

Climatology of the United States No. 20

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

Station: STAUNTON SEWAGE PLANT, VA

1971-2000

COOP ID: 448062

Climate Division: VA 5

NWS Call Sign:

Elevation: 1,640 Feet Lat: 38° 11N

Lon: 79° 05W

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	40.5	20.8	30.7	76	1950	27	41.1	1974	-16	1987	27	19.5	1977	1066	0	.0	.0	8.1	6.1	27.3	1.3
Feb	44.2	22.9	33.6	78	1985	25	40.7	1976	-8	1979	19	21.6	1978	880	0	.0	.0	10.8	4.3	23.3	.5
Mar	53.1	30.3	41.7	84+	1968	22	47.4	1977	-3	1993	15	36.6	1993	723	0	.0	.0	19.9	.8	19.2	@
Apr	63.3	38.3	50.8	91+	1960	27	54.7	1994	12	1985	10	47.3+	1982	426	0	.0	.0	26.9	.0	8.7	.0
May	71.6	47.9	59.8	94+	1963	9	65.5	2000	26+	1978	2	55.9	1994	191	28	.0	.1	30.8	.0	1.1	.0
Jun	79.2	56.5	67.9	99	1952	27	71.3	2000	34	1972	11	63.8	1972	34	119	.0	1.5	30.0	.0	.0	.0
Jul	83.3	60.9	72.1	102+	1954	15	77.0	1999	41	1988	1	68.9	1971	6	226	@	6.3	31.0	.0	.0	.0
Aug	81.8	59.2	70.5	102	1983	21	74.3	1995	37	1982	29	67.1	1982	10	180	.1	4.0	31.0	.0	.0	.0
Sep	75.5	52.2	63.9	100+	1954	7	70.5	1998	22	1983	24	60.2	1982	95	60	.0	1.2	29.9	.0	.4	.0
Oct	65.3	38.9	52.1	94	1951	6	58.0	1984	18	1988	14	46.3	1988	409	9	.0	.0	30.1	.0	8.4	.0
Nov	54.6	31.6	43.1	84+	1950	2	50.8	1999	8	1950	26	36.6	1976	657	0	.0	.0	21.2	.2	16.9	.0
Dec	44.5	24.2	34.4	76+	2001	6	41.7	1984	-13	1989	23	20.5	1989	950	0	.0	.0	12.0	3.8	25.0	.6
Ann	63.1	40.3	51.7	102+	Aug 1983	21	77.0	Jul 1999	-16	Jan 1987	27	19.5	Jan 1977	5447	622	.1	13.1	281.7	15.2	130.3	2.4

+ 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

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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Climate Division: VA 5

NWS Call Sign:

Elevation: 1,640 Feet Lat: 38°11N

Lon: 79°05W

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	2.91	2.34	2.49	1968	14	7.21	1996	.12	1981	8.8	6.5	2.1	.6	.41	.65	1.07	1.47	1.89	2.36	2.90	3.56	4.45	5.90	7.29
Feb	2.50	2.19	3.50	1998	12	10.37	1998	.23	1977	7.3	5.3	1.8	.5	.40	.62	.98	1.33	1.68	2.07	2.51	3.06	3.78	4.95	6.08
Mar	3.23	3.04	2.61	1967	7	7.57	1993	.73	1981	8.8	6.6	1.9	.8	.90	1.21	1.67	2.08	2.48	2.89	3.35	3.89	4.60	5.70	6.73
Apr	2.92	2.47	2.72	1992	22	8.68	1987	.93	1976	9.5	6.1	1.8	.8	.83	1.11	1.53	1.89	2.25	2.62	3.03	3.52	4.15	5.14	6.06
May	3.81	3.62	3.86	1971	30	8.21	1971	1.42	1991	11.3	8.0	2.5	.6	1.59	1.94	2.43	2.83	3.20	3.58	3.99	4.46	5.06	5.96	6.79
Jun	3.57	3.32	3.57	1995	27	13.40	1995	.84	1999	9.1	6.1	2.5	.8	.84	1.17	1.69	2.16	2.62	3.11	3.66	4.32	5.18	6.55	7.84
Jul	3.82	3.67	5.40	1997	24	8.94	1991	1.27	1983	11.0	7.0	2.4	.8	1.45	1.81	2.31	2.74	3.14	3.55	3.99	4.51	5.16	6.17	7.09
Aug	3.50	3.04	2.42	1967	24	9.24	1974	.57	1976	10.1	6.8	2.5	.8	.85	1.18	1.69	2.14	2.59	3.07	3.61	4.24	5.08	6.40	7.64
Sep	3.78	2.80	5.00	1996	7	12.82	1996	.04	1985	8.4	5.5	2.4	1.1	.32	.58	1.08	1.60	2.18	2.84	3.62	4.60	5.95	8.22	10.45
Oct	3.37	2.53	5.20	1972	6	9.65	1976	.02	2000	7.6	5.0	2.4	1.0	.26	.49	.93	1.39	1.91	2.50	3.21	4.10	5.34	7.42	9.47
Nov	2.95	2.93	3.27	1985	5	11.85	1985	.68	1981	8.2	5.5	1.9	.6	.62	.90	1.33	1.72	2.12	2.54	3.02	3.59	4.35	5.55	6.69
Dec	2.49	2.21	2.50	1958	29	6.28	1973	.35	1980	8.1	5.0	1.9	.5	.61	.84	1.20	1.53	1.85	2.18	2.56	3.01	3.60	4.53	5.40
Ann	38.85	38.47	5.40	Jul 1997	24	13.40	Jun 1995	.02	Oct 2000	108.2	73.4	26.1	8.9	28.94	30.90	33.38	35.25	36.91	38.50	40.14	41.95	44.12	47.27	49.97

+ 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 5

NWS Call Sign:

Elevation: 1,640 Feet

Lat: 38° 11N

Lon: 79° 05W

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	6.4	4.3	1	#	18.0	1971	1	29.8	1978	22	1978	22	6	1978	2.2	1.6	.6	.4	.1	3.7	2.1	1.0	.4
Feb	6.8	3.4	1	#	11.0	1983	12	25.0	1983	20	1983	12	6	1978	2.3	1.7	.8	.3	@	3.7	2.3	1.4	.1
Mar	3.4	1.0	#	#	11.0	1993	14	19.5	1993	18	1994	3	2	1993	1.1	.8	.3	.3	.1	1.3	.6	.3	.1
Apr	.4	.0	#	0	3.5	1987	4	7.1	1987	5	1971	7	#+	1987	.2	.2	@	.0	.0	@	.0	.0	.0
May	#	.0	0	0	#	1989	8	#	1989	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	.3	.0	0	0	7.0	1979	10	8.5	1979	0	0	0	0	0	.1	.1	@	@	.0	.0	.0	.0	.0
Nov	1.0	.0	#	0	7.0	1971	25	8.0	1971	6	1987	12	1	1981	.4	.4	.1	@	.0	.2	.2	@	.0
Dec	1.9	.5	#	#	8.5	1973	17	10.5	1982	10	1997	30	5	1989	1.5	1.0	.5	.1	.0	2.3	1.6	1.1	.1
Ann	20.2	9.2	N/A	N/A	18.0	Jan 1971	1	29.8	Jan 1978	22	Jan 1978	22	6+	Feb 1978	7.8	5.8	2.3	1.1	.2	11.2	6.8	3.8	.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

Complete documentation available from:

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Climate Division: VA 5

NWS Call Sign:

Elevation: 1,640 Feet

Lat: 38° 11N

Lon: 79° 05W

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	5/31	5/24	5/20	5/16	5/12	5/09	5/05	4/30	4/24
32	5/18	5/12	5/08	5/04	4/30	4/27	4/23	4/18	4/12
28	5/04	4/29	4/25	4/22	4/19	4/17	4/14	4/10	4/05
24	4/24	4/19	4/14	4/11	4/07	4/04	3/31	3/27	3/21
20	4/12	4/06	4/01	3/28	3/24	3/20	3/16	3/11	3/05
16	3/28	3/21	3/15	3/11	3/06	3/02	2/25	2/20	2/12
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	9/20	9/24	9/26	9/28	9/30	10/02	10/04	10/07	10/10
32	9/24	9/29	10/03	10/07	10/10	10/13	10/17	10/21	10/26
28	10/03	10/08	10/13	10/16	10/20	10/23	10/26	10/31	11/05
24	10/10	10/18	10/23	10/28	11/01	11/05	11/10	11/15	11/23
20	10/22	10/29	11/04	11/08	11/13	11/17	11/21	11/27	12/04
16	11/08	11/16	11/21	11/26	11/30	12/04	12/09	12/14	12/22
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	162	155	149	145	140	136	131	126	119
32	190	180	173	167	162	157	151	144	134
28	210	200	194	188	182	177	171	164	155
24	241	229	221	214	207	200	193	185	173
20	263	253	245	239	233	227	220	213	202
16	301	290	282	275	268	262	255	247	236

* 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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Climate Division: VA 5

NWS Call Sign:

Elevation: 1,640 Feet Lat: 38° 11N

Lon: 79° 05W

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	1066	880	723	426	191	34	6	10	95	409	657	950	5447
60	911	740	568	282	92	6	0	0	35	276	508	795	4213
57	818	656	476	204	52	1	0	0	16	207	419	702	3551
55	756	600	418	158	33	0	0	0	9	167	362	644	3147
50	611	470	279	69	7	0	0	0	2	88	231	500	2257
32	183	110	19	0	0	0	0	0	0	0	9	119	440

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	140	154	319	564	859	1075	1243	1193	955	623	342	192	7659
55	0	0	5	32	179	386	530	480	274	77	5	4	1972
57	0	0	1	18	136	327	468	418	221	55	2	0	1646
60	0	0	0	6	84	241	375	325	150	30	0	0	1211
65	0	0	0	0	28	119	226	180	60	9	0	0	622
70	0	0	0	0	5	40	102	72	14	1	0	0	234

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	64	164	359	639	866	1027	974	739	406	184	72	37	101	265	624	1263	2129	3156	4130	4869	5275	5459	5531
45	14	27	93	235	485	716	872	819	590	270	99	32	14	41	134	369	854	1570	2442	3261	3851	4121	4220	4252
50	2	9	41	134	335	566	717	664	441	150	44	11	2	11	52	186	521	1087	1804	2468	2909	3059	3103	3114
55	0	0	15	70	205	416	562	509	300	73	14	1	0	0	15	85	290	706	1268	1777	2077	2150	2164	2165
60	0	0	4	29	103	274	407	355	174	25	2	0	0	0	4	33	136	410	817	1172	1346	1371	1373	1373
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	30	51	122	238	399	568	691	650	476	273	129	51	30	81	203	441	840	1408	2099	2749	3225	3498	3627	3678

(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

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
- 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">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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