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: SENECA STATE FOREST 1N, WV **COOP ID: 468051**

Climate Division: WV 4 **NWS Call Sign:** **Elevation: 2,450 Feet** **Lat: 38˚20N** **Lon: 79˚56W**

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	35.9	13.5	24.7	64+	1974	27	35.6	1974	-24+	1982	17	12.1	1977	1248	0	.0	.0	4.7	9.1	29.1	4.4
Feb	40.5	15.3	27.9	72	1977	26	34.6	1976	-21	1972	8	15.7	1978	1039	0	.0	.0	8.0	5.7	26.3	2.7
Mar	49.4	22.6	36.0	82+	1986	31	42.1	1973	-13	1980	3	30.0	1984	900	0	.0	.0	17.0	1.7	25.2	.4
Apr	60.2	30.2	45.2	88	1976	19	50.4	1994	1	1985	10	40.7	1975	595	0	.0	.0	25.0	.1	16.7	.0
May	69.7	40.9	55.3	91+	1991	29	63.1	1991	17	1968	7	50.6	1997	317	16	.0	.3	30.4	.0	6.2	.0
Jun	76.6	49.5	63.1	92+	1988	22	67.0	1994	24	1972	11	57.8	1972	105	46	.0	.9	30.0	.0	.5	.0
Jul	80.1	54.4	67.3	99	1988	16	71.3	1993	29	1988	1	63.9	1976	33	103	.0	1.7	31.0	.0	.1	.0
Aug	78.4	53.2	65.8	96+	1987	17	70.2	1995	30	1968	29	61.8	1976	51	74	.0	1.4	31.0	.0	@	.0
Sep	72.1	46.3	59.2	93	1973	1	62.8	1998	18	1983	24	55.6	1974	185	10	.0	.1	29.9	.0	1.9	.0
Oct	62.2	33.4	47.8	84	1989	13	57.5	1984	7	1969	24	41.0	1988	535	1	.0	.0	28.2	.0	14.9	.0
Nov	50.1	24.9	37.5	77+	1982	2	47.0	1985	-2	1970	25	28.7	1976	825	0	.0	.0	17.2	1.2	22.7	.1
Dec	40.0	17.8	28.9	75	1982	4	37.5	1984	-25	1989	23	16.6	1989	1120	0	.0	.0	7.5	6.0	27.7	2.2
Ann	59.6	33.5	46.6	99	Jul 1988	16	71.3	Jul 1993	-25	Dec 1989	23	12.1	Jan 1977	6953	250	.0	4.4	259.9	23.8	171.3	9.8

\+ 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: 1967-2000

(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	3.92	3.56	2.59	1996	19	8.47	1996	1.13	1981
Feb	3.43	3.38	1.79	1971	13	6.25	1972	.76	1978
Mar	4.42	4.24	1.87	1978	25	7.59	1991	1.91	1972
Apr	3.56	3.36	2.91	1977	4	7.73	1973	.30	1976
May	4.73	4.47	2.56	1994	8	8.72	1996	1.11	1977
Jun	4.16	3.75	2.89	1995	23	7.43	1972	1.02	1988
Jul	4.82	4.81	2.70	1995	28	9.74	1994	1.17	1975
Aug	4.22	3.75	3.60	1989	21	11.48	1984	1.47	1981
Sep	3.59	2.98	3.48	1967	28	7.45	1993	.16	1978
Oct	3.36	2.77	4.86	1972	5	9.01	1976	.43	2000
Nov	3.79	3.70	6.20	1985	4	11.76	1985	1.14	1981
Dec	3.87	3.82	2.49	1973	26	7.77	1973	1.09	1980
Ann	47.87	46.68	6.20	Nov 1985	4	11.76	Nov 1985	.16	Sep 1978

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	15.3	8.6	2.3	.7
Feb	13.0	7.4	2.4	.6
Mar	14.0	9.2	3.4	.9
Apr	12.7	7.6	2.3	.7
May	13.5	9.2	3.1	1.2
Jun	12.9	8.9	2.8	.8
Jul	12.9	8.9	3.4	1.3
Aug	11.0	7.7	3.1	1.0
Sep	10.3	6.5	2.3	1.1
Oct	9.3	5.8	2.2	.9
Nov	11.7	7.1	2.4	.9
Dec	13.8	7.6	2.5	.8
Ann	150.4	94.5	32.2	10.9

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	1.39	1.76	2.29	2.74	3.17	3.61	4.09	4.65	5.37	6.48	7.49
Feb	1.39	1.70	2.15	2.52	2.86	3.22	3.60	4.03	4.59	5.44	6.21
Mar	2.00	2.39	2.93	3.37	3.78	4.20	4.64	5.15	5.79	6.75	7.62
Apr	1.06	1.40	1.91	2.34	2.77	3.21	3.70	4.27	5.02	6.18	7.25
May	1.90	2.33	2.95	3.46	3.94	4.43	4.96	5.57	6.34	7.52	8.60
Jun	1.41	1.80	2.38	2.87	3.34	3.82	4.35	4.96	5.75	6.98	8.10
Jul	1.99	2.43	3.05	3.56	4.04	4.53	5.06	5.66	6.43	7.60	8.67
Aug	1.50	1.90	2.48	2.96	3.42	3.90	4.41	5.01	5.78	6.97	8.06
Sep	.54	.84	1.36	1.86	2.37	2.94	3.59	4.39	5.46	7.20	8.87
Oct	.71	1.02	1.52	1.96	2.42	2.90	3.44	4.09	4.94	6.31	7.61
Nov	1.39	1.75	2.26	2.68	3.09	3.51	3.96	4.49	5.16	6.19	7.14
Dec	1.47	1.83	2.34	2.77	3.18	3.60	4.05	4.58	5.24	6.27	7.20
Ann	36.71	38.94	41.76	43.88	45.74	47.53	49.37	51.39	53.81	57.31	60.30

\+ 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: 1967-2000
(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	17.8	15.1	4	3	14.7	1987	22	36.3	1996	22	1996	13	10	1977	11.3	5.3	2.1	.9	.2	17.4	12.0	7.6	1.9
Feb	14.7	13.1	3	2	16.8	1983	11	39.1	1972	21	1983	11	9	1987	9.2	4.3	1.4	.7	.1	15.9	11.8	7.6	1.6
Mar	12.2	10.2	1	1	16.0	1993	14	34.7	1971	19	1993	15	5	1993	6.5	3.5	1.2	.7	.1	7.4	3.5	2.1	.5
Apr	3.1	1.4	#	#	7.7	1987	3	14.0	1987	10	1987	5	1	1987	2.3	1.0	.3	.1	.0	1.1	.5	.3	.1
May	.1	.0	#	0	1.1	1989	7	1.1	1989	#+	1997	16	#+	1997	.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	#	1983	23	#	1983	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.7	.0	#	0	7.8	1979	10	7.8	1979	3	1979	10	#+	1997	.4	.2	.1	@	.0	.2	.1	.0	.0
Nov	5.0	2.5	#	#	10.2	1971	24	22.0	1971	10	1971	24	2	1971	3.5	1.9	.5	.1	@	3.3	1.2	.4	@
Dec	10.5	5.4	1	1	14.3	1974	1	29.0	1974	18	1997	31	8	1989	7.8	3.3	.9	.3	.1	10.3	5.6	3.0	.9
Ann	64.1	47.7	N/A	N/A	16.8	Feb 1983	11	39.1	Feb 1972	22	Jan 1996	13	10	Jan 1977	41.1	19.5	6.5	2.8	.5	55.6	34.7	21.0	5.0

+ 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	6/28	6/21	6/16	6/12	6/08	6/04	5/31	5/26	5/19
32	6/10	6/04	5/31	5/27	5/23	5/20	5/16	5/12	5/05
28	5/31	5/25	5/20	5/16	5/12	5/08	5/04	4/30	4/23
24	5/21	5/13	5/07	5/02	4/28	4/23	4/19	4/13	4/05
20	5/07	4/30	4/25	4/21	4/17	4/13	4/08	4/03	3/27
16	4/18	4/12	4/07	4/04	4/01	3/28	3/25	3/20	3/15

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	9/06	9/10	9/13	9/16	9/19	9/23	9/29
32	9/11	9/16	9/19	9/22	9/25	9/27	9/30	10/04	10/08
28	9/21	9/25	9/28	9/30	10/03	10/05	10/08	10/11	10/15
24	10/01	10/06	10/09	10/12	10/15	10/18	10/21	10/24	10/29
20	10/07	10/14	10/18	10/22	10/26	10/29	11/02	11/07	11/13
16	10/19	10/25	10/30	11/03	11/07	11/11	11/15	11/20	11/27

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	126	116	108	102	96	90	84	76	66
32	145	138	132	128	124	120	115	110	103
28	166	158	152	148	143	138	133	127	119
24	200	190	182	175	169	163	157	149	138
20	224	213	205	198	191	185	178	170	159
16	247	238	231	225	220	214	209	202	192

***** 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	1248	1039	900	595	317	105	33	51	185	535	825	1120	6953
60	1093	899	745	446	195	36	5	8	80	389	675	965	5536
57	1000	815	652	358	137	15	0	1	42	308	586	872	4786
55	938	759	590	302	104	8	0	0	25	259	527	810	4322
50	783	619	441	175	44	1	0	0	5	156	388	657	3269
32	304	191	67	2	0	0	0	0	0	6	53	207	830

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	78	77	190	396	722	931	1093	1047	815	496	219	110	6174
55	0	0	0	7	113	249	380	334	151	36	2	0	1272
57	0	0	0	3	84	197	318	273	107	23	1	0	1006
60	0	0	0	1	49	128	230	187	55	11	0	0	661
65	0	0	0	0	16	46	103	74	10	1	0	0	250
70	0	0	0	0	4	9	28	16	0	0	0	0	57

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	15	26	97	249	518	733	879	847	618	299	103	32	15	41	138	387	905	1638	2517	3364	3982	4281	4384	4416
45	1	5	44	143	369	583	724	692	470	176	45	10	1	6	50	193	562	1145	1869	2561	3031	3207	3252	3262
50	0	0	17	69	232	433	569	537	326	91	15	0	0	0	17	86	318	751	1320	1857	2183	2274	2289	2289
55	0	0	3	29	128	288	414	382	198	37	2	0	0	0	3	32	160	448	862	1244	1442	1479	1481	1481
60	0	0	0	3	50	160	263	229	95	7	0	0	0	0	0	3	53	213	476	705	800	807	807	807
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	12	36	100	207	351	478	575	543	397	229	93	25	12	48	148	355	706	1184	1759	2302	2699	2928	3021	3046

(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