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: WAYNESVILLE 1 E, NC **COOP ID: 319147**

Climate Division: NC 3 **NWS Call Sign:** **Elevation: 2,658 Feet** **Lat: 35˚29N** **Lon: 82˚58W**

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	47.0	21.6	34.3	75	1999	28	47.4	1974	-22	1985	21	22.9	1977	951	0	.0	.0	15.4	2.2	23.1	1.0
Feb	50.5	24.1	37.3	79	1996	23	44.6	1990	-16	1958	18	29.5	1978	775	0	.0	.0	17.6	1.8	20.4	.3
Mar	58.4	30.7	44.6	84	1985	30	50.8	1974	-8	1993	15	38.4	1971	634	0	.0	.0	26.2	.3	15.9	.1
Apr	65.9	37.4	51.7	87+	2001	11	56.6	1981	15	1987	1	47.4	1983	400	0	.0	.0	28.9	.0	8.5	.0
May	73.3	46.0	59.7	92	1996	20	64.9	1991	24	1986	4	55.9	1997	197	31	.0	.1	30.9	.0	1.6	.0
Jun	79.6	53.4	66.5	94	1954	27	69.7	1998	31	1966	2	62.3	1972	38	82	.0	.6	30.0	.0	.0	.0
Jul	82.8	57.3	70.1	95+	1993	24	73.0	1993	40	1988	2	67.4	1971	6	162	.0	2.0	31.0	.0	.0	.0
Aug	81.5	56.2	68.9	96	1930	8	72.9	1995	39	1968	30	66.3	1981	11	129	.0	1.3	31.0	.0	.0	.0
Sep	76.2	50.1	63.2	92+	1998	14	67.9	1998	27	1967	30	59.8	1984	98	42	.0	.3	30.0	.0	.4	.0
Oct	67.5	37.4	52.5	88	1951	6	58.6	1984	12	1952	21	47.4	1988	392	4	.0	.0	30.5	.0	7.8	.0
Nov	58.3	29.8	44.1	79+	1994	4	52.3	1985	0	1950	25	37.5	1976	630	0	.0	.0	24.9	.1	16.2	.0
Dec	50.1	24.0	37.1	78	1951	31	44.1	1984	-8	1962	13	29.4	1989	867	0	.0	.0	18.6	1.3	22.1	.2
Ann	65.9	39.0	52.5	96	Aug 1930	8	73.0	Jul 1993	-22	Jan 1985	21	22.9	Jan 1977	4999	450	.0	4.3	315.0	5.7	116.0	1.6

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1894-2001

(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	4.62	4.41	3.78	1996	27	10.02	1998	.52	1986
Feb	4.54	4.67	3.90	1990	16	8.25	1989	.47	1978
Mar	5.24	4.32	3.86	1963	12	10.62	1975	1.71	1985
Apr	3.84	3.45	3.31	1974	4	8.64	1998	.36	1976
May	4.43	4.21	3.07	1976	29	8.67	1976	2.06	1985
Jun	4.03	3.24	4.08	1949	16	8.78	1989	1.26	1988
Jul	3.59	3.39	3.23	1967	7	7.22	1971	1.42	1998
Aug	4.11	4.04	3.90	1995	27	8.20	1995	.85	1997
Sep	3.60	3.16	2.98	1975	23	8.55	1979	.18	1978
Oct	2.92	2.66	3.88	1995	5	8.24	1995	.05	2000
Nov	3.81	3.75	3.20	1948	28	8.72	1979	1.33	1990
Dec	4.04	4.29	3.12	1961	12	8.86	1973	1.32	1985
Ann	48.77	49.87	4.08	Jun 1949	16	10.62	Mar 1975	.05	Oct 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.1	8.4	3.2	1.3
Feb	10.6	7.3	3.2	1.3
Mar	12.8	8.5	3.6	1.4
Apr	11.0	7.1	2.7	.9
May	13.1	8.4	3.2	.9
Jun	12.5	7.8	2.8	.9
Jul	13.5	8.1	2.1	.7
Aug	12.5	7.6	2.5	.9
Sep	10.8	6.5	2.4	1.0
Oct	8.3	5.2	1.6	.7
Nov	10.6	6.4	2.9	1.1
Dec	11.3	7.5	2.7	1.1
Ann	139.1	88.8	32.9	12.2

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	1.42	1.86	2.52	3.08	3.62	4.19	4.81	5.54	6.48	7.95	9.31
Feb	1.44	1.87	2.51	3.06	3.58	4.13	4.73	5.43	6.33	7.74	9.04
Mar	2.01	2.50	3.19	3.77	4.32	4.88	5.48	6.18	7.08	8.45	9.70
Apr	1.12	1.49	2.04	2.51	2.97	3.45	3.98	4.61	5.42	6.68	7.86
May	2.14	2.52	3.04	3.46	3.84	4.23	4.64	5.11	5.70	6.59	7.39
Jun	1.27	1.65	2.22	2.71	3.17	3.66	4.19	4.82	5.62	6.88	8.04
Jul	1.61	1.93	2.37	2.73	3.07	3.40	3.77	4.18	4.71	5.50	6.22
Aug	1.23	1.62	2.20	2.71	3.20	3.71	4.27	4.93	5.79	7.12	8.36
Sep	.65	.97	1.49	1.99	2.49	3.03	3.65	4.39	5.39	6.99	8.52
Oct	.42	.66	1.08	1.49	1.91	2.37	2.91	3.57	4.45	5.90	7.29
Nov	1.73	2.07	2.54	2.91	3.27	3.62	4.00	4.43	4.98	5.81	6.55
Dec	1.48	1.86	2.40	2.86	3.30	3.74	4.23	4.79	5.51	6.62	7.63
Ann	36.46	38.89	41.98	44.31	46.36	48.34	50.37	52.61	55.31	59.21	62.56

\+ 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: 1894-2001
(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	4.4	2.8	#	#
Feb	3.6	2.1	#	#
Mar	2.4	.5	#	0
Apr	1.0	.0	#	0
May	.2	.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	1.7	.5	#	#
Ann	13.8	5.9	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	12.5	1998	28	15.7	1987	17	1998	28	3	1996
Feb	9.8	1979	18	18.0	1979	10	1979	18	2	1979
Mar	16.5	1993	13	18.0	1993	18	1993	13	2	1993
Apr	15.5	1987	3	15.5	1987	16	1987	3	1	1987
May	7.0	1992	7	7.0	1992	5	1992	7	#	1992
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	#	1993	31	#+	1993	0	0	0	0	0
Nov	2.5	1975	14	4.8	1975	3	2000	20	#+	2000
Dec	15.0	1971	3	15.0	1971	12	1971	4	1	1993
Ann	16.5	Mar 1993	13	18.0+	Mar 1993	18	Mar 1993	13	3	Jan 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.2	1.3	.4	.2	.1
Feb	2.4	1.2	.4	.1	.0
Mar	1.4	.7	.2	.1	@
Apr	.2	.2	.1	.1	@
May	@	@	@	@	.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	.4	.3	.0	.0	.0
Dec	1.1	.4	.2	.1	@
Ann	7.7	4.1	1.3	.6	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	3.2	1.1	.6	.2
Feb	1.8	.8	.1	@
Mar	.8	.4	.2	.1
Apr	.1	.1	.1	@
May	.1	@	@	.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	.2	@	.0	.0
Dec	.9	.3	@	.0
Ann	7.1	2.7	1.0	.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

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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	6/06	5/31	5/27	5/23	5/20	5/16	5/13	5/09	5/03
32	5/19	5/15	5/12	5/09	5/06	5/04	5/01	4/28	4/24
28	5/07	5/01	4/28	4/24	4/21	4/18	4/15	4/12	4/06
24	4/23	4/18	4/14	4/11	4/08	4/05	4/01	3/29	3/23
20	4/10	4/04	3/31	3/27	3/24	3/20	3/17	3/12	3/06
16	3/29	3/21	3/15	3/10	3/06	3/01	2/24	2/19	2/11

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	153	145	140	135	131	126	122	116	108
32	169	163	158	154	150	147	143	138	131
28	197	190	186	182	178	175	171	166	160
24	221	214	209	205	202	198	194	189	182
20	250	243	237	232	228	224	219	213	206
16	291	282	275	269	264	258	252	245	236

***** 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	951	775	634	400	197	38	6	11	98	392	630	867	4999
60	796	635	482	255	99	6	0	0	32	254	480	712	3751
57	710	551	395	178	58	2	0	0	13	183	394	619	3103
55	652	495	339	132	37	1	0	0	7	143	339	559	2704
50	510	363	214	51	9	0	0	0	1	67	212	416	1843
32	140	44	10	0	0	0	0	0	0	0	7	66	267

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	212	192	398	590	857	1034	1179	1141	934	635	368	222	7762
55	11	0	15	32	181	345	466	428	251	64	9	2	1804
57	7	0	9	18	140	286	404	366	197	43	5	0	1475
60	0	0	3	5	88	201	311	273	126	20	1	0	1028
65	0	0	0	0	31	82	162	129	42	4	0	0	450
70	0	0	0	0	7	17	53	35	6	0	0	0	118

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	113	254	411	654	839	973	942	746	457	223	118	83	196	450	861	1515	2354	3327	4269	5015	5472	5695	5813
45	35	52	146	276	499	689	818	787	596	311	128	58	35	87	233	509	1008	1697	2515	3302	3898	4209	4337	4395
50	9	19	71	165	351	539	663	632	447	182	60	26	9	28	99	264	615	1154	1817	2449	2896	3078	3138	3164
55	0	1	29	77	211	390	508	477	304	86	20	2	0	1	30	107	318	708	1216	1693	1997	2083	2103	2105
60	0	0	3	26	100	243	353	323	171	28	0	0	0	0	3	29	129	372	725	1048	1219	1247	1247	1247
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	64	91	186	288	420	549	654	629	478	311	168	84	64	155	341	629	1049	1598	2252	2881	3359	3670	3838	3922

(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