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: BREVARD, NC **COOP ID: 311055**

Climate Division: NC 3 **NWS Call Sign:** **Elevation: 2,212 Feet** **Lat: 35˚13N** **Lon: 82˚42W**

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	47.2	23.7	35.5	76	1949	9	47.1	1974	-15	1985	21	24.3	1977	917	0	.0	.0	15.2	1.9	22.2	.5
Feb	51.5	25.3	38.4	79	1951	26	44.5	1990	-20	1958	17	31.4	1978	745	0	.0	.0	18.2	.7	19.2	.1
Mar	59.4	31.9	45.7	84	1985	30	51.9	1997	-2	1960	5	40.4	1996	601	0	.0	.0	27.0	.1	13.9	@
Apr	67.2	39.2	53.2	90+	2001	10	57.6	1999	19+	1960	11	49.3	1983	355	1	.0	@	29.5	.0	5.8	.0
May	74.0	48.6	61.3	96	1953	31	65.9	2000	25+	1971	4	57.6	1989	156	42	.0	@	30.9	.0	.5	.0
Jun	79.2	56.6	67.9	97+	1984	19	71.2	1981	35	1966	2	63.2	1972	27	114	.0	1.2	30.0	.0	.0	.0
Jul	81.8	61.4	71.6	97	1980	17	75.8	1993	43+	1988	2	68.9	1972	2	207	.0	4.1	31.0	.0	.0	.0
Aug	80.1	60.1	70.1	96+	1984	4	72.3	1983	43+	1968	29	67.5	1981	4	162	.0	1.5	31.0	.0	.0	.0
Sep	75.3	54.0	64.7	95+	1954	6	68.4	1998	29	1962	30	61.5	1976	67	56	.0	.2	30.0	.0	.1	.0
Oct	67.5	40.7	54.1	92	1954	5	60.0	1984	15	1962	27	47.5	1988	346	9	.0	.0	30.9	.0	5.3	.0
Nov	58.4	32.5	45.5	82+	1974	2	53.0	1985	4+	1950	26	38.6	1976	586	0	.0	.0	26.2	@	14.5	.0
Dec	49.9	26.2	38.1	76+	1984	18	44.7	1984	-9	1962	13	31.7	1989	834	0	.0	.0	18.6	.5	20.7	.2
Ann	66.0	41.7	53.8	97+	Jun 1984	19	75.8	Jul 1993	-20	Feb 1958	17	24.3	Jan 1977	4640	591	.0	7.0	318.5	3.2	102.2	.8

\+ 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	5.93	5.39	8.21	1998	7	15.71	1998	.68	1981
Feb	5.23	5.60	4.00	1955	6	11.93	1998	.60	1978
Mar	6.50	6.27	5.49	1968	12	12.87	1973	1.84	1985
Apr	4.69	4.47	3.43	1957	5	9.55	1998	.58	1986
May	5.92	5.39	5.00	1973	28	14.04	1975	1.80	1988
Jun	5.75	5.14	6.70	1967	4	13.88	1989	1.48	1990
Jul	5.11	4.48	5.70	1949	12	10.91	1989	1.69	1977
Aug	5.40	4.57	5.50	1994	17	11.92	1978	.98	1981
Sep	5.12	4.20	6.90	1964	29	13.68	1977	.20	1984
Oct	4.85	5.16	5.53	1964	4	11.17	1990	.04	2000
Nov	5.69	5.35	3.85	1986	26	11.19	1992	2.08	1997
Dec	6.01	5.70	4.65	1950	7	14.36	1973	.44	1980
Ann	66.20	66.98	8.21	Jan 1998	7	15.71	Jan 1998	.04	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.0	7.6	4.0	2.1
Feb	8.8	7.0	3.6	1.8
Mar	10.7	8.4	4.4	2.2
Apr	9.3	6.7	3.3	1.6
May	11.6	8.5	3.6	1.7
Jun	11.7	8.7	3.6	1.5
Jul	12.4	8.4	3.3	1.3
Aug	13.1	8.4	3.1	1.4
Sep	9.7	7.2	3.2	1.6
Oct	7.3	5.6	3.0	1.7
Nov	8.9	6.7	3.5	2.2
Dec	9.6	7.5	3.4	1.9
Ann	123.1	90.7	42.0	21.0

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	1.68	2.24	3.09	3.83	4.56	5.31	6.15	7.14	8.42	10.42	12.30
Feb	1.19	1.68	2.44	3.13	3.82	4.55	5.36	6.34	7.63	9.67	11.60
Mar	2.51	3.11	3.97	4.69	5.37	6.06	6.81	7.67	8.77	10.46	12.00
Apr	1.11	1.55	2.23	2.85	3.45	4.10	4.82	5.68	6.80	8.59	10.27
May	1.90	2.46	3.29	4.00	4.68	5.39	6.16	7.07	8.24	10.06	11.73
Jun	1.72	2.26	3.08	3.79	4.47	5.19	5.97	6.90	8.09	9.96	11.69
Jul	1.87	2.35	3.04	3.62	4.17	4.73	5.34	6.05	6.96	8.36	9.64
Aug	1.50	2.01	2.79	3.46	4.13	4.82	5.59	6.50	7.68	9.53	11.26
Sep	.82	1.26	2.01	2.71	3.44	4.23	5.14	6.25	7.74	10.14	12.45
Oct	.47	.82	1.47	2.15	2.88	3.71	4.69	5.92	7.60	10.40	13.14
Nov	2.25	2.77	3.52	4.14	4.72	5.32	5.96	6.70	7.64	9.08	10.40
Dec	1.17	1.72	2.60	3.41	4.23	5.11	6.11	7.31	8.91	11.47	13.90
Ann	45.54	49.48	54.57	58.44	61.90	65.25	68.72	72.57	77.25	84.07	89.98

\+ 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

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	2.2	.0	#	0
Feb	2.3	.0	#	0
Mar	1.5	.0	#	0
Apr	#	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	#	.0	0	0
Nov	.5	.0	#	0
Dec	1.0	.0	#	0
Ann	7.5	.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	6.0	1977	9	14.0	1977	11	1996	8	2	1977
Feb	11.0	1979	18	17.0	1979	11	1979	18	4	1982
Mar	7.5	1978	2	8.0	1971	8	1978	2	3	1983
Apr	#	1978	21	#+	1978	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	#	1977	16	#	1977	0	0	0	0	0
Nov	4.0	2000	19	4.0	2000	2	1974	30	#+	1997
Dec	17.0	1971	3	17.0	1971	17	1971	3	2	1971
Ann	17.0	Dec 1971	3	17.0+	Feb 1979	17	Dec 1971	3	4	Feb 1982

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.8	.6	.2	@	.0
Feb	.6	.5	.3	.1	.1
Mar	.6	.6	.3	.1	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.2	.1	.1	.0	.0
Dec	.3	.1	.1	.1	.1
Ann	2.5	1.9	1.0	.3	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	2.3	.8	.3	.0
Feb	1.1	.5	.3	.1
Mar	.8	.5	.1	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.1	.0	.0	.0
Dec	.2	.2	.2	.2
Ann	4.5	2.0	.9	.3

+ Also occurred on an earlier date(s) #Denotes trace amounts

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	5/27	5/21	5/17	5/13	5/09	5/06	5/02	4/28	4/22
32	5/10	5/06	5/02	4/29	4/27	4/24	4/21	4/18	4/13
28	5/06	4/29	4/23	4/19	4/14	4/10	4/06	3/31	3/24
24	4/09	4/03	3/30	3/27	3/24	3/21	3/17	3/13	3/08
20	3/27	3/20	3/16	3/12	3/08	3/04	2/28	2/23	2/17
16	3/19	3/11	3/05	2/28	2/23	2/18	2/13	2/07	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	9/24	9/27	9/30	10/03	10/05	10/07	10/09	10/12	10/16
32	9/29	10/04	10/07	10/10	10/12	10/15	10/18	10/21	10/25
28	10/07	10/13	10/17	10/20	10/23	10/26	10/30	11/03	11/09
24	10/18	10/25	10/31	11/04	11/08	11/12	11/17	11/22	11/29
20	11/04	11/10	11/14	11/18	11/21	11/24	11/28	12/02	12/08
16	11/20	11/27	12/01	12/06	12/09	12/13	12/17	12/22	12/29

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	168	161	156	152	148	144	140	135	128
32	189	182	177	172	168	164	159	154	147
28	215	207	201	196	191	186	181	175	167
24	258	248	241	235	229	223	217	210	200
20	280	272	267	262	257	253	248	242	234
16	320	309	302	295	289	282	275	268	257

***** 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	917	745	601	355	156	27	2	4	67	346	586	834	4640
60	762	605	450	213	69	4	0	0	18	217	438	679	3455
57	673	521	363	139	35	1	0	0	7	154	353	586	2832
55	615	465	308	98	21	0	0	0	3	119	299	526	2454
50	472	333	189	31	4	0	0	0	0	54	179	383	1645
32	109	30	7	0	0	0	0	0	0	0	3	49	198

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	216	209	429	636	909	1076	1228	1181	980	686	407	238	8195
55	9	0	17	44	216	386	515	468	293	92	13	2	2055
57	4	0	10	25	169	327	453	406	236	65	7	0	1702
60	0	0	4	9	110	240	360	313	158	35	2	0	1231
65	0	0	0	1	42	114	207	162	56	9	0	0	591
70	0	0	0	0	10	33	80	48	9	1	0	0	181

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	83	120	276	462	708	888	1033	999	805	514	254	112	83	203	479	941	1649	2537	3570	4569	5374	5888	6142	6254
45	38	59	164	318	553	738	878	844	655	363	147	55	38	97	261	579	1132	1870	2748	3592	4247	4610	4757	4812
50	10	22	79	192	400	588	723	689	505	227	73	23	10	32	111	303	703	1291	2014	2703	3208	3435	3508	3531
55	0	1	29	98	251	438	568	534	358	116	29	1	0	1	30	128	379	817	1385	1919	2277	2393	2422	2423
60	0	0	3	38	131	290	413	380	218	49	3	0	0	0	3	41	172	462	875	1255	1473	1522	1525	1525
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	65	99	197	308	454	590	706	685	525	342	177	82	65	164	361	669	1123	1713	2419	3104	3629	3971	4148	4230

(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