

Climatography of the United States

No. 20

1971-2000

Station: NEWTON 6 SSE, IL

COOP ID: 116159

Climate Division: IL 7

NWS Call Sign:

Elevation: 510 Feet

Lat: 38°55N

Lon: 88°07W

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	34.3	18.5	26.4	72	1950	25	38.1	1990	-28	1994	19	9.7	1977	1196	0	.0	.0	3.8	13.1	27.3	3.2
Feb	40.2	22.4	31.3	77	1972	29	41.1	1998	-21	1982	10	16.6	1978	943	0	.0	.0	7.1	7.8	21.8	2.0
Mar	51.3	32.5	41.9	83	1986	31	48.3	1973	-12	1978	5	32.7	1978	716	0	.0	.0	17.2	1.8	16.1	.2
Apr	62.7	41.9	52.3	88+	1989	27	58.0	1981	21+	1987	3	47.1	1983	386	5	.0	.0	26.5	.0	4.7	.0
May	73.2	52.2	62.7	96	1953	26	69.7	1987	29	1966	10	58.1	1981	160	88	.0	.7	30.9	.0	.2	.0
Jun	82.1	61.9	72.0	106	1954	26	77.1	1984	39	1966	1	67.1	1974	13	224	.1	5.5	30.0	.0	.0	.0
Jul	85.4	66.0	75.7	112	1954	14	79.3	1986	46	1950	14	71.2	2000	0	332	.3	9.9	31.0	.0	.0	.0
Aug	83.5	63.1	73.3	104+	1991	4	79.3	1983	39	1986	29	68.5	1992	10	268	.3	7.3	31.0	.0	.0	.0
Sep	77.7	55.0	66.4	105+	1954	5	71.4	1998	31+	1995	23	61.3	1974	68	108	.0	2.7	30.0	.0	.1	.0
Oct	66.3	43.3	54.8	97	1953	2	61.6	1971	19	1962	26	48.2	1988	335	18	.0	.1	29.6	.0	4.6	.0
Nov	51.9	34.1	43.0	83	1950	1	48.1	1999	0	1950	25	34.7	1976	659	0	.0	.0	17.3	.8	14.3	.0
Dec	39.3	23.8	31.6	73	1982	3	40.3	1982	-19	1989	22	18.8	2000	1038	0	.0	.0	6.6	7.4	24.6	1.7
Ann	62.3	42.9	52.6	112	Jul 1954	14	79.3+	Jul 1986	-28	Jan 1994	19	9.7	Jan 1977	5524	1043	.7	26.2	261.0	30.9	113.7	7.1

+ 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: 1948-2001

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

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No. 20

1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: NEWTON 6 SSE, IL

COOP ID: 116159

Climate Division: IL 7

NWS Call Sign:

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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	2.38	1.68	3.00	1999	22	6.62	1982	.01	1986	8.8	5.2	1.5	.3	.22	.39	.71	1.04	1.40	1.81	2.30	2.91	3.74	5.13	6.50
Feb	2.38	1.98	2.75	1975	23	5.27	1999	.37	1978	7.6	4.7	1.4	.5	.53	.75	1.10	1.42	1.73	2.07	2.44	2.89	3.48	4.43	5.32
Mar	3.85	3.94	2.94	1977	28	8.04	1973	1.06	1981	10.4	7.2	2.8	.8	1.18	1.55	2.09	2.56	3.01	3.49	4.01	4.62	5.40	6.63	7.77
Apr	3.90	3.50	2.83	1996	29	8.12	1972	.86	1971	11.5	7.8	2.5	.8	1.29	1.66	2.20	2.66	3.11	3.57	4.07	4.66	5.41	6.58	7.67
May	4.39	3.92	2.88	1985	2	9.47	1990	1.04	1977	10.8	7.6	3.1	1.1	1.24	1.66	2.29	2.84	3.37	3.93	4.55	5.28	6.23	7.71	9.10
Jun	3.74	3.67	3.46	2000	17	7.52	1999	.65	1984	10.1	6.9	2.5	.8	.96	1.32	1.86	2.34	2.81	3.31	3.86	4.52	5.38	6.73	8.00
Jul	4.37	3.44	4.15	1956	13	11.28	1979	.90	1983	8.7	6.5	2.9	1.4	1.09	1.50	2.14	2.70	3.26	3.85	4.50	5.28	6.30	7.91	9.41
Aug	3.43	2.35	4.69	1972	3	10.74	1972	.15	1996	8.1	5.3	2.3	1.0	.56	.85	1.35	1.82	2.31	2.84	3.44	4.18	5.17	6.77	8.31
Sep	3.17	2.67	2.77	1955	29	7.60	1993	.24	1999	7.3	5.0	2.1	1.1	.44	.70	1.15	1.59	2.05	2.56	3.15	3.87	4.85	6.44	7.98
Oct	2.77	2.58	2.39	2001	14	7.68	1983	.68	1971	8.1	5.0	2.0	.6	.92	1.18	1.57	1.90	2.21	2.54	2.89	3.31	3.84	4.67	5.43
Nov	3.99	3.56	3.86	1993	14	12.59	1985	.25	1999	10.0	6.4	2.8	1.0	.63	.98	1.56	2.11	2.68	3.30	4.01	4.88	6.04	7.92	9.73
Dec	2.90	2.50	4.56	1967	21	7.76	1982	.38	1976	9.6	5.6	2.2	.6	.70	.98	1.40	1.78	2.15	2.54	2.98	3.51	4.19	5.28	6.30
Ann	41.27	42.34	4.69	Aug 1972	3	12.59	Nov 1985	.01	Jan 1986	111.0	73.2	28.1	10.0	30.57	32.67	35.36	37.38	39.17	40.89	42.66	44.61	46.97	50.38	53.31

+ 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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Station: NEWTON 6 SSE, IL

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NWS Call Sign:

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Lat: 38°55N

Lon: 88°07W

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	5.4	3.7	1	1	6.5	1994	17	15.7	1977	10	1977	24	5	1977	3.5	2.0	.5	.1	.0	8.3	3.2	1.3	.0
Feb	3.0	1.3	1	#	6.0	1971	12	13.8	1993	10	1982	10	5	1982	2.1	1.1	.3	.2	.0	6.7	4.0	1.5	.1
Mar	2.6	1.5	#	#	10.0	1990	24	10.0+	1990	9	1990	24	2	1978	1.1	.8	.3	.1	@	1.5	.5	.1	.0
Apr	.1	.0	#	0	1.5	1973	10	1.5	1973	1	1982	8	#+	2000	.1	.1	.0	.0	.0	.1	.0	.0	.0
May	#	.0	0	0	#	1989	8	#	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	.1	.0	#	0	2.5	1989	20	2.5	1989	1	1993	30	#+	1993	.1	.1	.0	.0	.0	@	.0	.0	.0
Nov	.9	.0	#	#	5.0	1980	27	7.0	1980	5	1980	28	#+	1997	.4	.3	.1	@	.0	.6	.2	.1	.0
Dec	2.9	2.0	1	#	10.0	1973	20	16.1	1973	10	1973	21	4	2000	2.3	1.2	.3	.1	@	4.5	1.6	.3	.1
Ann	15.0	8.5	N/A	N/A	10.0+	Mar 1990	24	16.1	Dec 1973	10+	Feb 1982	10	5+	Feb 1982	9.6	5.6	1.5	.5	@	21.7	9.5	3.3	.2

+ 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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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	5/13	5/07	5/03	4/29	4/25	4/22	4/18	4/14	4/08
32	4/30	4/24	4/21	4/18	4/15	4/12	4/09	4/05	3/31
28	4/16	4/11	4/08	4/05	4/03	3/31	3/29	3/25	3/21
24	4/09	4/03	3/30	3/27	3/23	3/20	3/16	3/12	3/06
20	3/25	3/19	3/15	3/12	3/09	3/06	3/02	2/26	2/21
16	3/17	3/10	3/05	3/01	2/25	2/21	2/16	2/11	2/04
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	9/27	10/03	10/07	10/11	10/14	10/17	10/21	10/25	10/31
28	10/15	10/20	10/24	10/28	10/31	11/03	11/06	11/10	11/15
24	10/22	10/30	11/04	11/08	11/13	11/17	11/22	11/27	12/04
20	11/05	11/11	11/16	11/20	11/24	11/28	12/02	12/07	12/13
16	11/14	11/21	11/26	12/01	12/05	12/10	12/14	12/20	12/27
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	183	176	171	166	162	158	153	148	141
32	206	197	191	186	182	177	172	166	157
28	229	223	218	214	210	206	202	197	191
24	258	250	244	239	234	229	224	218	209
20	281	274	268	264	260	255	251	245	238
16	309	300	294	288	283	278	272	266	257

* 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)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1196	943	716	386	160	13	0	10	68	335	659	1038	5524
60	1041	803	563	252	84	3	0	1	23	214	510	883	4377
57	948	724	478	182	51	1	0	0	10	154	424	793	3765
55	886	672	421	142	35	0	0	0	5	120	370	737	3388
50	743	543	291	65	12	0	0	0	1	57	243	592	2547
32	291	185	36	0	0	0	0	0	0	0	17	195	724

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	118	166	343	608	951	1200	1355	1282	1029	707	348	179	8286
55	0	9	14	60	273	511	642	569	344	114	11	9	2556
57	0	5	10	40	227	451	580	507	289	86	5	3	2203
60	0	0	1	20	167	363	487	414	212	52	1	0	1717
65	0	0	0	5	88	224	332	268	108	18	0	0	1043
70	0	0	0	1	37	110	186	144	41	5	0	0	524

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	53	178	397	721	981	1124	1055	809	483	189	47	24	77	255	652	1373	2354	3478	4533	5342	5825	6014	6061
45	6	23	107	268	566	831	969	900	659	341	109	24	6	29	136	404	970	1801	2770	3670	4329	4670	4779	4803
50	1	7	58	163	413	681	814	745	511	219	55	7	1	8	66	229	642	1323	2137	2882	3393	3612	3667	3674
55	0	0	27	84	276	531	659	591	366	123	24	2	0	0	27	111	387	918	1577	2168	2534	2657	2681	2683
60	0	0	4	40	160	382	504	436	235	59	6	0	0	0	4	44	204	586	1090	1526	1761	1820	1826	1826
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	12	36	108	233	450	661	777	715	528	305	110	28	12	48	156	389	839	1500	2277	2992	3520	3825	3935	3963

(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/normals/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 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.

- | | |
|---|---|
| <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