

**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: BALTIMORE-WASHINGTON AP, MD**

**1971-2000**

**COOP ID: 180465**

**Climate Division: MD 6**

**NWS Call Sign: BWI**

**Elevation: 148 Feet**

**Lat: 39° 10N**

**Lon: 76° 41W**

**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	41.2	23.5	32.3	79	1950	26	41.4	1990	-7+	1963	29	21.2	1977	1000	0	.0	.0	7.0	6.4	24.4	.4
Feb	44.8	26.1	35.5	79+	1985	24	42.6	1976	-3	1979	10	24.1	1979	816	0	.0	.0	9.4	3.9	20.5	.1
Mar	53.9	33.6	43.7	89	1998	30	48.6	1977	6	1960	11	37.7	1984	648	4	.0	.0	19.5	.5	13.3	.0
Apr	64.5	42.0	53.2	94+	1960	23	59.1	1994	20	1965	4	49.1	1975	349	11	.0	.3	28.3	.0	3.0	.0
May	73.9	51.8	62.9	98+	1962	19	70.0	1991	32	1966	11	58.3	1973	120	71	.0	1.5	31.0	.0	.0	.0
Jun	82.7	60.8	71.8	101	1994	15	76.6	1994	40	1972	11	66.7	1972	16	236	.1	5.7	30.0	.0	.0	.0
Jul	87.2	65.8	76.5	104	1988	16	80.8	1995	50+	1988	1	72.7	2000	0	372	.6	12.0	31.0	.0	.0	.0
Aug	85.1	63.9	74.5	105	1983	20	79.2	1995	45	1986	30	71.5	1992	1	311	.2	7.3	31.0	.0	.0	.0
Sep	78.2	56.6	67.4	100	1983	11	71.8	1998	35	1963	25	63.7	1975	42	129	@	2.6	30.0	.0	.0	.0
Oct	67.0	43.7	55.4	92+	1951	5	61.1	1984	25+	1966	31	50.3	1988	296	13	.0	.0	30.6	.0	1.4	.0
Nov	56.3	34.7	45.5	86	1950	1	51.4	1985	13	1955	29	38.7	1976	570	0	.0	.0	22.0	.1	10.4	.0
Dec	46.0	27.3	36.7	77+	1984	29	43.3	1984	0+	1960	23	24.6	1989	862	0	.0	.0	11.4	2.9	20.6	@
Ann	65.1	44.2	54.6	105	Aug 1983	20	80.8	Jul 1995	-7+	Jan 1963	29	21.2	Jan 1977	4720	1147	.9	29.4	281.2	13.8	93.6	.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](http://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

(3) Derived from 1971-2000 serially complete daily data

004-A

**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: BALTIMORE-WASHINGTON AP, MD**

**COOP ID: 180465**

**Climate Division: MD 6**

**NWS Call Sign: BWI**

**Elevation: 148 Feet**

**Lat: 39°10N**

**Lon: 76°41W**

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	3.47	3.00	2.51	1996	7	7.84	1979	.49	1981	10.8	6.5	2.6	.8	1.08	1.41	1.90	2.32	2.72	3.14	3.61	4.15	4.85	5.94	6.95
Feb	3.02	2.74	3.26	1983	11	7.16	1979	.56	1978	9.3	5.9	2.2	.7	.72	1.00	1.44	1.83	2.22	2.64	3.10	3.65	4.38	5.53	6.61
Mar	3.93	3.95	2.48	1994	2	8.64	1994	.96	1986	10.4	7.1	2.7	.9	1.16	1.54	2.10	2.58	3.05	3.54	4.08	4.72	5.54	6.83	8.02
Apr	3.00	2.69	2.26	1952	27	6.55	1983	.39	1985	10.2	6.3	2.1	.6	.97	1.25	1.67	2.03	2.38	2.73	3.12	3.58	4.17	5.09	5.93
May	3.89	3.70	3.28	1960	8	8.71	1989	.37	1986	11.5	7.5	2.7	.7	1.24	1.61	2.15	2.62	3.07	3.54	4.05	4.65	5.42	6.62	7.73
Jun	3.43	2.88	3.84	1972	22	9.95	1972	.84	1988	10.0	6.3	2.2	1.0	1.06	1.39	1.88	2.29	2.69	3.11	3.57	4.11	4.80	5.88	6.88
Jul	3.85	3.75	5.85	1952	8	7.38	1996	.85	1974	10.0	6.5	2.5	1.1	1.17	1.53	2.08	2.55	3.01	3.48	4.01	4.62	5.42	6.66	7.81
Aug	3.74	3.37	4.91	1955	12	10.91	1971	.91	1998	9.1	5.8	2.4	1.0	1.09	1.44	1.98	2.44	2.89	3.37	3.88	4.50	5.29	6.53	7.68
Sep	3.98	3.64	5.02	1999	16	11.50	1999	.58	1986	8.4	5.4	2.4	1.0	.62	.95	1.53	2.08	2.65	3.27	3.98	4.86	6.03	7.93	9.75
Oct	3.16	2.80	2.74	1962	4	8.09	1976	.08	2000	8.2	5.0	2.2	1.0	.63	.91	1.38	1.80	2.23	2.69	3.21	3.84	4.67	6.00	7.27
Nov	3.12	2.87	3.39	1952	21	7.05	1972	.31	1981	8.9	5.6	2.4	.7	.73	1.02	1.48	1.89	2.29	2.73	3.21	3.78	4.54	5.74	6.86
Dec	3.35	2.81	3.36	1977	18	6.77	1996	.70	1980	9.7	5.6	2.3	.9	.76	1.07	1.56	2.00	2.44	2.91	3.44	4.07	4.90	6.21	7.46
Ann	41.94	41.29	5.85	Jul 1952	8	11.50	Sep 1999	.08	Oct 2000	116.5	73.5	28.7	10.4	29.77	32.12	35.14	37.42	39.46	41.42	43.46	45.70	48.42	52.37	55.79

+ 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

Complete documentation available from:

[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

# 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](http://www.ncdc.noaa.gov)

**Station: BALTIMORE-WASHINGTON AP, MD**

**COOP ID: 180465**

**Climate Division: MD 6**

**NWS Call Sign: BWI**

**Elevation: 148 Feet**

**Lat: 39°10N**

**Lon: 76°41W**

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	7.0	4.5	1	0	15.8	1996	7	32.6	1996	25+	1996	13	7	1996	3.7	1.8	.6	.3	.1	5.6	2.6	1.6	.7
Feb	6.4	3.2	1	0	22.8	1983	11	33.1	1979	23	1983	12	5	1979	2.7	1.3	.8	.3	.1	4.7	2.1	1.0	.4
Mar	2.4	.3	#	0	11.3	1993	13	12.7	1993	9+	1993	16	1	1993	1.3	.7	.3	.1	@	1.2	.5	.2	.0
Apr	.1	#	0	0	.7	1985	9	.7	1985	##	1997	1	0	0	.2	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1999	.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	.3	1979	10	.3	1979	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.6	.0	#	0	6.0	1987	11	6.0	1987	6	1987	12	#	1995	.5	.1	.1	@	.0	.2	.1	@	.0
Dec	1.7	.5	#	0	6.7	1982	12	10.2	1989	5+	1989	16	2	1989	1.5	.5	.2	.1	.0	1.7	.7	.2	.0
Ann	18.2	8.5	N/A	N/A	22.8	Feb 1983	11	33.1	Feb 1979	25+	Jan 1996	13	7	Jan 1996	9.9	4.4	2.0	.8	.2	13.4	6.0	3.0	1.1

+ 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

Complete documentation available from:

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

# Climatography of the United States

## No. 20 1971-2000

**Station: BALTIMORE-WASHINGTON AP, MD**

**COOP ID: 180465**

**Climate Division: MD 6**

**NWS Call Sign: BWI**

**Elevation: 148 Feet**

**Lat: 39° 10N**

**Lon: 76° 41W**

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	5/04	4/30	4/27	4/24	4/21	4/18	4/14	4/10
32	4/22	4/18	4/16	4/13	4/11	4/09	4/07	4/04	3/31
28	4/12	4/08	4/04	4/02	3/30	3/28	3/25	3/22	3/17
24	3/29	3/24	3/20	3/17	3/14	3/12	3/09	3/05	2/28
20	3/18	3/13	3/09	3/06	3/02	2/27	2/24	2/20	2/15
16	3/06	2/28	2/24	2/20	2/17	2/13	2/10	2/05	1/29
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	10/04	10/08	10/12	10/14	10/17	10/20	10/22	10/26	10/30
32	10/17	10/21	10/24	10/27	10/29	11/01	11/04	11/07	11/11
28	10/24	10/30	11/03	11/06	11/10	11/13	11/16	11/20	11/26
24	11/10	11/15	11/18	11/21	11/24	11/27	11/30	12/03	12/08
20	11/21	11/27	12/01	12/05	12/09	12/12	12/16	12/21	12/27
16	12/06	12/12	12/17	12/22	12/26	12/30	1/03	1/09	1/17
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	198	190	184	180	175	171	166	161	153
32	220	213	209	204	200	197	192	187	181
28	245	238	232	228	224	220	215	210	203
24	274	267	262	258	254	250	246	241	234
20	305	297	291	285	281	276	271	264	256
16	339	326	320	315	310	306	301	296	288

\* 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:

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

**Climatology  
of the United States**  
**No. 20**  
**1971-2000**

**Station: BALTIMORE-WASHINGTON AP, MD**

**COOP ID: 180465**

**Climate Division: MD 6**

**NWS Call Sign: BWI**

**Elevation: 148 Feet**

**Lat: 39°10N**

**Lon: 76°41W**

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	1000	816	648	349	120	16	0	1	42	296	570	862	4720
60	857	687	505	217	54	1	0	0	8	190	437	723	3679
57	764	603	414	147	27	0	0	0	3	132	352	630	3072
55	702	547	357	108	15	0	0	0	1	100	298	571	2699
50	558	418	224	39	3	0	0	0	0	43	178	428	1891
32	150	82	10	0	0	0	0	0	0	0	4	76	322

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	140	176	394	657	977	1215	1408	1351	1098	764	443	224	8847
55	2	3	22	82	275	525	695	638	410	123	28	4	2807
57	1	2	16	59	223	465	633	576	353	92	18	3	2441
60	0	1	10	35	155	376	540	483	270	55	9	1	1935
65	0	0	4	11	71	236	372	311	129	13	0	0	1147
70	0	0	1	4	25	121	235	186	68	4	0	0	644

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	46	73	199	428	738	984	1169	1112	869	522	237	82	46	119	318	746	1484	2468	3637	4749	5618	6140	6377	6459
45	17	32	107	289	583	834	1014	957	719	375	139	38	17	49	156	445	1028	1862	2876	3833	4552	4927	5066	5104
50	5	15	57	169	429	684	859	802	569	236	70	13	5	20	77	246	675	1359	2218	3020	3589	3825	3895	3908
55	0	2	24	85	283	534	704	647	420	131	28	3	0	2	26	111	394	928	1632	2279	2699	2830	2858	2861
60	0	0	7	35	162	388	549	492	282	59	9	0	0	0	7	42	204	592	1141	1633	1915	1974	1983	1983
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	27	42	118	242	447	662	805	772	563	311	132	48	27	69	187	429	876	1538	2343	3115	3678	3989	4121	4169

(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](http://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.  
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)