U.S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
IN COOPERATION WITH THE WISCONSIN CROP REPORTING SERVICE
CLIMATOGRAPHY OF THE UNITED STATES NO. 20-47

LATITUDE 44° 15' N
LONGITUDE 88° 23' W
ELEV. (GROUND) 742 Feet

CLIMATOLOGICAL SUMMARY

MEANS AND EXTREMES FOR PERIOD-1930-59

STATION:
APPLETON, WISCONSIN

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	
Jan.	26.1	9.8	18.0	55	1934	- 30	1951	1460	1.31	0.79	1959	10.6	22.3	1947	7.3	1951	4	0	21	31	8	Jan.
Feb.	28.4	11.1	19.8	59	1930	- 27	1951	1270	1.27	1.33	1937	9.1	24.6	1959	8.5	1959	4	0	18	28	6	Feb.
Mar.	37.5	22.0	29.8	75	1945	- 13	1943	1090	1.77	1.43	1955	9.7	28.2	1956	9.0	1955	5	0	9	27	1	Mar.
Apr.	53.4	34.8	44.1	83	1958+	8	1954	630	2.60	1.54	1945	1.6	7.1	1957	5.0	1956	6	0	1	13	0	Apr.
May	66.8	46.2	56.5	93	1934	28	1954+	290	3.00	2.96	1954	0.2	3.8	1947	3.5	1947	7	*	0	1	0	May
June	77.0	56.9	67.0	98	1933+	35	1945	80	3.98	3.19	1934	0	0		0		7	2	0	0	0	June
July	82.6	61.9	72.3	107	1936	46	1930	10	3.00	3.29	1952	0	0		0		6	5	0	0	0	July
Aug.	80.4	60.2	70.3	101	1946	40	1934	20	2.86	2.30	1939	0	0		0		6	4	0	0	0	Aug.
Sept.	71.2	51.8	61.5	97	1937	27	1942	160	3.18	2.31	1935	T	T	1942	T	1942	6	1	0	*	0	Sept.
Oct.	59.2	41.2	50.2	85	1947	19	1942	460	1.95	2.45	1954	0.2	3.5	1933	3.0	1933	5	0	0	5	0	Oct.
Nov.	41.8	27.8	34.8	72	1950	- 6	1950	910	2.14	2.15	1934	3.7	16.8	1959	5.5	1950	5	0	6	21	*	Nov.
Dec.	29.9	15.9	22.9	59	1946	- 19	1932	1310	1.39	1.55	1959	8.3	19.3	1942	7.0	1942	4	0	17	29	4	Dec.
Year	54.5	36.6	45.6	107	July 1936	- 30	Jan. 1951	7690	28.45	3.29	July 1952	43.4	28.2	Mar. 1956	9.0	Mar. 1955	65	12	72	155	19	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F. (H. C. S. Thom, Monthly Weather Review, January 1954.)

+ Also on earlier dates, months, or years.

* Less than one half.

CLIMATE OF APPLETON, WISCONSIN

Appleton, county seat of Outagamie County, is located in east-central Wisconsin on the lower Fox River, six miles downstream from Lake Winnebago. The terrain has a gentle slope and soils are red lacustrine clay. The original vegetation of the area was sugar maple, basswood, and oak. Data in this summary are representative of Appleton and will approximate conditions in the surrounding area.

The climate of Appleton is classified continental. Winters are relatively cold and long, summers are warm, springs and falls are often short with many short-period weather changes. Temperatures are slightly modified by Lake Winnebago during the time of the year it is not frozen. Lake Winnebago usually begins to freeze after mid-November and is usually safe to walk on by Christmas; the ice is often two to three feet thick. Break-up occurs during early April and the ice is usually out by April 13.

There is considerable temperature range not only from season to season but also from year to year. In the period of this summary, the number of days in a year with 90 degrees or more has varied from 27 in 1936 to 0 in 1951. The number of days with 0 degrees or less has varied from 39 in 1936 to 4 in 1931. The average number of growing degree days to a 40-degree base is 4,196. The number of cooling degree days above a 65-degree base averages 436 a year.

Approximately 55 per cent of the average annual precipitation falls during the 5-month period of May through September. Likelihood of one inch or more of rain in a 7-day period is 3 in 10 years in June while at the end of August it is less than 2 in 10 years. The likelihood of a 7-day dry period, trace or less, is about 1 in 10 in June and more than 2 in 10 years at the end of August. Intensities of about 1.20 inches in 1 hour, 1.90 inches in 6 hours, and 2.60 inches in 24 hours can be expected about once in two years. The greatest amount of rain to be officially measured in 24 hours was the 3.34 inches that fell July 23, 1912. During the period when the station was closed, nine inches of rain was reported to have fallen June 11, 1922, causing a million dollars in damage. Thunderstorms have averaged occurrences on 25 days a year.

The amount of snowfall often varies greatly from year to year. While only 22 inches of snow fell in 1958, 90 inches fell in 1959. Snow has fallen an average of 196 hours a year. Snowfalls of 3 inches or more have averaged 5 occurrences a year with extreme years of 1 and 11; snowfalls of 4 inches or more have averaged three occurences a year with extreme years of 1 and 8. Glaze has formed on an average of 5.7 days a year and blizzards have occurred on an average of 0.5 days a year.

During January prevailing winds have blown from the northwest 24 per cent of the time, west 17 per cent, and southwest 22 per cent. The prevailing winds in July blow from the northwest 16 per cent of the time, west 9 per cent, and southwest 29 per cent. Annual prevailing wind directions are northwest 19 per cent, west 12 per cent, and southwest 23 per cent. The annual wind speed averages 12 miles per hour. April and November are the windiest months with averages of 13 miles per hour; August is the least windy with an average of 10 miles per hour. Extreme winds are usually from the southwest, south, or west.

Winter maximum relative humidities have averaged in the low 80's while minimums have averaged in the mid-70's. Comparative summer averages are mid-80's and low 60's.

Sunshine observations are not available but the following data From Green Bay should be similar. Possible sunshine has averaged about 40 per cent for November and December, 60 per cent or more for May through September, and between 50 and 60 per cent for the remaining months.

The average date of the last 32-degree freeze in the spring is May 3 and the first in the fall is October 14. The growing season, defined as the number of days between the last 32-degree freeze in the spring and the first in the fall, averages 164 days. The following table gives the likelihood of critical temperatures occurring.

Temperature	20%	40%	60%	80%
AFTER DATE IN SPRING				
32° or below	May 13	May 6	Apr. 30	Apr. 23
28° or below	Apr. 29	Apr. 22	Apr. 16	Apr. 8
24° or below	Apr. 16	Apr. 9	Apr. 2	Mar. 25
20° or below	Apr. 8	Apr. 1	Mar. 25	Mar. 17
16° or below	Mar. 31	Mar. 24	Mar. 17	Mar. 10
BEFORE DATE IN FALL				
32° or below	Oct. 3	Oct. 10	Oct. 17	Oct. 24
28° or below	Oct. 12	Oct. 20	Oct. 26	Nov. 3
24° or below	Oct. 25	Nov. 1	Nov. 8	Nov. 16
20° or below	Nov. 3	Nov. 10	Nov. 17	Nov. 24
16° or below	Nov. 11	Nov. 18	Nov. 25	Dec. 3

Marvin W. Burley
Weather Bureau State Climatologist
Weather Bureau Office
Madison, Wisconsin

APPLETON, WISCONSIN

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1930	9.8	24.3	29.6	44.4	57.0	66.8	71.8	71.0	62.2	47.7	38.0	22.8	45.4
1931	23.6	28.2	30.8	45.6	54.0	69.6	74.8	69.0	67.1	53.7	42.8	31.3	49.2
1932	24.9	22.4	23.9	42.0	55.6	68.5	71.1	70.2	60.6	46.6	30.8	19.8	44.7
1933	26.4	16.4	28.6	42.2	56.8	72.9	72.3	67.5	65.6	46.8	31.0	20.0	45.5
1934	23.8	14.4	26.4	42.2	61.6	69.6	71.4	65.5	59.2	51.0	39.3	18.9	45.3
1935	13.2	21.8	32.4	41.2	51.6	61.5	74.7	69.4	60.6	49.0	33.4	21.1	44.2
1936	11.4	4.2	31.4	38.8	62.0	64.5	76.4	72.0	65.3	46.6	31.4	25.8	44.1
1937	14.2	18.8	28.2	42.2	57.7	66.4	75.1	75.8	62.5	46.0	32.7	20.8	45.0
1938	16.1	24.6	35.9	46.2	57.0	67.2	71.8	73.2	60.7	54.6	37.0	22.8	47.3
1939	22.8	15.7	29.8	41.6	60.6	68.3	74.2	71.5	64.0	48.9	37.0	31.0	47.1
1940	12.2	22.4	26.4	41.6	54.5	66.2	73.0	69.0	62.9	52.4	33.6	24.7	44.9
1941	21.8	18.8	26.0	50.0	61.6	68.6	73.0	70.4	63.5	50.8	37.6	29.5	47.6
1942	18.3	19.0	34.0	49.6	55.0	65.2	70.4	68.4	58.1	49.2	33.2	17.2	44.8
1943	12.6	18.6	23.8	41.7	55.4	70.0	74.2	71.0	57.4	49.1	31.2	22.6	44.0
1944	25.2	21.6	26.2	40.3	59.8	68.8	71.2	71.4	60.9	48.2	38.6	18.0	45.8
1945	13.8	18.5	41.0	45.8	51.8	62.8	69.2	70.2	60.2	47.0	33.9	16.7	44.2
1946	19.4	18.8	38.8	47.5	54.4	64.8	72.0	68.2	61.2	53.9	37.8	24.8	46.8
1947	22.4	17.4	29.6	42.0	51.2	63.9	71.7	77.5	64.4	60.0	31.0	22.3	46.1
1948	12.0	17.8	28.8	48.2	54.8	65.8	72.0	71.3	65.4	48.6	39.5	23.3	45.6
1949	21.3	19.2	29.8	45.2	58.1	70.5	73.4	70.8	56.8	53.2	36.0	25.0	46.6
1950	17.8	19.3	26.2	36.8	55.3	65.8	68.3	63.7	59.6	52.9	30.1	15.9	42.6
1951	13.5	19.3	27.0	42.2	59.2	63.5	69.8	66.2	58.1	48.9	27.0	19.7	42.8
1952	18.6	24.3	28.1	47.9	55.8	67.7	73.4	69.0	62.0	43.6	38.0	26.9	46.3
1953	22.1	21.3	32.4	41.9	56.2	68.7	72.2	71.2	61.9	55.1	40.4	26.2	47.5
1954	18.0	29.6	29.9	46.5	51.8	68.9	71.4	67.8M	60.8	48.8	38.2	25.0	46.4
1955	17.9	20.1	28.3	50.8	59.6	66.6	76.4	74.9	62.5M	51.8	31.1	18.4	46.6
1956	19.9	20.3	26.6	41.4	54.5	69.1	67.8	69.5	58.4	55.9	34.7	24.1	45.2
1957	11.8	23.9	31.8	46.3	54.5	66.8	72.8	69.2	59.3	48.4	34.6	25.8	45.5
1958	20.8M	16.4	32.8	45.5	55.9	61.3	69.5	69.5	60.7	51.8	36.9	16.2	44.8
1959	10.6	14.9	27.6	45.0	61.9	69.3	72.4	74.3	63.1	45.5	27.4	30.0	45.1

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1930	1.76	1.12	2.37	1.10	3.52	3.59	2.60	1.38	1.72	2.03	0.72	0.36	22.27
1931	0.90	0.97	1.72	0.72	1.45	3.09	1.11	1.10	7.05	2.57	3.88	1.03	25.59
1932	1.86	1.19	0.95	1.12	3.89	2.77	2.67	1.82	0.71	1.65	1.23	1.93	21.79
1933	1.15	1.12	2.16	2.19	3.69	2.28	2.92	3.35	2.22	2.73	0.74	1.01	25.56
1934	0.71	0.24	1.50	1.26	1.91	5.33	2.64	3.16	2.84	1.19	5.93	0.91	27.62
1935	1.17	0.80	0.71	2.60	1.76	6.27	2.04	1.82	3.79	1.64	1.97	0.97	25.54
1936	1.41	1.35	1.27	1.04	2.54	2.90	0.92	6.40	3.12	2.17	0.80	1.83	25.75
1937	2.50	2.39	0.24	3.35	2.49	2.40	0.91	1.61	1.83	3.69	1.68	1.03	24.12
1938	2.50	3.10	1.83	2.22	2.10	2.86	3.73	4.24	8.50	0.98	1.80	2.28	36.14
1939	1.62	1.15	0.77	1.14	1.59	5.48	2.46	3.00	4.67	1.91	0.51	0.57	24.87
1940	1.30	0.50	0.88	2.89	3.61	4.98	2.13	5.53	1.27	2.78	3.23	1.76	30.86
1941	1.42	0.74	0.76	2.44	4.32	3.18	2.08	2.72	5.44	3.12	1.57	1.74	29.53
1942	0.53	0.87	1.73	3.04	8.79	5.54	3.05	3.06	5.29	1.37	1.67	2.38	37.32
1943	1.25	0.91	1.95	1.95	4.55	5.37	2.46	3.39	1.72	0.96	2.24	0.21	26.96
1944	0.82	1.30	1.77	2.19	2.21	8.52	1.40	3.07	2.47	0.67	3.57	0.78	28.77
1945	0.41	1.73	1.11	3.98	2.68	4.64	0.96	2.60	6.54	0.94	3.78	1.16	30.50
1946	1.82	0.55	2.29	0.55	3.54	5.27	1.14	3.19	2.60	1.39	3.18	2.08	27.60
1947	2.04	0.30	2.16	4.39	4.09	3.98	2.21	3.41	3.13	1.79	1.76	1.37	30.63
1948	0.65	2.16	2.37	3.05	1.80	6.04	3.61	1.96	1.67	0.96	4.72	1.95	30.94
1949	2.15	0.92	3.07	2.53	0.80	2.43	4.74	1.44	1.36	1.26	1.08	1.20	22.98
1950	2.30	1.49	2.93	2.95	1.07	2.46	6.56	1.93	3.06	0.93	1.32	2.16	29.16
1951	0.85	1.80	3.05	4.70	0.91	2.56	4.35	3.37	2.38	4.04	1.56	1.29	30.86
1952	2.53	0.98	2.17	1.64	3.46	3.04	5.04	2.26	0.38	0.09	2.25	1.65	25.49
1953	1.08	3.56	1.99	5.45	1.40	2.55	4.26	2.80	1.61	0.41	0.28	1.78	27.17
1954	0.55	1.40	1.42	4.56	4.13	4.21	3.30	2.19	6.07	4.71	1.11	0.82	34.47
1955	0.59	1.40	1.64	2.78	2.82	4.21	3.37	1.13	0.98	3.98	1.40	1.33	25.63
1956	0.75	0.77	3.18	1.83	3.92	4.84	6.95	4.01	1.89	0.75	2.93	0.97	32.79
1957	0.62	0.49	1.22	3.56	5.63	3.98	2.51	2.01	1.95	1.39	3.98	1.72	29.06
1958	0.54	0.24	0.52	3.01	1.52	2.83	4.19	4.08	3.67	1.90	1.65	0.17	24.32
1959	1.61	2.47	3.26	3.74	3.90	1.68	3.62	3.89	5.52	4.37	1.79	3.12	38.97

STATION HISTORY

Weather records for Appleton were first kept by Professor R. Z. Mason and Mr. J. C. Foye at Lawrence College. Six years of precipitation data and eight years and four months of temperature data were recorded from 1856 to 1871. These records are on file at the Smithsonian Institute, Washington, D. C.

A climatological station was established on the north bank of the Fox River January 1, 1893. Observations were taken until June 15, 1893.

April 1, 1901 a station was opened at the Underwood Observatory, and observations were taken until May 31, 1907. The station was moved to 636 Pacific Street June 1, 1907 where it remained until November 30, 1909. On December 1, 1909, the station was

STATION HISTORY (Continued)

removed to 764 College Street, where records were kept until its closing on March 31, 1919.

A climatological station was re-established 0.5 miles south of the post office near the general office building of the Wisconsin-Michigan Power Company on November 1, 1926. Employees of the company record the observations.

Observers at the stations have been:

Clem F. Kimball from January 1, 1893 to June 15, 1893.
Underwood Observatory from April 1, 1901 to May 31, 1907.
J. L. Mead from June 1, 1907 to November 30, 1909.
W. C. Thiede from December 1, 1909 to March 31, 1919.
A. C. Braun from November 1, 1926 to August 1, 1960.
J. C. Kurtyka from August 1, 1960.