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: CAIRO 3 N, IL **COOP ID: 111166**

Climate Division: IL 8 **NWS Call Sign:** **Elevation: 310 Feet** **Lat: 37˚03N** **Lon: 89˚11W**

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	41.1	25.6	33.4	75	1950	25	42.6	1990	-12	1985	20	21.5	1977	982	0	.0	.0	7.6	7.1	22.4	.4
Feb	47.4	29.8	38.6	77	1981	27	47.8	1976	-5+	1996	3	26.2	1978	740	0	.0	.0	12.2	3.5	16.3	.1
Mar	57.5	39.3	48.4	85	1986	30	54.4	1973	6	1960	5	41.3	1996	519	3	.0	.0	23.3	.5	7.4	.0
Apr	68.5	49.6	59.1	91+	1989	28	66.4	1981	27+	1995	1	53.3	1997	215	37	.0	.2	28.9	.0	1.0	.0
May	77.8	59.4	68.6	98	1953	26	75.9	1987	36	1988	1	63.7	1990	67	179	.0	1.7	31.0	.0	.0	.0
Jun	86.2	67.3	76.8	104+	1954	27	81.5	1984	45+	1992	22	72.1	1992	3	356	.4	10.0	30.0	.0	.0	.0
Jul	89.7	71.2	80.5	104+	1980	15	85.8	1980	57+	1997	6	77.6	1996	0	478	.8	17.1	31.0	.0	.0	.0
Aug	87.5	68.8	78.2	103+	1964	4	85.2	1983	50	1986	29	73.6	1992	1	408	.3	11.2	31.0	.0	.0	.0
Sep	81.0	60.9	71.0	103	1954	5	75.9	1998	39	1989	24	65.7	1974	26	205	.0	4.3	30.0	.0	.0	.0
Oct	70.5	49.2	59.9	92+	1963	11	67.0	1971	27	1981	24	53.3	1988	207	49	.0	.0	30.7	.0	.9	.0
Nov	56.7	39.1	47.9	82+	1999	8	53.4	1999	5	1950	25	40.0	1976	513	1	.0	.0	21.4	.2	6.9	.0
Dec	45.7	30.1	37.9	79	1982	2	46.0	1971	-9+	1989	24	25.4	1989	840	0	.0	.0	11.6	3.9	17.6	.2
Ann	67.5	49.2	58.4	104+	Jul 1980	15	85.8	Jul 1980	-12	Jan 1985	20	21.5	Jan 1977	4113	1716	1.5	44.5	288.7	15.2	72.5	.7

\+ 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: 1948-2001

(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	3.21	3.15	5.80	1949	24	8.02	1982	.83	1981
Feb	3.55	3.42	4.75	1950	12	11.21	1989	.67	1996
Mar	4.39	3.68	5.47	1997	2	11.81	1997	1.39	1971
Apr	4.74	5.21	3.19	1972	15	9.18	1983	1.25	1976
May	4.76	4.59	6.15	1967	14	9.55	1986	.86	1994
Jun	4.15	3.82	5.78	1961	14	9.79	1998	.50	1988
Jul	4.38	4.22	4.24	2001	27	9.20	1972	.39	1983
Aug	3.63	3.36	5.66	1952	11	11.62	1978	.17	1996
Sep	3.04	2.65	6.14	1965	11	7.68	1992	.41	1999
Oct	3.43	2.89	4.45	1992	16	7.89	1984	.89	1971
Nov	4.40	4.76	4.07	1957	13	8.09	1983	1.02	1999
Dec	4.16	3.27	4.66	1978	3	11.31	1978	.69	1976
Ann	47.84	46.76	6.15	May 1967	14	11.81	Mar 1997	.17	Aug 1996

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.2	5.7	1.9	.9
Feb	8.9	5.4	2.5	1.0
Mar	11.3	7.8	3.0	1.0
Apr	10.5	7.2	3.0	1.4
May	10.7	7.7	3.1	1.6
Jun	9.3	6.4	2.9	1.1
Jul	8.2	5.9	3.3	1.4
Aug	7.4	5.0	2.4	1.3
Sep	7.4	4.9	2.0	1.0
Oct	7.8	5.3	2.4	1.0
Nov	9.4	6.7	3.1	1.3
Dec	9.9	6.5	3.1	.9
Ann	110.0	74.5	32.7	13.9

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	.86	1.17	1.63	2.04	2.44	2.86	3.32	3.87	4.59	5.72	6.77
Feb	.95	1.29	1.80	2.25	2.69	3.16	3.67	4.28	5.08	6.32	7.49
Mar	1.50	1.91	2.52	3.03	3.52	4.03	4.58	5.22	6.05	7.32	8.50
Apr	1.62	2.06	2.72	3.27	3.80	4.35	4.95	5.65	6.54	7.92	9.20
May	1.88	2.32	2.94	3.46	3.95	4.44	4.98	5.60	6.39	7.60	8.70
Jun	1.04	1.43	2.04	2.57	3.10	3.66	4.28	5.01	5.98	7.50	8.93
Jul	.98	1.38	2.02	2.60	3.18	3.80	4.49	5.32	6.40	8.14	9.77
Aug	.37	.64	1.13	1.64	2.19	2.80	3.53	4.43	5.66	7.71	9.72
Sep	.50	.76	1.20	1.62	2.05	2.52	3.06	3.71	4.59	6.01	7.37
Oct	.98	1.31	1.80	2.22	2.64	3.07	3.55	4.12	4.85	6.00	7.07
Nov	1.33	1.74	2.37	2.91	3.43	3.97	4.57	5.28	6.19	7.61	8.92
Dec	.90	1.29	1.90	2.45	3.00	3.59	4.25	5.05	6.09	7.76	9.34
Ann	35.62	38.03	41.08	43.39	45.42	47.39	49.40	51.62	54.30	58.17	61.49

\+ 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: 1948-2001
(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	4.0	2.2	1	#
Feb	3.4	2.2	1	#
Mar	1.3	.2	#	#
Apr	.0	.0	0	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	.1	.0	#	0
Nov	.2	.0	#	0
Dec	1.0	.0	#	0
Ann	10.0	4.6	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	12.9	1978	16	21.8	1978	18	1978	17	7	1978
Feb	12.8	1981	1	13.7	1981	7	1993	16	3	1978
Mar	8.0	1994	9	12.2	1975	8	1994	10	1	1994
Apr	1.0	1971	5	1.0	1971	0	0	0	0	0
May	.0	0	0	.0	0	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	3.0	1993	30	3.0	1993	3	1993	30	#	1993
Nov	2.8	1980	27	2.8	1980	2	1980	27	#+	1995
Dec	5.6	1984	5	5.6	1984	6	1984	6	1	1984
Ann	12.9	Jan 1978	16	21.8	Jan 1978	18	Jan 1978	17	7	Jan 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.6	1.1	.3	.1	@
Feb	1.7	.8	.3	.1	@
Mar	.9	.4	.2	.1	.0
Apr	@	@	.0	.0	.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	@	@	@	.0	.0
Nov	.2	.1	.0	.0	.0
Dec	.8	.3	.1	@	.0
Ann	6.2	2.7	.9	.3	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	2.8	.8	.4	.0
Feb	2.0	.4	.0	.0
Mar	.6	.3	.1	.0
Apr	.0	.0	.0	.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
Nov	.1	.0	.0	.0
Dec	.9	.1	.1	.0
Ann	6.4	1.6	.6	.0

+ 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	4/21	4/15	4/11	4/08	4/05	4/01	3/29	3/25	3/19
32	4/11	4/06	4/02	3/29	3/26	3/23	3/19	3/15	3/10
28	4/05	3/28	3/22	3/18	3/13	3/09	3/04	2/27	2/19
24	3/18	3/12	3/07	3/03	2/27	2/23	2/19	2/14	2/07
20	3/12	3/04	2/27	2/22	2/18	2/13	2/09	2/03	1/27
16	3/03	2/23	2/17	2/12	2/07	2/02	1/28	1/21	1/11

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	10/09	10/14	10/18	10/21	10/25	10/28	10/31	11/04	11/10
32	10/16	10/23	10/27	10/31	11/04	11/08	11/12	11/16	11/23
28	10/30	11/05	11/10	11/14	11/17	11/21	11/25	11/29	12/05
24	11/11	11/17	11/22	11/26	11/30	12/03	12/07	12/12	12/18
20	11/17	11/24	11/29	12/04	12/08	12/12	12/16	12/21	12/28
16	11/25	12/02	12/07	12/12	12/16	12/20	12/25	12/31	1/08

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	227	219	212	207	202	197	192	186	177
32	251	241	234	228	222	217	211	203	193
28	276	266	259	254	248	243	237	230	221
24	300	292	285	280	275	270	265	258	250
20	322	311	304	298	292	286	280	273	263
16	358	338	328	320	312	305	298	289	277

***** 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	982	740	519	215	67	3	0	1	26	207	513	840	4113
60	827	602	377	119	26	0	0	0	6	113	371	689	3130
57	734	524	298	76	13	0	0	0	2	72	291	603	2613
55	677	472	251	53	8	0	0	0	1	51	242	545	2300
50	533	348	153	18	1	0	0	0	0	17	140	408	1618
32	144	63	7	0	0	0	0	0	0	0	4	86	304

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	185	247	514	811	1134	1343	1501	1430	1168	864	481	269	9947
55	4	12	45	174	429	653	788	717	479	202	29	15	3547
57	0	8	30	137	372	593	726	655	420	161	18	11	3131
60	0	3	16	90	292	503	633	562	334	109	8	4	2554
65	0	0	3	37	179	356	478	408	205	49	1	0	1716
70	0	0	0	11	94	218	323	263	104	16	0	0	1029

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	62	120	314	583	888	1110	1263	1187	937	625	283	108	62	182	496	1079	1967	3077	4340	5527	6464	7089	7372	7480
45	26	64	204	436	733	960	1108	1032	787	473	179	54	26	90	294	730	1463	2423	3531	4563	5350	5823	6002	6056
50	6	30	117	304	578	810	953	877	637	331	100	22	6	36	153	457	1035	1845	2798	3675	4312	4643	4743	4765
55	1	9	58	189	426	660	798	722	488	203	47	9	1	10	68	257	683	1343	2141	2863	3351	3554	3601	3610
60	0	1	25	102	282	510	643	567	343	109	18	1	0	1	26	128	410	920	1563	2130	2473	2582	2600	2601
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	30	66	172	343	577	768	881	829	629	380	154	51	30	96	268	611	1188	1956	2837	3666	4295	4675	4829	4880

(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