

Climatology of the United States No. 20

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

Station: PRINCEVILLE, IL

1971-2000

COOP ID: 117004

Climate Division: IL 4

NWS Call Sign:

Elevation: 735 Feet

Lat: 40° 56N

Lon: 89° 47W

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	30.4	9.5	20.0	65	1997	5	31.6	1990	-26	1984	21	6.0	1979	1396	0	.0	.0	1.6	16.7	30.0	7.7
Feb	36.7	14.8	25.8	72	1996	27	38.0	1998	-26+	1996	4	11.0	1979	1099	0	.0	.0	4.7	10.8	25.5	4.4
Mar	49.7	25.5	37.6	87	1986	30	45.6	2000	-7+	1996	9	29.3	1996	849	0	.0	.0	14.4	3.2	22.3	.3
Apr	63.2	36.6	49.9	93	1986	25	58.2	1977	5	1982	7	43.8	1982	463	8	.0	.1	25.4	.1	10.1	.0
May	73.4	47.5	60.5	94	1975	19	68.5	1977	22+	1989	7	55.1	1995	203	62	.0	.6	30.7	.0	.8	.0
Jun	81.8	57.3	69.6	101	1988	26	76.4	1971	35	1993	1	63.0	1982	32	168	@	4.0	30.0	.0	.0	.0
Jul	84.9	60.6	72.8	104	1983	28	77.6	1980	44+	1988	1	68.8	1996	10	250	.3	7.5	31.0	.0	.0	.0
Aug	82.5	58.5	70.5	105	1988	2	76.5	1983	36	1986	28	64.3	1986	35	205	.5	5.2	31.0	.0	.0	.0
Sep	76.1	49.4	62.8	99	1983	9	69.0	1971	26+	1995	24	57.1	1993	137	70	.0	1.9	30.0	.0	.8	.0
Oct	64.7	38.5	51.6	90	1971	1	61.4	1971	12	1988	30	43.8	1987	427	12	.0	@	28.5	.0	8.1	.0
Nov	49.2	27.0	38.1	82	1999	9	47.5	1999	-3	1977	26	29.8	1995	807	0	.0	.0	14.1	2.0	20.1	.2
Dec	35.8	16.0	25.9	70	1984	29	35.0	1982	-26	1983	24	10.5	1983	1212	0	.0	.0	3.4	10.6	28.5	4.0
Ann	60.7	36.8	48.8	105	Aug 1988	2	77.6	Jul 1980	-26+	Feb 1996	4	6.0	Jan 1979	6670	775	.8	19.3	244.8	43.4	146.2	16.6

+ 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

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

069-A

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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	1.95	1.46	5.00	2000	20	7.09	1999	.11	1981	6.6	4.2	1.3	.5	.22	.37	.64	.91	1.20	1.53	1.91	2.38	3.02	4.08	5.11
Feb	1.72	1.49	3.20	1997	21	5.75	1997	.00	1987	5.4	3.4	1.4	.3	.24	.46	.75	.99	1.24	1.49	1.77	2.11	2.56	3.26	3.93
Mar	3.06	3.02	3.02	1985	4	8.76	1984	.82	1989	8.7	6.1	1.9	.8	.65	.93	1.38	1.78	2.19	2.63	3.12	3.72	4.50	5.74	6.92
Apr	3.72	3.67	3.55	1950	24	7.50	1981	.89	1971	10.2	7.3	2.5	.8	1.11	1.47	2.00	2.45	2.90	3.36	3.87	4.47	5.24	6.45	7.57
May	4.58	3.84	4.60	1999	13	11.94	1995	.37	1992	11.2	8.0	2.7	1.1	1.12	1.55	2.21	2.81	3.40	4.02	4.71	5.54	6.62	8.34	9.95
Jun	3.92	3.19	5.46	1964	20	11.01	1990	1.07	1988	9.1	6.9	2.8	.9	1.18	1.55	2.11	2.59	3.05	3.54	4.07	4.69	5.50	6.77	7.94
Jul	3.91	3.05	4.85	1951	22	12.61	1992	.31	1988	8.9	6.7	2.6	1.0	.63	.96	1.53	2.07	2.62	3.23	3.92	4.77	5.91	7.75	9.51
Aug	3.72	3.10	3.15+	1997	17	9.16	1997	.53	1974	9.0	6.7	2.4	.9	.72	1.06	1.60	2.11	2.62	3.16	3.78	4.53	5.52	7.11	8.62
Sep	3.39	3.04	3.50	1999	28	7.53	1977	.00	1979	7.9	5.6	2.2	.8	.70	1.18	1.75	2.20	2.64	3.09	3.58	4.15	4.89	6.05	7.12
Oct	2.84	2.35	3.95	1986	3	7.47	1991	.79	1992	8.3	5.7	1.9	.5	.75	1.02	1.43	1.79	2.15	2.52	2.94	3.43	4.07	5.07	6.01
Nov	2.98	2.40	2.81	1985	19	10.62	1985	.16	1999	8.7	6.0	2.2	.7	.44	.69	1.12	1.53	1.96	2.43	2.98	3.64	4.54	5.99	7.39
Dec	2.45	2.38	3.10	1982	2	6.59	1982	.19	1976	7.3	5.2	1.5	.6	.55	.78	1.14	1.46	1.78	2.13	2.51	2.97	3.58	4.55	5.46
Ann	38.24	38.40	5.46	Jun 1964	20	12.61	Jul 1992	.00+	Feb 1987	101.3	71.8	25.4	8.9	26.92	29.10	31.90	34.03	35.92	37.75	39.65	41.74	44.28	47.97	51.17

+ 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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NWS Call Sign:

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Lat: 40° 56N

Lon: 89° 47W

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	6.3	6.5	2	1	7.0	1971	3	24.0	1982	24	1979	23	19	1979	3.3	2.5	.6	.3	.0	10.9	6.0	3.4	.2
Feb	5.0	2.8	2	#	8.0	1988	11	16.0	1988	11	1985	15	8	1985	2.2	1.7	.7	.3	.0	6.5	4.4	2.2	.5
Mar	2.5	.3	#	#	6.0	1983	20	11.0	1984	6	1991	14	1	1984	1.2	.9	.4	.1	.0	1.2	.5	.1	.0
Apr	.2	.0	#	0	4.3	1982	8	4.3	1982	12+	1997	11	1	1997	.2	.1	.1	.0	.0	@	.0	.0	.0
May	#	.0	0	0	#	1989	6	#	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	0	2.0	1972	18	2.0	1972	0	0	0	0	0	.1	.1	.0	.0	.0	.0	.0	.0	.0
Nov	2.2	.3	#	0	10.0	1975	27	13.5	1975	7	1975	27	1	1975	1.0	.8	.2	.1	@	.7	.3	.1	.0
Dec	5.0	3.1	1	#	9.0	1973	19	16.0	1983	15	2000	30	6	2000	2.6	1.9	.7	.3	.0	3.3	1.4	.5	.3
Ann	21.3	13.0	N/A	N/A	10.0	Nov 1975	27	24.0	Jan 1982	24	Jan 1979	23	19	Jan 1979	10.6	8.0	2.7	1.1	@	22.6	12.6	6.3	1.0

+ 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	5/29	5/23	5/19	5/16	5/12	5/09	5/06	5/02	4/26
32	5/14	5/09	5/05	5/01	4/28	4/25	4/22	4/18	4/13
28	4/30	4/25	4/22	4/19	4/16	4/13	4/10	4/06	4/01
24	4/22	4/16	4/12	4/08	4/04	3/31	3/27	3/23	3/16
20	4/17	4/11	4/07	4/03	3/30	3/27	3/23	3/19	3/13
16	4/08	3/31	3/26	3/21	3/17	3/12	3/08	3/02	2/22
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	9/11	9/16	9/19	9/22	9/25	9/28	10/01	10/05	10/10
32	9/21	9/26	9/30	10/04	10/07	10/10	10/13	10/17	10/23
28	9/25	10/02	10/06	10/10	10/14	10/17	10/21	10/26	11/01
24	10/14	10/20	10/24	10/27	10/31	11/03	11/07	11/11	11/17
20	10/22	10/28	11/02	11/06	11/09	11/13	11/16	11/21	11/27
16	10/31	11/06	11/11	11/15	11/18	11/22	11/25	11/30	12/06
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	159	151	145	140	135	130	125	120	111
32	186	177	171	166	161	156	150	144	136
28	206	197	191	185	180	175	170	163	154
24	236	227	220	214	209	204	198	191	182
20	251	242	235	229	223	217	211	204	195
16	275	265	258	251	246	240	234	226	216

* 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	1396	1099	849	463	203	32	10	35	137	427	807	1212	6670
60	1241	959	694	330	115	7	0	10	65	295	658	1057	5431
57	1148	875	604	259	76	3	0	3	36	227	570	964	4765
55	1086	825	548	216	55	1	0	1	23	187	513	902	4357
50	933	694	408	128	21	0	0	0	6	105	379	759	3433
32	436	291	80	4	0	0	0	0	0	2	66	309	1188

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	63	116	254	539	882	1126	1264	1193	923	610	249	120	7339
55	0	5	9	62	225	437	551	481	256	82	6	0	2114
57	0	0	3	44	183	379	489	421	209	60	3	0	1791
60	0	0	0	25	130	294	396	335	147	35	1	0	1363
65	0	0	0	8	62	168	250	205	70	12	0	0	775
70	0	0	0	2	23	77	129	109	24	3	0	0	367

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	4	26	115	324	647	889	1032	964	711	393	114	18	4	30	145	469	1116	2005	3037	4001	4712	5105	5219	5237
45	0	6	65	210	494	739	877	809	563	263	61	7	0	6	71	281	775	1514	2391	3200	3763	4026	4087	4094
50	0	1	35	123	345	589	722	654	418	159	28	2	0	1	36	159	504	1093	1815	2469	2887	3046	3074	3076
55	0	0	12	66	218	439	567	499	283	85	10	0	0	0	12	78	296	735	1302	1801	2084	2169	2179	2179
60	0	0	3	26	118	299	413	345	172	37	2	0	0	0	3	29	147	446	859	1204	1376	1413	1415	1415
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	1	17	84	214	406	586	691	638	460	254	72	8	1	18	102	316	722	1308	1999	2637	3097	3351	3423	3431

(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 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