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: BERNHEIM FOREST, KY **COOP ID: 150630**

Climate Division: KY 2 **NWS Call Sign:** **Elevation: 550 Feet** **Lat: 37˚55N** **Lon: 85˚39W**

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	43.5	24.1	33.8	73	1975	29	43.5	1990	-24	1994	19	17.8	1977	967	0	.0	.0	10.3	5.9	23.0	1.4
Feb	49.7	27.3	38.5	80+	1996	24	46.4	1990	-10	1996	4	24.3	1978	741	0	.0	.0	14.7	3.2	19.5	.9
Mar	60.1	35.6	47.9	86	1977	30	54.8	1973	-4	1978	5	41.4	1984	533	1	.0	.0	25.4	.2	14.0	@
Apr	69.9	43.4	56.7	91+	1989	27	62.4	1981	17	1982	7	51.6	1982	265	14	.0	.1	29.0	.0	5.1	.0
May	78.2	52.7	65.5	94	1996	24	72.5	1991	28	1976	4	61.3	1971	100	114	.0	1.2	31.0	.0	.4	.0
Jun	85.7	60.9	73.3	101+	1988	25	76.7	1991	39	1972	1	68.8	1982	6	255	.1	8.3	30.0	.0	.0	.0
Jul	89.5	65.2	77.4	106	1988	9	80.9	1993	45	1972	7	73.0	1979	0	383	.7	16.2	31.0	.0	.0	.0
Aug	88.9	63.5	76.2	104+	1983	23	82.0	1983	42	1986	30	71.6	1982	2	348	.5	14.4	31.0	.0	.0	.0
Sep	82.9	56.7	69.8	101	1999	4	73.5	1998	32	1974	23	64.3	1982	31	174	.1	5.6	30.0	.0	@	.0
Oct	71.9	45.1	58.5	90	1971	1	64.6	1984	18+	1981	24	51.8	1976	236	35	.0	@	30.7	.0	3.8	.0
Nov	58.8	37.0	47.9	84	1987	3	54.6	1985	0	1976	30	38.4	1976	515	2	.0	.0	23.4	.1	11.7	@
Dec	47.9	28.6	38.3	78	1982	3	46.3	1984	-19	1989	22	26.4	1989	829	0	.0	.0	14.3	2.8	20.0	.5
Ann	68.9	45.0	57.0	106	Jul 1988	9	82.0	Aug 1983	-24	Jan 1994	19	17.8	Jan 1977	4225	1326	1.4	45.8	300.8	12.2	97.5	2.8

\+ 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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1970-2001

(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	3.48	3.59	2.08	1974	10	7.67	1978	.67	1981
Feb	3.92	3.11	4.21	1975	23	12.20	1989	1.07	1978
Mar	4.72	4.02	6.60	1997	1	16.20	1997	2.02	1983
Apr	4.42	3.84	3.64	1970	28	9.72	1972	.67	1997
May	5.37	4.49	3.57	1974	31	14.93	1983	1.42	1977
Jun	4.66	4.47	5.04	1970	4	9.70	1998	.64	1984
Jul	4.48	4.24	4.60	1979	26	12.14	1973	.65	1983
Aug	3.49	2.87	3.79	1974	29	9.72	1974	1.05	1999
Sep	3.29	2.82	6.10	1979	14	14.72	1979	.90	1978
Oct	3.23	3.10	3.42	1993	20	7.25	1983	.46	2000
Nov	4.26	3.89	2.23	1986	26	8.23	1973	.65	1976
Dec	4.67	4.29	3.31	1978	3	11.09	1990	1.09	1976
Ann	49.99	51.03	6.60	Mar 1997	1	16.20	Mar 1997	.46	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.2	6.6	2.6	.7
Feb	9.8	6.2	2.4	1.0
Mar	12.7	8.3	3.1	1.3
Apr	12.4	8.1	3.3	1.0
May	12.5	8.0	3.7	1.7
Jun	10.6	7.3	3.6	1.3
Jul	9.9	6.4	3.1	1.3
Aug	9.0	6.2	2.3	1.0
Sep	9.2	5.6	2.2	.7
Oct	8.8	5.4	2.0	.8
Nov	10.6	7.2	3.5	1.1
Dec	11.5	7.1	3.0	1.2
Ann	128.2	82.4	34.8	13.1

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	1.13	1.46	1.95	2.37	2.77	3.18	3.63	4.16	4.84	5.90	6.88
Feb	1.00	1.37	1.94	2.44	2.94	3.47	4.05	4.74	5.65	7.08	8.41
Mar	1.69	2.13	2.77	3.31	3.83	4.35	4.93	5.60	6.45	7.76	8.97
Apr	1.10	1.52	2.16	2.73	3.29	3.89	4.55	5.34	6.38	8.01	9.54
May	1.73	2.24	2.99	3.64	4.25	4.89	5.60	6.42	7.47	9.12	10.63
Jun	1.49	1.94	2.59	3.15	3.69	4.25	4.86	5.57	6.49	7.93	9.25
Jul	1.01	1.43	2.09	2.68	3.27	3.89	4.60	5.44	6.55	8.31	9.96
Aug	.87	1.20	1.70	2.16	2.60	3.07	3.60	4.22	5.04	6.34	7.55
Sep	.90	1.22	1.69	2.11	2.51	2.94	3.41	3.97	4.69	5.83	6.89
Oct	.79	1.09	1.56	1.98	2.40	2.84	3.33	3.91	4.68	5.89	7.03
Nov	1.35	1.75	2.35	2.86	3.36	3.87	4.44	5.10	5.95	7.27	8.50
Dec	1.41	1.86	2.52	3.09	3.65	4.22	4.85	5.60	6.56	8.06	9.45
Ann	35.58	38.38	41.95	44.67	47.08	49.41	51.82	54.48	57.70	62.38	66.43

\+ 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: 1970-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	7.0	.8	1	#
Feb	2.4	1.0	1	#
Mar	1.0	.0	#	0
Apr	#	.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
Dec	.7	.0	#	#
Ann	11.4	1.8	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	14.0	1978	17	35.2	1978	22	1978	20	7	1978
Feb	7.9	1993	26	12.0	1979	10	1978	2	6	1978
Mar	4.8	1975	10	6.8	1978	10	1978	3	1	1978
Apr	#	1993	21	#+	1993	0	0	0	0	0
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	.0	0	0	.0	0	0	0	0	0	0
Nov	4.0	1977	27	4.0	1977	4	1977	27	#+	1995
Dec	3.8	1976	29	3.9	1976	4	1984	6	1	1989
Ann	14.0	Jan 1978	17	35.2	Jan 1978	22	Jan 1978	20	7	Jan 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.2	1.3	.3	.1	@
Feb	1.4	.8	.4	.1	.0
Mar	.5	.3	.1	.0	.0
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	.0	.0	.0	.0	.0
Nov	.1	.1	@	.0	.0
Dec	.5	.2	.1	.0	.0
Ann	4.7	2.7	.9	.2	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	4.5	2.5	2.1	.6
Feb	3.5	2.5	1.7	.1
Mar	.3	.0	.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	.2	@	.0	.0
Dec	.6	.1	.0	.0
Ann	9.1	5.1	3.8	.7

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

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	10/01	10/03	10/06	10/08	10/11	10/14	10/18
32	10/02	10/07	10/10	10/13	10/16	10/19	10/22	10/26	10/31
28	10/12	10/17	10/21	10/24	10/27	10/30	11/02	11/06	11/11
24	10/25	10/31	11/04	11/08	11/11	11/15	11/19	11/23	11/29
20	10/31	11/08	11/13	11/17	11/21	11/25	11/30	12/05	12/12
16	11/12	11/20	11/25	11/30	12/04	12/08	12/13	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	168	163	159	155	151	147	142	135
32	199	190	184	179	174	170	165	158	150
28	220	213	208	204	199	195	191	186	179
24	251	243	238	233	228	224	219	214	206
20	278	270	264	258	253	248	243	237	228
16	302	294	288	283	278	273	268	262	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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	967	741	533	265	100	6	0	2	31	236	515	829	4225
60	816	603	389	150	41	1	0	0	7	135	375	675	3192
57	731	526	308	97	21	0	0	0	2	89	296	591	2661
55	673	474	258	69	12	0	0	0	1	65	248	533	2333
50	532	351	157	22	3	0	0	0	0	24	149	396	1634
32	167	67	7	0	0	0	0	0	0	0	5	78	324

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	222	250	497	739	1037	1239	1406	1369	1133	822	482	272	9468
55	15	13	36	118	336	549	693	656	444	174	35	14	3083
57	12	9	23	86	283	489	631	594	385	136	23	10	2681
60	4	2	12	49	210	400	538	501	300	89	12	1	2118
65	0	0	1	14	114	255	383	348	174	35	2	0	1326
70	0	0	0	2	48	130	234	207	80	10	0	0	711

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	128	301	518	807	1012	1169	1127	901	586	282	115	74	202	503	1021	1828	2840	4009	5136	6037	6623	6905	7020
45	36	70	191	376	652	862	1014	972	751	434	181	61	36	106	297	673	1325	2187	3201	4173	4924	5358	5539	5600
50	13	32	112	249	497	712	859	817	601	296	106	30	13	45	157	406	903	1615	2474	3291	3892	4188	4294	4324
55	2	14	56	152	347	562	704	662	452	182	56	9	2	16	72	224	571	1133	1837	2499	2951	3133	3189	3198
60	0	2	28	81	214	412	549	507	311	94	20	0	0	2	30	111	325	737	1286	1793	2104	2198	2218	2218
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	46	90	201	345	529	683	790	761	600	387	176	66	46	136	337	682	1211	1894	2684	3445	4045	4432	4608	4674

(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