

# Climatography of the United States No. 20

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
www.ncdc.noaa.gov

Station: BOWLING GREEN FAA AP, KY

1971-2000

COOP ID: 150909

Climate Division: KY 2

NWS Call Sign: BWG

Elevation: 528 Feet

Lat: 36° 59N

Lon: 86° 26W

## 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	43.0	25.4	34.2	78	1943	24	43.4	1990	-21+	1963	24	20.0	1977	956	0	.0	.0	9.7	6.2	23.0	.9
Feb	48.6	28.6	38.6	82	1962	13	46.8	1990	-20	1951	2	25.2	1978	740	0	.0	.0	14.0	3.4	18.5	.5
Mar	58.6	36.9	47.8	85+	1982	19	54.8	1973	-6	1960	5	42.0	1996	535	1	.0	.0	23.9	.4	11.3	.0
Apr	68.6	45.0	56.8	92	1942	30	61.3	1977	22	1950	14	50.7	1983	261	15	.0	.1	28.8	.0	2.9	.0
May	77.0	54.5	65.8	96+	1941	29	72.0	1991	30	1963	1	60.6	1981	99	122	.0	.9	31.0	.0	.1	.0
Jun	85.3	63.4	74.4	108	1936	29	77.2	1971	40	1966	1	69.5	1982	4	283	@	8.2	30.0	.0	.0	.0
Jul	89.2	67.7	78.5	107	1980	16	82.6	1980	46	1947	23	74.2	1984	0	417	1.0	15.3	31.0	.0	.0	.0
Aug	87.8	65.7	76.8	106	1936	28	82.3	1995	42	1946	31	72.5	1982	2	366	.3	12.9	31.0	.0	.0	.0
Sep	81.1	58.1	69.6	104+	1990	7	74.4	1998	33+	1983	24	65.3	1974	40	178	.1	4.7	30.0	.0	.0	.0
Oct	70.1	45.7	57.9	93+	1951	5	64.7	1971	23	1987	22	50.6	1988	251	31	.0	.0	30.5	.0	2.2	.0
Nov	57.6	37.2	47.4	85	1946	2	54.1	1985	-7	1950	25	38.9	1976	527	0	.0	.0	21.8	.1	10.9	.0
Dec	47.4	29.2	38.3	78	1982	3	47.2	1984	-14	1989	22	26.4	1989	828	0	.0	.0	13.4	3.2	20.0	.3
Ann	67.9	46.5	57.2	108	Jun 1936	29	82.6	Jul 1980	-21+	Jan 1963	24	20.0	Jan 1977	4243	1413	1.4	42.1	295.1	13.3	88.9	1.7

+ 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

Issue Date: February 2004

(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

010-A

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**Lon: 86°26W**

### Precipitation (inches)

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days <sup>(3)</sup>				Precipitation Probabilities <sup>(1)</sup> Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians <sup>(1)</sup>		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily <sup>(2)</sup>	Year	Day	Highest Monthly <sup>(1)</sup>	Year	Lowest Monthly <sup>(1)</sup>	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	4.15	3.98	4.75	1956	29	10.38	1974	1.00	1986	11.8	7.1	2.6	1.0	1.18	1.57	2.17	2.69	3.19	3.72	4.30	4.99	5.88	7.28	8.58
Feb	4.15	3.55	3.74	1975	23	11.27	1989	1.36	1985	10.9	6.6	2.8	1.1	1.46	1.85	2.42	2.90	3.36	3.82	4.33	4.93	5.69	6.87	7.95
Mar	4.97	3.69	5.93	1975	12	14.58	1975	2.14	1971	12.6	8.4	3.1	1.1	1.65	2.12	2.81	3.40	3.97	4.55	5.18	5.93	6.89	8.37	9.74
Apr	3.99	3.55	11.02	1937	29	9.68	1983	.94	1976	11.6	7.8	2.7	.7	1.13	1.50	2.08	2.58	3.06	3.57	4.13	4.80	5.66	7.01	8.27
May	5.36	4.98	3.22	1984	6	13.27	1983	1.98	1977	11.8	8.2	3.5	1.5	2.17	2.66	3.36	3.93	4.47	5.03	5.62	6.30	7.17	8.50	9.71
Jun	4.29	4.10	5.69	1969	23	9.04	1998	1.22	1975	10.8	7.2	2.7	1.0	1.36	1.77	2.37	2.89	3.39	3.91	4.47	5.13	5.99	7.32	8.55
Jul	4.54	3.98	4.91	1989	3	8.95	1987	1.18	1986	9.5	6.1	2.8	1.3	1.30	1.73	2.38	2.95	3.50	4.08	4.71	5.46	6.44	7.96	9.39
Aug	3.36	2.77	3.53	1975	5	7.71	1971	.72	1972	8.3	5.4	2.1	.9	.82	1.14	1.63	2.06	2.49	2.95	3.46	4.06	4.85	6.11	7.28
Sep	4.13	3.92	6.02	1979	13	11.75	1979	.83	1983	8.9	6.0	2.5	1.3	1.17	1.56	2.15	2.67	3.17	3.70	4.28	4.97	5.86	7.26	8.57
Oct	3.17	2.83	3.99	1995	5	7.71	1975	.47	1987	8.2	5.2	2.1	.8	.85	1.15	1.60	2.01	2.40	2.82	3.28	3.82	4.54	5.65	6.70
Nov	4.46	3.85	3.54	1948	5	8.41	1973	.69	1976	10.5	7.2	3.1	1.2	1.41	1.84	2.46	3.00	3.52	4.06	4.65	5.34	6.23	7.61	8.89
Dec	5.06	4.65	4.47	1949	12	13.17	1978	1.47	1976	12.2	7.7	3.0	1.6	1.45	1.93	2.66	3.29	3.90	4.54	5.25	6.09	7.17	8.87	10.45
Ann	51.63	50.87	11.02	Apr 1937	29	14.58	Mar 1975	.47	Oct 1987	127.1	82.9	33.0	13.5	37.68	40.41	43.89	46.52	48.86	51.10	53.42	55.98	59.07	63.54	67.40

+ 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

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**Elevation: 528 Feet**

**Lat: 36°59N**

**Lon: 86°26W**

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	4.1	2.0	1	0	6.0	1978	19	21.5	1978	13+	1978	23	5	1978	2.2	1.6	.7	.2	.0	4.8	2.8	1.2	.2
Feb	4.0	2.1	#	0	6.4	1986	14	20.0	1979	10	1979	9	3	1978	2.1	1.5	.6	.2	.0	4.5	1.9	1.0	@
Mar	1.1	.0	#	0	7.5	1987	30	8.0	1987	5+	1980	2	#	1995	.7	.5	.1	.1	.0	.4	.1	.1	.0
Apr	.1	.0	#	0	2.1	1983	18	2.1	1983	1	1983	18	#	1983	.0	.0	.0	.0	.0	@	.0	.0	.0
May	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1995	.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	.0	.0	0	0	.9	1993	31	.9	1993	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.2	#	#	0	3.0	1977	27	3.0	1977	2	1977	27	#	1977	.1	.1	@	.0	.0	.1	.0	.0	.0
Dec	.8	.1	#	0	4.8	1989	8	7.1	1989	2+	1989	22	1	1989	.8	.3	.1	.0	.0	.9	.0	.0	.0
Ann	10.3	4.2	N/A	N/A	7.5	Mar 1987	30	21.5	Jan 1978	13+	Jan 1978	23	5	Jan 1978	5.9	4.0	1.5	.5	.0	10.7	4.8	2.3	.2

+ 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	5/08	5/02	4/28	4/25	4/22	4/18	4/15	4/11	4/05
32	4/26	4/21	4/17	4/14	4/11	4/08	4/04	4/01	3/26
28	4/14	4/10	4/06	4/04	4/01	3/29	3/26	3/23	3/19
24	4/03	3/28	3/23	3/19	3/16	3/12	3/09	3/04	2/26
20	3/21	3/13	3/08	3/04	2/27	2/23	2/19	2/13	2/06
16	3/09	3/01	2/23	2/18	2/13	2/09	2/04	1/29	1/21
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	10/01	10/05	10/08	10/10	10/12	10/15	10/17	10/20	10/24
32	10/08	10/13	10/17	10/20	10/23	10/26	10/29	11/02	11/07
28	10/21	10/26	10/30	11/02	11/05	11/08	11/11	11/15	11/21
24	10/30	11/06	11/10	11/14	11/18	11/21	11/25	11/30	12/06
20	11/11	11/17	11/22	11/26	11/29	12/03	12/07	12/11	12/18
16	11/25	12/02	12/06	12/11	12/14	12/18	12/22	12/27	1/03
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	191	185	180	177	173	170	166	161	155
32	214	207	202	198	195	191	187	182	175
28	238	231	226	221	218	214	209	204	197
24	271	262	256	251	246	241	236	230	222
20	300	291	285	279	274	269	264	258	249
16	332	322	315	309	303	297	291	284	274

\* 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:

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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	956	740	535	261	99	4	0	2	40	251	527	828	4243
60	801	600	390	146	42	0	0	0	11	144	384	673	3191
57	718	522	308	93	21	0	0	0	4	96	303	590	2655
55	659	469	259	65	13	0	0	0	2	70	253	532	2322
50	518	344	156	20	3	0	0	0	0	26	149	396	1612
32	153	58	6	0	0	0	0	0	0	0	4	78	299

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	220	242	495	744	1046	1270	1440	1387	1128	803	467	274	9516
55	13	10	35	119	346	580	727	674	440	159	26	14	3143
57	10	7	22	87	293	520	665	612	382	123	16	10	2747
60	0	0	11	50	220	430	572	519	299	79	7	1	2188
65	0	0	1	15	122	283	417	366	178	31	0	0	1413
70	0	0	0	2	54	150	263	224	88	8	0	0	789

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	72	129	289	517	809	1034	1198	1152	897	568	270	111	72	201	490	1007	1816	2850	4048	5200	6097	6665	6935	7046
45	34	68	183	374	654	884	1043	997	747	418	165	56	34	102	285	659	1313	2197	3240	4237	4984	5402	5567	5623
50	14	32	101	246	499	734	888	842	597	279	94	28	14	46	147	393	892	1626	2514	3356	3953	4232	4326	4354
55	1	9	46	145	352	584	733	687	447	163	47	9	1	10	56	201	553	1137	1870	2557	3004	3167	3214	3223
60	0	1	18	74	218	434	578	532	306	79	15	0	0	1	19	93	311	745	1323	1855	2161	2240	2255	2255
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	43	82	177	321	519	706	826	785	588	356	158	64	43	125	302	623	1142	1848	2674	3459	4047	4403	4561	4625

(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.  
Complete documentation for the 1971-2000 Normals is available on the internet from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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 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.

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)