
1950	0.51	0.08	2.42	2.52	5.24	1.08	1.10	1.13	1.67	2.41	0.73	0.77	19 66
1951	0.46	1.17	2.96	2.09	4.28	4.52	2.16	4.94	2.09	1.86	0 40	1 44	28.37
1952	1.19	2.47	2.10	0.88	1.99	7.32	2.70	2.76	0.72	0	0.51	0.36	23.00
1953	0.97	2.02	1.65	4.39	3.52	5.05	5.83	2.04	1.40	0.47	1.55	1 39	30.28
1954	0.16	1.45	2.25	1 81	1.66	2.46	2.45	3.77	3.48	1.32	0.21	0.35	21.37
1955	0.26	1.04	0.45	3.26	1.77	2.12	1.85	6.52	4.73	0.23	0.32	1.10	23.65
1956	0.49	0.33	1.36	1.56	2.18	5.39	5.34	3.86	1.11	1.07	3.44	0.22	26.35
1957	0.16	0.52	1.31	2.46	4.10	13.83	3.22	4.46	2.58	2.02	1.31	0.86	36.83
1958	0.33	0.49	0.60	3.17	0.31	3.06	2.29	2.48	2.60	0.51	1.49	0.18	17.51
1959	0.35	0.48	0.14	0.95	5.63	1.44	2.16	2.51	1.94	3.19	1.05	2.11	21.95
1960	0.53	0.02	1.30	3.61	4.49	4.61	5.05	5.11	3.18	0.99	1.34	1.18	31.41
1961	0.06	0.47	1.22	0.82	5.15	3.27	4.98	1.27	2.51	1.94	0.83	0.40	22.92
1962	0.38	1.75	1.23	1.75	4.29	3.30	6.76	2.02	2.16	0.87	0.28	0.11	24.90
1963	0.51	0.44	1.21	2.94	3.87	3.66	12.48	1.09	3.54	0.97	0.25	0.30	31.26

STATION HISTORY

The instrumental equipment at the station consists of a non-recording rain gage and self registering maximum and minimum thermometers housed in a standard instrument shelter. The equipment was installed at the Lyon County Court House on April 23, 1935 where it is presently located. Employees of the county have served as observers. The present observer is H. Vernon English, surveyor in the County Engineers Office.

All records are on file at the Weather Bureau Office, Minneapolis. The Marshall record has been published in Minnesota Climatological Data by the Department of Commerce U. S. Weather Bureau since May 1, 1935.