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: CHARLOTTE COURT HOUSE, VA **COOP ID: 441585**

Climate Division: VA 3 **NWS Call Sign:** **Elevation: 590 Feet** **Lat: 37˚04N** **Lon: 78˚42W**

Temperature (˚F)

Month	Mean (1) Daily Max	Mean (1) Daily Min	Mean (1) Mean	Extremes Highest Daily(2)	Extremes Year	Extremes Day	Extremes Highest Month(1) Mean	Extremes Year	Extremes Lowest Daily(2)	Extremes Year	Extremes Day	Extremes Lowest Month(1) Mean	Extremes Year	Degree Days (1) Base Temp 65 Heating	Degree Days (1) Base Temp 65 Cooling	Mean Number of Days (3) Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	45.6	24.8	35.2	78+	1975	30	45.1	1974	-8+	1985	22	24.6	1977	924	0	.0	.0	11.4	3.4	23.9	.5
Feb	49.7	27.0	38.4	79+	2000	26	46.8	1990	-3+	1996	5	26.6	1979	745	0	.0	.0	14.2	2.0	20.8	.2
Mar	58.3	34.9	46.6	87	1968	22	51.8	2000	9+	1960	8	41.4	1984	570	0	.0	.0	23.7	.3	13.5	.0
Apr	68.2	42.8	55.5	94+	1985	20	59.6	1994	19	1985	10	51.3	1987	289	4	.0	.6	29.1	.0	4.1	.0
May	75.7	51.9	63.8	95	1953	31	69.5	1991	26	1963	2	60.2+	1997	103	66	.0	.6	30.9	.0	.2	.0
Jun	83.3	61.0	72.2	101	1954	28	75.4	1981	36	1977	8	68.5	1972	7	222	.0	5.7	30.0	.0	.0	.0
Jul	87.3	65.7	76.5	106	1954	15	79.6	1993	44	1979	6	72.9	1978	0	357	.4	12.1	31.0	.0	.0	.0
Aug	86.2	64.1	75.2	103	1977	13	78.8	1977	39	1976	31	71.5	1992	1	316	.2	9.7	31.0	.0	.0	.0
Sep	79.8	57.4	68.6	105	1954	7	74.6	1980	34+	1983	25	64.7	1976	37	145	@	3.6	30.0	.0	.0	.0
Oct	69.5	44.2	56.9	95	1951	6	67.7	1984	18	1962	27	49.0	1976	288	35	.0	.1	30.4	.0	4.0	.0
Nov	59.8	35.5	47.7	87+	1974	4	53.6	1985	9	1970	25	42.2	1996	522	1	.0	.0	24.9	@	12.6	.0
Dec	49.7	28.4	39.1	80	1998	8	46.9	1971	-1+	1983	26	30.1	1989	804	0	.0	.0	15.5	1.6	20.9	.1
Ann	67.8	44.8	56.3	106	Jul 1954	15	79.6	Jul 1993	-8+	Jan 1985	22	24.6	Jan 1977	4290	1146	.6	32.4	302.1	7.3	100.0	.8

\+ 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	4.04	3.82	2.24	1995	15	8.86	1978	.96	1981
Feb	3.24	3.17	2.30	1979	25	7.14	1979	.59	1978
Mar	4.16	3.33	3.30	1975	30	10.57	1975	.81	1985
Apr	3.59	3.29	4.50	1978	27	7.64	1978	.35	1985
May	4.07	3.74	2.50	1978	5	10.05	1971	.56	1997
Jun	3.36	2.70	3.45	1972	22	10.75	1995	.54	1999
Jul	4.19	4.37	5.35	1975	14	10.64	1975	.88	1977
Aug	3.72	3.63	4.20	1955	18	12.13	1985	.13	1980
Sep	4.28	3.46	6.12	1989	16	14.69	1979	.54	1985
Oct	3.99	2.99	4.10	1972	6	14.13	1971	.03	2000
Nov	3.38	3.09	5.68	1993	28	10.73	1985	.70	1981
Dec	3.29	3.57	2.28	1951	21	6.88	1973	.41	1980
Ann	45.31	43.60	6.12	Sep 1989	16	14.69	Sep 1979	.03	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.2	7.2	3.0	.9
Feb	9.2	6.7	2.3	.8
Mar	10.5	7.8	3.0	1.0
Apr	9.6	6.5	2.3	.9
May	10.5	7.4	2.8	.8
Jun	8.5	5.8	2.2	1.1
Jul	8.8	6.3	2.9	1.1
Aug	8.5	5.7	2.5	1.2
Sep	7.6	5.9	2.4	1.1
Oct	7.6	5.3	2.6	1.2
Nov	8.6	5.3	2.2	1.0
Dec	9.2	6.5	2.3	.8
Ann	108.8	76.4	30.5	11.9

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	1.38	1.76	2.32	2.79	3.24	3.71	4.22	4.81	5.57	6.75	7.84
Feb	1.18	1.48	1.92	2.29	2.64	3.00	3.39	3.84	4.42	5.31	6.13
Mar	1.29	1.69	2.27	2.78	3.26	3.77	4.32	4.97	5.82	7.13	8.34
Apr	.85	1.19	1.72	2.18	2.65	3.14	3.69	4.35	5.21	6.58	7.86
May	1.21	1.60	2.18	2.68	3.17	3.67	4.23	4.89	5.73	7.06	8.29
Jun	.68	.98	1.47	1.93	2.38	2.87	3.42	4.09	4.97	6.38	7.72
Jul	1.28	1.68	2.27	2.78	3.28	3.79	4.35	5.02	5.88	7.22	8.46
Aug	.63	.95	1.50	2.01	2.53	3.10	3.75	4.55	5.60	7.31	8.95
Sep	.48	.81	1.40	2.00	2.64	3.35	4.18	5.22	6.63	8.97	11.24
Oct	.36	.64	1.17	1.73	2.33	3.02	3.83	4.86	6.27	8.62	10.92
Nov	.87	1.19	1.68	2.12	2.54	2.99	3.49	4.08	4.86	6.08	7.22
Dec	.73	1.04	1.52	1.95	2.39	2.85	3.37	3.99	4.81	6.12	7.35
Ann	33.28	35.64	38.64	40.91	42.92	44.86	46.85	49.05	51.71	55.55	58.86

\+ 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)

Extremes (2)

Mean Number of Days (1)

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	4.0	2.4	#	0	9.0	2000	25	18.3	2000	12	1980	6	3	1980	1.3	.8	.4	.2	.0	1.6	.7	.3	.1
Feb	2.2	.0	#	0	10.0	1982	28	14.0	1972	8	1972	2	1+	2000	.8	.5	.3	.2	.1	1.5	.3	.2	.0
Mar	1.5	.0	#	0	12.0	1980	3	12.0	1980	9	1971	27	1	1971	.6	.5	.2	.1	@	.4	.2	.1	.0
Apr	.0	.0	#	0	.7	1971	7	.7	1971	1	1971	7	#	1971	@	.0	.0	.0	.0	.1	.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	11	#	1979	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.3	.0	#	0	3.0	1987	11	3.0	1987	2	1972	17	#+	1972	.1	.1	@	.0	.0	.1	.0	.0	.0
Dec	1.2	.0	#	0	11.2	1973	17	16.7	1973	15	1973	18	2	1973	.5	.4	.1	.1	@	.6	.1	.1	.1
Ann	9.2	2.4	N/A	N/A	12.0	Mar 1980	3	18.3	Jan 2000	15	Dec 1973	18	3	Jan 1980	3.3	2.3	1.0	.6	.1	4.3	1.3	.7	.2

+ 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	5/05	5/02	4/28	4/25	4/20	4/14
32	5/03	4/27	4/23	4/20	4/17	4/14	4/11	4/07	4/01
28	4/22	4/16	4/12	4/08	4/04	4/01	3/28	3/23	3/17
24	4/09	4/02	3/27	3/23	3/18	3/14	3/09	3/04	2/24
20	3/29	3/22	3/17	3/12	3/08	3/04	2/27	2/22	2/14
16	3/15	3/08	3/02	2/26	2/21	2/17	2/12	2/07	1/30

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	9/25	9/30	10/04	10/07	10/10	10/13	10/16	10/20	10/25
32	10/04	10/10	10/15	10/18	10/21	10/25	10/28	11/02	11/07
28	10/14	10/20	10/24	10/28	10/31	11/04	11/07	11/12	11/18
24	10/25	11/01	11/07	11/11	11/15	11/19	11/24	11/29	12/06
20	11/06	11/14	11/20	11/25	11/29	12/04	12/09	12/15	12/23
16	11/28	12/05	12/10	12/14	12/17	12/21	12/25	12/30	1/06

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	185	177	171	166	161	156	151	145	136
32	211	203	197	192	187	182	177	170	162
28	236	227	220	215	209	204	198	192	182
24	277	265	256	248	241	234	227	218	206
20	299	288	279	272	266	259	252	244	233
16	327	317	310	304	298	293	287	279	269

***** 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	924	745	570	289	103	7	0	1	37	288	522	804	4290
60	769	605	418	160	37	1	0	0	10	181	376	649	3206
57	682	522	332	100	15	0	0	0	4	130	293	562	2640
55	623	471	277	68	8	0	0	0	2	101	242	503	2295
50	480	342	162	19	1	0	0	0	0	46	133	362	1545
32	116	47	4	0	0	0	0	0	0	0	1	51	219

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	215	226	457	705	986	1205	1380	1338	1098	770	469	270	9119
55	9	6	17	83	281	515	667	625	410	158	20	8	2799
57	6	0	10	54	226	455	605	563	352	124	12	6	2413
60	0	0	3	25	155	366	512	470	268	83	4	0	1886
65	0	0	0	4	66	222	357	316	145	35	1	0	1146
70	0	0	0	0	19	104	207	176	56	12	0	0	574

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	71	110	258	486	750	978	1138	1101	865	536	267	112	71	181	439	925	1675	2653	3791	4892	5757	6293	6560	6672
45	32	58	154	346	595	828	983	946	715	387	167	59	32	90	244	590	1185	2013	2996	3942	4657	5044	5211	5270
50	8	20	82	222	444	678	828	791	565	250	91	27	8	28	110	332	776	1454	2282	3073	3638	3888	3979	4006
55	1	7	36	127	299	529	673	636	417	146	45	8	1	8	44	171	470	999	1672	2308	2725	2871	2916	2924
60	0	0	10	60	173	380	518	482	281	69	10	0	0	0	10	70	243	623	1141	1623	1904	1973	1983	1983
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	51	83	171	311	478	659	780	752	568	342	177	76	51	134	305	616	1094	1753	2533	3285	3853	4195	4372	4448

(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