

Climatology of the United States

No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: COWEETA EXP STATION, NC

1971-2000

COOP ID: 312102

Climate Division: NC 3

NWS Call Sign:

Elevation: 2,249 Feet Lat: 35°04N

Lon: 83°26W

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	48.9	24.6	36.8	78	1999	28	48.6	1974	-18	1985	21	25.2	1977	877	0	.0	.0	15.6	1.9	23.5	.6
Feb	53.0	26.6	39.8	79	1996	28	46.4	1990	-4	1958	17	32.3	1978	705	0	.0	.0	18.0	.9	20.7	@
Mar	60.3	33.7	47.0	86	1967	15	52.5	1997	-1+	1993	15	41.8	1996	558	0	.0	.0	26.3	.2	14.5	.1
Apr	68.3	40.5	54.4	89	1955	18	59.7	1999	16	1987	1	49.9	1983	320	2	.0	.0	29.1	.0	6.4	.0
May	74.8	48.7	61.8	92	1996	20	66.6	1998	23	1963	2	58.2	1981	146	45	.0	.1	30.9	.0	.9	.0
Jun	80.7	55.6	68.2	96	1952	27	71.1	1998	32	1966	2	64.6	1974	19	114	.0	.9	30.0	.0	.0	.0
Jul	83.9	59.6	71.8	98	1952	29	74.9	1993	42	1953	14	68.8	1979	2	210	.0	3.8	31.0	.0	.0	.0
Aug	82.5	58.8	70.7	97+	1999	1	73.7	1999	40	1968	29	68.0	1992	3	179	.0	2.0	31.0	.0	.0	.0
Sep	77.5	53.4	65.5	94	1954	4	68.6	1998	28	1967	30	62.0	1976	56	69	.0	.3	30.0	.0	.2	.0
Oct	69.4	41.3	55.4	88	1951	6	60.9	1984	14	1952	21	49.0	1987	309	9	.0	.0	30.9	.0	6.7	.0
Nov	60.3	33.3	46.8	79+	2000	2	55.6	1985	3	1950	25	40.4	1976	546	0	.0	.0	25.9	@	16.6	.0
Dec	51.9	26.9	39.4	76+	1956	8	46.3	1971	-11	1962	13	32.3	1989	795	0	.0	.0	19.3	1.0	22.9	.2
Ann	67.6	41.9	54.8	98	Jul 1952	29	74.9	Jul 1993	-18	Jan 1985	21	25.2	Jan 1977	4336	628	.0	7.1	318.0	4.0	112.4	.9

+ 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: 1948-2001

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

024-A

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Lon: 83°26W

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	7.47	7.82	5.15	1998	8	14.18	1996	1.96	1981	12.3	9.3	4.9	2.7	3.08	3.76	4.73	5.52	6.26	7.01	7.83	8.76	9.95	11.76	13.41
Feb	6.95	7.19	6.53	1983	2	13.52	1990	.87	1978	10.6	7.8	4.7	2.4	2.07	2.73	3.72	4.57	5.40	6.27	7.22	8.34	9.79	12.06	14.16
Mar	8.03	7.17	5.58	1990	17	17.04	1980	1.62	1985	12.7	9.3	5.0	2.7	2.84	3.60	4.70	5.62	6.50	7.40	8.39	9.53	11.00	13.27	15.35
Apr	5.67	5.18	4.76	1974	4	10.78	1974	1.25	1975	10.8	8.0	3.7	1.7	1.69	2.23	3.03	3.73	4.41	5.11	5.89	6.80	7.99	9.84	11.55
May	6.20	5.91	6.69	1976	29	19.02	1976	1.96	1988	12.7	9.0	4.0	1.5	1.94	2.53	3.41	4.16	4.88	5.63	6.45	7.42	8.66	10.60	12.40
Jun	5.44	4.92	6.50	1949	16	13.09	1989	.73	1986	12.6	8.7	3.5	1.5	1.57	2.09	2.86	3.54	4.20	4.88	5.64	6.54	7.69	9.51	11.20
Jul	4.45	4.12	3.94	1949	11	10.72	1989	.79	1998	12.3	8.2	2.8	1.1	.93	1.34	1.99	2.59	3.18	3.82	4.54	5.40	6.54	8.36	10.09
Aug	4.88	3.95	4.62	1994	17	12.48	1992	.77	1997	12.3	8.1	3.3	1.2	1.31	1.77	2.48	3.10	3.71	4.34	5.05	5.89	6.99	8.70	10.30
Sep	5.30	4.75	8.05	1964	29	13.21	1975	.22	1984	10.3	7.4	2.9	1.5	.89	1.35	2.13	2.85	3.60	4.41	5.34	6.46	7.97	10.41	12.73
Oct	4.58	3.80	5.26	1965	1	10.70	1995	.00	2000	7.5	5.5	2.8	1.5	.38	.88	1.62	2.29	2.98	3.74	4.60	5.65	7.06	9.35	11.55
Nov	6.43	6.21	4.16	2000	10	14.06	1992	2.51	1990	10.3	7.9	4.2	2.4	2.95	3.51	4.30	4.93	5.52	6.11	6.75	7.48	8.39	9.77	11.02
Dec	6.49	6.62	4.78	1954	29	12.88	1973	1.40	1985	11.8	8.5	4.2	2.2	2.02	2.63	3.55	4.33	5.10	5.88	6.75	7.77	9.08	11.13	13.02
Ann	71.89	75.02	8.05	Sep 1964	29	19.02	May 1976	.00	Oct 2000	136.2	97.7	46.0	22.4	50.16	54.34	59.70	63.78	67.42	70.94	74.58	78.61	83.51	90.62	96.79

+ 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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Elevation: 2,249 Feet

Lat: 35°04N

Lon: 83°26W

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	3.2	1.1	#	0	10.5	1988	8	17.0	1988	17	1988	8	3	1988	1.2	.9	.3	.2	.1	2.1	1.0	.7	.1
Feb	3.0	1.0	#	0	11.0	1982	27	15.5	1979	12	1979	19	2	1979	.9	.7	.4	.2	.1	1.3	.6	.2	.1
Mar	1.7	.0	#	0	25.5	1993	13	26.5	1993	27	1993	14	3	1993	.2	.2	.1	.1	.1	.6	.3	.2	.1
Apr	.5	.0	#	0	5.0	1987	4	7.0	1987	7	1987	4	1	1987	.2	.2	.1	.1	.0	.2	.1	.1	.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	0	.2	1993	1	.2	1993	0	0	0	0	0	.1	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.3	.0	#	0	2.6	1993	21	4.1	1993	4	1993	25	1	1993	.2	.2	.0	.0	.0	.3	.2	.0	.0
Ann	8.7	2.1	N/A	N/A	25.5	Mar 1993	13	26.5	Mar 1993	27	Mar 1993	14	3+	Mar 1993	2.8	2.2	.9	.6	.3	4.5	2.2	1.2	.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

Complete documentation available from:

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Lat: 35° 04N

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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	6/01	5/26	5/21	5/18	5/14	5/11	5/07	5/03	4/27
32	5/17	5/11	5/07	5/03	4/30	4/26	4/23	4/18	4/12
28	5/03	4/27	4/23	4/20	4/16	4/13	4/09	4/05	3/30
24	4/11	4/05	4/01	3/29	3/26	3/22	3/19	3/15	3/09
20	4/04	3/27	3/22	3/17	3/12	3/08	3/03	2/25	2/17
16	3/22	3/14	3/07	3/02	2/25	2/20	2/14	2/08	1/30
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	9/20	9/24	9/27	9/29	10/02	10/04	10/06	10/09	10/13
32	9/27	9/30	10/03	10/05	10/07	10/09	10/12	10/14	10/18
28	10/05	10/10	10/13	10/16	10/19	10/21	10/24	10/27	11/01
24	10/20	10/26	10/31	11/04	11/07	11/11	11/14	11/19	11/25
20	11/04	11/09	11/13	11/17	11/20	11/23	11/27	12/01	12/06
16	11/12	11/21	11/29	12/05	12/10	12/16	12/22	12/29	1/08
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	160	153	148	144	140	136	131	126	119
32	180	173	168	164	160	156	152	147	140
28	205	198	193	189	185	181	177	172	165
24	250	242	236	231	226	221	216	210	202
20	279	270	263	257	252	247	241	234	225
16	316	305	297	291	286	280	274	267	258

* 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:
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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	877	705	558	320	146	19	2	3	56	309	546	795	4336
60	722	565	409	186	64	2	0	0	13	183	400	640	3184
57	638	481	324	120	32	0	0	0	4	123	317	548	2587
55	580	426	271	85	19	0	0	0	2	91	264	492	2230
50	440	298	160	26	3	0	0	0	0	36	154	350	1467
32	99	24	4	0	0	0	0	0	0	0	2	42	171

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	245	244	469	672	922	1085	1231	1199	1003	723	447	270	8510
55	13	2	23	67	228	395	518	486	315	102	19	7	2175
57	9	0	14	42	179	336	456	424	257	72	11	1	1801
60	0	0	6	17	118	247	363	331	177	38	4	0	1301
65	0	0	0	2	45	114	210	179	69	9	0	0	628
70	0	0	0	0	11	29	81	60	13	1	0	0	195

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	80	110	258	442	682	853	992	960	771	483	243	105	80	190	448	890	1572	2425	3417	4377	5148	5631	5874	5979
45	34	52	149	305	528	703	837	805	621	333	139	53	34	86	235	540	1068	1771	2608	3413	4034	4367	4506	4559
50	4	17	69	188	376	553	682	650	471	208	66	23	4	21	90	278	654	1207	1889	2539	3010	3218	3284	3307
55	0	2	25	96	234	403	527	495	323	104	23	1	0	2	27	123	357	760	1287	1782	2105	2209	2232	2233
60	0	0	1	34	118	255	372	340	188	32	1	0	0	0	1	35	153	408	780	1120	1308	1340	1341	1341
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	57	95	185	298	431	560	667	644	500	323	175	86	57	152	337	635	1066	1626	2293	2937	3437	3760	3935	4021

(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.
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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. 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