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: MILLINGTON 1 SE, MD **COOP ID: 185985**

Climate Division: MD 5 **NWS Call Sign:** **Elevation: 30 Feet** **Lat: 39˚16N** **Lon: 75˚52W**

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	42.1	23.5	32.8	77+	1950	25	41.6	1998	-12	1987	28	22.0	1977	999	0	.0	.0	7.4	5.7	25.6	.6
Feb	45.5	25.5	35.5	76+	1954	16	43.7	1990	-15	1979	14	22.4	1979	826	0	.0	.0	9.8	3.6	21.7	.4
Mar	54.8	33.1	44.0	85+	1990	13	49.1	2000	4+	1960	7	37.9	1984	653	0	.0	.0	20.4	.4	16.2	.0
Apr	65.4	41.2	53.3	94	1976	18	58.8	1994	20+	1969	1	47.0	1975	354	2	.0	.3	28.6	.0	4.7	.0
May	74.6	51.0	62.8	96	1962	19	69.0	1991	28	1974	8	59.3	1973	119	51	.0	1.0	31.0	.0	.1	.0
Jun	82.7	59.9	71.3	101	1952	26	75.0	1994	35	1972	11	66.9	1974	12	201	.0	4.2	30.0	.0	.0	.0
Jul	87.1	64.7	75.9	103	1957	21	79.5	1999	46+	1971	5	72.3	2000	0	338	.0	10.3	31.0	.0	.0	.0
Aug	85.6	63.2	74.4	103	1953	31	77.6	1999	41+	1982	29	71.3	1992	1	292	.1	6.8	31.0	.0	.0	.0
Sep	79.1	56.5	67.8	100+	1953	2	72.2	1998	30	1974	24	64.4	1975	36	120	.0	2.4	30.0	.0	@	.0
Oct	68.3	44.7	56.5	92	1959	5	62.6	1971	20+	1969	24	51.2	1988	285	21	.0	.0	30.7	.0	3.3	.0
Nov	57.4	36.1	46.8	88	1950	1	52.8	1985	12+	1974	27	39.4	1976	547	0	.0	.0	23.2	.1	11.5	.0
Dec	47.0	28.0	37.5	78	1998	6	43.7	1984	-1+	1960	20	25.1	1989	852	0	.0	.0	12.3	2.5	22.0	.1
Ann	65.8	44.0	54.9	103+	Jul 1957	21	79.5	Jul 1999	-15	Feb 1979	14	22.0	Jan 1977	4684	1025	.1	25.0	285.4	12.3	105.1	1.1

\+ 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	3.50	3.32	1.94	1976	27	7.97	1979	.64	1981
Feb	2.95	2.89	2.30	1973	2	6.25	1971	1.11	1980
Mar	4.22	4.43	3.50	1958	20	8.36	1994	1.36	1986
Apr	3.36	3.10	1.95	1983	10	8.15	1983	.58	1985
May	4.32	4.72	2.97	1982	28	8.84	1983	1.20	1999
Jun	3.88	2.94	4.87	1972	22	11.02	1972	.68	1988
Jul	4.05	3.93	3.51	1969	28	8.06	1989	.81	1974
Aug	4.05	3.76	6.40	1971	27	14.85	1971	.58+	1987
Sep	4.27	3.45	10.77	1999	16	14.16	1999	.69	1986
Oct	3.39	3.29	3.56	1966	19	7.92	1971	.65	2000
Nov	3.22	2.93	5.82	1956	2	7.65	1972	.42	1981
Dec	3.57	2.60	3.53	1974	2	7.79	1983	.82	1980
Ann	44.78	43.19	10.77	Sep 1999	16	14.85	Aug 1971	.42	Nov 1981

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.0	6.8	2.6	.8
Feb	8.4	5.6	1.9	.7
Mar	9.9	7.1	2.9	1.0
Apr	10.4	7.0	2.5	.5
May	10.6	7.5	2.9	.9
Jun	9.3	6.5	2.2	1.0
Jul	9.8	6.8	2.7	1.0
Aug	8.5	6.1	2.6	.9
Sep	7.8	5.4	2.6	1.2
Oct	7.3	5.1	2.1	1.0
Nov	8.2	5.4	2.5	.7
Dec	9.5	6.3	2.4	1.0
Ann	109.7	75.6	29.9	10.7

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	1.17	1.50	1.99	2.40	2.80	3.21	3.65	4.18	4.85	5.89	6.85
Feb	1.07	1.35	1.75	2.09	2.41	2.73	3.09	3.50	4.03	4.84	5.59
Mar	1.42	1.82	2.41	2.90	3.38	3.87	4.40	5.03	5.83	7.07	8.21
Apr	1.17	1.49	1.95	2.34	2.71	3.09	3.51	3.99	4.62	5.58	6.46
May	1.51	1.92	2.51	3.01	3.48	3.97	4.51	5.13	5.93	7.16	8.29
Jun	.93	1.29	1.86	2.36	2.86	3.39	3.99	4.70	5.62	7.09	8.47
Jul	1.32	1.71	2.27	2.75	3.22	3.69	4.22	4.83	5.62	6.84	7.97
Aug	.85	1.22	1.81	2.35	2.90	3.48	4.14	4.92	5.97	7.63	9.20
Sep	.93	1.32	1.95	2.51	3.08	3.69	4.37	5.18	6.26	7.98	9.60
Oct	1.01	1.33	1.81	2.23	2.64	3.06	3.53	4.07	4.78	5.89	6.93
Nov	.64	.93	1.41	1.84	2.28	2.75	3.28	3.92	4.76	6.12	7.41
Dec	.80	1.13	1.65	2.12	2.60	3.10	3.66	4.33	5.22	6.63	7.96
Ann	31.80	34.31	37.53	39.97	42.14	44.24	46.41	48.81	51.71	55.93	59.58

\+ 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:
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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	5.5	5.5	1	#
Feb	6.0	3.5	1	#
Mar	1.1	.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
Nov	.3	.0	#	0
Dec	1.4	.0	#	0
Ann	14.3	9.0	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	9.0	1971	1	13.0	1980	9	1971	1	4	1971
Feb	14.0	1979	19	24.5	1979	17	1979	19	6	1978
Mar	6.0	1976	9	8.2	1978	6	1978	3	2	1978
Apr	.5	1971	7	.5	1971	#	1972	9	#	1972
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	#	1979	10	#+	1979	0	0	0	0	0
Nov	3.5	1989	23	3.5	1989	2	1978	27	#+	1996
Dec	5.5	1989	13	12.5	1989	5	1973	19	1	1982
Ann	14.0	Feb 1979	19	24.5	Feb 1979	17	Feb 1979	19	6	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.7	1.4	.4	.2	.0
Feb	1.6	1.2	.6	.2	.1
Mar	.5	.4	.1	@	.0
Apr	@	.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	.4	.1	@	.0
Ann	4.4	3.5	1.2	.4	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	4.2	1.9	.9	.0
Feb	3.9	2.8	1.7	.7
Mar	.8	.4	.2	.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	@	.0	.0	.0
Dec	1.0	.2	.2	.0
Ann	9.9	5.3	3.0	.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	5/19	5/13	5/09	5/06	5/03	4/30	4/27	4/23	4/17
32	5/01	4/26	4/22	4/19	4/16	4/13	4/10	4/07	4/02
28	4/21	4/15	4/11	4/07	4/04	4/01	3/28	3/24	3/18
24	4/08	4/03	3/30	3/27	3/24	3/21	3/18	3/15	3/10
20	3/25	3/20	3/15	3/12	3/09	3/05	3/02	2/26	2/20
16	3/17	3/10	3/05	3/01	2/25	2/22	2/17	2/12	2/04

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	9/27	10/02	10/05	10/08	10/11	10/14	10/17	10/20	10/25
32	10/07	10/12	10/16	10/19	10/21	10/24	10/27	10/31	11/05
28	10/14	10/20	10/24	10/28	10/31	11/03	11/07	11/11	11/17
24	10/26	11/02	11/06	11/10	11/14	11/18	11/22	11/26	12/03
20	11/05	11/15	11/23	11/30	12/06	12/12	12/19	12/27	1/06
16	11/26	12/03	12/07	12/11	12/15	12/19	12/23	12/28	1/05

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	183	175	170	165	160	156	151	145	137
32	211	203	197	192	188	183	178	172	164
28	238	228	221	215	209	204	197	190	180
24	263	253	246	240	234	228	222	215	205
20	300	288	281	274	269	263	257	250	240
16	323	309	302	296	291	285	280	274	265

***** 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	999	826	653	354	119	12	0	1	36	285	547	852	4684
60	844	686	498	216	45	1	0	0	8	170	400	697	3565
57	751	602	406	147	20	0	0	0	3	117	318	605	2969
55	690	552	350	108	10	0	0	0	1	88	265	548	2612
50	547	422	216	40	1	0	0	0	0	36	154	405	1821
32	149	93	9	0	0	0	0	0	0	0	3	68	322

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	173	190	379	638	955	1179	1361	1314	1074	759	446	239	8707
55	1	6	7	56	252	489	648	601	385	134	18	6	2603
57	0	0	2	35	200	429	586	539	326	101	11	1	2230
60	0	0	0	15	132	340	493	446	242	61	4	0	1733
65	0	0	0	2	51	201	338	292	120	21	0	0	1025
70	0	0	0	0	12	92	190	152	39	5	0	0	490

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	45	68	183	407	717	941	1120	1079	840	516	239	77	45	113	296	703	1420	2361	3481	4560	5400	5916	6155	6232
45	17	28	96	268	562	791	965	924	690	366	138	37	17	45	141	409	971	1762	2727	3651	4341	4707	4845	4882
50	4	12	47	160	409	641	810	769	540	230	71	12	4	16	63	223	632	1273	2083	2852	3392	3622	3693	3705
55	0	0	22	79	262	491	655	614	390	124	32	3	0	0	22	101	363	854	1509	2123	2513	2637	2669	2672
60	0	0	4	30	144	344	500	459	251	56	8	0	0	0	4	34	178	522	1022	1481	1732	1788	1796	1796
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	30	46	116	251	442	631	767	741	546	319	145	48	30	76	192	443	885	1516	2283	3024	3570	3889	4034	4082

(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.
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