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: WHITE SULPHUR SPRINGS, WV **COOP ID: 469522**

Climate Division: WV 5 **NWS Call Sign:** **Elevation: 1,920 Feet** **Lat: 37˚47N** **Lon: 80˚19W**

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	40.2	18.7	29.5	77	1950	26	40.9	1974	-19	1985	21	16.8	1977	1102	0	.0	.0	7.7	6.5	26.7	1.8
Feb	45.2	20.1	32.7	79	1977	26	39.3	1976	-16	1996	6	22.1	1978	906	0	.0	.0	11.1	4.3	23.4	.7
Mar	54.6	27.0	40.8	88	1929	25	47.1	1973	-8	1960	8	34.2	1996	751	0	.0	.0	21.0	1.0	19.6	.1
Apr	64.6	34.7	49.7	92+	1976	18	54.2	1981	14+	1950	7	45.3	1997	460	0	.0	.3	26.9	@	11.1	.0
May	73.3	45.0	59.2	96	1941	22	64.7	1991	21	1927	1	52.7	1997	212	32	.0	.2	30.8	.0	2.4	.0
Jun	79.6	53.6	66.6	99+	1943	12	70.0	1973	30	1966	2	62.7	1992	41	89	.0	1.3	30.0	.0	.1	.0
Jul	83.4	58.7	71.1	102	1954	14	73.7	1993	36	1961	10	67.2	1996	3	190	.0	4.2	31.0	.0	.0	.0
Aug	82.4	57.2	69.8	100+	1926	11	74.1	1975	36+	1986	29	66.5	1992	12	162	@	3.7	31.0	.0	.0	.0
Sep	76.4	50.4	63.4	98+	1953	1	67.7	1973	26+	1942	28	60.5	1994	96	48	.0	1.4	30.0	.0	.5	.0
Oct	67.0	37.5	52.3	91	1927	1	61.8	1984	9	1962	27	45.3	1988	405	9	.0	.0	29.9	.0	9.5	.0
Nov	54.7	29.2	42.0	82+	1927	2	50.9	1985	-1	1929	30	34.7	1976	693	0	.0	.0	20.3	.3	17.8	.0
Dec	44.0	22.1	33.1	77	1951	7	41.7	1984	-20	1989	24	19.8	1989	991	0	.0	.0	10.9	4.4	24.1	.8
Ann	63.8	37.9	50.9	102	Jul 1954	14	74.1	Aug 1975	-20	Dec 1989	24	16.8	Jan 1977	5672	530	@	11.1	280.6	16.5	135.2	3.4

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1926-2001

(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	3.37	3.22	2.15	1935	22	6.82	1996	.61	1981
Feb	2.93	2.57	2.10	1984	24	6.18	1972	.72	1978
Mar	3.70	3.41	3.29	1963	12	7.31	1993	1.10	1988
Apr	3.22	3.12	3.40	1977	5	7.10	1987	.84	1976
May	4.31	3.80	2.31	1971	30	7.71	1998	1.35	1977
Jun	3.51	3.04	3.58	1982	13	7.94	1972	.63	1999
Jul	4.23	4.12	3.50	1954	19	7.89	1980	1.75	1976
Aug	3.32	2.95	3.02	1969	20	11.44	1984	.56	1976
Sep	3.18	3.16	3.29	1967	29	7.22	1989	.21	1985
Oct	2.90	2.37	3.67	1954	16	7.20	1976	.01	2000
Nov	2.85	2.79	3.55	1985	5	8.47	1985	1.13	1981
Dec	2.97	2.62	2.20	1948	15	6.73	1973	.68	1985
Ann	40.49	40.26	3.67	Oct 1954	16	11.44	Aug 1984	.01	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.4	7.2	2.2	.6
Feb	11.0	6.8	1.9	.5
Mar	12.2	7.6	2.7	.6
Apr	11.5	6.9	2.2	.6
May	13.3	8.6	3.2	.8
Jun	11.4	7.2	2.2	.7
Jul	11.8	8.1	3.0	1.1
Aug	10.3	6.5	2.3	.9
Sep	9.8	5.6	2.1	.8
Oct	8.6	5.3	2.1	.7
Nov	10.5	5.9	2.1	.3
Dec	11.0	6.9	1.9	.5
Ann	133.8	82.6	27.9	8.1

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	1.03	1.35	1.83	2.24	2.63	3.05	3.50	4.03	4.72	5.79	6.79
Feb	1.02	1.30	1.70	2.04	2.36	2.70	3.06	3.48	4.02	4.86	5.62
Mar	1.44	1.78	2.27	2.67	3.06	3.45	3.87	4.36	4.99	5.95	6.82
Apr	1.12	1.42	1.86	2.23	2.59	2.96	3.36	3.82	4.42	5.35	6.20
May	2.11	2.48	2.98	3.38	3.76	4.13	4.52	4.97	5.54	6.39	7.15
Jun	.97	1.30	1.81	2.25	2.68	3.13	3.63	4.22	4.99	6.19	7.31
Jul	1.97	2.34	2.85	3.26	3.64	4.03	4.44	4.91	5.50	6.39	7.19
Aug	.78	1.08	1.57	2.00	2.44	2.90	3.41	4.02	4.83	6.10	7.31
Sep	.48	.75	1.21	1.65	2.10	2.60	3.18	3.88	4.83	6.37	7.85
Oct	.32	.54	.95	1.35	1.78	2.27	2.84	3.54	4.50	6.09	7.64
Nov	1.09	1.36	1.74	2.05	2.35	2.66	2.99	3.37	3.86	4.60	5.29
Dec	1.03	1.31	1.72	2.06	2.39	2.73	3.10	3.53	4.08	4.94	5.72
Ann	31.00	32.89	35.28	37.08	38.66	40.17	41.73	43.44	45.50	48.46	50.99

\+ 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: 1926-2001
(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	6.8	4.3	1	1
Feb	5.5	3.3	1	#
Mar	3.7	1.0	#	#
Apr	.6	.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	.1	.0	0	0
Nov	.8	.0	#	0
Dec	3.1	1.0	#	#
Ann	20.6	9.6	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	14.0	1996	7	31.0	1996	24	1996	12	7	1996
Feb	11.0	1983	11	21.5	1987	16	1983	12	6	1982
Mar	9.5	1980	2	18.5	1999	17	1993	15	3	1993
Apr	5.5	1971	7	7.0	1987	6	1971	7	1	1987
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	1.0	1979	10	1.0	1979	0	0	0	0	0
Nov	5.0	1971	25	5.0+	1976	5	1971	25	#+	2000
Dec	10.0	1997	30	12.7	1989	12	1997	31	4	1989
Ann	14.0	Jan 1996	7	31.0	Jan 1996	24	Jan 1996	12	7	Jan 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.8	2.4	.9	.3	.1
Feb	2.3	2.1	.7	.4	@
Mar	1.4	1.1	.4	.2	.0
Apr	.2	.2	.1	@	.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	.1	@	.0	.0	.0
Nov	.3	.2	.1	@	.0
Dec	1.3	1.1	.4	.2	@
Ann	8.4	7.1	2.6	1.1	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.5	3.5	1.9	1.3
Feb	6.3	3.2	1.4	.1
Mar	1.9	1.1	.8	.2
Apr	.3	.2	.1	.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	.2	.2	@	.0
Dec	3.6	2.1	1.3	.1
Ann	18.8	10.3	5.5	1.7

+ 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

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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	6/05	5/30	5/26	5/22	5/19	5/16	5/12	5/08	5/03
32	5/28	5/23	5/19	5/15	5/12	5/09	5/06	5/02	4/26
28	5/09	5/05	5/01	4/28	4/26	4/23	4/20	4/17	4/12
24	4/23	4/18	4/15	4/12	4/09	4/06	4/04	3/31	3/27
20	4/12	4/07	4/03	3/31	3/28	3/25	3/22	3/18	3/13
16	3/29	3/23	3/18	3/14	3/10	3/06	3/02	2/25	2/18

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	9/11	9/16	9/20	9/23	9/26	9/29	10/02	10/06	10/11
32	9/22	9/27	9/30	10/03	10/05	10/08	10/11	10/14	10/18
28	10/02	10/06	10/10	10/12	10/15	10/17	10/20	10/23	10/27
24	10/14	10/19	10/23	10/27	10/30	11/02	11/05	11/09	11/15
20	10/21	10/28	11/02	11/06	11/10	11/14	11/18	11/23	11/30
16	11/06	11/12	11/16	11/20	11/24	11/27	12/01	12/05	12/11

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	151	143	138	133	129	125	120	115	108
32	164	158	153	149	146	142	138	133	127
28	189	183	178	175	171	168	164	159	153
24	221	215	210	206	203	199	196	191	185
20	250	242	236	231	226	222	217	211	203
16	282	274	268	263	258	253	248	242	234

***** 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	1102	906	751	460	212	41	3	12	96	405	693	991	5672
60	947	766	596	313	112	8	0	0	33	272	543	836	4426
57	854	682	506	231	69	3	0	0	14	205	456	743	3763
55	792	626	448	181	46	1	0	0	8	166	399	681	3348
50	646	488	309	81	13	0	0	0	1	88	268	537	2431
32	207	110	29	0	0	0	0	0	0	1	19	138	504

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	128	128	301	530	843	1038	1210	1173	942	628	316	170	7407
55	0	0	7	21	176	349	497	460	260	79	7	0	1856
57	0	0	3	11	136	291	435	398	206	57	3	0	1540
60	0	0	0	3	87	206	342	306	135	31	1	0	1111
65	0	0	0	0	32	89	190	162	48	9	0	0	530
70	0	0	0	0	8	21	67	59	9	1	0	0	165

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	36	64	178	364	636	838	999	964	747	428	174	61	36	100	278	642	1278	2116	3115	4079	4826	5254	5428	5489
45	15	24	95	238	483	688	844	809	597	286	96	27	15	39	134	372	855	1543	2387	3196	3793	4079	4175	4202
50	1	7	46	134	338	538	689	654	448	168	42	8	1	8	54	188	526	1064	1753	2407	2855	3023	3065	3073
55	0	0	15	69	207	388	534	499	306	84	12	0	0	0	15	84	291	679	1213	1712	2018	2102	2114	2114
60	0	0	3	26	105	246	379	345	183	33	2	0	0	0	3	29	134	380	759	1104	1287	1320	1322	1322
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	24	56	145	261	416	549	669	645	478	296	128	48	24	80	225	486	902	1451	2120	2765	3243	3539	3667	3715

(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.
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