

Climatography of the United States

No. 20

1971-2000

Station: CARLINVILLE, IL

COOP ID: 111280

Climate Division: IL 6

NWS Call Sign:

Elevation: 630 Feet

Lat: 39° 17N

Lon: 89° 53W

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	34.9	17.4	26.2	74	1909	23	38.2	1990	-22	1912	7	12.4	1977	1204	0	.0	.0	4.1	12.2	26.9	2.9
Feb	41.2	22.0	31.6	82	1930	24	41.0	1976	-23	1905	13	18.5	1978	936	0	.0	.0	8.1	7.2	21.3	1.6
Mar	52.9	31.9	42.4	91	1907	21	49.1	1973	-12	1960	6	34.7	1984	701	0	.0	.0	18.9	1.2	15.1	.1
Apr	65.1	43.0	54.1	92+	1930	11	60.9	1981	16	1920	5	46.7	1997	340	12	.0	.1	27.7	.0	4.2	.0
May	75.0	52.8	63.9	99+	1934	31	70.1	1987	26	1966	10	59.4	1997	130	95	.0	.7	31.0	.0	.2	.0
Jun	83.5	62.1	72.8	106+	1934	28	76.6	1971	37	1917	16	68.6	1982	8	242	.0	6.2	30.0	.0	.0	.0
Jul	87.3	66.6	77.0	113+	1954	18	81.6	1980	44	1947	23	73.5	1971	0	370	.6	12.5	31.0	.0	.0	.0
Aug	85.6	64.4	75.0	110+	1934	9	81.8	1983	38	1950	21	69.4	1992	7	317	.5	8.8	31.0	.0	.0	.0
Sep	79.1	55.7	67.4	105+	1913	3	72.7	1998	26	1942	28	61.9	1974	60	132	.0	3.4	30.0	.0	.2	.0
Oct	67.7	44.5	56.1	95	1953	2	62.5	1971	14	1925	30	50.2	1976	292	16	.0	.1	30.0	.0	3.4	.0
Nov	52.2	33.4	42.8	84	1950	1	50.2	1999	-4+	1950	25	35.2	1976	667	0	.0	.0	17.1	1.1	13.3	.0
Dec	39.6	23.4	31.5	74+	1998	4	39.8	1982	-20	1989	22	18.6	1983	1039	0	.0	.0	6.6	7.3	23.8	1.5
Ann	63.7	43.1	53.4	113+	Jul 1954	18	81.8	Aug 1983	-23	Feb 1905	13	12.4	Jan 1977	5384	1184	1.1	31.8	265.5	29.0	108.4	6.1

+ 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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1901-2000

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

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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: CARLINVILLE, IL

COOP ID: 111280

Climate Division: IL 6

NWS Call Sign:

Elevation: 630 Feet

Lat: 39°17N

Lon: 89°53W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	1.96	1.61	2.93	1975	10	5.60	1975	.07	1986	8.5	4.8	1.0	.3	.30	.46	.74	1.02	1.30	1.61	1.96	2.39	2.98	3.93	4.84
Feb	1.95	1.66	2.23	1942	6	5.05	1985	.45	1991	7.8	4.3	1.2	.3	.50	.69	.97	1.22	1.47	1.73	2.02	2.36	2.81	3.51	4.17
Mar	3.54	3.55	3.97	1922	14	8.15	1973	1.17	1999	11.1	7.4	2.4	.7	1.28	1.61	2.09	2.49	2.88	3.27	3.70	4.19	4.82	5.80	6.70
Apr	3.95	3.70	4.14	1979	11	11.46	1994	1.11	1986	11.5	7.3	2.5	.8	.98	1.35	1.93	2.44	2.95	3.48	4.07	4.78	5.71	7.17	8.54
May	4.25	4.04	2.77	1927	24	9.32	1990	.56	1992	11.6	7.4	3.0	1.1	1.06	1.46	2.08	2.63	3.17	3.74	4.38	5.14	6.13	7.70	9.16
Jun	3.89	3.17	5.26	1957	28	9.34	1973	1.18	1989	9.6	6.5	2.7	.9	1.00	1.37	1.93	2.43	2.92	3.44	4.02	4.70	5.59	7.00	8.32
Jul	3.66	3.58	6.22	1942	8	10.32	1981	.35	1997	9.1	5.4	2.6	1.1	.81	1.15	1.68	2.17	2.65	3.17	3.75	4.44	5.35	6.81	8.18
Aug	3.34	3.31	5.00	1915	20	8.22	1974	.05	1971	8.3	5.3	2.5	.8	.66	.97	1.46	1.90	2.36	2.85	3.40	4.06	4.94	6.35	7.69
Sep	2.88	2.63	3.96	1966	19	8.57	1984	.51	1985	8.0	4.9	2.2	.7	.52	.77	1.19	1.59	1.99	2.42	2.92	3.52	4.31	5.60	6.83
Oct	2.67	2.28	4.81	1969	12	5.77	1983	.69	1992	9.1	5.7	1.8	.4	.88	1.14	1.51	1.82	2.13	2.44	2.78	3.18	3.69	4.49	5.23
Nov	3.63	3.22	4.08	1946	1	8.91	1985	.87	1989	10.3	6.7	2.6	.7	.97	1.32	1.84	2.30	2.76	3.23	3.76	4.38	5.20	6.47	7.66
Dec	2.87	2.28	3.75	1982	3	7.85	1990	.37	1976	9.2	5.3	1.7	.6	.52	.78	1.20	1.59	1.99	2.42	2.91	3.50	4.29	5.56	6.77
Ann	38.59	39.16	6.22	Jul 1942	8	11.46	Apr 1994	.05	Aug 1971	114.1	71.0	26.2	8.4	26.85	29.10	32.00	34.21	36.17	38.08	40.05	42.23	44.88	48.74	52.08

+ 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: 1901-2000

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

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

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Station: CARLINVILLE, IL

COOP ID: 111280

Climate Division: IL 6

NWS Call Sign:

Elevation: 630 Feet

Lat: 39° 17N

Lon: 89° 53W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	6.7	3.9	2	1	8.5	1982	31	25.4	1977	13	1977	30	10	1977	4.6	2.3	.7	.3	.0	9.8	5.8	4.0	1.2
Feb	4.2	3.3	1	#	8.8	1984	27	18.2	1993	12	1982	10	6	1982	2.7	1.1	.5	.2	.0	6.3	4.5	3.2	.7
Mar	3.4	1.9	#	#	10.0	1989	6	21.0	1978	20	1978	8	7	1978	1.6	1.1	.3	.2	@	2.0	1.1	.8	.4
Apr	.7	.0	#	0	6.0	1971	5	8.5	1971	6	1971	5	#+	2000	.3	.2	.1	.1	.0	.1	.1	.1	.0
May	#	.0	0	0	#	1989	25	#	1989	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	#	1993	31	#+	1993	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.5	.0	#	0	7.2	1975	26	9.1	1975	7	1975	26	1	1975	.6	.4	.2	.1	.0	.7	.3	.1	.0
Dec	3.7	1.3	1	#	10.5	1973	19	25.5	1973	12	1973	31	4	1983	2.3	1.3	.4	.2	@	4.3	2.8	1.5	.1
Ann	20.2	10.4	N/A	N/A	10.5	Dec 1973	19	25.5	Dec 1973	20	Mar 1978	8	10	Jan 1977	12.1	6.4	2.2	1.1	@	23.2	14.6	9.7	2.4

+ 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

Complete documentation available from:

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NWS Call Sign:

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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	5/16	5/10	5/06	5/03	4/30	4/26	4/23	4/19	4/14
32	5/01	4/25	4/22	4/18	4/15	4/12	4/09	4/05	3/31
28	4/17	4/13	4/10	4/07	4/05	4/03	3/31	3/28	3/24
24	4/10	4/05	4/01	3/28	3/25	3/22	3/18	3/14	3/09
20	3/31	3/25	3/20	3/16	3/13	3/09	3/05	3/01	2/23
16	3/22	3/15	3/09	3/05	2/28	2/24	2/19	2/14	2/06
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	10/02	10/05	10/07	10/09	10/12	10/16
32	9/26	10/01	10/05	10/08	10/11	10/14	10/17	10/21	10/26
28	10/09	10/15	10/19	10/23	10/26	10/29	11/02	11/06	11/12
24	10/21	10/28	11/02	11/06	11/10	11/14	11/18	11/23	11/30
20	11/04	11/10	11/14	11/18	11/21	11/25	11/29	12/03	12/09
16	11/10	11/17	11/21	11/26	11/29	12/03	12/07	12/12	12/19
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	177	170	165	161	157	153	149	144	137
32	199	192	187	182	178	174	169	164	157
28	224	217	212	207	203	199	195	190	183
24	255	246	240	235	229	224	219	212	203
20	278	270	263	258	253	248	242	236	227
16	308	296	287	280	273	267	259	251	239

* 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

Complete documentation available from:

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Degree Days to Selected Base Temperatures (°F)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1204	936	701	340	130	8	0	7	60	292	667	1039	5384
60	1049	796	547	216	62	1	0	0	19	174	519	884	4267
57	956	717	462	155	35	0	0	0	7	117	435	794	3678
55	894	665	405	120	23	0	0	0	3	87	380	736	3313
50	749	535	275	54	6	0	0	0	0	35	257	592	2503
32	288	178	30	0	0	0	0	0	0	0	25	192	713

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	107	166	353	662	988	1224	1393	1332	1062	747	349	177	8560
55	0	8	14	92	298	534	680	619	375	121	14	7	2762
57	0	5	9	67	248	474	618	557	319	89	9	3	2398
60	0	0	2	38	182	385	525	465	240	53	2	0	1892
65	0	0	0	12	95	242	370	317	132	16	0	0	1184
70	0	0	0	2	38	121	222	186	58	3	0	0	630

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	24	66	200	458	768	1004	1157	1094	845	525	199	50	24	90	290	748	1516	2520	3677	4771	5616	6141	6340	6390
45	5	36	119	323	613	854	1002	939	695	380	120	25	5	41	160	483	1096	1950	2952	3891	4586	4966	5086	5111
50	1	13	66	207	459	704	847	784	547	251	63	7	1	14	80	287	746	1450	2297	3081	3628	3879	3942	3949
55	0	3	35	116	312	554	692	629	402	145	28	1	0	3	38	154	466	1020	1712	2341	2743	2888	2916	2917
60	0	0	9	60	188	405	537	474	266	69	8	0	0	0	9	69	257	662	1199	1673	1939	2008	2016	2016
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	13	39	126	279	486	681	793	746	550	323	110	29	13	52	178	457	943	1624	2417	3163	3713	4036	4146	4175

(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:
www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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