U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

Climatography of the United States No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: WALNUT, IL **COOP ID: 118916**

Climate Division: IL 1 **NWS Call Sign:** **Elevation: 690 Feet** **Lat: 41˚33N** **Lon: 89˚36W**

Temperature (˚F)

Mean (1)				Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
Month	Daily Max	Daily Min	Mean	Highest Daily(2)	Year	Day	Highest Month(1) Mean	Year	Lowest Daily(2)	Year	Day	Lowest Month(1) Mean	Year	Heating	Cooling	Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	28.0	10.7	19.4	73	1942	26	31.5	1990	-27	1985	20	5.8	1977	1415	0	.0	.0	1.1	18.4	30.3	8.2
Feb	33.1	16.7	24.9	70	2000	26	36.2	1998	-26	1905	13	12.6	1978	1122	0	.0	.0	2.8	12.6	25.7	4.4
Mar	45.7	28.1	36.9	87	1986	29	44.0	2000	-13	1962	1	28.9	1984	870	0	.0	.0	11.9	3.5	22.1	.3
Apr	59.3	38.7	49.0	93+	1986	25	56.2	1977	6	1982	6	44.1	1975	484	4	.0	.1	24.1	.1	8.1	.0
May	71.3	50.6	61.0	105	1934	31	68.3	1977	25+	1989	7	54.6	1997	202	76	.0	1.0	30.7	.0	.5	.0
Jun	80.5	59.7	70.1	106	1934	1	74.2	1971	37+	1945	5	66.2	1982	18	171	.1	3.9	30.0	.0	.0	.0
Jul	83.4	63.6	73.5	111	1936	14	77.9	1983	44	1904	2	69.1	1992	6	270	.3	7.3	31.0	.0	.0	.0
Aug	81.4	61.3	71.4	105	1936	18	77.7	1995	36	1923	27	65.4	1992	22	220	.5	4.2	31.0	.0	.0	.0
Sep	74.5	52.8	63.7	101+	1953	1	68.9	1978	24	1942	28	58.7	1993	105	63	.0	1.3	29.9	.0	.5	.0
Oct	62.9	40.9	51.9	92	1963	6	60.0	1971	10	1925	28	45.3+	1988	413	7	.0	.1	28.3	.0	6.7	.0
Nov	46.1	29.4	37.8	81	1950	1	44.6	1999	-8+	1977	26	29.3	1976	818	0	.0	.0	12.3	2.9	19.0	.2
Dec	33.0	17.2	25.1	68	1998	5	32.9	1998	-23	1924	28	11.5	2000	1237	0	.0	.0	2.3	12.7	28.8	4.1
Ann	58.3	39.1	48.7	111	Jul 1936	14	77.9	Jul 1983	-27	Jan 1985	20	5.8	Jan 1977	6712	811	.9	17.9	235.4	50.2	141.7	17.2

\+ Also occurred on an earlier date(s)

@ Denotes mean number of days greater than 0 but less than .05

Complete documentation available from: www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1901-2001

(3) Derived from 1971-2000 serially complete daily data

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	1.31	.86	2.51	1938	24	4.22	1974	.11	1981
Feb	1.35	1.08	2.43	1997	21	3.55	1997	.26	1978
Mar	2.65	2.61	2.34	1954	25	6.08	1973	.28	1999
Apr	3.49	3.50	2.55	1983	1	6.48	1973	1.15	1997
May	4.43	3.93	5.31	1951	10	11.14	1974	.64	1992
Jun	4.52	3.68	6.38	1994	24	10.99	1998	.32	1988
Jul	3.61	3.30	3.66	1948	21	10.90	1992	.46	1991
Aug	4.36	3.41	4.57	1979	20	13.54	1987	.70	1971
Sep	3.45	3.06	4.08	1926	1	8.77	1992	.00	1979
Oct	2.80	2.19	5.20	1941	3	9.30	1998	.47	1975
Nov	2.57	1.89	2.76	1928	17	7.65	1985	.41	1999
Dec	2.03	1.76	2.90	1982	2	5.73	1971	.31	1976
Ann	36.57	34.94	6.38	Jun 1994	24	13.54	Aug 1987	.00	Sep 1979

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.4	4.3	.5	.1
Feb	5.3	3.8	.8	.2
Mar	8.2	6.3	1.9	.4
Apr	8.8	7.2	2.3	.8
May	9.5	7.8	3.1	1.1
Jun	8.5	7.0	3.1	1.1
Jul	8.1	6.4	2.7	1.0
Aug	8.6	7.0	2.7	1.4
Sep	7.4	6.0	2.5	.9
Oct	7.0	5.4	1.8	.7
Nov	7.0	5.7	1.8	.4
Dec	6.7	5.1	1.0	.4
Ann	91.5	72.0	24.2	8.5

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.22	.34	.53	.71	.89	1.09	1.32	1.60	1.98	2.58	3.16
Feb	.30	.42	.62	.79	.97	1.16	1.38	1.63	1.97	2.51	3.01
Mar	.29	.49	.85	1.22	1.62	2.07	2.59	3.24	4.13	5.60	7.03
Apr	1.19	1.52	2.00	2.41	2.80	3.20	3.64	4.16	4.81	5.83	6.77
May	1.32	1.74	2.37	2.91	3.44	3.99	4.60	5.31	6.24	7.68	9.02
Jun	.89	1.30	1.97	2.57	3.19	3.85	4.60	5.50	6.69	8.60	10.42
Jul	.72	1.05	1.58	2.06	2.55	3.08	3.68	4.40	5.35	6.88	8.33
Aug	.66	1.03	1.66	2.26	2.88	3.57	4.36	5.32	6.61	8.71	10.73
Sep	.73	1.22	1.80	2.26	2.70	3.15	3.64	4.21	4.95	6.11	7.17
Oct	.50	.75	1.16	1.54	1.93	2.35	2.83	3.41	4.19	5.44	6.63
Nov	.46	.68	1.06	1.41	1.77	2.16	2.60	3.14	3.85	5.00	6.10
Dec	.47	.66	.96	1.22	1.49	1.77	2.09	2.46	2.96	3.75	4.49
Ann	25.80	27.88	30.54	32.57	34.37	36.11	37.92	39.91	42.33	45.84	48.88

\+ Also occurred on an earlier date(s)
\# Denotes amounts of a trace
@ Denotes mean number of days greater than 0 but less than .05
****** Statistics not computed because less than six years out of thirty had measurable precipitation

(1) From the 1971-2000 Monthly Normals
(2) Derived from station's available digital record: 1901-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	10.6	9.0	4	3
Feb	6.4	5.5	3	2
Mar	3.5	1.5	1	#
Apr	1.0	.0	#	0
May	#	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.1	.0	#	0
Nov	1.8	.1	#	#
Dec	8.2	7.0	2	1
Ann	31.6	23.1	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	18.0	1979	13	31.9	1979	30	1979	20	21	1979
Feb	8.0	1990	14	19.0	1994	22	1979	19	19	1979
Mar	8.1	1972	29	22.6	1972	12	1994	1	5	1983
Apr	6.0	1982	5	8.0	1982	6	1982	5	#+	1997
May	#	1989	6	#	1989	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	1.5	1972	18	1.5+	1997	1	1997	27	#	1997
Nov	6.0	1975	27	7.0+	1975	6	1975	27	1	1977
Dec	12.0	1978	31	26.3	1978	18	1978	31	6	1983
Ann	18.0	Jan 1979	13	31.9	Jan 1979	30	Jan 1979	20	21	Jan 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.6	4.2	1.1	.4	@
Feb	2.8	2.6	.9	.2	.0
Mar	1.7	1.4	.3	.2	.0
Apr	.4	.4	.1	.1	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.1	.1	.0	.0	.0
Nov	1.1	.8	.2	@	.0
Dec	3.6	3.3	1.2	.4	.1
Ann	14.3	12.8	3.8	1.3	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	19.8	13.5	8.1	3.9
Feb	12.9	9.6	5.9	2.3
Mar	3.2	1.3	.7	.2
Apr	.4	.1	.1	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	@	.0	.0	.0
Nov	1.1	.4	.1	.0
Dec	10.5	7.0	4.1	.4
Ann	47.9	31.9	19.0	6.8

+ Also occurred on an earlier date(s) #Denotes trace amounts

@ Denotes mean number of days greater than 0 but less than .05

-9/-9.9 represents missing values
Annual statistics for Mean/Median snow depths are not appropriate

(1) Derived from Snow Climatology and 1971-2000 daily data

(2) Derived from 1971-2000 daily data

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Freeze Data

Spring Freeze Dates (Month/Day)

Temp (F)	Probability of later date in spring (thru Jul 31) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	5/19	5/15	5/12	5/09	5/07	5/04	5/02	4/29	4/24
32	5/12	5/06	5/02	4/29	4/26	4/23	4/20	4/16	4/10
28	4/27	4/23	4/20	4/17	4/14	4/12	4/09	4/06	4/01
24	4/17	4/13	4/11	4/08	4/06	4/04	4/02	3/30	3/27
20	4/11	4/06	4/02	3/29	3/26	3/23	3/19	3/15	3/10
16	4/03	3/27	3/22	3/18	3/14	3/10	3/06	3/01	2/22

Fall Freeze Dates (Month/Day)

Temp (F)	Probability of earlier date in fall (beginning Aug 1) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	9/18	9/22	9/25	9/28	9/30	10/02	10/05	10/08	10/11
32	9/23	9/28	10/01	10/04	10/07	10/10	10/12	10/16	10/21
28	10/03	10/08	10/12	10/16	10/19	10/22	10/25	10/29	11/04
24	10/14	10/20	10/24	10/27	10/31	11/03	11/07	11/11	11/16
20	10/27	10/31	11/04	11/07	11/09	11/12	11/15	11/19	11/23
16	11/05	11/11	11/15	11/18	11/21	11/25	11/28	12/02	12/07

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	164	157	153	149	145	142	138	133	127
32	183	176	171	167	163	159	155	150	143
28	207	200	195	191	187	183	178	173	167
24	227	220	215	211	207	203	198	194	187
20	250	242	237	232	228	223	219	213	206
16	278	269	262	257	252	247	241	235	226

***** Probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date.

0/00 Indicates that the probability of occurrence of threshold temperature is less than the indicated probability.

Derived from 1971-2000 serially complete daily data

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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1415	1122	870	484	202	18	6	22	105	413	818	1237	6712
60	1260	982	715	345	118	3	0	4	39	279	668	1082	5495
57	1167	898	623	269	80	1	0	0	18	209	580	989	4834
55	1105	842	564	223	59	0	0	0	10	169	521	927	4420
50	950	711	422	126	24	0	0	0	1	89	384	781	3488
32	449	294	81	2	0	0	0	0	0	1	63	318	1208

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	56	97	234	511	897	1143	1287	1221	948	618	235	104	7351
55	0	0	4	42	243	453	574	508	268	72	3	0	2167
57	0	0	1	29	202	394	512	446	217	51	1	0	1853
60	0	0	0	14	147	306	419	357	148	27	0	0	1418
65	0	0	0	4	76	171	270	220	63	7	0	0	811
70	0	0	0	1	32	68	141	115	18	1	0	0	376

Growing Degree Units (2)

Base	Growing Degree Units (Monthly)												Growing Degree Units (Accumulated Monthly)											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
40	3	19	102	315	670	920	1060	998	735	399	105	12	3	22	124	439	1109	2029	3089	4087	4822	5221	5326	5338
45	0	5	54	198	517	770	905	843	586	270	52	4	0	5	59	257	774	1544	2449	3292	3878	4148	4200	4204
50	0	0	29	114	372	620	750	688	440	162	22	2	0	0	29	143	515	1135	1885	2573	3013	3175	3197	3199
55	0	0	8	58	240	471	595	533	301	82	5	0	0	0	8	66	306	777	1372	1905	2206	2288	2293	2293
60	0	0	1	23	138	323	440	379	187	36	1	0	0	0	1	24	162	485	925	1304	1491	1527	1528	1528
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	13	66	192	414	610	721	669	470	245	63	6	0	13	79	271	685	1295	2016	2685	3155	3400	3463	3469

(1) Derived from the 1971-2000 Monthly Normals
(2) Derived from 1971-2000 serially complete daily data
Note: For corn, temperatures below 50 are set to 50, and temperatures above 86 are set to 86

Complete documentation available from:
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Notes

a. The monthly means are simple arithmetic averages computed by summing the monthly values for the period 1971-2000 and dividing by thirty. Prior to averaging, the data are adjusted if necessary to compensate for data quality issues, station moves or changes in station reporting practices. Missing months are replaced by estimates based on neighboring stations.

b. The median is defined as the middle value in an ordered set of values. The median is being provided for the snow and precipitation elements because the mean can be a misleading value for precipitation normals.

c. Only observed validated values were used to select the extreme daily values.

d. Extreme monthly temperature/precipitation means were selected from the monthly normals data.
Monthly snow extremes were calculated from daily values quality controlled to be consistent with the Snow Climatology.

e. Degree Days were derived using the same techniques as the 1971-2000 normals.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

f. Mean "number of days statistics" for temperature and precipitation were calculated from a serially complete daily data set .
Documentation of the serially complete data set is available from the link below:

g. Snowfall and snow depth statistics were derived from the Snow Climatology.
Documentation for the Snow Climatology project is available from the link under references.

Data Sources for Tables

Several different data sources were used to create the Clim20 climate summaries. In some cases the daily extremes appear inconsistent with the monthly extremes and or the mean number of days statistics. For example, a high daily extreme value may not be reflected in the highest monthly value or the mean number of days threshold that is less than and equal to the extreme value. Some of these difference are caused by different periods of record. Daily extremes are derived from the station's entire period of record while the serial data and normals data were are for the 1971-2000 period. Therefore extremes observed before 1971 would not be included in the 1971-2000 normals or the 1971-2000 serial daily data set. Inconsistencies can also occur when monthly values are adjusted to reflect the current observing conditions or were replaced during the 1971-2000 Monthly Normals processing and are not reconciled with the Summary of the Day data.

a. Temperature/ Precipitation Tables
   1. 1971-2000 Monthly Normals
   2. Cooperative Summary of the Day
   3. National Weather Service station records
   4. 1971-2000 serially complete daily data

b. Degree Day Table
   1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
   2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   1971-2000 serially complete daily data

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/usnormalsprods.html
Snow Climatology Project Description, www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html
Eischeid, J. K., P. Pasteris, H. F. Diaz, M. Plantico, and N. Lott, 2000: Creating a serially complete, national daily time series of temperature and precipitation for the Western United States. J. Appl. Meteorol., 39, 1580-1591,
www1.ncdc.noaa.gov/pub/data/special/ serialcomplete_jam_0900.pdf