

Climatography of the United States

No. 20

1971-2000

Station: MAMMOTH CAVE, KY

COOP ID: 155097

Climate Division: KY 2

NWS Call Sign:

Elevation: 790 Feet

Lat: 37° 11N

Lon: 86° 05W

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	44.0	24.5	34.3	78+	1950	25	43.1	1990	-20+	1984	21	19.2	1977	953	0	.0	.0	10.5	5.8	23.0	1.4
Feb	50.4	27.8	39.1	82	1962	13	47.0	1990	-21	1951	2	25.1	1978	724	0	.0	.0	14.9	3.0	18.1	.6
Mar	60.4	35.7	48.1	86	1963	31	55.3	1973	-6	1960	5	41.4	1996	529	4	.0	.0	25.3	.3	12.5	@
Apr	70.5	43.2	56.9	93	1995	10	62.6	1981	18	1950	14	51.4	1983	257	12	.0	.1	29.3	.0	4.5	.0
May	78.0	51.7	64.9	96	1991	17	71.8	1991	27	1963	1	60.3	1997	113	108	.0	.4	31.0	.0	.3	.0
Jun	85.0	60.2	72.6	105	1952	28	75.5	2000	32	1950	5	67.9	1992	9	236	.2	5.8	30.0	.0	.0	.0
Jul	88.6	64.6	76.6	108	1952	27	81.6	1999	40	1950	7	73.5	1984	0	358	.5	12.8	31.0	.0	.0	.0
Aug	87.4	63.0	75.2	104	1983	21	80.1	1983	37	1950	4	71.0	1992	4	321	.2	10.6	31.0	.0	.0	.0
Sep	81.6	56.2	68.9	106	1954	5	73.9	1998	30	1949	30	64.7	1975	41	158	.0	3.9	30.0	.0	@	.0
Oct	71.1	44.9	58.0	94	1953	2	64.2	1984	18+	1981	24	50.9	1988	252	35	.0	.0	30.7	.0	3.8	.0
Nov	58.6	36.9	47.8	93	2000	1	55.1	1985	-8	1950	25	38.5	1976	520	2	.0	@	23.0	.1	11.0	.0
Dec	48.4	28.6	38.5	80	1951	7	47.4	1971	-18	1989	22	26.5	1989	822	0	.0	.0	14.2	2.8	19.2	.5
Ann	68.7	44.8	56.7	108	Jul 1952	27	81.6	Jul 1999	-21	Feb 1951	2	19.2	Jan 1977	4224	1234	.9	33.6	300.9	12.0	92.4	2.5

+ 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

036-A

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: MAMMOTH CAVE, KY

COOP ID: 155097

Climate Division: KY 2

NWS Call Sign:

Elevation: 790 Feet Lat: 37°11N

Lon: 86°05W

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	3.85	3.95	3.10	1974	10	8.74	1974	.72	1984	10.1	7.3	2.8	.9	1.11	1.47	2.03	2.50	2.97	3.46	4.00	4.63	5.46	6.75	7.95
Feb	3.82	3.56	3.86	1949	14	12.08	1989	.87	1999	9.2	6.4	2.8	1.2	1.13	1.49	2.04	2.51	2.97	3.44	3.97	4.58	5.38	6.63	7.79
Mar	5.04	4.23	4.50	1997	1	15.02	1997	1.63	1999	12.4	8.6	3.5	1.3	1.54	2.02	2.74	3.35	3.94	4.56	5.24	6.04	7.07	8.67	10.16
Apr	4.18	3.36	3.55	1968	4	9.76	1979	.53	1976	11.5	7.8	2.6	1.2	1.04	1.44	2.05	2.59	3.12	3.68	4.31	5.06	6.03	7.58	9.03
May	5.22	4.28	6.80	1984	7	14.11	1995	2.03	1999	10.7	7.9	3.9	1.5	1.80	2.29	3.01	3.62	4.20	4.80	5.45	6.21	7.19	8.70	10.08
Jun	4.65	4.68	3.34	1973	27	8.88	1997	1.26	1988	9.5	7.5	3.2	1.3	1.54	1.99	2.63	3.18	3.71	4.25	4.85	5.55	6.44	7.83	9.11
Jul	4.56	4.70	3.04	1989	3	8.76	1992	.83	1997	9.0	6.8	3.2	1.5	1.69	2.12	2.73	3.24	3.73	4.23	4.77	5.40	6.20	7.43	8.56
Aug	3.62	3.44	3.73	1958	1	6.95	1985	.61	1973	8.5	5.4	2.5	1.1	.88	1.22	1.74	2.21	2.68	3.17	3.72	4.38	5.24	6.60	7.87
Sep	4.17	3.40	4.40	1979	14	9.18	1979	.59	1983	8.6	6.1	2.8	1.3	1.10	1.50	2.10	2.63	3.15	3.70	4.31	5.03	5.97	7.46	8.84
Oct	3.46	3.35	3.21	1962	2	7.63	1975	.42	1987	8.1	5.2	2.4	1.1	.77	1.08	1.59	2.05	2.51	2.99	3.54	4.20	5.06	6.43	7.73
Nov	4.50	4.14	6.66	1957	18	8.42	1988	.92	1976	9.9	7.0	3.2	1.5	1.63	2.05	2.66	3.18	3.66	4.16	4.71	5.34	6.15	7.39	8.53
Dec	4.92	4.47	4.00	1978	8	12.26	1978	1.53	1976	10.4	7.7	3.6	1.9	1.68	2.14	2.82	3.40	3.95	4.51	5.13	5.85	6.78	8.21	9.53
Ann	51.99	51.34	6.80	May 1984	7	15.02	Mar 1997	.42	Oct 1987	117.9	83.7	36.5	15.8	36.52	39.50	43.33	46.24	48.82	51.33	53.92	56.78	60.26	65.32	69.69

+ 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

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

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: MAMMOTH CAVE, KY

COOP ID: 155097

Climate Division: KY 2

NWS Call Sign:

Elevation: 790 Feet

Lat: 37° 11N

Lon: 86° 05W

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	4.1	1.5	1	#	7.5	1981	30	22.5	1978	11	1978	23	5	1978	2.2	1.4	.5	.2	.0	5.0	3.5	1.4	.2
Feb	4.5	2.0	1	#	8.0	1971	8	18.8	1978	9+	1986	15	6	1978	1.9	1.2	.6	.2	.0	4.3	3.1	1.5	.0
Mar	1.1	.0	#	#	6.0	1975	10	6.6	1975	8	1996	22	2	1978	.8	.4	.2	.1	.0	.8	.5	.3	.0
Apr	.1	.0	#	0	2.0	1983	18	2.0	1983	#+	1972	1	#+	1972	.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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.4	.0	#	0	5.5	1977	27	5.5	1977	5	1977	27	#+	1979	.2	.2	@	@	.0	.2	@	@	.0
Dec	1.6	.0	#	#	6.0	1989	19	8.4	1997	5	1997	31	1	1997	.9	.5	.2	.1	.0	.8	.2	.1	.0
Ann	11.8	3.5	N/A	N/A	8.0	Feb 1971	8	22.5	Jan 1978	11	Jan 1978	23	6	Feb 1978	6.1	3.7	1.5	.6	.0	11.1	7.3	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:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

Climatography of the United States

No. 20 1971-2000

Station: MAMMOTH CAVE, KY

COOP ID: 155097

Climate Division: KY 2

NWS Call Sign:

Elevation: 790 Feet

Lat: 37° 11N

Lon: 86° 05W

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	5/22	5/16	5/11	5/08	5/04	4/30	4/26	4/22	4/16
32	5/10	5/05	4/30	4/27	4/24	4/20	4/17	4/13	4/07
28	4/22	4/17	4/13	4/10	4/07	4/04	4/01	3/29	3/24
24	4/16	4/09	4/04	3/31	3/27	3/23	3/19	3/14	3/07
20	3/26	3/20	3/16	3/12	3/08	3/05	3/01	2/24	2/18
16	3/17	3/10	3/05	3/01	2/25	2/21	2/17	2/12	2/05
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	9/24	9/28	9/30	10/02	10/04	10/06	10/09	10/11	10/15
32	10/01	10/06	10/09	10/12	10/15	10/17	10/20	10/23	10/28
28	10/10	10/16	10/20	10/23	10/27	10/30	11/03	11/07	11/13
24	10/23	10/30	11/03	11/07	11/11	11/15	11/19	11/23	11/30
20	10/31	11/07	11/12	11/17	11/21	11/25	11/29	12/04	12/11
16	11/13	11/20	11/25	11/29	12/03	12/07	12/11	12/17	12/23
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	175	167	162	157	153	148	144	138	131
32	192	186	181	177	173	169	165	160	154
28	225	217	211	206	202	197	192	187	179
24	256	247	240	234	228	223	217	209	200
20	282	273	267	262	257	252	247	240	232
16	306	297	291	285	280	275	270	263	255

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

**Climatography
of the United States
No. 20
1971-2000**

Station: MAMMOTH CAVE, KY

COOP ID: 155097

Climate Division: KY 2

NWS Call Sign:

Elevation: 790 Feet

Lat: 37°11N

Lon: 86°05W

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	953	724	529	257	113	9	0	4	41	252	520	822	4224
60	798	587	386	141	49	1	0	0	11	149	381	669	3172
57	716	510	307	89	26	0	0	0	4	101	302	584	2639
55	658	458	259	61	16	0	0	0	2	75	255	527	2311
50	518	336	161	18	4	0	0	0	0	30	156	391	1614
32	155	59	8	0	0	0	0	0	0	0	6	77	305

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	226	259	507	746	1019	1217	1381	1340	1107	806	478	278	9364
55	15	14	44	117	322	527	668	627	419	168	37	15	2973
57	11	10	30	84	269	468	606	565	361	132	25	11	2572
60	0	3	16	46	200	379	513	472	278	87	13	3	2010
65	0	0	4	12	108	236	358	321	158	35	2	0	1234
70	0	0	0	2	46	116	209	184	72	11	0	0	640

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	74	138	306	526	787	989	1147	1105	884	573	281	123	74	212	518	1044	1831	2820	3967	5072	5956	6529	6810	6933
45	37	76	199	386	632	839	992	950	734	424	181	65	37	113	312	698	1330	2169	3161	4111	4845	5269	5450	5515
50	16	36	115	257	477	689	837	795	584	287	102	30	16	52	167	424	901	1590	2427	3222	3806	4093	4195	4225
55	3	12	58	156	330	539	682	640	437	174	54	7	3	15	73	229	559	1098	1780	2420	2857	3031	3085	3092
60	0	2	23	82	199	391	527	485	296	89	20	0	0	2	25	107	306	697	1224	1709	2005	2094	2114	2114
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	47	89	201	345	515	672	782	752	582	370	165	66	47	136	337	682	1197	1869	2651	3403	3985	4355	4520	4586

(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