

# Climatology of the United States

## No. 20

### 1971-2000

**Station: COLUMBIA METRO AP, SC**

**COOP ID: 381939**

**Climate Division: SC 6**

**NWS Call Sign: CAE**

**Elevation: 213 Feet**

**Lat: 33°57N**

**Lon: 81°07W**

### 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	55.1	34.0	44.6	84+	1975	31	58.5	1974	-1	1985	21	35.9	1977	628	2	.0	.0	22.1	.4	15.5	@
Feb	59.5	36.3	47.9	84+	1997	27	56.0	1990	5	1973	12	38.6	1978	485	4	.0	.0	22.5	.2	12.0	.0
Mar	67.4	43.5	55.4	91	1974	10	61.5	1997	4	1980	3	49.4	1971	321	20	.0	.1	29.6	@	5.7	.0
Apr	75.7	50.7	63.2	94+	1986	28	67.9	1981	26	1983	20	58.8	1983	131	69	.0	1.6	30.0	.0	1.0	.0
May	83.1	60.0	71.6	101+	2000	25	75.6	1987	34	1963	2	67.7	1973	23	211	@	6.2	31.0	.0	.0	.0
Jun	89.1	67.9	78.5	107	1954	27	83.3	1986	44	1984	1	73.9	1972	0	390	.9	15.8	30.0	.0	.0	.0
Jul	92.1	71.8	82.0	107+	1952	29	87.2	1986	54	1951	7	78.9	1975	0	519	2.8	22.9	31.0	.0	.0	.0
Aug	90.0	70.6	80.3	107	1983	21	84.0	1987	53	1969	24	76.9	1981	0	467	.9	18.1	31.0	.0	.0	.0
Sep	84.8	64.6	74.7	101	1954	6	78.5	1973	40	1967	30	71.8	1994	8	296	.0	8.9	30.0	.0	.0	.0
Oct	75.8	51.5	63.7	101	1954	5	70.9	1984	23+	1952	30	57.0	1987	121	76	.0	.6	31.0	.0	.8	.0
Nov	66.7	42.6	54.7	90	1961	2	62.9	1985	12	1970	25	47.6	1976	325	15	.0	.0	29.2	.0	7.0	.0
Dec	57.8	36.1	47.0	83+	1978	8	55.9	1971	4	1958	12	38.4	2000	552	5	.0	.0	24.5	.1	13.6	.0
Ann	74.8	52.5	63.6	107+	Aug 1983	21	87.2	Jul 1986	-1	Jan 1985	21	35.9	Jan 1977	2594	2074	4.6	74.2	341.9	.7	55.6	@

+ 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](http://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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### 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	Median	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	4.66	4.23	2.79	1968	10	9.26	1978	.84	1981	11.0	7.8	3.3	1.3	1.56	2.00	2.65	3.20	3.72	4.27	4.86	5.55	6.45	7.83	9.10
Feb	3.84	4.07	3.69	1962	22	8.10	1979	.87	1976	9.1	6.1	2.7	1.2	.98	1.34	1.90	2.39	2.88	3.39	3.97	4.65	5.53	6.93	8.25
Mar	4.59	4.11	3.24	1960	30	10.89	1973	.56	1985	10.0	7.0	3.0	1.3	1.08	1.51	2.18	2.78	3.38	4.01	4.72	5.57	6.68	8.44	10.10
Apr	2.98	2.99	3.03	1956	11	6.85	1979	.29	1994	7.7	5.0	2.3	.8	.42	.66	1.09	1.50	1.94	2.41	2.97	3.64	4.56	6.05	7.49
May	3.17	2.95	4.68	1967	22	7.88	1975	.70	1983	8.6	5.8	2.3	.8	.73	1.02	1.49	1.90	2.32	2.76	3.26	3.85	4.62	5.86	7.02
Jun	4.99	4.57	5.40	1973	15	14.81	1973	.74	1993	10.3	6.9	3.1	1.4	.90	1.34	2.07	2.75	3.45	4.20	5.05	6.09	7.46	9.68	11.79
Jul	5.54	4.66	5.79	1959	9	17.46	1991	.57	1977	11.5	7.7	3.6	1.9	.84	1.31	2.11	2.87	3.67	4.54	5.54	6.77	8.42	11.09	13.66
Aug	5.41	4.55	5.03	1965	18	11.75	1988	.22	1997	10.3	7.1	3.3	1.9	1.03	1.52	2.31	3.04	3.79	4.58	5.49	6.58	8.03	10.36	12.58
Sep	3.94	4.00	5.17	1998	3	7.86	1979	.07	1985	8.1	5.5	2.3	1.4	.57	.90	1.47	2.01	2.59	3.21	3.93	4.82	6.01	7.95	9.82
Oct	2.89	2.15	4.09	1964	15	11.66	1990	.00	2000	6.4	4.0	2.0	.9	.07	.26	.64	1.05	1.51	2.05	2.69	3.52	4.67	6.61	8.54
Nov	2.88	2.49	2.60	1986	12	6.26	1986	.41	1973	7.5	4.7	2.1	1.0	.69	.96	1.38	1.76	2.13	2.52	2.96	3.49	4.17	5.26	6.28
Dec	3.38	2.57	3.18	1970	16	8.54	1981	.75	1988	9.6	5.9	2.1	.9	.74	1.05	1.54	1.99	2.44	2.92	3.46	4.10	4.95	6.31	7.59
Ann	48.27	47.74	5.79	Jul 1959	9	17.46	Jul 1991	.00	Oct 2000	110.1	73.5	32.1	14.8	32.85	35.79	39.58	42.47	45.06	47.57	50.17	53.05	56.57	61.69	66.14

+ 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															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	.0	#	0	4.3	1988	7	4.3+	2000	4+	2000	24	1	1988	.4	.1	.1	.0	.0	.6	.2	.0	.0
Feb	1.1	.0	#	0	12.3	1973	10	16.0	1973	14	1973	11	1	1973	.4	.2	.2	.1	@	.4	.2	.2	@
Mar	.3	.0	#	0	4.1	1980	2	4.1	1980	4	1980	3	#	1980	.2	.1	@	.0	.0	.1	@	.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	#	2000	.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	#	1976	14	#	1976	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.1	.0	#	0	2.3	1993	23	2.3	1993	1	1993	23	#	1993	.1	.0	.0	.0	.0	@	.0	.0	.0
Ann	2.1	.0	N/A	N/A	12.3	Feb 1973	10	16.0	Feb 1973	14	Feb 1973	11	1+	Jan 1988	1.1	.4	.3	.1	@	1.1	.4	.2	.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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<b>Freeze Data</b>									
<b>Spring Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of later date in spring (thru Jul 31) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	5/01	4/25	4/21	4/18	4/14	4/11	4/08	4/04	3/29
<b>32</b>	4/20	4/13	4/08	4/04	4/01	3/28	3/24	3/19	3/13
<b>28</b>	3/31	3/25	3/20	3/16	3/12	3/09	3/05	2/28	2/22
<b>24</b>	3/18	3/09	3/03	2/26	2/21	2/16	2/10	2/04	1/26
<b>20</b>	3/12	3/02	2/23	2/17	2/11	2/06	1/31	1/24	1/14
<b>16</b>	2/16	2/08	2/02	1/27	1/21	1/13	0/00	0/00	0/00
<b>Fall Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of earlier date in fall (beginning Aug 1) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	10/10	10/14	10/18	10/20	10/23	10/25	10/28	10/31	11/04
<b>32</b>	10/13	10/20	10/25	10/29	11/01	11/05	11/09	11/14	11/21
<b>28</b>	10/31	11/06	11/10	11/14	11/17	11/20	11/24	11/28	12/04
<b>24</b>	11/10	11/18	11/24	11/28	12/03	12/07	12/12	12/17	12/25
<b>20</b>	11/30	12/08	12/14	12/20	12/24	12/29	1/03	1/09	1/18
<b>16</b>	12/16	12/27	1/04	1/12	1/21	2/03	0/00	0/00	0/00
<b>Freeze Free Period</b>									
<b>Temp (F)</b>	<b>Probability of longer than indicated freeze free period (Days)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	212	204	199	195	190	186	182	177	169
<b>32</b>	236	229	223	218	214	210	205	200	192
<b>28</b>	272	264	259	254	249	244	239	234	226
<b>24</b>	308	298	292	286	281	276	271	265	257
<b>20</b>	>365	333	323	316	310	304	298	291	281
<b>16</b>	>365	>365	>365	>365	>365	>365	342	328	315

\* 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)

Base	Heating Degree Days (1)												
	Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
65	628	485	321	131	23	0	0	0	8	121	325	552	2594
60	495	349	196	42	3	0	0	0	0	64	203	417	1769
57	413	276	140	20	0	0	0	0	0	37	145	335	1366
55	362	231	108	10	0	0	0	0	0	24	112	285	1132
50	251	139	48	2	0	0	0	0	0	7	49	180	676
32	28	4	0	0	0	0	0	0	0	0	0	9	41

Base	Cooling Degree Days (1)												
	Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
32	407	453	726	926	1211	1380	1538	1490	1277	977	678	471	11534
55	25	42	121	256	499	690	825	777	587	280	103	39	4244
57	17	29	91	209	437	630	763	715	527	229	77	27	3751
60	9	15	56	147	348	540	670	622	437	161	46	15	3066
65	2	4	20	69	211	390	519	467	296	76	15	5	2074
70	0	0	4	20	99	246	361	313	167	25	3	1	1239

### 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	209	275	494	696	978	1150	1299	1251	1048	739	451	262	209	484	978	1674	2652	3802	5101	6352	7400	8139	8590	8852
45	121	171	346	547	823	1000	1144	1096	898	584	311	158	121	292	638	1185	2008	3008	4152	5248	6146	6730	7041	7199
50	63	97	224	401	668	850	989	941	748	430	196	84	63	160	384	785	1453	2303	3292	4233	4981	5411	5607	5691
55	27	47	127	262	513	700	834	786	598	287	108	43	27	74	201	463	976	1676	2510	3296	3894	4181	4289	4332
60	3	18	59	153	360	550	679	631	448	167	48	16	3	21	80	233	593	1143	1822	2453	2901	3068	3116	3132
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	136	186	317	453	645	782	886	862	718	485	291	170	136	322	639	1092	1737	2519	3405	4267	4985	5470	5761	5931

(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](http://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](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)