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: BUENA VISTA, VA **COOP ID: 441159**

Climate Division: VA 5 **NWS Call Sign:** **Elevation: 840 Feet** **Lat: 37˚44N** **Lon: 79˚21W**

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	.0	.0	.0	71	2000	4	.0	0	-18	1977	17	.0	0	0	0	.0	.0	8.8	3.8	27.3	.6
Feb	.0	.0	.0	81	2000	26	.0	0	5	1977	7	.0	0	0	0	.0	.0	12.0	2.9	26.3	.1
Mar	.0	.0	.0	90	1998	31	.0	0	10	1978	5	.0	0	0	0	.0	@	22.2	.4	21.9	.0
Apr	.0	.0	.0	94+	1976	23	.0	0	24+	1977	9	.0	0	0	0	.0	.3	28.1	.0	5.3	.0
May	.0	.0	.0	95	1998	29	.0	0	30	1977	10	.0	0	0	0	.0	.6	31.0	.0	7.2	.0
Jun	.0	.0	.0	95+	1998	29	.0	0	34	1977	8	.0	0	0	0	.0	3.4	30.0	.0	.0	.0
Jul	.0	.0	.0	104	1999	6	.0	0	40+	1975	31	.0	0	0	0	.5	8.7	31.0	.0	.0	.0
Aug	.0	.0	.0	102+	1999	18	.0	0	37	1975	28	.0	0	0	0	.3	7.4	31.0	.0	.0	.0
Sep	.0	.0	.0	98+	1998	17	.0	0	35	1976	23	.0	0	0	0	.0	2.0	30.0	.0	@	.0
Oct	.0	.0	.0	87+	2001	25	.0	0	20	2001	29	.0	0	0	0	.0	.0	30.5	.0	3.5	.0
Nov	.0	.0	.0	80+	2001	3	.0	0	12	1976	30	.0	0	0	0	.0	.0	22.4	.1	14.5	.0
Dec	.0	.0	.0	78	2001	6	.0	0	6	2000	24	.0	0	0	0	.0	.0	13.1	2.2	24.7	.2
Ann	.0	.0	.0	104	Jul 1999	6	-99.9	0	-18	Jan 1977	17	99.9	0	0	0	.8	22.4	290.1	9.4	130.7	.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

(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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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	2.79	2.57	2.50	1982	4	6.61	1998	.08	1981
Feb	2.66	2.06	2.65	1984	14	7.92	1972	.62	1978
Mar	3.49	3.25	3.66	1967	7	7.54	1975	.70	1972
Apr	3.20	2.29	3.32	2000	18	11.52	1987	.71	1990
May	3.89	3.80	2.32	1971	30	7.76	1971	1.13	1987
Jun	3.37	2.64	6.00	1995	23	12.07	1995	.89	1987
Jul	3.86	3.51	2.30+	1959	27	8.05	1972	1.33	1996
Aug	2.97	2.34	4.00	1948	1	9.86	1984	.60	1995
Sep	3.42	2.10	4.03	1987	8	10.25	1979	.09	1984
Oct	3.18	3.04	5.00	1961	21	10.17	1976	.00	2000
Nov	3.17	3.14	2.30	1962	10	9.14	1985	.59	1981
Dec	2.84	2.86	2.70	1989	31	6.08	1973	.00	2000
Ann	38.84	38.34	6.00	Jun 1995	23	12.07	Jun 1995	.00+	Dec 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.1	5.7	2.0	.6
Feb	7.3	5.5	1.9	.6
Mar	8.9	6.4	2.6	.9
Apr	8.5	5.8	1.8	.9
May	10.6	7.8	2.6	1.0
Jun	8.7	6.2	2.2	.7
Jul	9.7	7.0	2.8	1.1
Aug	7.1	5.3	2.0	.9
Sep	7.4	5.6	2.4	.9
Oct	6.3	5.1	2.4	.8
Nov	7.0	5.3	2.3	1.0
Dec	7.8	5.6	2.1	.6
Ann	97.4	71.3	27.1	10.0

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	.41	.64	1.04	1.43	1.83	2.28	2.79	3.41	4.25	5.62	6.94
Feb	.58	.82	1.21	1.57	1.92	2.30	2.72	3.23	3.90	4.96	5.97
Mar	1.18	1.51	1.99	2.40	2.79	3.20	3.64	4.15	4.81	5.83	6.78
Apr	.63	.92	1.39	1.82	2.26	2.73	3.26	3.89	4.74	6.09	7.38
May	1.60	1.96	2.46	2.87	3.26	3.65	4.08	4.57	5.19	6.13	6.99
Jun	.70	1.01	1.50	1.96	2.41	2.89	3.44	4.10	4.97	6.36	7.67
Jul	1.39	1.75	2.27	2.71	3.13	3.56	4.03	4.58	5.27	6.35	7.33
Aug	.61	.89	1.32	1.72	2.12	2.54	3.03	3.61	4.37	5.59	6.75
Sep	.22	.43	.85	1.32	1.85	2.46	3.20	4.15	5.47	7.70	9.92
Oct	.28	.64	1.16	1.63	2.10	2.62	3.21	3.93	4.89	6.45	7.94
Nov	.73	1.02	1.48	1.90	2.31	2.76	3.25	3.84	4.62	5.85	7.01
Dec	.49	.88	1.37	1.75	2.13	2.53	2.97	3.49	4.16	5.22	6.21
Ann	28.53	30.55	33.13	35.07	36.79	38.45	40.16	42.05	44.32	47.61	50.45

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	4.9	2.8	1	#
Feb	3.9	1.4	#	0
Mar	.8	.0	#	0
Apr	.1	.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	.1	.0	#	0
Dec	1.8	.0	#	0
Ann	11.6	4.2	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	17.5	1971	1	18.0	1971	28	1996	9	9	1996
Feb	12.0	1979	19	21.0	1979	17	1979	20	4	1979
Mar	3.0	1978	2	7.5	1978	5	1971	26	#+	1996
Apr	3.0	1971	7	3.0	1971	3	1971	7	#	1971
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	.0	0	0	.0	0	4	1979	10	#	1979
Nov	2.0	1977	28	2.0	1977	2	1977	28	#+	1996
Dec	8.5	1997	30	14.0	1973	14	1973	18	1	1997
Ann	17.5	Jan 1971	1	21.0	Feb 1979	28	Jan 1996	9	9	Jan 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.5	1.1	.5	.3	.1
Feb	1.2	1.1	.3	.2	@
Mar	.4	.3	.1	.0	.0
Apr	@	@	@	.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	@	@	.0	.0	.0
Dec	.5	.4	.2	.1	.0
Ann	3.6	2.9	1.1	.6	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.6	1.0	.5	.1
Feb	1.1	.5	.4	.1
Mar	.3	.1	.0	.0
Apr	@	@	.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	.4	.2	.2	.1
Ann	3.4	1.8	1.1	.3

+ 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	6/06	6/02	5/31	5/28	5/26	5/23	5/21	5/18	5/14
32	6/04	5/29	5/24	5/21	5/17	5/13	5/09	5/05	4/28
28	5/28	5/20	5/14	5/09	5/04	4/29	4/23	4/17	4/09
24	5/08	4/29	4/22	4/16	4/10	4/05	3/30	3/23	3/13
20	4/07	3/31	3/26	3/22	3/18	3/13	3/09	3/04	2/25
16	3/21	3/15	3/11	3/07	3/04	2/28	2/25	2/20	2/14

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	9/22	9/27	10/01	10/04	10/07	10/10	10/13	10/17	10/22
32	10/04	10/09	10/13	10/16	10/19	10/22	10/25	10/29	11/03
28	10/17	10/23	10/27	10/30	11/02	11/05	11/09	11/13	11/18
24	10/27	11/02	11/07	11/10	11/14	11/17	11/21	11/25	12/01
20	11/07	11/13	11/18	11/21	11/25	11/28	12/02	12/06	12/12
16	11/20	11/26	12/01	12/05	12/08	12/12	12/16	12/21	12/27

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	154	147	142	137	133	129	125	120	112
32	178	170	164	159	154	150	145	139	130
28	214	203	195	188	182	176	169	161	150
24	248	237	230	223	217	210	204	196	185
20	277	268	262	256	251	246	241	234	225
16	305	296	290	284	279	274	268	262	253

***** 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	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	37	51	166	398	521	881	1044	1007	807	489	215	68	37	88	254	652	1173	2054	3098	4105	4912	5401	5616	5684
45	17	16	89	261	369	731	889	852	657	340	118	31	17	33	122	383	752	1483	2372	3224	3881	4221	4339	4370
50	1	5	42	150	231	581	734	697	508	208	55	8	1	6	48	198	429	1010	1744	2441	2949	3157	3212	3220
55	0	0	14	71	116	431	579	542	361	109	20	0	0	0	14	85	201	632	1211	1753	2114	2223	2243	2243
60	0	0	3	26	44	283	424	387	224	44	5	0	0	0	3	29	73	356	780	1167	1391	1435	1440	1440
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	32	59	144	256	397	579	696	665	517	306	145	51	32	91	235	491	888	1467	2163	2828	3345	3651	3796	3847

(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

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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