

Climatology of the United States

No. 20

1971-2000

Station: BELTSVILLE, MD

COOP ID: 180700

Climate Division: MD 4

NWS Call Sign:

Elevation: 145 Feet

Lat: 39°02N

Lon: 76°53W

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	41.7	23.5	32.6	78	1950	27	40.7	1998	-15	1957	18	22.2	1977	1005	0	.0	.0	6.8	6.2	26.1	.9
Feb	44.8	25.9	35.4	79	1985	25	41.3	1990	-12	1979	10	22.7	1979	831	0	.0	.0	9.2	4.1	21.8	.3
Mar	54.0	33.5	43.8	88	1990	13	48.7+	1977	-1	1960	11	37.1	1984	659	0	.0	.0	19.2	.5	15.6	.0
Apr	64.7	41.9	53.3	94	1976	19	58.4	1994	18	1969	1	49.6	1975	353	1	.0	.3	28.2	.0	4.7	.0
May	74.0	51.9	63.0	96	1991	31	69.7	1991	26	1956	17	59.4	1971	119	55	.0	1.1	31.0	.0	.1	.0
Jun	82.7	61.4	72.1	99	1988	23	76.0	1994	37+	1972	11	67.4	1972	9	220	.0	5.3	30.0	.0	.0	.0
Jul	87.2	66.5	76.9	103	1988	17	80.5	1987	45+	1952	2	72.9	2000	0	368	.3	11.6	31.0	.0	.0	.0
Aug	85.6	65.0	75.3	102+	1954	1	78.2	1988	38	1982	29	72.1	1992	0	319	.2	7.9	31.0	.0	.0	.0
Sep	78.9	57.8	68.4	101	1953	1	73.6	1998	30	1956	21	65.2	1975	29	129	.0	2.4	30.0	.0	.0	.0
Oct	67.6	44.5	56.1	93+	1951	6	62.3	1984	20+	1965	30	51.1	1987	294	17	.0	@	30.7	.0	3.3	.0
Nov	56.9	36.4	46.7	85	1950	2	52.1	1985	12	1951	28	40.0	1976	550	0	.0	.0	22.0	@	12.6	.0
Dec	46.1	28.5	37.3	78	1998	8	43.9	1984	-6	1960	23	24.5	1989	858	0	.0	.0	11.2	2.9	23.2	.1
Ann	65.4	44.7	55.1	103	Jul 1988	17	80.5	Jul 1987	-15	Jan 1957	18	22.2	Jan 1977	4707	1109	.5	28.6	280.3	13.7	107.4	1.3

+ 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

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

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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: BELTSVILLE, MD

COOP ID: 180700

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NWS Call Sign:

Elevation: 145 Feet

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Lon: 76°53W

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	3.43	3.02	2.30	1976	1	9.52	1979	.46	1981	9.5	6.6	2.4	.6	1.03	1.36	1.85	2.27	2.68	3.10	3.57	4.12	4.83	5.94	6.97
Feb	2.69	2.30	1.80	1972	19	5.82	1979	.47	1977	8.0	5.5	1.7	.5	.66	.91	1.31	1.65	2.00	2.37	2.77	3.26	3.89	4.90	5.84
Mar	3.87	3.76	3.10	1958	20	8.54	1994	.77	1986	9.7	6.9	2.6	1.0	1.13	1.50	2.05	2.53	2.99	3.48	4.01	4.64	5.46	6.74	7.93
Apr	3.33	2.87	2.13	1983	16	7.67	1983	.60	1985	9.8	6.7	2.4	.7	1.17	1.48	1.94	2.32	2.69	3.07	3.48	3.96	4.57	5.52	6.39
May	4.54	4.66	2.39	1960	9	9.33	1989	.69	1986	11.0	7.6	3.3	1.3	1.57	2.00	2.62	3.15	3.65	4.17	4.74	5.40	6.24	7.55	8.75
Jun	3.59	2.78	4.70	1972	22	10.29	1972	.88	1988	9.2	5.9	2.5	.8	.95	1.29	1.81	2.27	2.72	3.19	3.71	4.33	5.14	6.42	7.61
Jul	4.09	3.88	4.58	1975	14	9.78	1975	.62	1983	10.5	7.1	2.7	1.1	1.08	1.47	2.06	2.58	3.09	3.63	4.23	4.93	5.86	7.31	8.66
Aug	3.69	3.24	9.38	1955	13	8.51	1971	.52	1998	9.4	6.5	2.4	.9	.92	1.27	1.81	2.29	2.76	3.25	3.81	4.46	5.32	6.68	7.95
Sep	4.35	3.20	5.10	1975	26	15.45	1975	.61	1977	8.2	5.5	2.5	1.3	.62	.98	1.60	2.20	2.83	3.53	4.33	5.31	6.63	8.79	10.87
Oct	3.56	3.05	4.15	1955	14	8.26	1976	.15	2000	7.9	5.3	2.5	1.2	.68	1.00	1.52	2.01	2.49	3.02	3.62	4.34	5.29	6.83	8.29
Nov	3.32	3.11	4.10	1993	28	6.15	1972	.65	1981	8.7	5.2	2.5	.8	.87	1.18	1.66	2.09	2.50	2.94	3.43	4.00	4.75	5.94	7.05
Dec	3.30	2.55	3.33	1977	18	7.64	1977	.74	1989	9.4	5.6	2.2	.8	.65	.94	1.43	1.87	2.32	2.80	3.35	4.01	4.89	6.29	7.62
Ann	43.76	41.09	9.38	Aug 1955	13	15.45	Sep 1975	.15	Oct 2000	111.3	74.4	29.7	11.0	31.03	33.49	36.64	39.04	41.16	43.22	45.35	47.69	50.54	54.68	58.25

+ 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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NWS Call Sign:

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Lon: 76°53W

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	5.9	3.1	1	#	13.5	1987	26	27.8	1987	24	1996	13	6	1996	2.5	1.6	.8	.3	.1	3.9	2.3	1.5	.6
Feb	3.5	1.5	1	#	9.0	1996	17	18.4	1996	15	1983	14	5	1979	1.7	1.2	.5	.2	.0	2.8	1.3	.7	@
Mar	1.4	.0	#	#	9.0	1993	13	10.0	1999	9	1993	13	1+	1999	.7	.4	.2	.1	.0	.8	.3	.1	.0
Apr	.0	.0	#	0	1.0	2000	9	1.0	2000	#	1982	9	#	1982	@	@	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.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	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.5	.0	#	0	7.3	1987	11	7.6	1987	10	1987	12	1	1987	.3	.1	.1	@	.0	.3	.1	@	.0
Dec	1.5	1.0	#	#	7.0	1973	17	7.5	1973	7	1973	17	4	1989	.8	.5	.2	@	.0	1.8	1.0	.6	.0
Ann	12.8	5.6	N/A	N/A	13.5	Jan 1987	26	27.8	Jan 1987	24	Jan 1996	13	6	Jan 1996	6.0	3.8	1.8	.6	.1	9.6	5.0	2.9	.6

+ 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:

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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	5/16	5/12	5/09	5/06	5/04	5/01	4/29	4/26	4/22
32	5/01	4/26	4/23	4/21	4/18	4/16	4/13	4/10	4/05
28	4/19	4/14	4/11	4/08	4/05	4/02	3/30	3/27	3/22
24	4/07	4/02	3/29	3/26	3/23	3/20	3/16	3/13	3/07
20	3/27	3/22	3/18	3/15	3/12	3/09	3/05	3/02	2/25
16	3/12	3/05	2/28	2/24	2/20	2/16	2/12	2/07	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	10/04	10/07	10/10	10/12	10/15	10/17	10/20	10/25
32	10/09	10/13	10/17	10/19	10/22	10/25	10/27	10/31	11/04
28	10/16	10/21	10/24	10/28	10/30	11/02	11/05	11/09	11/14
24	11/02	11/07	11/11	11/15	11/18	11/21	11/25	11/29	12/04
20	11/17	11/24	11/29	12/03	12/07	12/11	12/16	12/21	12/28
16	12/01	12/07	12/11	12/14	12/18	12/21	12/24	12/29	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	178	172	168	164	161	157	154	150	144
32	208	201	195	191	186	182	177	172	164
28	230	222	217	212	208	203	199	193	185
24	261	254	248	244	240	235	231	226	218
20	297	288	281	275	270	265	259	252	243
16	327	318	311	305	300	294	288	282	272

* 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	1005	831	659	353	119	9	0	0	29	294	550	858	4707
60	850	691	504	213	45	1	0	0	6	176	402	703	3591
57	757	607	415	142	20	0	0	0	2	120	319	612	2994
55	695	551	358	102	10	0	0	0	1	90	265	556	2628
50	552	420	227	35	1	0	0	0	0	37	151	413	1836
32	147	78	11	0	0	0	0	0	0	0	2	75	313

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	165	172	376	638	960	1201	1391	1342	1090	746	442	240	8763
55	0	0	9	50	257	511	678	629	400	123	14	8	2679
57	0	0	4	30	205	451	616	567	342	91	8	2	2316
60	0	0	0	11	137	362	523	474	256	54	2	0	1819
65	0	0	0	1	55	220	368	319	129	17	0	0	1109
70	0	0	0	0	15	105	221	174	42	3	0	0	560

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	36	64	184	396	712	951	1138	1082	841	491	224	70	36	100	284	680	1392	2343	3481	4563	5404	5895	6119	6189
45	16	26	98	261	557	801	983	927	691	343	131	33	16	42	140	401	958	1759	2742	3669	4360	4703	4834	4867
50	4	9	49	152	403	651	828	772	542	216	64	13	4	13	62	214	617	1268	2096	2868	3410	3626	3690	3703
55	0	0	24	78	264	502	673	617	393	117	28	2	0	0	24	102	366	868	1541	2158	2551	2668	2696	2698
60	0	0	8	34	147	356	518	462	254	52	6	0	0	0	8	42	189	545	1063	1525	1779	1831	1837	1837
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	27	41	117	235	438	636	777	741	547	304	140	44	27	68	185	420	858	1494	2271	3012	3559	3863	4003	4047

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
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">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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