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: DU QUOIN 4 SE, IL **COOP ID: 112483**

Climate Division: IL 8 **NWS Call Sign:** **Elevation: 420 Feet** **Lat: 37˚59N** **Lon: 89˚12W**

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	39.8	21.7	30.8	76	1943	24	42.6	1990	-22	1912	13	15.3	1977	1062	0	.0	.0	6.8	9.0	26.0	2.0
Feb	46.3	26.3	36.3	79	1932	10	43.8	1976	-16	1985	3	21.3	1978	804	0	.0	.0	10.8	4.3	19.4	1.0
Mar	57.2	35.8	46.5	92	1910	23	52.8	1973	-10	1978	5	39.3	1978	573	0	.0	.0	22.1	.8	12.8	@
Apr	67.9	45.3	56.6	92+	1989	27	62.9	1981	20	1944	5	49.7	1983	270	18	.0	.1	28.2	.0	3.3	.0
May	77.3	55.1	66.2	97+	1911	28	73.0	1987	29+	1929	2	61.9	1981	92	129	.0	1.5	31.0	.0	.1	.0
Jun	85.6	64.0	74.8	106	1988	25	79.0	1971	39	1917	16	70.6	1974	4	297	.4	8.8	30.0	.0	.0	.0
Jul	89.6	67.8	78.7	113	1934	25	82.8	1980	47+	1947	23	75.5	2000	0	424	.9	15.9	31.0	.0	.0	.0
Aug	87.8	64.8	76.3	113	1930	9	81.8	1983	43+	1986	29	72.5	1994	2	353	.5	11.9	31.0	.0	.0	.0
Sep	80.9	56.8	68.9	108	1925	6	73.7	1998	28+	1942	29	63.9	1974	44	159	@	4.5	30.0	.0	.1	.0
Oct	70.5	45.3	57.9	96	1953	2	65.6	1971	20+	1981	24	50.9	1976	253	33	.0	.1	30.5	.0	3.4	.0
Nov	56.2	35.7	46.0	85+	1955	13	51.6	1990	-4	1929	30	37.9	1976	573	1	.0	.0	19.9	.3	12.7	.0
Dec	44.1	26.0	35.1	76	1908	17	42.7	1984	-15	1901	20	21.8	2000	929	0	.0	.0	9.6	5.0	22.3	.8
Ann	66.9	45.4	56.2	113+	Jul 1934	25	82.8	Jul 1980	-22	Jan 1912	13	15.3	Jan 1977	4606	1414	1.8	42.8	280.9	19.4	100.1	3.8

\+ 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

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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	2.75	2.62	2.96	1990	19	7.70	1982	.32	1981
Feb	2.61	2.56	4.25	1945	26	5.27	1989	.64	1996
Mar	4.30	3.92	4.75	1904	25	8.48	1977	1.27	1971
Apr	4.27	3.07	4.97	1996	28	12.74	1996	.86	1977
May	4.81	4.21	4.96	1995	18	14.22	1995	.84	1994
Jun	4.23	3.87	5.25	1998	29	15.20	1998	.78	1986
Jul	3.54	3.18	6.60	1905	21	7.47	1986	.34	1974
Aug	3.33	2.94	5.38	1959	17	7.63	1977	.48	1976
Sep	3.27	2.32	4.56	1993	23	10.49	1993	.62	1983
Oct	3.17	2.53	4.60	1910	4	8.58	1983	.82	2000
Nov	4.44	4.15	6.70	1993	14	11.07	1993	.22	1999
Dec	3.47	2.81	3.71	1982	3	13.24	1982	.85	1980
Ann	44.19	43.79	6.70	Nov 1993	14	15.20	Jun 1998	.22	Nov 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.9	5.1	2.0	.7
Feb	7.1	4.9	1.8	.6
Mar	9.8	7.3	3.2	1.0
Apr	10.2	7.8	2.9	1.1
May	9.6	7.4	3.4	1.5
Jun	8.7	6.6	2.9	.9
Jul	7.1	5.1	2.3	.9
Aug	7.6	5.7	2.1	1.0
Sep	6.9	4.9	2.3	1.0
Oct	7.1	5.3	2.2	.8
Nov	8.5	6.3	3.0	1.4
Dec	8.0	6.0	2.7	.8
Ann	98.5	72.4	30.8	11.7

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	.42	.66	1.06	1.44	1.83	2.26	2.76	3.36	4.18	5.50	6.77
Feb	.93	1.18	1.53	1.83	2.12	2.41	2.73	3.10	3.58	4.31	4.99
Mar	1.74	2.14	2.70	3.16	3.59	4.03	4.50	5.05	5.75	6.81	7.78
Apr	1.01	1.41	2.04	2.60	3.15	3.74	4.39	5.18	6.20	7.83	9.36
May	1.11	1.56	2.26	2.89	3.52	4.19	4.94	5.84	7.01	8.88	10.64
Jun	.84	1.22	1.84	2.41	2.98	3.60	4.30	5.14	6.26	8.05	9.74
Jul	.81	1.14	1.66	2.12	2.59	3.08	3.64	4.30	5.17	6.55	7.85
Aug	.72	1.03	1.52	1.96	2.40	2.87	3.40	4.04	4.88	6.21	7.48
Sep	.52	.80	1.28	1.73	2.19	2.70	3.29	4.00	4.95	6.49	7.97
Oct	.84	1.14	1.59	2.00	2.39	2.81	3.27	3.82	4.54	5.66	6.71
Nov	.73	1.12	1.76	2.37	3.00	3.69	4.47	5.42	6.70	8.77	10.74
Dec	.80	1.12	1.63	2.08	2.54	3.02	3.56	4.20	5.05	6.39	7.65
Ann	30.64	33.24	36.58	39.13	41.40	43.60	45.88	48.40	51.46	55.92	59.79

\+ 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)

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	5.0	2.8	1	#	12.5	1978	16	20.0	1979	17	1978	19	8	1977	2.9	1.9	.5	.1	@	7.4	3.6	2.4	.7
Feb	3.2	1.7	1	#	11.5	1984	27	16.0	1984	15	1984	28	5	1979	1.6	1.3	.3	.1	@	3.6	2.0	1.4	.1
Mar	1.1	.1	#	#	10.0	1999	14	10.0	1999	10	1999	14	1	1999	.5	.4	.2	@	@	.8	.3	.2	@
Apr	.5	.0	#	0	7.8	1971	6	7.8	1971	8	1971	6	#+	1983	.2	.1	.1	@	.0	.1	@	@	.0
May	.0	.0	#	0	.0	0	0	.0	0	#	1996	26	#	1996	.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	.2	.0	#	0	2.5	1993	31	4.5	1993	1	1993	29	#	1993	.1	.1	.0	.0	.0	@	.0	.0	.0
Nov	.8	.0	#	0	6.0	1980	26	9.0	1980	6	1980	27	1	1980	.3	.3	.2	@	.0	.3	.1	.1	.0
Dec	2.6	1.1	1	#	10.5	1990	27	13.8	1990	12	1990	27	4	2000	1.4	1.1	.3	.1	@	3.5	1.6	.9	@
Ann	13.4	5.7	N/A	N/A	12.5	Jan 1978	16	20.0	Jan 1979	17	Jan 1978	19	8	Jan 1977	7.0	5.2	1.6	.3	@	15.7	7.6	5.0	.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	5/10	5/04	5/01	4/27	4/24	4/21	4/18	4/14	4/09
32	4/25	4/21	4/17	4/14	4/12	4/09	4/06	4/03	3/29
28	4/15	4/10	4/06	4/03	3/31	3/28	3/25	3/21	3/16
24	4/04	3/29	3/26	3/22	3/19	3/16	3/13	3/09	3/03
20	3/22	3/16	3/11	3/08	3/04	3/01	2/25	2/21	2/15
16	3/14	3/05	2/27	2/22	2/18	2/13	2/08	2/02	1/24

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	180	174	170	166	163	160	156	152	146
32	208	201	195	191	187	183	178	173	166
28	227	221	216	213	209	206	202	198	192
24	263	254	248	243	239	234	229	223	215
20	285	277	272	267	262	258	253	247	240
16	326	315	307	301	295	288	282	274	263

***** 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	1062	804	573	270	92	4	0	2	44	253	573	929	4606
60	907	668	429	157	38	0	0	0	12	148	430	775	3564
57	819	590	346	105	19	0	0	0	5	100	349	691	3024
55	762	538	294	76	12	0	0	0	2	74	298	633	2689
50	618	413	187	28	3	0	0	0	0	29	190	493	1961
32	217	106	12	0	0	0	0	0	0	0	12	137	484

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	178	226	462	738	1060	1284	1447	1373	1105	803	430	232	9338
55	11	14	32	125	359	594	734	660	418	163	26	14	3150
57	5	10	21	93	305	534	672	598	360	127	17	10	2752
60	0	4	11	56	230	444	579	505	278	83	8	2	2200
65	0	0	0	18	129	297	424	353	159	33	1	0	1414
70	0	0	0	4	59	164	269	211	73	9	0	0	789

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	43	97	250	498	805	1040	1197	1123	865	558	234	75	43	140	390	888	1693	2733	3930	5053	5918	6476	6710	6785
45	19	49	154	359	650	890	1042	968	715	408	145	31	19	68	222	581	1231	2121	3163	4131	4846	5254	5399	5430
50	3	21	86	237	495	740	887	813	565	274	77	14	3	24	110	347	842	1582	2469	3282	3847	4121	4198	4212
55	0	5	39	139	347	590	732	658	419	164	34	3	0	5	44	183	530	1120	1852	2510	2929	3093	3127	3130
60	0	0	13	71	212	441	577	503	286	84	12	0	0	0	13	84	296	737	1314	1817	2103	2187	2199	2199
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	27	60	154	303	516	706	815	765	570	357	135	42	27	87	241	544	1060	1766	2581	3346	3916	4273	4408	4450

(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