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: CHARLESTON YEAGER AP, WV **COOP ID: 461570**

Climate Division: WV 3 **NWS Call Sign: CRW** **Elevation: 910 Feet** **Lat: 38˚23N** **Lon: 81˚35W**

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	42.6	24.2	33.4	79	1950	25	44.2	1974	-16	1994	19	18.8	1977	977	0	.0	.0	9.4	7.3	23.1	1.0
Feb	47.0	26.7	36.9	79	2000	26	46.2	1976	-12	1996	5	24.1	1978	794	0	.0	.0	12.2	4.8	19.6	.2
Mar	56.6	34.0	45.3	89	1990	14	52.0	1973	0	1980	3	39.5	1971	604	7	.0	.0	21.4	.8	14.2	@
Apr	66.7	41.8	54.3	94	1990	27	59.5	1985	19+	1972	9	49.4	1975	330	25	.0	.4	27.5	@	4.8	.0
May	74.6	50.3	62.4	93+	1950	5	70.1	1991	26	1966	10	57.8	1989	141	76	.0	.7	31.0	.0	.3	.0
Jun	81.5	58.3	69.9	98+	1953	21	73.4	1984	33	1972	11	63.6	1972	19	182	.0	4.0	30.0	.0	.0	.0
Jul	84.9	62.9	73.9	104	1988	16	79.1	1999	46+	1961	10	71.1	1971	8	300	.2	8.4	31.0	.0	.0	.0
Aug	83.5	61.7	72.6	101	1988	17	77.0	1995	41	1965	29	69.0	1976	3	254	@	5.1	31.0	.0	.0	.0
Sep	77.3	55.0	66.2	102	1953	2	70.2	1998	34+	1951	29	62.4	1974	62	114	.0	1.4	30.0	.0	.0	.0
Oct	67.1	43.1	55.1	92	1951	4	63.4	1971	17	1962	27	47.9	1988	309	17	.0	.0	29.9	.0	3.2	.0
Nov	56.4	35.3	45.9	85+	1948	5	54.4	1985	6	1950	25	37.8	1976	560	3	.0	.0	20.4	.2	12.6	.0
Dec	46.8	28.2	37.5	80+	1971	10	48.0	1971	-12	1989	23	25.2	1989	837	0	.0	.0	13.0	4.3	20.2	.3
Ann	65.4	43.5	54.5	104	Jul 1988	16	79.1	Jul 1999	-16	Jan 1994	19	18.8	Jan 1977	4644	978	.2	20.0	286.8	17.4	98.0	1.5

\+ 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	3.25	2.88	1.88	1950	31	6.48	1979	1.09	1981
Feb	3.19	2.98	2.67	2000	18	6.05	1989	1.08	1977
Mar	3.90	3.41	2.76+	1967	6	8.35	1997	1.30	1987
Apr	3.25	3.63	2.47	1977	4	5.44	1973	.50	1976
May	4.30	4.33	2.26	1994	7	7.40	1996	.84	1977
Jun	4.09	3.57	2.24	1962	11	10.56	1998	.94	1988
Jul	4.86	4.30	5.60	1961	19	9.83	1978	1.98	1993
Aug	4.11	3.92	4.13	1958	3	10.32	1980	2.02	1985
Sep	3.45	2.91	2.38	1950	21	7.61	1971	.71	1985
Oct	2.67	2.49	2.15	1954	15	6.49	1983	.84	1997
Nov	3.66	3.52	2.47	1991	22	8.45	1985	1.02	1976
Dec	3.32	2.80	2.44	1978	8	8.02	1978	1.57	1997
Ann	44.05	42.83	5.60	Jul 1961	19	10.56	Jun 1998	.50	Apr 1976

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	15.8	8.2	2.0	.4
Feb	14.0	8.0	1.8	.3
Mar	14.7	8.9	2.5	.7
Apr	13.6	8.1	2.0	.3
May	13.8	9.3	3.0	.8
Jun	12.4	8.0	2.7	1.0
Jul	12.4	8.3	3.3	1.2
Aug	11.1	7.3	3.1	1.0
Sep	10.0	6.5	2.4	.8
Oct	9.5	6.1	1.7	.4
Nov	12.4	7.4	2.5	.8
Dec	14.5	7.6	2.2	.4
Ann	154.2	93.7	29.2	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	1.04	1.35	1.81	2.20	2.57	2.96	3.39	3.89	4.54	5.54	6.47
Feb	1.47	1.75	2.14	2.45	2.74	3.04	3.35	3.71	4.16	4.84	5.45
Mar	1.43	1.80	2.33	2.77	3.18	3.61	4.08	4.62	5.31	6.37	7.34
Apr	1.17	1.48	1.92	2.29	2.64	3.00	3.39	3.85	4.44	5.34	6.17
May	1.61	2.01	2.59	3.07	3.53	3.99	4.50	5.08	5.83	6.98	8.03
Jun	1.44	1.83	2.39	2.86	3.31	3.77	4.28	4.86	5.61	6.77	7.83
Jul	1.98	2.42	3.05	3.57	4.06	4.56	5.09	5.71	6.49	7.69	8.78
Aug	1.63	2.01	2.55	2.99	3.41	3.84	4.30	4.84	5.51	6.55	7.50
Sep	.97	1.29	1.79	2.22	2.64	3.08	3.57	4.15	4.90	6.07	7.17
Oct	.78	1.04	1.42	1.75	2.07	2.40	2.77	3.21	3.77	4.65	5.47
Nov	1.31	1.66	2.16	2.57	2.97	3.38	3.83	4.34	5.00	6.02	6.96
Dec	1.35	1.65	2.09	2.44	2.77	3.11	3.48	3.90	4.43	5.25	6.00
Ann	34.37	36.31	38.76	40.60	42.21	43.76	45.34	47.08	49.16	52.16	54.72

\+ 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	13.0	11.3	1	1	15.5	1994	4	39.5	1978	23	1978	21	7	1978	8.5	3.6	1.1	.4	.2	10.7	6.0	3.0	.8
Feb	9.7	9.7	1	1	9.9	1983	11	20.1+	1985	13	1985	3	6	1985	7.0	2.9	.9	.4	.0	8.4	4.8	2.7	.3
Mar	6.6	5.4	#	1	17.1	1993	13	20.4+	1996	18	1993	14	2+	1993	4.4	2.0	.8	.2	@	3.2	1.3	.7	.1
Apr	1.3	.0	#	0	10.9	1987	4	20.7	1987	17	1987	5	1	1987	.9	.2	.2	.1	@	.3	.2	.2	.1
May	.0	.0	#	0	.6	1989	7	.6	1989	#	1989	7	#	1996	.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	.1	.0	0	0	1.5	1993	31	1.5	1993	#+	1993	31	0	0	.1	.0	.0	.0	.0	.0	.0	.0	.0
Nov	2.0	.5	#	0	6.0	1995	28	13.6	1995	6	1995	29	#	1995	2.1	.8	.2	@	.0	.7	.2	@	.0
Dec	5.3	3.8	#	0	6.2	1995	7	21.9	1995	6	1995	7	1+	1995	5.2	2.1	.3	@	.0	4.8	.8	.1	.0
Ann	38.0	30.7	N/A	N/A	17.1	Mar 1993	13	39.5	Jan 1978	23	Jan 1978	21	7	Jan 1978	28.2	11.6	3.5	1.1	.2	28.1	13.3	6.7	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	5/19	5/14	5/10	5/06	5/03	4/30	4/27	4/23	4/17
32	5/08	5/02	4/28	4/25	4/22	4/19	4/16	4/12	4/07
28	4/17	4/13	4/11	4/08	4/06	4/04	4/01	3/30	3/26
24	4/08	4/03	3/31	3/28	3/25	3/22	3/19	3/15	3/10
20	3/29	3/21	3/16	3/11	3/06	3/02	2/25	2/19	2/12
16	3/14	3/07	3/02	2/26	2/22	2/18	2/14	2/09	2/02

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	9/29	10/03	10/06	10/08	10/11	10/13	10/16	10/19	10/23
32	10/05	10/11	10/15	10/18	10/21	10/25	10/28	11/01	11/07
28	10/16	10/21	10/25	10/28	11/01	11/04	11/07	11/11	11/17
24	10/24	10/30	11/04	11/07	11/11	11/14	11/18	11/22	11/28
20	11/08	11/15	11/20	11/24	11/28	12/02	12/06	12/11	12/18
16	11/21	11/27	12/02	12/06	12/09	12/13	12/17	12/22	12/28

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	179	172	168	164	160	156	152	147	141
32	203	196	190	186	181	177	173	167	160
28	229	222	216	212	208	204	199	194	187
24	256	247	241	235	230	225	219	213	204
20	296	286	278	272	266	260	253	246	235
16	316	307	300	295	290	284	279	272	263

***** 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	977	794	604	330	141	19	8	3	62	309	560	837	4644
60	826	648	465	200	70	4	0	0	18	212	428	697	3568
57	742	568	380	137	39	1	0	0	8	155	346	614	2990
55	683	516	326	102	24	0	0	0	4	123	293	556	2627
50	540	388	211	40	6	0	0	0	1	60	180	419	1845
32	164	79	14	0	0	0	0	0	0	0	6	91	354

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	170	219	444	695	980	1177	1342	1298	1057	742	438	246	8808
55	5	9	43	124	283	488	629	585	371	121	38	10	2706
57	3	6	32	97	232	429	567	523	315	90	26	7	2327
60	1	2	19	64	164	341	474	430	236	54	13	3	1801
65	0	0	7	25	76	182	300	254	114	17	3	0	978
70	0	0	1	5	23	92	175	139	50	3	0	0	488

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	64	106	252	470	739	945	1101	1059	824	506	245	112	64	170	422	892	1631	2576	3677	4736	5560	6066	6311	6423
45	33	58	156	333	584	795	946	904	674	359	154	61	33	91	247	580	1164	1959	2905	3809	4483	4842	4996	5057
50	11	25	90	215	432	645	791	749	525	227	89	31	11	36	126	341	773	1418	2209	2958	3483	3710	3799	3830
55	2	11	42	128	288	495	636	594	379	127	41	8	2	13	55	183	471	966	1602	2196	2575	2702	2743	2751
60	0	1	23	67	172	347	481	439	240	57	12	0	0	1	24	91	263	610	1091	1530	1770	1827	1839	1839
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	39	69	167	299	470	637	757	727	532	307	148	66	39	108	275	574	1044	1681	2438	3165	3697	4004	4152	4218

(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