

# Climatography of the United States

No. 20

1971-2000

Station: LAUREL 3 W, MD

COOP ID: 185111

Climate Division: MD 4

NWS Call Sign:

Elevation: 400 Feet Lat: 39°06N Lon: 76°54W

## 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	24.5	33.1	78	1950	26	42.7	1990	-12	1994	19	21.2	1977	989	0	.0	.0	6.9	6.3	24.5	.5
Feb	45.6	27.0	36.3	80	2000	25	45.2	1976	-1	1961	2	24.6	1979	804	0	.0	.0	10.1	3.8	20.4	@
Mar	54.9	34.8	44.9	89	1998	30	50.6	2000	8+	1980	1	38.0	1984	625	0	.0	.0	20.4	.5	12.4	.0
Apr	65.7	44.0	54.9	94	1990	27	61.8	1994	22+	1950	14	49.9	1975	313	8	.0	.4	28.4	.0	2.3	.0
May	75.1	54.0	64.6	98	1991	30	72.0	1991	30	1966	10	60.2	1992	106	91	.0	1.6	31.0	.0	.0	.0
Jun	83.3	62.3	72.8	101+	1959	30	76.6	1994	41	1988	10	68.2	1972	9	243	.1	6.1	30.0	.0	.0	.0
Jul	88.2	67.4	77.8	104+	1966	3	81.9	1999	50+	1978	13	73.7	2000	0	396	.7	12.9	31.0	.0	.0	.0
Aug	86.7	66.2	76.5	104	1957	3	80.1	1977	45+	1965	29	73.1	1992	0	355	.3	9.0	31.0	.0	.0	.0
Sep	79.3	58.8	69.1	101	1953	2	75.1	1998	38+	1974	24	65.4	1975	30	151	.0	2.7	30.0	.0	.0	.0
Oct	68.2	46.9	57.6	90	1954	13	62.9	1984	11	1983	21	50.7	1988	258	26	.0	.0	30.6	.0	1.1	.0
Nov	57.0	37.9	47.5	84	1950	1	53.7	1985	10	1976	30	40.7	1976	528	1	.0	.0	22.0	@	9.0	.0
Dec	46.3	29.3	37.8	78	1998	7	44.4	1984	0	1983	25	26.2	1989	843	0	.0	.0	11.1	3.0	20.0	@
Ann	66.0	46.1	56.1	104+	Jul 1966	3	81.9	Jul 1999	-12	Jan 1994	19	21.2	Jan 1977	4505	1271	1.1	32.7	282.5	13.6	89.7	.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/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: 1949-2001

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

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## No. 20 1971-2000

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

**Station: LAUREL 3 W, MD**

**COOP ID: 185111**

**Climate Division: MD 4**

**NWS Call Sign:**

**Elevation: 400 Feet Lat: 39°06N**

**Lon: 76°54W**

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	3.52	3.20	1.90	1998	28	8.39	1979	.52	1981	9.1	6.6	2.7	.9	1.09	1.42	1.92	2.35	2.76	3.19	3.66	4.21	4.93	6.04	7.07
Feb	3.01	2.93	1.92	1958	16	6.05	1972	.56	1977	8.1	6.2	2.3	.5	.80	1.08	1.52	1.90	2.28	2.67	3.11	3.62	4.30	5.36	6.35
Mar	4.17	4.11	2.68	1965	5	8.53	1993	1.15	1981	9.2	7.7	2.7	1.2	1.57	1.96	2.51	2.98	3.42	3.87	4.36	4.93	5.65	6.76	7.78
Apr	3.61	3.22	2.97	1983	15	9.25	1983	.47	1985	8.8	7.2	3.0	.6	1.17	1.51	2.02	2.45	2.86	3.29	3.76	4.31	5.02	6.12	7.14
May	4.75	4.97	3.10	1997	25	11.17	1989	.28	1986	10.3	8.5	3.4	1.3	1.17	1.62	2.31	2.92	3.53	4.18	4.89	5.75	6.87	8.63	10.29
Jun	3.92	3.12	5.60	1972	22	12.77	1972	1.53	1991	8.8	7.0	2.9	.9	1.01	1.38	1.95	2.45	2.94	3.46	4.04	4.73	5.63	7.04	8.37
Jul	4.02	3.77	4.90	1975	13	9.38	1975	.68	1983	8.9	6.8	2.6	1.1	1.15	1.53	2.11	2.61	3.10	3.61	4.17	4.84	5.70	7.05	8.31
Aug	3.61	3.75	3.90	1967	25	8.17	1994	.06	1989	8.2	6.0	2.6	.9	.78	1.11	1.64	2.12	2.60	3.11	3.69	4.38	5.29	6.75	8.12
Sep	4.53	3.92	4.31	1979	5	16.03	1999	.32	1977	8.0	5.9	2.7	1.4	.58	.94	1.59	2.22	2.89	3.62	4.48	5.54	6.97	9.31	11.58
Oct	3.62	3.22	4.01	1955	14	8.58	1995	.16	2000	7.4	5.4	2.6	1.3	.79	1.13	1.66	2.14	2.62	3.13	3.71	4.40	5.31	6.76	8.13
Nov	3.98	3.36	3.55	1996	8	7.45	1972	.62	1981	8.0	6.0	2.7	1.2	.95	1.32	1.91	2.42	2.94	3.48	4.09	4.82	5.77	7.28	8.69
Dec	3.66	3.13	3.21	1977	18	7.56	1983	.67	1980	8.5	6.6	2.7	1.0	.93	1.27	1.80	2.28	2.74	3.23	3.78	4.43	5.27	6.61	7.87
Ann	46.40	44.73	5.60	Jun 1972	22	16.03	Sep 1999	.06	Aug 1989	103.3	79.9	32.9	12.3	32.87	35.49	38.83	41.38	43.64	45.82	48.08	50.58	53.61	58.00	61.80

+ 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: 1949-2001

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

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**NWS Call Sign:**

**Elevation: 400 Feet**

**Lat: 39°06N**

**Lon: 76°54W**

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	2.5	1.3	#	0	17.5	1996	7	17.5	1996	12	1987	22	3	1977	1.1	1.1	.6	.2	.1	-9.9	-9.9	-9.9	-9.9
Feb	3.4	.2	#	0	10.0	1987	23	14.5	1987	8	1995	4	3	1994	.9	.6	.4	.2	.1	-9.9	-9.9	-9.9	-9.9
Mar	.7	.0	0	0	12.5	1993	13	12.5	1993	0	0	0	0	0	.3	.3	.2	.1	@	.0	.0	.0	.0
Apr	#	.0	#	0	#	1996	9	#+	1996	#	1996	9	#	1996	.0	.0	.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	#	1979	10	#	1979	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.9	.0	0	0	16.0	1987	11	16.0	1987	0	0	0	0	0	.1	.1	.1	@	@	.0	.0	.0	.0
Dec	1.2	.0	#	0	6.0	1973	16	7.5	1973	4	1989	8	#+	2000	.4	.3	.1	.1	.0	.0	.0	.0	.0
Ann	8.7	1.5	N/A	N/A	17.5	Jan 1996	7	17.5	Jan 1996	12	Jan 1987	22	3+	Feb 1994	2.8	2.4	1.4	.6	.2	-9.9	-9.9	-9.9	-9.9

+ 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	5/04	4/29	4/26	4/23	4/20	4/17	4/14	4/10	4/06
32	4/20	4/16	4/13	4/10	4/08	4/05	4/03	3/31	3/26
28	4/10	4/06	4/02	3/30	3/28	3/25	3/22	3/19	3/14
24	4/05	3/31	3/27	3/24	3/21	3/18	3/15	3/11	3/06
20	3/22	3/15	3/11	3/07	3/03	2/27	2/23	2/18	2/12
16	3/16	3/07	3/01	2/23	2/18	2/13	2/08	2/02	1/24
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	10/10	10/13	10/17	10/20	10/23	10/26	10/30	11/04
32	10/11	10/18	10/23	10/27	10/30	11/03	11/07	11/12	11/18
28	10/24	10/31	11/05	11/09	11/13	11/17	11/21	11/26	12/03
24	11/07	11/14	11/19	11/23	11/27	12/01	12/05	12/10	12/16
20	11/22	11/29	12/04	12/09	12/13	12/17	12/22	12/27	1/04
16	11/30	12/08	12/15	12/20	12/25	12/31	1/05	1/11	1/20
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	206	198	192	187	182	178	173	167	159
32	232	223	216	210	205	199	194	187	177
28	258	248	241	235	229	224	218	211	201
24	275	267	260	255	250	245	240	233	225
20	313	303	296	290	285	279	273	266	257
16	343	330	322	315	308	302	295	287	276

\* 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)

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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	989	804	625	313	106	9	0	0	30	258	528	843	4505
60	834	664	471	187	43	1	0	0	6	149	385	688	3428
57	741	580	385	126	21	0	0	0	2	100	305	602	2862
55	680	527	328	92	12	0	0	0	1	74	256	544	2514
50	538	398	204	34	2	0	0	0	0	28	152	405	1761
32	142	75	9	0	0	0	0	0	0	0	5	77	308

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	176	195	407	685	1008	1225	1419	1378	1111	792	467	256	9119
55	1	4	13	88	307	535	706	665	422	152	28	11	2932
57	0	0	8	61	254	475	644	603	363	116	18	6	2548
60	0	0	1	32	183	386	551	510	277	73	8	0	2021
65	0	0	0	8	91	243	396	355	151	26	1	0	1271
70	0	0	0	1	34	125	247	208	59	6	0	0	680

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	71	209	455	766	994	1174	1127	875	550	255	86	45	116	325	780	1546	2540	3714	4841	5716	6266	6521	6607
45	19	34	118	317	611	844	1019	972	725	399	148	39	19	53	171	488	1099	1943	2962	3934	4659	5058	5206	5245
50	3	15	62	192	456	694	864	817	575	256	78	12	3	18	80	272	728	1422	2286	3103	3678	3934	4012	4024
55	0	1	24	105	310	544	709	662	426	143	36	4	0	1	25	130	440	984	1693	2355	2781	2924	2960	2964
60	0	0	10	50	184	394	554	507	282	64	8	0	0	0	10	60	244	638	1192	1699	1981	2045	2053	2053
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	25	45	122	264	470	670	806	782	570	319	137	44	25	70	192	456	926	1596	2402	3184	3754	4073	4210	4254

(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)