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: HYDEN, KY **COOP ID: 154093**

Climate Division: KY 4 **NWS Call Sign:** **Elevation: 970 Feet** **Lat: 37˚09N** **Lon: 83˚22W**

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	42.7	22.9	32.8	80	1999	23	43.6	1974	-20+	1994	20	18.7	1977	998	0	.0	.0	9.6	5.2	25.3	1.1
Feb	48.3	25.3	36.8	79	1996	24	44.2	1990	-17+	1996	6	24.2	1978	790	0	.0	.0	13.3	2.9	21.6	.8
Mar	58.1	32.2	45.2	85+	1998	30	51.2	1973	-2+	1993	16	38.7	1996	616	0	.0	.0	24.3	.5	17.0	.1
Apr	68.5	39.8	54.2	90+	1995	11	58.3	1999	18	1969	1	50.5	1983	329	3	.0	@	28.3	.0	6.5	.0
May	76.4	49.9	63.2	93	1962	17	71.1	1991	28	1971	5	58.1	1994	143	85	.0	.1	30.9	.0	.6	.0
Jun	82.8	58.3	70.6	96	1966	29	73.3	1984	35	1966	1	64.6	1972	17	182	.0	2.0	30.0	.0	.0	.0
Jul	86.2	63.8	75.0	99	1999	30	78.4	1999	48	1961	10	72.0	1976	0	310	.0	6.4	31.0	.0	.0	.0
Aug	85.0	62.4	73.7	97	1999	14	77.8	1995	46+	1965	30	70.6	1976	2	271	.0	4.5	31.0	.0	.0	.0
Sep	79.1	56.1	67.6	96+	1999	5	72.0	1998	34+	1976	23	63.5	1974	47	125	.0	1.6	30.0	.0	@	.0
Oct	69.1	42.9	56.0	89	1998	5	63.5	1971	18	1962	27	49.2	1976	304	25	.0	.0	30.5	.0	4.4	.0
Nov	57.3	33.7	45.5	85	1961	4	53.3	1985	5	1976	30	37.5	1976	586	0	.0	.0	22.3	.1	14.7	.0
Dec	47.0	26.2	36.6	74+	1998	6	45.5	1971	-11+	1962	14	25.5	1989	880	0	.0	.0	13.5	3.0	25.1	.2
Ann	66.7	42.8	54.8	99	Jul 1999	30	78.4	Jul 1999	-20+	Jan 1994	20	18.7	Jan 1977	4712	1001	.0	14.6	294.7	11.7	115.2	2.2

\+ 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

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	4.31	4.30	3.55	1949	23	8.73	1999	1.02	1981
Feb	3.56	3.46	2.25	1955	28	6.83	1994	1.20	1977
Mar	5.26	4.80	3.95	1963	12	11.94	1975	2.21	2000
Apr	4.09	3.71	3.09	1998	16	10.70	1998	.80	1976
May	5.16	4.76	3.41	1971	7	8.75	1971	1.63	1977
Jun	4.65	4.57	2.15	1960	23	7.49	1991	.90	1988
Jul	4.24	4.47	2.39	1972	5	8.36	1992	.90	1999
Aug	3.88	4.01	2.38	1949	18	7.53	1977	.67	1972
Sep	3.25	2.97	3.15	1991	19	6.60	1993	.23	1998
Oct	3.24	2.98	3.19	1977	2	6.64	1983	.89	1987
Nov	3.78	3.46	2.63	1973	27	7.60	1973	.67	1976
Dec	4.73	4.41	3.83	1991	3	10.27	1978	1.79	1980
Ann	50.15	50.87	3.95	Mar 1963	12	11.94	Mar 1975	.23	Sep 1998

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.0	8.4	3.1	.8
Feb	12.6	7.2	2.3	.9
Mar	13.7	9.7	2.9	1.2
Apr	12.5	7.9	2.4	.6
May	13.7	9.2	3.0	1.1
Jun	13.0	8.9	3.1	1.0
Jul	8.7	5.4	1.6	.4
Aug	7.4	5.1	2.0	.6
Sep	10.1	6.1	2.5	.6
Oct	9.4	5.9	1.7	.5
Nov	11.2	7.5	2.3	.9
Dec	13.1	8.0	2.7	.9
Ann	138.4	89.3	29.6	9.5

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	1.32	1.73	2.34	2.87	3.37	3.90	4.49	5.17	6.05	7.43	8.71
Feb	1.50	1.82	2.27	2.64	2.99	3.35	3.73	4.16	4.72	5.56	6.33
Mar	2.06	2.55	3.24	3.81	4.36	4.91	5.51	6.20	7.08	8.43	9.66
Apr	1.50	1.88	2.44	2.90	3.34	3.79	4.28	4.85	5.58	6.69	7.72
May	2.29	2.75	3.39	3.91	4.40	4.89	5.41	6.02	6.78	7.93	8.97
Jun	2.16	2.57	3.13	3.58	4.01	4.43	4.88	5.39	6.04	7.02	7.90
Jul	1.37	1.77	2.37	2.87	3.36	3.87	4.42	5.07	5.90	7.20	8.39
Aug	1.48	1.84	2.36	2.79	3.20	3.61	4.06	4.59	5.25	6.27	7.20
Sep	.75	1.05	1.53	1.95	2.38	2.83	3.33	3.94	4.73	5.99	7.18
Oct	1.12	1.43	1.88	2.25	2.61	2.98	3.38	3.85	4.46	5.39	6.24
Nov	1.28	1.64	2.16	2.60	3.03	3.46	3.94	4.50	5.22	6.33	7.35
Dec	1.79	2.24	2.87	3.39	3.89	4.40	4.95	5.59	6.41	7.66	8.80
Ann	39.27	41.46	44.22	46.28	48.10	49.84	51.61	53.56	55.91	59.27	62.14

\+ 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	7.1	4.5	1	#
Feb	1.5	1.3	1	#
Mar	1.7	.1	#	#
Apr	#	.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	.6	.0	#	0
Dec	1.4	1.2	#	#
Ann	12.3	7.1	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	15.0	1996	7	23.5	1977	17	1996	8	6	1996
Feb	10.5	1996	3	10.5	1996	11	1996	3	5	1978
Mar	11.0	1993	13	11.0	1993	15	1993	15	1	1996
Apr	#	1993	3	#+	1993	#+	1977	6	#+	1977
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	.5	1993	31	.5	1993	0	0	0	0	0
Nov	3.0	1977	28	3.5	1976	1+	1996	9	#+	1996
Dec	4.0	1976	31	4.0	1976	3	1995	8	1	1995
Ann	15.0	Jan 1996	7	23.5	Jan 1977	17	Jan 1996	8	6	Jan 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.9	1.9	.9	.3	.1
Feb	1.6	1.2	.3	.1	.1
Mar	.9	.6	.2	.1	.1
Apr	.0	.0	.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	.1	.0	.0	.0	.0
Nov	.3	.2	.1	.0	.0
Dec	1.2	.6	.2	.0	.0
Ann	7.0	4.5	1.7	.5	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.1	4.1	2.0	.2
Feb	1.8	.2	.0	.0
Mar	.7	.3	.0	.0
Apr	.0	.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	.3	.0	.0	.0
Dec	.6	.0	.0	.0
Ann	9.5	4.6	2.0	.2

+ 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

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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	5/15	5/11	5/08	5/06	5/03	4/30	4/27	4/22
32	5/12	5/06	5/02	4/29	4/26	4/22	4/19	4/15	4/09
28	4/26	4/21	4/17	4/14	4/11	4/08	4/04	3/31	3/26
24	4/12	4/06	4/02	3/29	3/26	3/22	3/19	3/14	3/09
20	3/30	3/24	3/19	3/15	3/11	3/08	3/04	2/27	2/21
16	3/20	3/13	3/07	3/02	2/26	2/21	2/16	2/11	2/03

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	9/28	10/01	10/04	10/07	10/09	10/11	10/14	10/17	10/21
32	10/04	10/09	10/12	10/15	10/17	10/20	10/23	10/26	10/30
28	10/12	10/18	10/23	10/26	10/30	11/02	11/06	11/10	11/16
24	10/24	10/29	11/02	11/06	11/09	11/12	11/16	11/20	11/25
20	11/05	11/12	11/17	11/22	11/26	11/30	12/04	12/09	12/17
16	11/21	11/27	12/01	12/05	12/09	12/12	12/16	12/21	12/27

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	156	152	148	143	136
32	196	188	183	178	174	170	165	159	152
28	225	217	211	206	201	197	192	186	178
24	249	241	236	232	228	224	219	214	207
20	282	274	268	263	259	254	249	243	235
16	314	304	297	291	285	280	274	267	257

***** 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	998	790	616	329	143	17	0	2	47	304	586	880	4712
60	843	650	464	194	68	3	0	0	13	190	439	725	3589
57	760	566	377	127	38	1	0	0	5	135	355	639	3003
55	702	516	322	90	25	0	0	0	3	105	301	580	2644
50	560	386	201	29	7	0	0	0	0	48	184	439	1854
32	182	72	10	0	0	0	0	0	0	0	6	97	367

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	207	206	417	665	965	1155	1333	1293	1069	744	410	240	8704
55	14	6	16	64	277	466	620	580	381	136	16	11	2587
57	10	0	10	41	228	406	558	518	324	104	9	8	2216
60	0	0	3	19	166	318	465	425	242	66	3	0	1707
65	0	0	0	3	85	182	310	271	125	25	0	0	1001
70	0	0	0	0	33	78	164	134	46	7	0	0	462

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	52	87	231	445	714	929	1088	1045	831	500	229	76	52	139	370	815	1529	2458	3546	4591	5422	5922	6151	6227
45	25	39	137	310	559	779	933	890	681	355	134	35	25	64	201	511	1070	1849	2782	3672	4353	4708	4842	4877
50	5	12	66	192	408	629	778	735	531	222	67	10	5	17	83	275	683	1312	2090	2825	3356	3578	3645	3655
55	0	1	29	104	268	479	623	580	385	120	23	1	0	1	30	134	402	881	1504	2084	2469	2589	2612	2613
60	0	0	4	43	147	330	468	426	247	50	1	0	0	0	4	47	194	524	992	1418	1665	1715	1716	1716
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	33	70	180	299	460	625	751	720	540	328	154	63	33	103	283	582	1042	1667	2418	3138	3678	4006	4160	4223

(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