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: HEIDELBERG, KY **COOP ID: 153741**

Climate Division: KY 4 **NWS Call Sign:** **Elevation: 665 Feet** **Lat: 37˚33N** **Lon: 83˚46W**

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	41.9	21.4	31.7	79	1943	24	40.6	1974	-27	1994	20	17.2	1977	1034	0	.0	.0	10.4	5.7	25.0	1.2
Feb	47.2	23.4	35.3	81	1996	24	43.6	1990	-18+	1996	6	22.4	1978	832	0	.0	.0	13.7	3.5	21.7	.9
Mar	57.1	30.8	44.0	87+	1990	15	50.7	2000	-9	1960	6	38.3	1996	654	0	.0	.0	23.7	.4	17.3	.1
Apr	66.8	38.5	52.7	94	1986	28	57.9	1981	18+	1982	7	47.9	1983	374	3	.0	.4	28.2	.0	7.8	.0
May	74.6	49.1	61.9	99	1941	22	68.9	1991	27+	1971	4	57.0	1997	166	68	.0	.6	31.0	.0	.7	.0
Jun	81.7	58.3	70.0	104	1936	29	73.0	1994	27	1941	22	65.6	1972	18	167	.1	4.7	30.0	.0	.0	.0
Jul	85.6	63.2	74.4	105	1988	10	77.8	1993	44+	1988	3	70.9	1976	0	292	.2	10.5	31.0	.0	.0	.0
Aug	84.6	61.9	73.3	105	1936	19	78.6	1995	39+	1986	30	69.0	1976	6	261	.1	7.8	31.0	.0	.0	.0
Sep	78.9	55.0	67.0	101+	1953	3	72.3	1998	32+	1963	25	62.3	1974	55	113	.0	2.6	30.0	.0	.0	.0
Oct	69.1	41.2	55.2	94	1941	6	61.6	1984	15	1962	27	48.7	1976	324	18	.0	.0	30.6	.0	5.6	.0
Nov	57.7	32.5	45.1	85	1961	3	52.7	1985	2	1938	25	36.4	1976	597	0	.0	.0	22.2	.1	14.7	.0
Dec	46.8	25.3	36.1	82+	1982	4	44.3	1971	-15	1962	13	24.9	1989	898	0	.0	.0	13.9	3.5	22.5	.3
Ann	66.0	41.7	53.9	105+	Jul 1988	10	78.6	Aug 1995	-27	Jan 1994	20	17.2	Jan 1977	4958	922	.4	26.6	295.7	13.2	115.3	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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1932-2001

(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	3.78	3.33	2.76	1974	11	8.59	1974	.68	1981
Feb	3.70	3.69	3.70	1962	27	9.30	1989	.83	1977
Mar	4.41	3.99	2.64	1952	23	11.08	1975	1.54	1971
Apr	3.87	3.55	2.85	1972	12	10.86	1972	1.19	1997
May	4.94	4.65	3.40	1984	7	8.76	1998	1.19	1977
Jun	4.16	4.09	4.57	1960	12	8.74	1998	.84	1980
Jul	4.69	4.59	4.15	1965	23	7.95	1992	1.91	1995
Aug	4.16	3.84	3.15	1961	21	8.95	1974	1.54	1984
Sep	3.74	3.03	3.58	1989	14	10.80	1989	1.07	1980
Oct	3.00	2.51	5.26	1989	17	7.58	1989	.51	1987
Nov	3.88	3.40	3.60	1986	9	8.89	1986	.92	1976
Dec	4.26	3.63	5.02	1978	8	14.22	1978	1.53	1985
Ann	48.59	46.35	5.26	Oct 1989	17	14.22	Dec 1978	.51	Oct 1987

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.3	7.2	2.4	.6
Feb	10.7	6.7	2.5	.8
Mar	12.8	8.8	2.8	.8
Apr	12.0	7.7	2.3	.5
May	13.1	8.7	3.2	1.2
Jun	11.3	8.0	3.1	.9
Jul	11.4	8.2	3.7	.9
Aug	9.8	7.1	3.0	1.0
Sep	9.1	5.9	2.1	1.0
Oct	8.9	5.7	2.0	.7
Nov	10.6	7.1	2.1	.8
Dec	12.5	7.6	2.6	.8
Ann	134.5	88.7	31.8	10.0

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	1.17	1.53	2.06	2.52	2.97	3.43	3.94	4.53	5.30	6.50	7.60
Feb	1.17	1.52	2.04	2.49	2.92	3.37	3.86	4.43	5.17	6.32	7.38
Mar	1.53	1.95	2.55	3.06	3.55	4.05	4.60	5.24	6.06	7.32	8.49
Apr	1.16	1.53	2.08	2.56	3.02	3.50	4.02	4.64	5.44	6.69	7.86
May	1.90	2.36	3.02	3.56	4.08	4.60	5.17	5.83	6.66	7.95	9.12
Jun	1.36	1.75	2.33	2.83	3.30	3.80	4.34	4.97	5.78	7.04	8.21
Jul	2.39	2.78	3.31	3.73	4.12	4.51	4.92	5.39	5.97	6.84	7.61
Aug	1.74	2.12	2.65	3.09	3.50	3.91	4.36	4.87	5.52	6.51	7.40
Sep	1.00	1.36	1.90	2.37	2.84	3.33	3.87	4.51	5.35	6.67	7.90
Oct	.88	1.16	1.59	1.96	2.32	2.70	3.11	3.60	4.24	5.23	6.15
Nov	1.36	1.73	2.26	2.70	3.13	3.57	4.05	4.60	5.32	6.42	7.43
Dec	1.11	1.52	2.13	2.68	3.21	3.78	4.40	5.14	6.11	7.64	9.06
Ann	35.35	37.93	41.23	43.73	45.94	48.08	50.28	52.70	55.64	59.88	63.55

\+ 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: 1932-2001
(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	5.2	2.0	1	#
Feb	5.0	3.0	1	#
Mar	2.3	.5	#	#
Apr	.6	.0	#	0
May	#	.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	.2	.0	#	0
Dec	1.7	1.0	#	#
Ann	15.0	6.5	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	13.5	1996	7	22.0	1996	15	1996	8	5	1996
Feb	15.0	1985	13	30.0	1985	19	1985	13	7	1978
Mar	14.0	1993	14	19.0	1993	18	1993	14	2	1993
Apr	8.8	1987	5	12.5	1987	6	1987	5	#+	1997
May	#	1989	8	#	1989	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	#	1993	31	#	1993	0	0	0	0	0
Nov	3.0	1995	29	3.0	1995	1	1995	29	#+	1997
Dec	6.0	2000	3	9.8	1997	6	2000	3	1+	2000
Ann	15.0	Feb 1985	13	30.0	Feb 1985	19	Feb 1985	13	7	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.8	1.7	.5	.2	.1
Feb	2.1	1.4	.6	.3	.1
Mar	1.0	.6	.2	.1	@
Apr	.3	.1	@	@	.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	.0
Nov	.2	.1	@	.0	.0
Dec	2.1	1.0	.2	@	.0
Ann	8.5	4.9	1.5	.6	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	4.7	2.1	1.2	.5
Feb	3.7	2.0	1.0	.4
Mar	1.0	.2	.2	@
Apr	.2	.1	@	.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	.0
Dec	2.6	.4	.1	.0
Ann	12.3	4.8	2.5	.9

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

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	9/30	10/03	10/05	10/07	10/08	10/10	10/12	10/14	10/17
32	10/04	10/08	10/11	10/13	10/16	10/18	10/20	10/23	10/27
28	10/14	10/19	10/23	10/26	10/29	11/01	11/04	11/08	11/14
24	10/24	10/30	11/03	11/07	11/10	11/14	11/17	11/22	11/28
20	11/02	11/08	11/12	11/16	11/19	11/23	11/27	12/01	12/07
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	175	169	164	160	157	153	149	145	138
32	190	183	179	175	171	167	163	159	152
28	223	215	210	205	201	196	192	186	179
24	246	238	232	227	223	218	213	207	199
20	274	265	259	253	248	243	237	231	222
16	313	303	296	289	283	277	271	264	253

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1034	832	654	374	166	18	0	6	55	324	597	898	4958
60	879	692	501	238	85	3	0	0	16	204	451	743	3812
57	786	609	415	167	51	1	0	0	7	146	369	651	3202
55	733	559	358	127	34	0	0	0	3	114	315	596	2839
50	588	429	232	53	10	0	0	0	0	53	199	452	2016
32	189	99	16	0	0	0	0	0	0	0	9	97	410

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	178	191	385	620	925	1140	1315	1279	1047	717	402	222	8421
55	9	7	15	57	246	450	602	566	361	118	18	8	2457
57	0	1	9	37	201	391	540	504	304	88	12	1	2088
60	0	0	2	17	142	303	447	411	224	53	4	0	1603
65	0	0	0	3	68	167	292	261	113	18	0	0	922
70	0	0	0	0	24	66	150	132	41	4	0	0	417

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	60	95	239	444	723	945	1108	1071	843	508	240	95	60	155	394	838	1561	2506	3614	4685	5528	6036	6276	6371
45	28	47	142	308	568	795	953	916	693	364	148	49	28	75	217	525	1093	1888	2841	3757	4450	4814	4962	5011
50	9	17	73	192	418	645	798	761	543	233	82	19	9	26	99	291	709	1354	2152	2913	3456	3689	3771	3790
55	0	2	34	104	277	495	643	606	395	127	34	3	0	2	36	140	417	912	1555	2161	2556	2683	2717	2720
60	0	0	9	51	159	348	488	452	259	60	8	0	0	0	9	60	219	567	1055	1507	1766	1826	1834	1834
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	46	81	185	308	471	635	756	730	553	340	167	69	46	127	312	620	1091	1726	2482	3212	3765	4105	4272	4341

(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