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: WILLIAMSTOWN 3 W, KY **COOP ID: 158714**

Climate Division: KY 3 **NWS Call Sign:** **Elevation: 940 Feet** **Lat: 38˚40N** **Lon: 84˚37W**

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	.0	.0	.0	75	1950	26	.0	0	-23	1994	19	.0	0	0	0	.0	.0	7.3	8.4	25.1	1.9
Feb	.0	.0	.0	77	1954	16	.0	0	-14	1951	2	.0	0	0	0	.0	.0	11.7	4.8	19.9	.7
Mar	.0	.0	.0	83	1986	31	.0	0	-2+	1960	6	.0	0	0	0	.0	.0	21.4	.6	14.5	.1
Apr	.0	.0	.0	89+	2001	9	.0	0	15	1982	7	.0	0	0	0	.0	.0	28.3	.0	4.1	.0
May	.0	.0	.0	93	1962	19	.0	0	27	1966	10	.0	0	0	0	.0	.1	31.0	.0	@	.0
Jun	.0	.0	.0	102+	1988	25	.0	0	37	1966	1	.0	0	0	0	@	2.6	30.0	.0	.0	.0
Jul	.0	.0	.0	104+	1999	30	.0	0	50+	1983	6	.0	0	0	0	.4	7.9	31.0	.0	.0	.0
Aug	.0	.0	.0	104	1983	20	.0	0	42+	1986	30	.0	0	0	0	.2	6.3	31.0	.0	.0	.0
Sep	.0	.0	.0	101+	1953	3	.0	0	32	1993	30	.0	0	0	0	.0	2.0	30.0	.0	@	.0
Oct	.0	.0	.0	94	1953	1	.0	0	20	1962	26	.0	0	0	0	.0	.0	30.2	.0	2.5	.0
Nov	.0	.0	.0	83+	1987	2	.0	0	-1	1950	25	.0	0	0	0	.0	.0	20.1	.1	11.7	.0
Dec	.0	.0	.0	74	1982	3	.0	0	-22	1989	22	.0	0	0	0	.0	.0	10.9	4.5	20.7	.6
Ann	.0	.0	.0	104+	Jul 1999	30	-99.9	0	-23	Jan 1994	19	99.9	0	0	0	.6	18.9	282.9	18.4	98.5	3.3

+ 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: 1948-2001

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

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: WILLIAMSTOWN 3 W, KY **COOP ID: 158714**

Climate Division: KY 3 **NWS Call Sign:** **Elevation: 940 Feet** **Lat: 38˚40N** **Lon: 84˚37W**

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	2.99	3.19	2.10	1951	14	5.31	1982	.41	1981
Feb	2.92	2.53	3.47	2000	18	7.15	1989	.28	1978
Mar	4.39	3.92	6.00+	1997	2	16.52	1997	1.83	1981
Apr	4.23	4.05	3.06	1970	2	9.54	1998	1.47	1997
May	4.72	4.58	3.80	1961	8	10.50	1996	.86	1977
Jun	4.42	4.28	4.24	1960	23	8.05	1998	.94	1988
Jul	4.02	3.73	3.84	1957	5	8.29	1992	1.07	1983
Aug	3.99	3.75	3.12	1977	12	7.46	1974	1.12	1987
Sep	3.17	3.11	4.57	1965	1	9.42	1979	.60	1998
Oct	3.03	2.58	3.29	1973	1	11.49	1983	.52	1987
Nov	3.50	3.35	2.35	1957	19	6.95	1973	.44	1976
Dec	3.51	3.29	2.61	1978	8	8.35	1978	.77	1985
Ann	44.89+	43.48+	6.00+	Mar 1997	2	16.52	Mar 1997	.28	Feb 1978

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	14.1	7.0	1.8	.5
Feb	12.2	6.0	1.7	.7
Mar	14.8	8.8	2.9	.8
Apr	14.4	8.7	2.6	1.0
May	13.3	8.8	3.2	1.1
Jun	11.5	7.5	3.1	1.2
Jul	10.8	6.6	2.7	1.2
Aug	9.9	6.1	2.7	1.1
Sep	9.6	5.4	2.1	.9
Oct	10.3	5.2	1.7	.7
Nov	12.7	7.6	2.4	.6
Dec	14.0	7.6	2.4	.6
Ann	147.6	85.3	29.3	10.4

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	.91	1.20	1.62	1.99	2.34	2.71	3.11	3.58	4.20	5.15	6.04
Feb	.68	.95	1.38	1.76	2.14	2.55	3.00	3.54	4.25	5.37	6.43
Mar	1.50	1.92	2.52	3.03	3.53	4.03	4.58	5.23	6.06	7.34	8.51
Apr	1.44	1.84	2.42	2.91	3.39	3.88	4.41	5.03	5.83	7.07	8.21
May	1.54	1.99	2.65	3.21	3.75	4.31	4.92	5.63	6.55	7.98	9.30
Jun	1.58	1.99	2.60	3.10	3.58	4.08	4.61	5.24	6.04	7.27	8.41
Jul	1.18	1.57	2.14	2.64	3.12	3.62	4.18	4.83	5.68	7.00	8.23
Aug	1.54	1.91	2.44	2.88	3.29	3.72	4.18	4.71	5.38	6.42	7.36
Sep	.68	.98	1.44	1.86	2.29	2.74	3.24	3.85	4.66	5.94	7.15
Oct	.67	.95	1.39	1.79	2.19	2.62	3.10	3.67	4.43	5.63	6.77
Nov	1.07	1.41	1.90	2.33	2.74	3.17	3.64	4.19	4.91	6.03	7.06
Dec	1.16	1.49	1.98	2.40	2.80	3.21	3.66	4.19	4.87	5.92	6.89
Ann	33.29	35.57	38.47	40.66	42.60	44.46	46.38	48.50	51.05	54.73	57.90

\+ 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

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: WILLIAMSTOWN 3 W, KY **COOP ID: 158714**

Climate Division: KY 3 **NWS Call Sign:** **Elevation: 940 Feet** **Lat: 38°40N** **Lon: 84°37W**

Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	6.0	3.2	1	#	13.0	1994	17	23.1	1977	18	1978	22	8	1978	5.0	2.6	.5	.1	@	8.0	4.0	2.2	1.1
Feb	4.0	2.9	1	#	6.0	1971	8	12.0	1998	12	1998	6	7	1978	3.4	1.7	.5	.1	.0	5.4	2.9	1.8	.2
Mar	2.8	1.9	#	#	7.0	1978	7	15.0	1978	12	1978	8	4	1978	2.1	1.1	.3	.1	.0	1.1	.4	.2	.1
Apr	.1	.0	#	0	4.0	1987	4	4.0	1987	3	1987	4	#+	2000	.2	.1	@	.0	.0	@	@	.0	.0
May	#	.0	0	0	#	1989	7	#	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	.2	.0	#	0	4.0	1989	19	4.0	1989	2	1993	30	#+	1993	.1	.1	@	.0	.0	.1	.0	.0	.0
Nov	.7	.2	#	0	4.0	1977	27	4.0	1977	4	1977	27	#+	1997	.9	.2	.1	.0	.0	.3	.1	.0	.0
Dec	2.5	2.0	#	#	5.0	1984	6	9.5	1993	7	1993	29	3	1989	3.0	1.1	.3	.1	.0	2.9	1.1	.7	.0
Ann	16.3	10.2	N/A	N/A	13.0	Jan 1994	17	23.1	Jan 1977	18	Jan 1978	22	8	Jan 1978	14.7	6.9	1.7	.4	@	17.8	8.5	4.9	1.4

+ Also occurred on an earlier date(s) #Denotes trace amounts

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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

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: WILLIAMSTOWN 3 W, KY **COOP ID: 158714**

Climate Division: KY 3 **NWS Call Sign:** **Elevation: 940 Feet** **Lat: 38˚40N** **Lon: 84˚37W**

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

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	10/01	10/04	10/08	10/11	10/13	10/17	10/20	10/25
32	10/06	10/11	10/15	10/18	10/21	10/24	10/27	10/30	11/04
28	10/19	10/24	10/28	10/31	11/03	11/06	11/09	11/13	11/18
24	10/29	11/04	11/09	11/13	11/16	11/20	11/23	11/28	12/04
20	11/08	11/15	11/19	11/23	11/26	11/30	12/04	12/08	12/14
16	11/18	11/25	11/30	12/04	12/08	12/12	12/16	12/21	12/28

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	177	172	168	164	160	156	151	144
32	209	202	197	193	189	185	180	175	168
28	231	224	219	215	211	207	203	198	191
24	258	250	244	239	234	230	225	219	211
20	277	269	263	258	254	249	244	238	230
16	307	298	291	285	279	274	268	261	251

***** 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/normals/usnormals.html

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: WILLIAMSTOWN 3 W, KY **COOP ID: 158714**

Climate Division: KY 3 **NWS Call Sign:** **Elevation: 940 Feet** **Lat: 38˚40N** **Lon: 84˚37W**

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	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	49	95	237	461	758	967	1120	1082	858	550	242	87	49	144	381	842	1600	2567	3687	4769	5627	6177	6419	6506
45	24	49	145	324	603	817	965	927	708	400	151	42	24	73	218	542	1145	1962	2927	3854	4562	4962	5113	5155
50	5	20	80	205	450	667	810	772	558	264	84	19	5	25	105	310	760	1427	2237	3009	3567	3831	3915	3934
55	0	5	39	118	304	517	655	617	415	152	39	2	0	5	44	162	466	983	1638	2255	2670	2822	2861	2863
60	0	0	16	56	182	368	500	462	276	73	11	0	0	0	16	72	254	622	1122	1584	1860	1933	1944	1944
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	30	59	142	280	476	656	776	744	565	328	132	43	30	89	231	511	987	1643	2419	3163	3728	4056	4188	4231

(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