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: QUINCY DAM 21, IL **COOP ID: 117077**

Climate Division: IL 3 **NWS Call Sign:** **Elevation: 483 Feet** **Lat: 39˚54N** **Lon: 91˚26W**

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	33.7	16.0	24.9	68	1996	18	36.7	1990	-21	1979	15	11.4	1977	1245	0	.0	.0	3.4	14.1	28.9	4.3
Feb	40.0	20.6	30.3	74	1996	27	39.9	1976	-17+	1982	10	15.4	1978	971	0	.0	.0	6.6	8.4	23.6	2.8
Mar	52.1	30.1	41.1	85	1986	30	47.7	1973	-12	1978	5	32.2	1978	741	0	.0	.0	16.2	1.9	17.5	.1
Apr	64.8	40.8	52.8	92	1986	26	59.2	1977	17+	1982	7	46.2	1983	375	9	.0	@	26.5	.0	3.6	.0
May	74.7	51.3	63.0	92+	1996	18	69.4	1977	34+	1989	8	58.7	1981	149	86	.0	.4	30.9	.0	.0	.0
Jun	83.8	60.9	72.4	102	1988	26	76.6	1971	45	1993	6	66.2	1982	12	232	.1	5.5	30.0	.0	.0	.0
Jul	88.0	65.5	76.8	104	1980	31	80.4	1999	52+	1983	8	73.4	1971	0	364	.7	12.0	31.0	.0	.0	.0
Aug	85.8	62.9	74.4	103	1988	9	80.3	1983	44	1974	10	68.9	1992	12	302	.7	7.7	31.0	.0	.0	.0
Sep	77.9	54.8	66.4	98+	2000	3	72.6	1998	32	1983	23	60.7	1974	70	112	.0	2.9	30.0	.0	@	.0
Oct	66.3	43.0	54.7	93	1997	4	60.8	1971	22	1981	24	48.5	1976	332	12	.0	@	29.4	.0	3.1	.0
Nov	50.9	32.5	41.7	83	1987	4	50.4	1999	0	1953	30	33.9	1976	699	0	.0	.0	16.5	1.5	15.6	.0
Dec	37.9	21.1	29.5	71	1984	29	37.1	1982	-18+	1983	26	15.0	1983	1101	0	.0	.0	4.8	8.3	27.2	2.0
Ann	63.0	41.6	52.3	104	Jul 1980	31	80.4	Jul 1999	-21	Jan 1979	15	11.4	Jan 1977	5707	1117	1.5	28.5	256.3	34.2	119.5	9.2

+ 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: 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	1.36	1.27	2.63	1982	30	3.34	1982	.03	1986
Feb	1.74	1.56	3.27	1997	21	5.40	1997	.27	1980
Mar	2.93	2.52	1.98	1976	4	7.92	1973	.43	1989
Apr	3.48	3.57	3.72	1973	21	7.63	1973	1.05	1971
May	4.61	3.76	4.32	1955	28	11.89	1991	1.33	1992
Jun	3.26	2.54	4.56	1968	15	8.11	2000	.63	1991
Jul	3.89	3.16	6.06	1993	1	11.16	1981	.30	1988
Aug	3.09	2.68	3.42	1965	26	9.12	1977	.33	1998
Sep	3.45	2.92	4.14	1970	24	10.05	1977	.09	1979
Oct	2.50	2.26	3.51	1955	5	6.26	1977	.69	1992
Nov	3.10	2.77	2.15	1990	28	9.50	1985	.28	1976
Dec	2.22	1.97	3.75	1982	3	8.42	1982	.27	1996
Ann	35.63	34.54	6.06	Jul 1993	1	11.89	May 1991	.03	Jan 1986

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.8	3.6	.5	.2
Feb	6.3	3.9	1.1	.3
Mar	8.7	6.0	2.0	.6
Apr	10.4	6.6	2.6	.6
May	10.1	7.6	3.3	1.5
Jun	8.7	6.3	2.4	.7
Jul	8.7	6.2	2.4	1.2
Aug	7.7	5.8	2.4	1.0
Sep	6.5	4.7	2.2	.8
Oct	6.8	4.6	1.8	.5
Nov	8.6	6.0	2.2	.6
Dec	7.7	4.7	1.5	.6
Ann	97.0	66.0	24.4	8.6

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	.17	.27	.46	.65	.86	1.08	1.34	1.67	2.11	2.83	3.53
Feb	.37	.53	.79	1.02	1.25	1.50	1.78	2.12	2.56	3.26	3.93
Mar	.68	.95	1.38	1.76	2.14	2.55	3.00	3.55	4.26	5.39	6.46
Apr	1.06	1.39	1.88	2.31	2.72	3.15	3.62	4.17	4.89	6.00	7.03
May	1.29	1.73	2.39	2.97	3.54	4.13	4.78	5.55	6.56	8.13	9.59
Jun	.69	.99	1.47	1.90	2.34	2.80	3.33	3.96	4.79	6.11	7.36
Jul	.72	1.06	1.63	2.16	2.70	3.28	3.95	4.74	5.81	7.52	9.15
Aug	.78	1.07	1.52	1.92	2.31	2.72	3.18	3.73	4.44	5.57	6.62
Sep	.61	.91	1.41	1.88	2.37	2.89	3.48	4.21	5.17	6.72	8.20
Oct	.67	.90	1.27	1.58	1.90	2.22	2.59	3.02	3.58	4.46	5.29
Nov	.55	.82	1.28	1.70	2.13	2.60	3.13	3.78	4.63	6.02	7.34
Dec	.37	.57	.89	1.20	1.51	1.85	2.24	2.71	3.34	4.36	5.34
Ann	22.66	25.07	28.20	30.62	32.80	34.93	37.14	39.62	42.64	47.09	50.98

\+ 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)

Extremes (2)

Mean Number of Days (1)

Snow Fall >= Thresholds

Snow Depth >= Thresholds

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	6.4	6.4	2	1	7.5	1979	1	22.0	1979	19	1979	28	15	1979	3.3	2.4	.9	.2	.0	9.1	6.6	4.7	2.1
Feb	3.1	2.8	2	1	5.0	1978	13	13.1	1978	20	1979	14	15	1979	2.0	1.6	.6	.1	.0	8.2	5.5	3.8	1.9
Mar	2.9	1.3	#	#	6.0	1980	1	14.8	1978	13	1978	8	5	1978	1.1	.8	.4	.1	.0	2.3	1.3	.7	.3
Apr	.3	.0	#	0	3.0	1980	14	4.0	1980	2	1982	9	#+	1997	.2	.2	@	.0	.0	.1	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.2	.0	#	0	5.8	1975	27	9.0	1975	9	1975	27	1	1977	.4	.4	.2	@	.0	.6	.3	.1	.0
Dec	1.6	.0	1	#	8.0	1981	17	8.0	1981	11	1983	31	4+	2000	1.5	1.0	.4	.1	.0	3.4	1.7	1.0	.0
Ann	15.5	10.5	N/A	N/A	8.0	Dec 1981	17	22.0	Jan 1979	20	Feb 1979	14	15+	Feb 1979	8.5	6.4	2.5	.5	.0	23.7	15.4	10.3	4.3

+ 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	5/04	4/29	4/26	4/23	4/20	4/18	4/15	4/11	4/07
32	4/21	4/17	4/15	4/12	4/10	4/08	4/06	4/04	3/31
28	4/15	4/10	4/07	4/04	4/02	3/31	3/28	3/25	3/20
24	4/07	4/01	3/27	3/24	3/20	3/16	3/12	3/08	3/01
20	3/30	3/23	3/18	3/14	3/10	3/06	3/02	2/25	2/18
16	3/20	3/12	3/07	3/02	2/25	2/21	2/16	2/11	2/03

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	9/23	9/28	10/02	10/05	10/09	10/12	10/15	10/19	10/25
32	10/05	10/11	10/15	10/19	10/22	10/25	10/29	11/02	11/08
28	10/21	10/26	10/30	11/02	11/05	11/08	11/11	11/15	11/20
24	10/27	11/02	11/07	11/10	11/14	11/18	11/22	11/26	12/03
20	11/04	11/11	11/16	11/20	11/24	11/27	12/02	12/06	12/13
16	11/16	11/22	11/27	12/01	12/05	12/08	12/12	12/17	12/23

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	193	185	180	175	170	166	161	156	148
32	214	207	202	198	194	190	186	181	174
28	235	229	224	220	216	213	209	204	198
24	266	257	250	244	238	233	227	220	210
20	288	278	270	264	258	252	246	238	228
16	313	302	294	288	281	275	269	261	250

***** 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	1245	971	741	375	149	12	0	12	70	332	699	1101	5707
60	1090	831	588	248	75	2	0	2	23	208	551	946	4564
57	997	754	503	183	45	1	0	0	9	146	466	853	3957
55	935	702	446	145	30	0	0	0	4	112	411	794	3579
50	791	572	315	72	9	0	0	0	0	51	284	651	2745
32	326	209	46	0	0	0	0	0	0	0	32	227	840

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	104	162	328	624	960	1210	1387	1312	1031	703	323	149	8293
55	1	10	15	79	277	520	674	599	346	102	12	3	2638
57	0	6	10	56	230	461	612	537	291	74	6	0	2283
60	0	0	2	31	168	372	519	447	214	42	2	0	1797
65	0	0	0	9	86	232	364	302	112	12	0	0	1117
70	0	0	0	2	35	115	212	177	46	2	0	0	589

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	10	46	160	413	730	991	1155	1085	815	484	165	32	10	56	216	629	1359	2350	3505	4590	5405	5889	6054	6086
45	3	18	93	280	575	841	1000	930	665	344	89	9	3	21	114	394	969	1810	2810	3740	4405	4749	4838	4847
50	0	5	48	170	420	691	845	775	517	218	46	3	0	5	53	223	643	1334	2179	2954	3471	3689	3735	3738
55	0	0	23	91	280	541	690	620	375	123	19	0	0	0	23	114	394	935	1625	2245	2620	2743	2762	2762
60	0	0	6	45	160	392	535	465	246	57	3	0	0	0	6	51	211	603	1138	1603	1849	1906	1909	1909
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	5	35	102	238	449	663	798	741	523	290	97	19	5	40	142	380	829	1492	2290	3031	3554	3844	3941	3960

(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