

Climatology of the United States

No. 20

1971-2000

Station: CHARLESTON INTL AP, SC

COOP ID: 381544

Climate Division: SC 7

NWS Call Sign: CHS

Elevation: 40 Feet

Lat: 32° 54N

Lon: 80° 02W

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	58.9	36.9	47.9	83	1950	16	61.4	1974	6	1985	21	38.3	1977	523	3	.0	.0	25.0	.2	9.8	.0
Feb	62.3	39.1	50.7	87	1989	16	57.8	1990	12	1973	12	42.5	1978	394	7	.0	.0	24.1	.1	6.5	.0
Mar	69.3	46.0	57.7	92	1935	21	64.3	1997	15	1980	3	51.9	1971	242	29	.0	@	30.2	@	1.8	.0
Apr	76.1	52.2	64.2	94	1989	27	68.0	1999	30+	1972	10	59.8	1983	95	84	.0	.9	30.0	.0	.1	.0
May	82.9	61.3	72.1	99	1938	21	75.6	2000	36	1963	2	69.2	1997	11	242	.0	3.8	31.0	.0	.0	.0
Jun	87.9	68.5	78.2	104	1944	24	82.8	1998	50+	1972	12	73.9	1972	1	408	.2	11.5	30.0	.0	.0	.0
Jul	90.9	72.5	81.7	104+	1986	20	85.2	1986	58	1952	5	78.0	1974	0	532	.7	19.8	31.0	.0	.0	.0
Aug	89.4	71.6	80.5	105	1999	1	83.2	1999	56	1979	18	77.0	1976	0	494	.2	15.6	31.0	.0	.0	.0
Sep	85.0	67.1	76.1	100+	1944	5	79.7	1980	42	1967	30	72.1	1984	2	348	.0	6.1	30.0	.0	.0	.0
Oct	77.0	55.3	66.2	94+	1986	5	71.2	1985	27+	1976	29	60.2	1987	69	121	.0	.4	31.0	.0	.1	.0
Nov	69.6	46.4	58.0	88	1961	1	66.2	1985	15	1950	25	50.5	1976	229	34	.0	.0	29.6	.0	1.7	.0
Dec	61.6	39.3	50.5	83	1972	11	58.3	1971	8	1962	13	41.9	1989	439	4	.0	.0	27.1	.1	7.5	.0
Ann	75.9	54.7	65.3	105	Aug 1999	1	85.2	Jul 1986	6	Jan 1985	21	38.3	Jan 1977	2005	2306	1.1	58.1	350.0	.4	27.5	.0

+ 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: 1930-2001

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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	4.08	4.02	3.90	1993	12	8.92	1993	.87	1985	10.4	7.1	2.9	.9	1.08	1.47	2.06	2.58	3.09	3.63	4.22	4.93	5.85	7.30	8.65	
Feb	3.08	2.78	4.77	1944	14	10.17	1998	.94	1991	8.6	5.6	2.1	.6	.79	1.08	1.53	1.92	2.31	2.72	3.18	3.72	4.43	5.55	6.60	
Mar	4.00	3.63	4.48	1959	5	11.11	1983	.70	1995	8.9	6.0	2.7	1.2	1.12	1.50	2.08	2.58	3.07	3.58	4.14	4.81	5.68	7.04	8.31	
Apr	2.77	2.71	4.10	1958	15	6.61	1997	.01	1972	7.2	4.9	1.8	.7	.26	.46	.83	1.22	1.63	2.11	2.67	3.37	4.34	5.94	7.52	
May	3.67	3.50	6.23	1967	22	8.87	1976	.75	1983	8.5	5.9	2.7	.9	.86	1.21	1.75	2.23	2.70	3.21	3.78	4.45	5.34	6.75	8.07	
Jun	5.92	4.45	9.40	1973	11	27.24	1973	2.12	1977	11.2	7.7	3.8	1.7	1.26	1.81	2.68	3.47	4.26	5.10	6.06	7.20	8.70	11.11	13.38	
Jul	6.13	5.88	5.39	1981	3	12.66	1981	1.76	1972	12.3	8.6	3.8	1.8	2.20	2.78	3.61	4.31	4.98	5.66	6.41	7.28	8.39	10.10	11.67	
Aug	6.91	6.49	7.66	1940	11	16.99	1974	.73	1980	13.0	9.0	4.8	2.1	1.42	2.05	3.07	3.99	4.93	5.92	7.05	8.41	10.20	13.07	15.78	
Sep	5.98	5.04	10.33	1933	6	15.36	1979	.18	1990	10.3	6.9	3.5	1.9	.77	1.25	2.09	2.93	3.80	4.78	5.91	7.30	9.19	12.28	15.27	
Oct	3.09	2.46	4.48	1990	11	12.11	1994	.00	2000	6.2	4.3	1.7	.9	.11	.36	.80	1.25	1.74	2.30	2.96	3.79	4.94	6.86	8.75	
Nov	2.66	2.11	5.24	1969	1	7.35	1972	.16	1998	7.2	4.4	1.6	.8	.58	.82	1.21	1.57	1.92	2.30	2.72	3.23	3.90	4.97	5.97	
Dec	3.24	2.85	3.40	1978	24	6.35	1994	.66	1984	8.7	6.0	2.2	.8	.84	1.15	1.62	2.04	2.44	2.87	3.35	3.92	4.66	5.82	6.91	
Ann	51.53	49.57	10.33	Sep 1933	6	27.24	Jun 1973	.00	Oct 2000	112.5	76.4	33.6	14.3	39.13	41.60	44.72	47.07	49.14	51.13	53.17	55.42	58.12	62.02	65.36	

+ 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

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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	.1	.0	0	0	.6	1977	31	1.0	1977	#+	1988	15	0	0	.2	.0	.0	.0	.0	.0	.0	.0	.0
Feb	.4	.0	#	0	5.4	1973	10	7.1	1973	7	1973	11	1	1973	.4	.1	@	@	.0	.3	.2	.1	.0
Mar	.1	.0	#	0	1.3	1980	2	1.3	1980	1	1980	3	#	1980	.0	.0	.0	.0	.0	@	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1988	.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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	#	.0	0	0	#	1995	5	#	1995	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.5	.0	#	0	6.0	1989	23	8.0	1989	8	1989	24	1	1989	.2	.1	.1	@	.0	.2	.1	@	.0
Ann	1.1	.0	N/A	N/A	6.0	Dec 1989	23	8.0	Dec 1989	8	Dec 1989	24	1+	Dec 1989	.8	.2	.1	@	.0	.5	.3	.1	.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	4/12	4/06	4/02	3/29	3/26	3/23	3/19	3/15	3/10
32	4/03	3/25	3/19	3/14	3/09	3/05	2/28	2/22	2/13
28	3/14	3/06	2/27	2/22	2/17	2/13	2/07	2/01	1/24
24	2/28	2/19	2/12	2/06	1/31	1/25	1/17	1/06	0/00
20	2/15	2/04	1/27	1/19	1/09	0/00	0/00	0/00	0/00
16	2/03	1/17	12/26	0/00	0/00	0/00	0/00	0/00	0/00
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	10/26	11/01	11/05	11/09	11/12	11/16	11/19	11/24	11/30
32	11/06	11/12	11/17	11/21	11/25	11/29	12/03	12/07	12/14
28	11/13	11/24	12/01	12/08	12/15	12/21	12/28	1/05	1/16
24	11/29	12/10	12/19	12/26	1/03	1/10	1/19	2/02	0/00
20	12/20	12/29	1/06	1/13	1/22	2/06	0/00	0/00	0/00
16	1/06	1/25	2/19	0/00	0/00	0/00	0/00	0/00	0/00
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	258	248	241	236	230	225	219	212	203
32	291	280	273	266	260	253	247	239	228
28	>365	319	308	300	293	286	280	272	261
24	>365	>365	>365	350	332	321	312	303	291
20	>365	>365	>365	>365	>365	>365	>365	338	326
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

* 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.

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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	523	394	242	95	11	1	0	0	2	69	229	439	2005
60	410	278	140	26	0	0	0	0	0	32	143	325	1354
57	337	210	90	10	0	0	0	0	0	15	97	253	1012
55	292	171	64	5	0	0	0	0	0	9	71	211	823
50	200	94	21	0	0	0	0	0	0	2	28	126	471
32	19	1	0	0	0	0	0	0	0	0	0	4	24

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	519	544	813	979	1258	1399	1555	1516	1334	1075	800	597	12389
55	46	66	166	298	545	709	842	803	644	368	175	73	4735
57	32	47	128	246	483	649	780	741	584	311	137	53	4191
60	17	26	81	176	391	559	687	648	495	231	90	30	3431
65	3	7	29	84	242	408	532	494	348	121	34	4	2306
70	0	0	6	26	120	262	377	339	206	45	7	1	1389

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	307	356	576	749	1019	1167	1318	1276	1104	836	568	368	307	663	1239	1988	3007	4174	5492	6768	7872	8708	9276	9644
45	190	234	427	599	864	1017	1163	1121	954	681	422	244	190	424	851	1450	2314	3331	4494	5615	6569	7250	7672	7916
50	101	141	291	450	709	867	1008	966	804	527	291	144	101	242	533	983	1692	2559	3567	4533	5337	5864	6155	6299
55	47	71	174	306	554	717	853	811	654	374	177	77	47	118	292	598	1152	1869	2722	3533	4187	4561	4738	4815
60	19	29	85	180	400	567	698	656	504	238	95	32	19	48	133	313	713	1280	1978	2634	3138	3376	3471	3503
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	176	212	350	475	696	817	923	906	777	544	353	217	176	388	738	1213	1909	2726	3649	4555	5332	5876	6229	6446

(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.
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 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/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