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: PRINCETON 1 SE, KY **COOP ID: 156580**

Climate Division: KY 1 **NWS Call Sign: 2M0** **Elevation: 497 Feet** **Lat: 37˚07N** **Lon: 87˚52W**

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	45.4	25.6	35.5	74	1972	24	45.7	1990	-18	1994	19	20.8	1977	915	0	.0	.0	10.9	5.6	21.9	1.0
Feb	51.5	29.6	40.6	79	1982	23	48.5	1976	-6	1996	4	25.6	1978	683	0	.0	.0	15.3	2.9	16.3	.5
Mar	62.0	38.1	50.1	85+	1982	18	56.2	1973	2	1980	3	43.8	1996	469	6	.0	.0	26.0	.2	10.9	.0
Apr	72.0	46.7	59.4	89+	1995	10	64.3	1981	22+	1992	3	53.1	1983	197	26	.0	.0	29.3	.0	2.8	.0
May	80.0	55.4	67.7	93	1998	16	73.2	1987	31	1976	4	63.7	1997	61	146	.0	.9	31.0	.0	.1	.0
Jun	88.0	64.0	76.0	102	1988	23	79.2	1971	41	1966	1	71.7	1974	1	331	.2	9.1	30.0	.0	.0	.0
Jul	91.6	67.9	79.8	105	1999	30	83.5	1993	50+	1971	31	77.1	1996	0	458	.7	18.0	31.0	.0	.0	.0
Aug	90.5	66.1	78.3	104	1999	12	84.1	1983	44	1986	29	73.8	1992	0	412	.7	14.2	31.0	.0	.0	.0
Sep	84.4	59.0	71.7	102	1999	4	76.6	1998	34	1983	22	66.9	1974	21	223	.1	5.9	30.0	.0	.0	.0
Oct	74.0	47.4	60.7	90	1971	1	67.2	1971	19	1981	24	53.1	1988	187	54	.0	@	30.7	.0	2.6	.0
Nov	60.7	39.0	49.9	84	2000	1	56.7	1999	10+	1976	30	41.3	1976	459	5	.0	.0	23.5	@	9.3	.0
Dec	49.7	30.0	39.9	78	1998	4	48.3	1984	-14	1989	22	28.7	2000	781	0	.0	.0	14.8	2.8	18.0	.3
Ann	70.8	47.4	59.1	105	Jul 1999	30	84.1	Aug 1983	-18	Jan 1994	19	20.8	Jan 1977	3774	1661	1.7	48.1	303.5	11.5	81.9	1.8

\+ 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: 1965-2001

(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	4.01	4.27	4.42	1999	22	8.82	1999	1.06	1981
Feb	4.48	3.95	5.48	1990	15	15.99	1989	1.31	1974
Mar	4.70	4.37	4.84	1997	1	13.11	1997	1.82	1987
Apr	4.70	5.11	3.02	1983	29	10.39	1983	1.55	1976
May	5.01	4.98	4.30	1983	3	11.76	1983	.84	1994
Jun	4.06	3.34	4.48	1998	9	12.62	1998	.63	1988
Jul	4.52	4.55	3.34	1992	15	7.59	1972	1.23	1991
Aug	3.56	2.71	5.25	1992	10	8.15	1975	.50	1983
Sep	3.28	2.81	5.15	1979	21	9.12	1979	.18	1983
Oct	3.28	3.17	3.20	1999	9	6.23	1985	.96	1971
Nov	4.80	4.26	4.52	1988	19	11.63	1988	.95	1976
Dec	5.05	4.18	3.89	1978	3	12.30	1990	.79	1976
Ann	51.45	49.47	5.48	Feb 1990	15	15.99	Feb 1989	.18	Sep 1983

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.0	6.9	2.7	.9
Feb	9.9	7.1	2.4	1.2
Mar	11.9	8.7	3.0	1.0
Apr	11.3	7.9	3.2	1.3
May	11.5	8.5	3.4	1.4
Jun	10.5	6.8	2.7	1.1
Jul	9.0	6.2	3.1	1.6
Aug	7.7	5.3	2.2	1.0
Sep	7.9	5.5	2.2	.9
Oct	7.9	5.2	2.3	.9
Nov	10.1	7.4	3.3	1.5
Dec	11.6	8.1	3.2	1.4
Ann	120.3	83.6	33.7	14.2

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	1.38	1.75	2.31	2.77	3.22	3.68	4.18	4.77	5.52	6.68	7.75
Feb	1.14	1.56	2.22	2.79	3.36	3.96	4.63	5.42	6.45	8.09	9.62
Mar	1.67	2.12	2.76	3.30	3.81	4.34	4.91	5.58	6.44	7.76	8.98
Apr	1.72	2.16	2.79	3.33	3.83	4.35	4.92	5.57	6.41	7.70	8.88
May	1.90	2.36	3.03	3.59	4.12	4.66	5.24	5.92	6.78	8.11	9.32
Jun	.78	1.15	1.75	2.29	2.85	3.45	4.13	4.95	6.03	7.77	9.43
Jul	1.96	2.36	2.93	3.39	3.83	4.27	4.74	5.28	5.96	7.00	7.94
Aug	.71	1.04	1.56	2.04	2.52	3.04	3.63	4.33	5.26	6.76	8.18
Sep	.58	.87	1.35	1.80	2.26	2.75	3.32	4.00	4.91	6.38	7.78
Oct	1.14	1.45	1.90	2.28	2.65	3.02	3.43	3.90	4.51	5.45	6.32
Nov	1.63	2.09	2.75	3.31	3.85	4.41	5.01	5.72	6.63	8.03	9.33
Dec	1.22	1.69	2.43	3.09	3.74	4.43	5.20	6.12	7.32	9.23	11.02
Ann	38.58	41.13	44.36	46.79	48.94	51.01	53.14	55.47	58.29	62.36	65.86

\+ 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: 1965-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	6.1	3.5	#	#
Feb	4.2	3.0	#	#
Mar	2.1	1.1	#	0
Apr	.2	.0	#	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.1	.0	#	0
Nov	.4	.0	#	0
Dec	1.4	.8	#	0
Ann	14.5	8.4	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	14.0	1994	17	23.6	1985	5	1997	9	#+	2000
Feb	8.0	1979	7	16.1	1979	6	1971	13	4	1985
Mar	5.0	1971	3	9.0	1996	7	1994	9	#+	1998
Apr	3.0	1971	6	3.0+	1983	1	1971	6	#	1971
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	3.0	1993	30	3.0	1993	3	1993	30	#	1993
Nov	4.0	1971	23	5.0	1971	2+	1997	12	#+	1997
Dec	3.5	1984	5	5.5	1984	5	1984	6	1	2000
Ann	14.0	Jan 1994	17	23.6	Jan 1985	7	Mar 1994	9	4	Feb 1985

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.9	1.9	.7	.2	@
Feb	2.4	1.5	.4	.1	.0
Mar	1.2	.7	.2	@	.0
Apr	.1	.1	.1	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	@	@	@	.0	.0
Nov	.2	.2	.1	.0	.0
Dec	1.3	.8	.1	.0	.0
Ann	8.1	5.2	1.6	.3	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.7	.2	.1	.0
Feb	1.5	.7	.2	.0
Mar	.4	.2	.1	.0
Apr	.1	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.1	.1	.0	.0
Nov	.1	.0	.0	.0
Dec	.8	.2	.1	.0
Ann	3.7	1.4	.5	.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

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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	5/05	5/01	4/27	4/24	4/21	4/18	4/14	4/08
32	4/25	4/21	4/18	4/15	4/13	4/10	4/07	4/04	3/31
28	4/17	4/11	4/07	4/04	4/01	3/29	3/25	3/21	3/16
24	4/09	4/03	3/30	3/26	3/23	3/19	3/16	3/11	3/05
20	3/22	3/17	3/12	3/09	3/05	3/02	2/26	2/22	2/16
16	3/14	3/06	2/28	2/23	2/18	2/13	2/08	2/02	1/25

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	9/28	10/02	10/05	10/08	10/10	10/12	10/15	10/18	10/22
32	10/06	10/12	10/15	10/18	10/21	10/24	10/27	10/31	11/05
28	10/14	10/20	10/25	10/28	11/01	11/04	11/08	11/12	11/18
24	10/31	11/06	11/10	11/14	11/17	11/20	11/24	11/28	12/04
20	11/04	11/11	11/16	11/20	11/25	11/29	12/03	12/09	12/16
16	11/23	11/30	12/04	12/08	12/12	12/16	12/20	12/24	12/31

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	185	179	175	171	168	165	162	157	152
32	209	203	198	195	191	187	184	179	173
28	236	228	222	218	213	209	204	199	191
24	265	256	249	244	239	234	228	222	213
20	286	278	273	268	264	259	255	249	242
16	324	314	307	301	296	291	285	278	268

***** 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	915	683	469	197	61	1	0	0	21	187	459	781	3774
60	769	553	328	99	20	0	0	0	4	99	323	634	2829
57	681	475	253	57	9	0	0	0	1	62	250	547	2335
55	623	425	210	37	5	0	0	0	0	43	208	490	2041
50	486	310	122	9	0	0	0	0	0	14	120	360	1421
32	140	55	4	0	0	0	0	0	0	0	3	66	268

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	247	295	565	820	1108	1320	1481	1435	1192	890	539	309	10201
55	18	21	58	167	399	630	768	722	502	220	53	20	3578
57	14	15	39	127	341	570	706	660	443	177	36	14	3142
60	9	9	21	78	259	480	613	567	356	121	19	9	2541
65	0	0	6	26	146	331	458	412	223	54	5	0	1661
70	0	0	0	5	66	190	303	264	117	18	0	0	963

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	86	157	335	568	840	1061	1212	1170	934	623	314	129	86	243	578	1146	1986	3047	4259	5429	6363	6986	7300	7429
45	38	88	223	425	685	911	1057	1015	784	471	201	66	38	126	349	774	1459	2370	3427	4442	5226	5697	5898	5964
50	19	46	132	293	530	761	902	860	634	336	124	31	19	65	197	490	1020	1781	2683	3543	4177	4513	4637	4668
55	3	18	70	180	380	611	747	705	485	210	59	7	3	21	91	271	651	1262	2009	2714	3199	3409	3468	3475
60	0	3	36	96	239	461	592	550	343	113	24	2	0	3	39	135	374	835	1427	1977	2320	2433	2457	2459
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	52	95	208	354	547	725	831	800	622	404	181	72	52	147	355	709	1256	1981	2812	3612	4234	4638	4819	4891

(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.
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