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: CLEMSON UNIVERSITY, SC **COOP ID: 381770**

Climate Division: SC 2 **NWS Call Sign:** **Elevation: 824 Feet** **Lat: 34˚40N** **Lon: 82˚49W**

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	52.1	29.8	41.0	80	1949	11	51.7	1974	-5	1940	26	30.5	1977	745	0	.0	.0	18.4	.7	18.8	.1
Feb	56.8	32.3	44.6	82	1930	25	50.3	1990	1	1958	17	37.3	1978	573	0	.0	.0	20.2	.4	15.1	.0
Mar	64.4	39.4	51.9	89	1995	24	56.6	1997	4	1980	3	46.4	1971	409	3	.0	.0	28.2	.1	7.4	.0
Apr	73.0	46.6	59.8	92+	1986	28	65.1	1981	24	1971	3	55.0	1983	180	23	.0	.1	29.6	.0	1.3	.0
May	80.0	55.7	67.9	100	1941	29	71.6	1991	32	1989	8	63.7	1997	45	134	.0	1.1	30.9	.0	@	.0
Jun	86.9	63.8	75.4	105	1952	26	79.3	1981	42	1984	1	71.4	1974	1	310	.1	9.0	30.0	.0	.0	.0
Jul	90.6	67.9	79.3	105	1952	29	83.4	1993	49	1933	5	74.8	1984	0	441	.9	16.7	31.0	.0	.0	.0
Aug	88.8	67.0	77.9	104+	1983	22	81.6	1980	53	1931	24	75.1	1992	0	399	.4	12.5	31.0	.0	.0	.0
Sep	83.2	60.8	72.0	102	1954	4	75.7	1980	34	1967	30	69.2	1982	10	220	.0	4.3	30.0	.0	.0	.0
Oct	73.7	48.2	61.0	98	1954	5	67.8	1984	23	1954	31	54.6	1987	175	50	.0	.1	31.0	.0	1.0	.0
Nov	64.2	39.7	52.0	86	1931	13	59.7	1985	10	1950	26	46.4	1976	396	4	.0	.0	28.3	.0	7.8	.0
Dec	54.9	32.5	43.7	81+	1955	25	50.7	1984	2	1962	13	36.5	2000	660	0	.0	.0	21.3	.4	16.8	.0
Ann	72.4	48.6	60.5	105+	Jul 1952	29	83.4	Jul 1993	-5	Jan 1940	26	30.5	Jan 1977	3194	1584	1.4	43.8	329.9	1.6	68.2	.1

\+ 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: 1930-2001

(3) Derived from 1971-2000 serially complete daily data

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: CLEMSON UNIVERSITY, SC **COOP ID: 381770**

Climate Division: SC 2 **NWS Call Sign:** **Elevation: 824 Feet** **Lat: 34˚40N** **Lon: 82˚49W**

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	5.59	5.49	3.90	1936	2	9.64	1974	.64	1981
Feb	4.84	5.42	3.89	1961	21	8.29	1982	.66	1978
Mar	5.81	5.46	5.20	1990	17	13.64	1980	1.02	1985
Apr	3.91	3.52	3.56	1969	18	10.48	1998	.78	1986
May	4.36	4.25	3.50	1934	15	10.12	1975	.15	2000
Jun	3.70	3.82	3.54	1972	20	7.39	1994	.30	1986
Jul	4.24	3.43	4.73	1985	1	11.08	1984	.91	1980
Aug	4.66	4.19	4.95	1940	12	11.39	1995	.36	1981
Sep	4.09	4.06	9.92	1936	30	7.92	1975	.17	1984
Oct	4.01	3.83	4.93	1965	1	8.18	1986	.02	2000
Nov	4.22	4.08	3.34	1948	28	9.26	1992	1.56+	1991
Dec	4.58	4.39	3.80	1932	17	10.41	1983	.64	1980
Ann	54.01	53.91	9.92	Sep 1936	30	13.64	Mar 1980	.02	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.4	8.6	3.6	1.9
Feb	10.2	7.1	3.7	1.4
Mar	11.5	8.1	4.1	1.7
Apr	9.6	6.0	2.9	1.3
May	10.6	7.3	3.0	1.5
Jun	10.5	6.4	2.6	1.0
Jul	11.0	7.1	2.7	1.2
Aug	10.7	6.7	3.0	1.3
Sep	10.3	6.2	2.6	1.1
Oct	7.6	4.9	2.5	1.4
Nov	10.5	7.0	2.9	1.3
Dec	11.7	7.7	3.2	1.3
Ann	126.6	83.1	36.8	16.4

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	2.03	2.56	3.31	3.95	4.55	5.17	5.84	6.62	7.62	9.16	10.57
Feb	1.62	2.08	2.75	3.32	3.87	4.43	5.05	5.77	6.70	8.14	9.47
Mar	1.82	2.37	3.19	3.89	4.57	5.28	6.05	6.96	8.13	9.95	11.64
Apr	1.03	1.40	1.96	2.46	2.95	3.47	4.04	4.72	5.61	7.00	8.31
May	1.08	1.49	2.13	2.69	3.25	3.83	4.49	5.27	6.29	7.90	9.41
Jun	.87	1.21	1.75	2.24	2.72	3.23	3.80	4.48	5.38	6.80	8.13
Jul	1.02	1.41	2.03	2.58	3.13	3.71	4.36	5.13	6.14	7.74	9.25
Aug	.96	1.38	2.06	2.69	3.32	3.99	4.75	5.67	6.88	8.81	10.64
Sep	.87	1.25	1.85	2.39	2.94	3.52	4.18	4.97	6.01	7.68	9.25
Oct	.30	.56	1.08	1.64	2.25	2.96	3.80	4.87	6.36	8.85	11.32
Nov	1.63	2.02	2.58	3.04	3.48	3.93	4.42	4.98	5.70	6.79	7.80
Dec	1.37	1.81	2.46	3.02	3.57	4.13	4.76	5.49	6.44	7.93	9.30
Ann	39.60	42.42	46.02	48.74	51.14	53.46	55.85	58.49	61.67	66.27	70.24

\+ 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: 1930-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: CLEMSON UNIVERSITY, SC **COOP ID: 381770**

Climate Division: SC 2 **NWS Call Sign:** **Elevation: 824 Feet** **Lat: 34°40N** **Lon: 82°49W**

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	1.5	.0	#	0	8.0	1988	8	9.0	1988	8	1988	8	1	1988	.8	.5	.2	@	.0	.8	.3	.2	.0
Feb	1.4	.0	#	0	4.1	1979	19	10.8	1979	8	1979	19	1	1979	.7	.5	.3	.0	.0	.5	.3	.1	.0
Mar	1.0	.0	#	0	9.3	1971	25	10.0	1971	2	1978	3	#	1978	.4	.2	.1	.1	.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	0	0	0	.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	.3	1971	24	.3	1971	#+	1976	14	#+	1976	@	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.5	.0	#	0	8.6	1971	3	8.6	1971	9	1971	3	#+	1997	.2	.1	@	@	.0	.1	@	@	.0
Ann	4.4	.0	N/A	N/A	9.3	Mar 1971	25	10.8	Feb 1979	9	Dec 1971	3	1+	Jan 1988	2.1	1.3	.6	.1	.0	1.4	.6	.3	.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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: CLEMSON UNIVERSITY, SC **COOP ID: 381770**

Climate Division: SC 2 **NWS Call Sign:** **Elevation: 824 Feet** **Lat: 34˚40N** **Lon: 82˚49W**

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	5/04	4/28	4/24	4/21	4/18	4/15	4/11	4/07	4/02
32	4/21	4/15	4/11	4/07	4/03	3/31	3/27	3/23	3/17
28	4/09	4/02	3/29	3/25	3/21	3/17	3/13	3/08	3/01
24	3/19	3/13	3/08	3/04	3/01	2/25	2/21	2/17	2/11
20	3/09	3/01	2/24	2/19	2/15	2/10	2/06	1/31	1/24
16	2/28	2/18	2/12	2/06	1/31	1/24	1/16	1/01	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	10/06	10/11	10/15	10/18	10/21	10/24	10/27	10/30	11/04
32	10/13	10/20	10/25	10/29	11/02	11/05	11/09	11/14	11/21
28	10/29	11/04	11/08	11/12	11/15	11/18	11/21	11/25	12/01
24	11/09	11/17	11/23	11/27	12/02	12/06	12/11	12/17	12/25
20	11/29	12/07	12/13	12/19	12/23	12/28	1/02	1/08	1/17
16	12/07	12/17	12/25	1/01	1/07	1/15	1/24	2/09	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	205	198	193	189	185	182	178	173	166
32	239	230	223	217	211	206	200	193	184
28	265	256	249	243	238	233	228	221	212
24	295	288	283	279	275	271	267	262	256
20	342	330	322	316	310	304	298	291	281
16	>365	>365	>365	>365	336	326	318	310	300

***** 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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: CLEMSON UNIVERSITY, SC **COOP ID: 381770**

Climate Division: SC 2 **NWS Call Sign:** **Elevation: 824 Feet** **Lat: 34˚40N** **Lon: 82˚49W**

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	745	573	409	180	45	1	0	0	10	175	396	660	3194
60	598	433	268	84	11	0	0	0	1	89	261	511	2256
57	511	354	194	45	3	0	0	0	0	53	191	423	1774
55	454	302	152	28	1	0	0	0	0	36	151	367	1491
50	324	184	71	5	0	0	0	0	0	10	73	242	909
32	45	5	0	0	0	0	0	0	0	0	0	18	68

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	323	356	617	834	1112	1299	1464	1422	1201	898	599	381	10506
55	19	8	56	171	400	609	751	709	511	221	60	17	3532
57	13	5	36	129	340	549	689	647	451	177	40	11	3087
60	8	0	17	78	254	459	596	554	362	119	20	6	2473
65	0	0	3	23	134	310	441	399	220	50	4	0	1584
70	0	0	0	4	52	172	288	246	102	15	0	0	879

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	133	192	385	594	863	1056	1213	1174	959	652	366	180	133	325	710	1304	2167	3223	4436	5610	6569	7221	7587	7767
45	66	104	252	446	708	906	1058	1019	809	498	239	94	66	170	422	868	1576	2482	3540	4559	5368	5866	6105	6199
50	28	52	142	306	555	756	903	864	659	349	138	41	28	80	222	528	1083	1839	2742	3606	4265	4614	4752	4793
55	4	15	65	185	400	606	748	709	509	217	63	17	4	19	84	269	669	1275	2023	2732	3241	3458	3521	3538
60	0	0	22	92	258	456	593	554	362	111	23	0	0	0	22	114	372	828	1421	1975	2337	2448	2471	2471
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	83	133	240	375	560	721	832	811	647	412	234	114	83	216	456	831	1391	2112	2944	3755	4402	4814	5048	5162

(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