

# Climatography of the United States

No. 20

1971-2000

Station: BURKES GARDEN, VA

COOP ID: 441209

Climate Division: VA 6

NWS Call Sign:

Elevation: 3,300 Feet Lat: 37°06N

Lon: 81°20W

## 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	38.0	19.5	28.8	71	1950	25	40.6	1974	-26	1987	27	15.7	1977	1124	0	.0	.0	6.7	8.6	26.3	2.3
Feb	41.4	20.7	31.1	72	1977	26	38.2	1990	-24	1970	4	20.7	1978	950	0	.0	.0	9.3	6.3	23.3	1.3
Mar	49.8	28.4	39.1	78+	1985	30	44.4	1973	-10	1960	14	33.2	1996	803	0	.0	.0	18.5	2.1	19.8	.1
Apr	58.9	34.7	46.8	81+	2001	24	53.2	1981	3	1985	10	42.4	1987	546	0	.0	.0	25.3	.2	12.3	.0
May	67.4	44.6	56.0	85	1949	5	61.6	1991	19	1986	5	51.3	1989	290	12	.0	.0	30.5	.0	3.5	.0
Jun	74.3	52.6	63.5	89+	1988	26	66.3+	1994	29+	1988	5	58.6	1972	87	41	.0	.0	30.0	.0	.2	.0
Jul	78.1	56.5	67.3	96	1954	16	70.4	1993	34	1988	2	64.6	1979	21	93	.0	.2	31.0	.0	.0	.0
Aug	77.0	54.1	65.6	94	1983	21	68.9	1995	31	1986	29	61.9	1976	49	66	.0	.3	31.0	.0	@	.0
Sep	71.3	47.7	59.5	90+	1998	15	63.2	1998	21	1983	24	56.3	1994	178	11	.0	.1	29.8	.0	1.4	.0
Oct	61.4	35.8	48.6	85	1953	1	56.9	1984	9	1952	21	40.6	1988	510	2	.0	.0	28.4	.0	11.6	.0
Nov	51.2	28.9	40.1	74+	1961	5	49.5	1985	-3	1950	25	32.7	1976	749	0	.0	.0	18.6	1.7	18.6	.1
Dec	41.9	22.7	32.3	70+	2001	6	41.3	1984	-22+	1989	24	21.7	1989	1013	0	.0	.0	9.7	5.5	24.2	1.1
Ann	59.2	37.2	48.2	96	Jul 1954	16	70.4	Jul 1993	-26	Jan 1987	27	15.7	Jan 1977	6320	225	.0	.6	268.8	24.4	141.2	4.9

+ 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

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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: BURKES GARDEN, VA**

**COOP ID: 441209**

**Climate Division: VA 6**

**NWS Call Sign:**

**Elevation: 3,300 Feet Lat: 37°06N**

**Lon: 81°20W**

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	3.89	3.41	4.56	1995	15	9.81	1995	.94	1981	14.1	8.3	2.7	.7	1.26	1.63	2.17	2.64	3.08	3.55	4.05	4.65	5.41	6.59	7.69
Feb	3.42	3.47	2.61	1984	23	6.34	1994	.92	1978	12.1	7.3	2.6	.5	1.30	1.62	2.08	2.46	2.82	3.18	3.58	4.04	4.63	5.53	6.36
Mar	4.16	4.17	2.63	1979	24	7.07	1975	1.08	1976	13.2	8.5	3.0	.6	1.72	2.10	2.63	3.07	3.49	3.91	4.36	4.88	5.54	6.55	7.47
Apr	3.58	3.40	2.22	1977	4	8.46	1987	.72	1976	11.8	7.9	2.5	.6	1.26	1.60	2.09	2.50	2.89	3.30	3.74	4.25	4.91	5.92	6.85
May	4.89	4.68	2.25	1996	16	8.16	1971	1.94	1977	14.4	10.1	3.6	1.0	2.28	2.71	3.30	3.77	4.21	4.65	5.13	5.67	6.34	7.37	8.29
Jun	4.26	3.96	2.40	1972	17	9.99	1995	1.22	1999	12.6	8.9	3.2	.8	1.64	2.03	2.60	3.07	3.51	3.97	4.46	5.03	5.75	6.86	7.88
Jul	4.38	4.37	3.78	1980	10	9.77	1980	1.05	1983	13.0	8.6	2.9	.9	1.60	2.01	2.60	3.10	3.57	4.06	4.58	5.19	5.97	7.17	8.27
Aug	4.04	3.57	3.94	1972	18	7.48	1996	1.65	1997	11.1	7.6	3.0	.8	1.63	2.00	2.53	2.96	3.37	3.79	4.23	4.75	5.41	6.41	7.32
Sep	3.47	3.41	3.09	1959	30	8.78	1989	.17	1985	9.9	6.9	2.2	1.0	.73	1.05	1.56	2.02	2.49	2.98	3.55	4.22	5.11	6.54	7.88
Oct	3.11	2.83	2.45	1954	15	7.70	1983	.33	2000	9.3	5.7	2.2	.7	.64	.92	1.38	1.80	2.22	2.67	3.17	3.79	4.59	5.88	7.11
Nov	3.14	2.97	2.50	1949	1	7.42	1985	.57	1976	10.5	7.0	2.1	.7	1.08	1.38	1.81	2.18	2.52	2.88	3.27	3.73	4.31	5.22	6.05
Dec	3.41	3.15	2.25	1962	4	7.26	1991	.87	1971	11.9	7.2	2.2	.5	1.12	1.44	1.92	2.32	2.71	3.11	3.55	4.07	4.73	5.75	6.70
Ann	45.75	44.62	4.56	Jan 1995	15	9.99	Jun 1995	.17	Sep 1985	143.9	94.0	32.2	8.8	34.28	36.54	39.42	41.59	43.50	45.34	47.24	49.32	51.83	55.45	58.57

+ 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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**Climate Division: VA 6**

**NWS Call Sign:**

**Elevation: 3,300 Feet**

**Lat: 37°06N**

**Lon: 81°20W**

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	13.6	11.5	2	1	21.0	1998	28	32.5	1987	21	1998	28	9	1996	6.2	4.5	1.8	.6	.1	11.0	6.4	3.3	.7
Feb	10.9	9.5	2	1	14.0	1984	23	25.0	1972	14+	1996	3	5	1998	5.5	4.5	1.6	.7	.1	9.9	5.6	3.1	.4
Mar	6.9	3.5	1	#	13.0	1993	14	27.5	1993	18	1993	14	4	1993	3.5	2.7	.8	.4	.1	3.9	1.8	.8	.1
Apr	3.1	1.0	#	#	12.0	1978	26	20.0	1987	17	1987	6	3	1987	1.3	1.0	.4	.1	.1	.8	.3	.2	.1
May	.1	.0	#	0	1.3	1989	8	1.6	1989	#	1989	7	#	1989	.1	@	.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	.4	.0	#	0	3.0	1993	31	3.0+	1993	3	1993	31	#+	1999	.3	.2	@	.0	.0	.1	@	.0	.0
Nov	1.9	.5	#	#	9.0	1971	24	11.5	1976	8	1971	24	1	1977	1.5	1.1	.3	.1	.0	1.6	.6	.1	.0
Dec	8.2	6.8	1	#	13.0	1995	7	21.0	1974	13	1995	7	5	1989	4.2	3.3	1.1	.4	.1	6.9	3.7	1.6	.3
Ann	45.1	32.8	N/A	N/A	21.0	Jan 1998	28	32.5	Jan 1987	21	Jan 1998	28	9	Jan 1996	22.6	17.3	6.0	2.3	.5	34.2	18.4	9.1	1.6

+ 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

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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	6/23	6/16	6/10	6/06	6/01	5/28	5/23	5/18	5/10
32	6/04	5/28	5/24	5/20	5/16	5/13	5/09	5/04	4/28
28	5/15	5/11	5/08	5/06	5/04	5/01	4/29	4/26	4/22
24	5/04	4/28	4/23	4/20	4/16	4/12	4/08	4/04	3/29
20	4/26	4/19	4/15	4/11	4/07	4/03	3/30	3/25	3/19
16	4/09	4/02	3/27	3/22	3/18	3/13	3/08	3/02	2/23
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	8/28	9/02	9/07	9/10	9/14	9/17	9/21	9/25	10/01
32	9/10	9/16	9/20	9/23	9/26	9/29	10/03	10/06	10/12
28	9/24	9/29	10/02	10/04	10/07	10/09	10/12	10/15	10/19
24	10/04	10/09	10/12	10/15	10/18	10/20	10/23	10/26	10/31
20	10/10	10/17	10/21	10/25	10/29	11/02	11/06	11/11	11/17
16	10/24	10/31	11/05	11/09	11/13	11/17	11/21	11/26	12/03
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	129	121	114	109	104	99	93	87	78
32	156	148	142	137	132	127	122	116	108
28	172	166	162	159	156	152	149	145	139
24	205	198	193	188	184	180	175	170	163
20	230	221	215	210	205	200	194	188	179
16	271	260	253	246	240	234	228	220	209

\* 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	1124	950	803	546	290	87	21	49	178	510	749	1013	6320
60	969	810	648	398	168	24	0	7	75	365	599	858	4921
57	876	726	555	312	112	8	0	1	39	285	510	765	4189
55	814	670	494	259	81	4	0	0	23	237	453	703	3738
50	669	530	351	143	29	0	0	0	5	138	316	558	2739
32	227	130	35	1	0	0	0	0	0	4	27	150	574

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	126	104	255	445	745	944	1096	1040	824	518	268	160	6525
55	0	0	2	13	113	257	383	327	157	38	3	0	1293
57	0	0	0	6	81	202	321	266	113	25	1	0	1015
60	0	0	0	2	45	128	228	179	59	12	0	0	653
65	0	0	0	0	12	41	93	66	11	2	0	0	225
70	0	0	0	0	2	6	18	11	0	0	0	0	37

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	32	49	137	279	524	723	865	819	614	318	137	56	32	81	218	497	1021	1744	2609	3428	4042	4360	4497	4553
45	10	16	73	172	375	573	710	664	466	192	67	23	10	26	99	271	646	1219	1929	2593	3059	3251	3318	3341
50	1	2	34	92	238	423	555	509	321	96	28	6	1	3	37	129	367	790	1345	1854	2175	2271	2299	2305
55	0	0	6	37	124	283	400	355	194	38	6	0	0	0	6	43	167	450	850	1205	1399	1437	1443	1443
60	0	0	2	5	51	152	250	207	90	6	0	0	0	0	2	7	58	210	460	667	757	763	763	763
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	22	35	94	189	320	456	562	521	377	214	91	33	22	57	151	340	660	1116	1678	2199	2576	2790	2881	2914

(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)