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: MOUNT CARROLL, IL **COOP ID: 115901**

Climate Division: IL 1 **NWS Call Sign:** **Elevation: 640 Feet** **Lat: 42˚06N** **Lon: 89˚59W**

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	28.9	7.5	18.2	61	1944	27	30.2	1990	-31	1910	7	3.5	1977	1452	0	.0	.0	.9	18.7	30.4	10.3
Feb	34.6	12.6	23.6	70	2000	26	36.6	1998	-30+	1996	3	10.7	1979	1159	0	.0	.0	2.4	12.2	26.7	6.7
Mar	46.7	24.5	35.6	85	1986	30	44.3	1973	-16	1962	1	27.5	1975	911	0	.0	.0	10.9	3.8	24.2	.7
Apr	60.2	34.6	47.4	92	1930	10	53.0	1985	-2	1982	7	42.4	1982	530	1	.0	.1	23.7	.2	12.6	@
May	72.1	45.7	58.9	104	1934	31	65.3	1998	22	1907	11	54.0	1996	230	42	.0	.6	30.6	.0	2.4	.0
Jun	81.6	54.4	68.0	104+	1934	28	73.9	1971	31+	1988	10	62.7	1982	38	128	@	3.8	30.0	.0	@	.0
Jul	85.1	58.8	72.0	108	1936	12	76.1	1999	35	1904	2	67.7	1996	9	224	@	6.5	31.0	.0	.0	.0
Aug	83.1	56.4	69.8	103	1936	18	77.2	1995	32	1986	28	64.3	1986	40	187	.2	4.1	31.0	.0	@	.0
Sep	75.8	47.3	61.6	99+	1939	7	67.1	1978	23+	1983	24	55.9	1993	152	48	.0	1.3	30.0	.0	2.0	.0
Oct	63.8	35.8	49.8	91	1997	4	60.2	1971	4	1925	30	41.6	1988	479	8	.0	@	27.7	.0	12.9	.0
Nov	47.3	26.1	36.7	79+	2000	2	43.5	1999	-15	1976	29	27.7	1976	849	0	.0	.0	12.2	2.3	22.0	.2
Dec	33.9	13.8	23.9	69	1998	5	33.0	1982	-28	1914	26	12.3	1985	1275	0	.0	.0	2.2	12.5	29.6	5.3
Ann	59.4	34.8	47.1	108	Jul 1936	12	77.2	Aug 1995	-31	Jan 1910	7	3.5	Jan 1977	7124	638	.2	16.4	232.6	49.7	162.8	23.2

\+ 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	1.43	1.41	1.80	1960	12	2.89+	1979	.12	1981
Feb	1.52	1.38	2.05	2001	9	3.79	1997	.14	1982
Mar	2.63	2.45	2.87	1976	5	5.74	1991	.38	1981
Apr	3.67	3.43	2.50	1909	29	7.08	1973	1.25	1985
May	4.34	4.05	4.00	1983	14	9.31	1974	.52	1992
Jun	4.77	4.20	4.49	1981	13	10.47	2000	.40	1988
Jul	3.83	3.69	3.29	1957	13	7.80	1992	.43	1991
Aug	4.54	3.54	5.01	1911	11	11.63	1981	1.62	1971
Sep	3.48	3.20	5.00	1961	14	7.78	1973	.09	1979
Oct	2.73	2.64	3.85	1960	31	7.24	1984	.50	1975
Nov	2.84	2.81	3.92	1952	17	6.72	1985	.42	1976
Dec	2.02	1.89	2.20	1971	15	5.43	1982	.28	1989
Ann	37.80	37.45	5.01	Aug 1911	11	11.63	Aug 1981	.09	Sep 1979

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.5	4.1	.8	.1
Feb	6.2	3.9	.8	.3
Mar	8.9	5.7	1.6	.5
Apr	10.6	7.0	2.5	.9
May	10.8	7.3	3.1	1.0
Jun	10.2	7.2	3.4	1.3
Jul	9.2	6.2	2.7	.9
Aug	9.9	7.2	2.9	1.4
Sep	8.6	6.0	2.1	.9
Oct	8.3	5.5	1.9	.5
Nov	8.8	5.6	1.9	.7
Dec	8.0	5.0	1.2	.3
Ann	107.0	70.7	24.9	8.8

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	.35	.49	.69	.88	1.06	1.26	1.47	1.73	2.06	2.59	3.09
Feb	.22	.35	.56	.78	1.00	1.24	1.52	1.86	2.32	3.07	3.79
Mar	.53	.77	1.15	1.51	1.87	2.25	2.68	3.20	3.89	5.00	6.04
Apr	1.34	1.69	2.18	2.60	2.99	3.40	3.84	4.35	5.00	6.01	6.93
May	1.16	1.58	2.20	2.75	3.29	3.86	4.49	5.23	6.20	7.72	9.14
Jun	1.16	1.61	2.31	2.93	3.54	4.19	4.91	5.78	6.91	8.70	10.38
Jul	1.19	1.56	2.10	2.56	3.01	3.48	3.99	4.59	5.36	6.57	7.69
Aug	1.35	1.78	2.42	2.98	3.53	4.09	4.71	5.45	6.40	7.88	9.26
Sep	.59	.90	1.40	1.88	2.37	2.90	3.51	4.25	5.23	6.82	8.34
Oct	.48	.72	1.12	1.49	1.87	2.29	2.76	3.32	4.08	5.31	6.47
Nov	.61	.87	1.29	1.67	2.05	2.45	2.90	3.45	4.17	5.32	6.40
Dec	.44	.63	.93	1.20	1.46	1.75	2.07	2.46	2.96	3.77	4.53
Ann	25.84	28.12	31.06	33.30	35.31	37.25	39.27	41.50	44.22	48.18	51.62

\+ 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	10.1	9.0	5	3	11.0	1995	20	34.3	1979	31	1979	28	23	1979	5.2	3.6	1.2	.4	.1	19.4	13.6	9.9	4.3
Feb	6.3	5.5	5	3	9.0	1975	24	17.5	1975	33	1979	13	29	1979	3.5	2.5	.8	.3	.0	15.6	12.3	9.1	2.3
Mar	4.3	4.0	1	#	7.5	1975	7	13.0	1972	23	1979	1	7	1979	2.1	1.5	.5	.2	.0	5.1	2.9	1.5	.4
Apr	1.5	.0	#	0	7.5	1982	6	9.5	1982	9	1982	9	1	1982	.6	.5	.2	.1	.0	.8	.3	.1	.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	#	1983	22	#	1983	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.1	.0	#	0	2.0	1997	27	2.5	1997	2	1997	27	#+	1997	.1	.1	.0	.0	.0	@	.0	.0	.0
Nov	2.7	1.5	#	#	6.0	1975	27	9.1	1995	6	1995	28	1	1995	1.2	.8	.5	.2	.0	1.8	1.2	.3	.0
Dec	6.7	5.5	2	1	8.0	1994	7	20.1	1978	16	2000	31	9	2000	4.1	2.8	.9	.2	.0	10.9	5.9	3.4	.4
Ann	31.7	25.5	N/A	N/A	11.0	Jan 1995	20	34.3	Jan 1979	33	Feb 1979	13	29	Feb 1979	16.8	11.8	4.1	1.4	.1	53.6	36.2	24.3	7.4

+ 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	6/08	6/02	5/29	5/26	5/23	5/19	5/16	5/12	5/06
32	5/28	5/22	5/18	5/15	5/12	5/08	5/05	5/01	4/25
28	5/16	5/10	5/06	5/02	4/29	4/25	4/22	4/18	4/12
24	4/29	4/24	4/20	4/17	4/14	4/11	4/08	4/04	3/30
20	4/19	4/15	4/11	4/08	4/06	4/03	3/31	3/28	3/23
16	4/19	4/12	4/07	4/03	3/30	3/26	3/22	3/18	3/11

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	140	132	126	121	117	112	107	102	94
32	161	152	146	141	137	132	127	121	113
28	187	178	171	165	160	155	149	142	133
24	210	201	194	189	183	178	173	166	157
20	230	222	216	211	206	201	196	190	182
16	253	242	235	229	223	217	211	203	193

***** 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	1452	1159	911	530	230	38	9	40	152	479	849	1275	7124
60	1297	1019	756	385	132	9	0	11	72	342	699	1120	5842
57	1204	935	663	304	88	3	0	4	40	269	610	1027	5147
55	1142	879	604	253	64	1	0	1	26	226	551	965	4712
50	987	750	462	146	24	0	0	0	6	134	410	815	3734
32	485	329	102	2	0	0	0	0	0	5	67	341	1331

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	56	94	214	463	834	1080	1238	1170	886	556	208	89	6888
55	0	0	3	24	185	391	525	458	222	64	2	0	1874
57	0	0	0	14	147	333	463	399	176	46	1	0	1579
60	0	0	0	6	99	249	370	313	118	26	0	0	1181
65	0	0	0	1	42	128	224	187	48	8	0	0	638
70	0	0	0	0	13	47	107	95	14	1	0	0	277

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	2	8	76	258	590	838	991	923	645	321	78	7	2	10	86	344	934	1772	2763	3686	4331	4652	4730	4737
45	0	2	42	157	438	688	836	768	495	206	37	3	0	2	44	201	639	1327	2163	2931	3426	3632	3669	3672
50	0	0	18	84	295	538	681	613	353	113	16	0	0	0	18	102	397	935	1616	2229	2582	2695	2711	2711
55	0	0	7	37	181	388	526	458	227	57	3	0	0	0	7	44	225	613	1139	1597	1824	1881	1884	1884
60	0	0	1	16	102	255	371	306	131	24	0	0	0	0	1	17	119	374	745	1051	1182	1206	1206	1206
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	6	57	175	375	550	658	606	420	227	53	5	0	6	63	238	613	1163	1821	2427	2847	3074	3127	3132

(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