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: MONTICELLO 3 NE, KY **COOP ID: 155524**

Climate Division: KY 4 **NWS Call Sign:** **Elevation: 979 Feet** **Lat: 36˚52N** **Lon: 84˚50W**

Temperature (˚F)

Month	Mean (1) Daily Max	Mean (1) Daily Min	Mean (1) Mean	Extremes Highest Daily(2)	Extremes Year	Extremes Day	Extremes Highest Month(1) Mean	Extremes Year	Extremes Lowest Daily(2)	Extremes Year	Extremes Day	Extremes Lowest Month(1) Mean	Extremes Year	Degree Days (1) Base Temp 65 Heating	Degree Days (1) Base Temp 65 Cooling	Mean Number of Days (3) Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	42.8	23.6	33.2	75	1972	24	42.2	1974	-33	1963	30	18.7	1977	985	0	.0	.0	11.3	5.7	22.9	1.1
Feb	48.2	25.9	37.1	82	1996	24	45.1	1976	-14	1996	5	23.4	1978	783	0	.0	.0	14.4	3.2	19.3	.5
Mar	57.6	33.5	45.6	85	1963	31	52.0	1973	-6	1980	3	39.0	1996	603	0	.0	.0	24.4	.6	14.5	@
Apr	66.9	40.6	53.8	90	1995	11	59.0	1981	20	1989	11	48.6	1997	343	5	.0	@	28.2	.0	5.6	.0
May	74.9	50.6	62.8	92+	1970	24	68.9	1991	28	1963	1	58.2	1997	145	76	.0	@	31.0	.0	.3	.0
Jun	82.6	60.0	71.3	100	1988	27	74.3	1984	35	1966	1	67.5	1974	10	199	@	2.9	30.0	.0	.0	.0
Jul	86.2	64.3	75.3	103	1988	10	78.9	1993	46+	1988	2	71.6	1976	0	317	.1	8.6	31.0	.0	.0	.0
Aug	85.5	62.4	74.0	103	1988	18	78.8	1995	44	1965	29	70.3	1976	4	281	.2	7.1	31.0	.0	.0	.0
Sep	79.8	55.5	67.7	100	1957	1	72.8	1998	33	1993	30	63.4	1974	47	126	.0	2.9	30.0	.0	.0	.0
Oct	69.4	43.1	56.3	92	1959	5	64.0	1984	19	1962	26	49.9	1988	296	24	.0	.0	30.4	.0	3.8	.0
Nov	57.6	34.7	46.2	82+	1987	3	54.8	1985	5	1976	30	36.4	1976	566	1	.0	.0	22.6	.1	11.7	.0
Dec	47.5	27.8	37.7	77+	1982	4	46.4	1984	-15	1962	13	26.1	1989	849	0	.0	.0	14.8	3.1	20.0	.2
Ann	66.6	43.5	55.1	103+	Aug 1988	18	78.9	Jul 1993	-33	Jan 1963	30	18.7	Jan 1977	4631	1029	.3	21.5	299.1	12.7	98.1	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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

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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	4.39	4.17	4.07	1957	29	8.32	1972	.13	1986
Feb	4.08	3.90	3.20	1962	27	7.32	1994	1.22	1980
Mar	4.85	4.16	3.64	1963	12	12.83	1975	1.16	1983
Apr	4.24	3.94	3.60	1972	12	9.09	1998	1.06	1976
May	5.15	4.87	4.31	1984	7	11.25	1995	1.60	1982
Jun	4.41	3.96	3.86	1998	1	10.66	1998	.55	1984
Jul	4.42	4.52	2.83	1988	13	10.76	1971	.97	1974
Aug	3.82	3.42	3.54	1970	10	8.40	1989	.86	1973
Sep	3.72	3.12	4.28	1964	29	8.10	1975	.32	1998
Oct	2.95	2.59	4.20	1989	17	6.93	1989	.19	1987
Nov	4.15	3.79	3.98	1986	9	10.05	1986	.93	1976
Dec	4.80	4.11	3.98	1978	4	13.91	1990	1.23	1980
Ann	50.98	49.91	4.31	May 1984	7	13.91	Dec 1990	.13	Jan 1986

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.3	8.0	2.9	1.0
Feb	11.8	7.5	3.1	1.0
Mar	12.7	8.9	3.1	1.3
Apr	11.5	7.9	2.8	1.1
May	12.3	8.8	3.4	1.3
Jun	10.7	7.8	2.7	1.2
Jul	10.2	7.5	3.3	1.1
Aug	9.2	6.3	2.9	1.0
Sep	8.5	5.9	2.8	1.0
Oct	8.4	5.5	2.1	.6
Nov	11.1	7.6	2.7	.9
Dec	12.2	8.0	3.0	1.3
Ann	130.9	89.7	34.8	12.8

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	1.07	1.48	2.12	2.69	3.26	3.85	4.52	5.31	6.35	8.00	9.54
Feb	1.75	2.12	2.63	3.05	3.45	3.85	4.28	4.77	5.39	6.34	7.20
Mar	1.52	1.98	2.66	3.25	3.82	4.40	5.05	5.81	6.79	8.31	9.72
Apr	1.31	1.72	2.32	2.83	3.33	3.84	4.41	5.07	5.93	7.27	8.51
May	2.06	2.54	3.21	3.76	4.29	4.82	5.39	6.06	6.90	8.18	9.36
Jun	1.08	1.49	2.14	2.71	3.28	3.88	4.55	5.34	6.39	8.04	9.59
Jul	1.21	1.63	2.26	2.82	3.37	3.94	4.58	5.33	6.31	7.84	9.28
Aug	1.32	1.68	2.20	2.65	3.07	3.51	3.99	4.54	5.26	6.36	7.38
Sep	.92	1.26	1.81	2.29	2.77	3.27	3.83	4.50	5.37	6.76	8.06
Oct	.68	.95	1.39	1.77	2.16	2.57	3.03	3.58	4.30	5.45	6.52
Nov	1.54	1.93	2.48	2.95	3.39	3.85	4.34	4.91	5.64	6.76	7.79
Dec	1.41	1.87	2.55	3.14	3.72	4.32	4.98	5.76	6.77	8.35	9.81
Ann	38.34	40.84	44.01	46.40	48.51	50.54	52.63	54.92	57.69	61.67	65.10

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	5.9	4.2	1	#
Feb	5.3	2.6	#	#
Mar	2.5	1.2	#	#
Apr	.1	.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	.0	.0	#	0
Nov	.5	.0	#	0
Dec	2.0	2.0	#	#
Ann	16.3	10.0	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	8.0	1996	7	16.7	1994	9	1996	8	3	1994
Feb	11.0	1998	4	22.6	1979	14	1998	6	2	1998
Mar	8.0	1993	13	16.2	1993	11	1993	14	1	1996
Apr	2.0	1983	18	2.0	1983	1	1983	18	#+	2000
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	1993	31	.3	1993	#	1993	31	#	1993
Nov	3.5	1977	28	6.0	1977	3	1977	27	#+	2000
Dec	4.2	2000	3	9.6	1997	4+	2000	3	1+	2000
Ann	11.0	Feb 1998	4	22.6	Feb 1979	14	Feb 1998	6	3	Jan 1994

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.0	1.7	.8	.2	.0
Feb	3.4	1.6	.5	.2	@
Mar	1.4	.8	.2	.1	.0
Apr	.2	@	.0	.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	.0	.0
Nov	.6	.2	@	.0	.0
Dec	2.6	.8	.1	.0	.0
Ann	12.2	5.1	1.6	.5	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	4.2	1.9	.7	.0
Feb	3.5	1.5	.7	.1
Mar	.8	.3	.1	@
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	.0	.0	.0	.0
Nov	.1	@	.0	.0
Dec	2.0	.2	.0	.0
Ann	10.7	3.9	1.5	.1

+ 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	5/17	5/12	5/08	5/05	5/02	4/29	4/25	4/22	4/16
32	5/06	4/30	4/27	4/23	4/20	4/17	4/14	4/10	4/05
28	4/20	4/16	4/13	4/10	4/08	4/05	4/03	3/30	3/26
24	4/15	4/08	4/04	3/31	3/27	3/23	3/19	3/14	3/08
20	3/28	3/21	3/17	3/13	3/09	3/05	3/01	2/24	2/18
16	3/16	3/09	3/04	2/28	2/24	2/21	2/16	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	9/27	10/01	10/04	10/06	10/08	10/11	10/13	10/16	10/20
32	10/03	10/09	10/13	10/17	10/20	10/23	10/27	10/31	11/06
28	10/11	10/18	10/22	10/26	10/29	11/02	11/06	11/10	11/16
24	10/28	11/03	11/07	11/11	11/14	11/17	11/21	11/25	12/01
20	11/06	11/12	11/17	11/21	11/24	11/28	12/01	12/06	12/12
16	11/18	11/26	12/02	12/07	12/12	12/16	12/21	12/27	1/04

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	176	170	166	162	159	155	152	148	142
32	205	197	191	187	182	178	173	167	159
28	227	219	213	208	204	199	195	189	181
24	256	248	242	236	231	226	221	215	207
20	282	274	269	264	260	255	250	245	237
16	317	307	301	295	289	284	278	271	262

***** 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	985	783	603	343	145	10	0	4	47	296	566	849	4631
60	830	643	455	211	70	1	0	0	13	182	423	694	3522
57	747	560	369	146	40	0	0	0	5	128	342	609	2946
55	688	510	315	110	26	0	0	0	2	99	291	550	2591
50	546	381	199	43	7	0	0	0	0	44	181	411	1812
32	170	72	11	0	0	0	0	0	0	0	8	82	343

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	208	213	430	652	954	1179	1340	1300	1069	751	432	256	8784
55	13	7	22	72	267	489	627	587	381	137	25	12	2639
57	10	1	14	48	219	429	565	525	324	104	16	8	2263
60	0	0	6	24	156	340	472	432	242	65	7	0	1744
65	0	0	0	5	76	199	317	281	126	24	1	0	1029
70	0	0	0	0	27	84	170	148	48	6	0	0	483

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	84	129	283	476	752	970	1122	1079	863	553	276	123	84	213	496	972	1724	2694	3816	4895	5758	6311	6587	6710
45	43	72	180	341	597	820	967	924	713	400	177	65	43	115	295	636	1233	2053	3020	3944	4657	5057	5234	5299
50	19	34	103	220	444	670	812	769	564	270	100	29	19	53	156	376	820	1490	2302	3071	3635	3905	4005	4034
55	2	12	51	129	302	520	657	614	416	162	51	8	2	14	65	194	496	1016	1673	2287	2703	2865	2916	2924
60	0	1	19	62	179	371	502	459	280	79	17	0	0	1	20	82	261	632	1134	1593	1873	1952	1969	1969
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	50	87	188	313	486	658	776	742	571	359	173	71	50	137	325	638	1124	1782	2558	3300	3871	4230	4403	4474

(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:
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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