

Climatography of the United States No. 20

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

Station: SUMMER SHADE, KY

1971-2000

COOP ID: 157800

Climate Division: KY 2

NWS Call Sign:

Elevation: 864 Feet

Lat: 36° 53N

Lon: 85° 43W

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	44.2	25.0	34.6	78	1952	1	43.7	1990	-28	1963	23	20.0	1977	942	0	.0	.0	11.0	5.8	22.6	1.4
Feb	50.1	28.5	39.3	81	1962	13	47.7	1990	-21	1951	2	25.7	1978	720	0	.0	.0	14.8	2.9	18.3	.7
Mar	59.7	36.6	48.2	87	1998	29	55.8	1973	-6	1960	5	42.5	1996	523	1	.0	.0	24.9	.4	12.4	@
Apr	69.2	44.3	56.8	90	1995	10	61.8	1991	19+	1983	19	51.1	1983	263	14	.0	@	29.0	.0	4.5	.0
May	76.6	53.4	65.0	94+	1962	18	71.7	1991	28	1963	1	59.3	1997	104	105	.0	.1	31.0	.0	.2	.0
Jun	84.1	61.5	72.8	102+	1952	30	76.0	1984	37	1966	1	69.1	1982	6	240	.1	4.2	30.0	.0	.0	.0
Jul	87.5	65.6	76.6	106	1952	28	80.2	1993	48+	1972	7	73.7	1976	0	358	.2	10.9	31.0	.0	.0	.0
Aug	86.3	63.8	75.1	102+	1983	21	80.1	1995	43	1986	29	71.8	1992	2	314	.1	8.1	31.0	.0	.0	.0
Sep	80.1	57.5	68.8	105	1954	6	72.9	1998	33+	2001	26	65.3	1974	39	152	.0	2.4	30.0	.0	.0	.0
Oct	69.8	45.5	57.7	91	1953	2	64.5	1984	16	1952	29	50.9	1988	259	31	.0	.0	30.7	.0	3.6	.0
Nov	58.4	36.7	47.6	83+	2000	1	55.7	1985	-7	1950	25	37.7	1976	525	2	.0	.0	22.4	.1	12.0	.0
Dec	48.5	29.0	38.8	78	1971	10	47.9	1984	-15	1989	22	26.7	1989	814	0	.0	.0	14.8	2.8	19.6	.3
Ann	67.9	45.6	56.8	106	Jul 1952	28	80.2	Jul 1993	-28	Jan 1963	23	20.0	Jan 1977	4197	1217	.4	25.7	300.6	12.0	93.2	2.4

+ 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: 1950-2001

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

054-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	3.94	3.68	3.30	1974	10	8.68	1974	.53	1986	10.6	7.2	2.6	1.0	1.12	1.50	2.06	2.55	3.03	3.54	4.09	4.74	5.59	6.92	8.16
Feb	4.12	3.16	3.56	1962	27	10.95	1989	1.44	1978	10.2	7.2	2.7	1.0	1.39	1.79	2.36	2.84	3.30	3.78	4.30	4.91	5.69	6.91	8.02
Mar	5.12	4.15	5.85	1952	22	13.78	1975	2.33	1983	12.6	9.0	3.4	1.3	1.75	2.24	2.94	3.54	4.11	4.70	5.34	6.09	7.05	8.54	9.91
Apr	3.82	3.53	3.01	1954	16	6.95	1998	.91	1986	10.9	7.4	2.7	.9	1.23	1.60	2.13	2.59	3.03	3.48	3.98	4.56	5.31	6.48	7.56
May	4.98	4.46	5.28	1984	7	12.80	1983	.98	1987	11.8	8.3	3.3	1.3	1.76	2.23	2.91	3.48	4.03	4.59	5.21	5.92	6.83	8.24	9.53
Jun	4.43	4.02	4.48	1969	23	10.59	1981	.35	1984	9.6	7.3	3.1	1.3	.95	1.36	2.01	2.60	3.19	3.82	4.53	5.39	6.51	8.31	10.01
Jul	4.34	4.07	3.16	1992	3	9.43	1971	.23	1997	9.6	6.4	3.0	1.4	1.00	1.41	2.04	2.61	3.18	3.78	4.46	5.26	6.32	8.00	9.59
Aug	3.43	2.67	2.71	2001	11	8.12	1974	.31	1998	8.4	5.9	2.4	.9	.86	1.18	1.68	2.13	2.56	3.02	3.54	4.15	4.95	6.21	7.39
Sep	3.81	3.43	6.45	1970	9	10.49	1979	.65	1983	8.4	5.9	2.6	1.1	.77	1.12	1.68	2.19	2.71	3.26	3.88	4.63	5.63	7.22	8.73
Oct	3.17	2.82	3.58	1995	5	7.90	1984	.43	2000	7.5	5.2	2.2	.8	.64	.93	1.39	1.82	2.25	2.71	3.23	3.86	4.69	6.02	7.28
Nov	4.27	4.00	3.88	1973	27	9.81	1986	.79	1976	10.4	7.7	2.9	.9	1.45	1.85	2.44	2.94	3.42	3.92	4.46	5.09	5.90	7.15	8.31
Dec	4.95	4.28	5.19	1978	8	14.59	1990	1.49	1985	11.3	7.8	3.5	1.2	1.35	1.81	2.53	3.15	3.77	4.41	5.12	5.96	7.06	8.78	10.39
Ann	50.38	49.36	6.45	Sep 1970	9	14.59	Dec 1990	.23	Jul 1997	121.3	85.3	34.4	13.1	35.43	38.32	42.02	44.83	47.33	49.75	52.26	55.03	58.39	63.27	67.50

+ 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: 1950-2001

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

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Station: SUMMER SHADE, KY

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NWS Call Sign:

Elevation: 864 Feet

Lat: 36°53N

Lon: 85°43W

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	4.3	3.0	1	#	8.0	1994	17	19.5	1978	12	1978	20	5	1978	2.0	1.6	.7	.1	.0	5.3	2.7	1.1	.2
Feb	3.7	1.8	#	#	10.0	1979	7	23.0	1979	12	1979	9	3	1979	1.7	1.4	.5	.1	@	3.4	2.0	.8	.2
Mar	1.1	.0	#	0	4.0	1990	19	7.0	1996	10	1978	1	1	1978	.7	.6	.2	.0	.0	.4	.2	@	.0
Apr	.1	.0	#	0	2.0	1983	18	2.0	1983	#	2000	8	#	2000	.1	.1	.0	.0	.0	.0	.0	.0	.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	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	.3	.0	#	0	5.0	1977	27	5.0	1977	3	1977	27	#+	1997	.1	.1	@	@	.0	@	@	.0	.0
Dec	1.3	.5	#	#	3.0	1973	20	6.0	1997	3	1973	21	1+	2000	.9	.7	.1	.0	.0	1.1	.1	.0	.0
Ann	10.8	5.3	N/A	N/A	10.0	Feb 1979	7	23.0	Feb 1979	12+	Feb 1979	9	5	Jan 1978	5.5	4.5	1.5	.2	@	10.2	5.0	1.9	.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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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	5/19	5/13	5/09	5/06	5/03	4/29	4/26	4/22	4/16
32	5/06	4/30	4/26	4/23	4/20	4/17	4/13	4/09	4/04
28	4/19	4/15	4/12	4/09	4/07	4/05	4/02	3/30	3/26
24	4/14	4/09	4/05	4/02	3/30	3/27	3/24	3/20	3/14
20	4/01	3/25	3/20	3/16	3/12	3/08	3/04	2/27	2/20
16	3/17	3/10	3/06	3/02	2/26	2/22	2/18	2/14	2/07
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	9/26	9/30	10/03	10/06	10/08	10/10	10/13	10/16	10/20
32	10/04	10/08	10/11	10/14	10/17	10/20	10/22	10/26	10/30
28	10/12	10/18	10/22	10/25	10/29	11/01	11/05	11/09	11/15
24	10/24	10/30	11/03	11/07	11/10	11/13	11/17	11/21	11/27
20	11/04	11/10	11/14	11/17	11/20	11/23	11/27	12/01	12/06
16	11/16	11/23	11/28	12/02	12/06	12/10	12/14	12/19	12/26
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	179	171	166	162	158	154	149	144	137
32	199	192	187	183	180	176	172	167	160
28	223	217	212	208	204	200	196	192	185
24	249	240	234	229	224	220	214	208	200
20	277	268	262	257	253	248	243	237	228
16	303	296	291	287	282	278	274	269	261

* 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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Elevation: 864 Feet Lat: 36°53N Lon: 85°43W

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	942	720	523	263	104	6	0	2	39	259	525	814	4197
60	794	581	379	148	43	1	0	0	10	153	385	666	3160
57	706	504	298	96	22	0	0	0	4	104	306	578	2618
55	648	452	249	68	13	0	0	0	2	78	258	520	2288
50	509	328	149	22	3	0	0	0	0	32	158	386	1587
32	152	53	5	0	0	0	0	0	0	0	6	76	292

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	233	257	506	741	1024	1224	1381	1335	1104	795	473	285	9358
55	16	11	37	119	324	534	668	622	415	160	35	16	2957
57	12	8	24	87	271	474	606	560	357	124	23	12	2558
60	7	1	12	49	199	385	513	467	274	80	12	7	2006
65	0	0	1	14	105	240	358	314	152	31	2	0	1217
70	0	0	0	2	42	116	206	175	66	9	0	0	616

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	80	136	301	511	782	991	1136	1094	871	554	273	124	80	216	517	1028	1810	2801	3937	5031	5902	6456	6729	6853
45	36	74	197	368	627	841	981	939	721	405	174	63	36	110	307	675	1302	2143	3124	4063	4784	5189	5363	5426
50	14	32	114	246	472	691	826	784	571	273	101	31	14	46	160	406	878	1569	2395	3179	3750	4023	4124	4155
55	1	11	56	148	326	541	671	629	425	156	52	9	1	12	68	216	542	1083	1754	2383	2808	2964	3016	3025
60	0	1	21	78	195	392	516	474	285	74	16	0	0	1	22	100	295	687	1203	1677	1962	2036	2052	2052
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	46	87	192	325	505	675	783	750	575	351	167	72	46	133	325	650	1155	1830	2613	3363	3938	4289	4456	4528

(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.

- 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/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