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: BLACK MOUNTAIN 2 W, NC **COOP ID: 310843**

Climate Division: NC 1 **NWS Call Sign:** **Elevation: 2,290 Feet** **Lat: 35˚36N** **Lon: 82˚21W**

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	46.5	23.5	35.0	79	1952	1	46.9	1974	-14	1985	21	23.6	1977	930	0	.0	.0	15.4	2.2	22.7	.4
Feb	50.1	25.1	37.6	78+	1977	26	44.5	1976	-7	1996	5	29.9	1978	768	0	.0	.0	17.6	1.1	19.3	@
Mar	57.9	31.9	44.9	86	1985	30	49.7	1997	7+	1996	9	39.2	1996	623	0	.0	.0	26.3	.2	13.6	.0
Apr	66.0	39.3	52.7	90	1986	27	58.3	1999	18	1983	19	47.3	1983	372	2	.0	@	29.1	@	5.1	.0
May	73.1	48.5	60.8	90+	1996	20	65.7	1991	26	1989	8	56.6	1997	169	39	.0	.1	30.9	.0	.5	.0
Jun	79.4	56.4	67.9	96	1952	26	72.0	1986	32	1984	1	63.7	1972	36	123	.0	1.5	30.0	.0	@	.0
Jul	83.1	60.8	72.0	99+	1980	21	75.6	1993	44	1988	2	69.0	1984	3	219	.0	4.2	31.0	.0	.0	.0
Aug	81.6	59.5	70.6	97	1983	21	73.6	1988	43	1986	29	67.9	1982	5	177	.0	2.6	31.0	.0	.0	.0
Sep	76.1	53.3	64.7	94	1954	7	69.2	1998	28	1983	23	60.5	1983	82	72	.0	.4	30.0	.0	.1	.0
Oct	67.7	40.9	54.3	92	1954	6	60.6	1984	18	1952	30	49.7	1987	339	7	.0	.0	30.8	.0	4.9	.0
Nov	58.4	32.4	45.4	81+	1968	2	54.1	1985	3	1950	26	40.4	1995	588	0	.0	.0	25.7	.1	12.9	.0
Dec	49.8	26.0	37.9	76	1998	8	45.5	1984	-13	1983	25	30.3	1983	840	0	.0	.0	19.0	1.2	20.8	.2
Ann	65.8	41.5	53.7	99+	Jul 1980	21	75.6	Jul 1993	-14	Jan 1985	21	23.6	Jan 1977	4755	639	.0	8.8	316.8	4.8	99.9	.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: 1949-2001

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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	4.04	4.11	5.20	1995	14	10.29	1995	.90	1981
Feb	3.76	3.72	3.70	1966	13	8.53	1998	.27	1980
Mar	4.89	4.51	4.70	1963	12	10.69	1975	1.30	1985
Apr	3.96	4.00	3.68	1974	4	7.22	1983	.59+	1986
May	4.94	4.52	6.02	1976	29	15.61	1976	1.50	1988
Jun	4.29	3.96	5.16	1972	20	10.20	1995	1.47	1986
Jul	3.82	3.87	2.80	1967	7	7.02	1972	.85	1983
Aug	3.96	3.08	6.80	1994	17	10.19	1974	.67	1997
Sep	3.86	3.34	5.40	1959	30	11.63	1979	.08	1984
Oct	3.50	3.16	4.00+	1964	16	10.67	1990	.11	2000
Nov	4.04	3.44	6.24	1977	6	14.34	1977	1.44	1981
Dec	3.38	3.43	4.13	1958	28	8.61	1983	.59	1980
Ann	48.44	50.15	6.80	Aug 1994	17	15.61	May 1976	.08	Sep 1984

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.2	7.4	3.1	1.2
Feb	9.6	6.5	2.5	1.0
Mar	11.2	8.0	3.2	1.6
Apr	9.5	6.6	2.8	1.1
May	11.8	8.1	3.3	1.1
Jun	11.9	7.4	3.0	1.0
Jul	11.5	7.4	2.5	.9
Aug	11.6	7.1	2.5	.8
Sep	9.1	5.7	2.5	.9
Oct	7.3	4.9	2.2	1.1
Nov	9.4	6.4	2.8	1.3
Dec	9.4	6.5	2.5	1.0
Ann	122.5	82.0	32.9	13.0

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	1.20	1.59	2.16	2.66	3.14	3.64	4.19	4.84	5.69	7.00	8.22
Feb	.88	1.23	1.78	2.28	2.76	3.28	3.86	4.56	5.46	6.91	8.26
Mar	1.76	2.22	2.89	3.44	3.97	4.52	5.11	5.80	6.68	8.04	9.28
Apr	1.06	1.44	2.01	2.51	3.01	3.52	4.09	4.77	5.66	7.04	8.34
May	1.66	2.12	2.81	3.39	3.95	4.53	5.16	5.89	6.84	8.30	9.65
Jun	1.41	1.82	2.41	2.92	3.41	3.92	4.47	5.12	5.95	7.24	8.43
Jul	1.42	1.78	2.29	2.72	3.13	3.54	3.99	4.52	5.19	6.21	7.15
Aug	.91	1.28	1.86	2.38	2.90	3.45	4.06	4.80	5.76	7.30	8.75
Sep	.59	.92	1.48	2.01	2.56	3.17	3.87	4.72	5.86	7.71	9.49
Oct	.27	.50	.96	1.44	1.98	2.59	3.32	4.25	5.54	7.69	9.82
Nov	1.26	1.64	2.21	2.70	3.18	3.67	4.21	4.84	5.66	6.93	8.11
Dec	.84	1.16	1.66	2.09	2.52	2.98	3.48	4.09	4.88	6.12	7.29
Ann	33.52	36.37	40.05	42.85	45.35	47.77	50.28	53.05	56.43	61.34	65.59

\+ 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: 1949-2001
(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	2.9	.0	#	0
Feb	1.8	.0	#	0
Mar	.7	.0	#	0
Apr	.4	.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	.2	.0	#	0
Dec	1.1	.0	#	0
Ann	7.1	.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	12.0	1988	7	16.5	1977	12	1988	7	2	1988
Feb	6.0	1982	27	9.0	1984	5	1984	29	2	1983
Mar	4.0	1981	22	7.0	1981	3	1978	3	#+	1999
Apr	10.0	1987	3	10.0+	1987	4	1982	8	#+	2000
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	17	#	1977	0	0	0	0	0
Nov	1.5	1975	23	2.0	1975	3	2000	20	#+	2000
Dec	14.0	1971	3	14.0	1971	14	1971	3	1+	2000
Ann	14.0	Dec 1971	3	16.5	Jan 1977	14	Dec 1971	3	2+	Jan 1988

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.8	.7	.2	.1	@
Feb	1.0	.7	.2	@	.0
Mar	.3	.3	.1	.0	.0
Apr	@	@	@	@	@
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	.1	.1	.0	.0	.0
Dec	.3	.2	.1	@	@
Ann	2.5	2.0	.6	.1	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.5	.3	.2	.1
Feb	.5	.3	.1	.0
Mar	.2	@	.0	.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	.1	.1	.1
Ann	1.5	.7	.4	.2

+ 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	5/26	5/20	5/16	5/13	5/09	5/06	5/03	4/29	4/23
32	5/16	5/10	5/05	5/01	4/28	4/24	4/20	4/15	4/09
28	4/26	4/20	4/16	4/12	4/09	4/06	4/02	3/29	3/23
24	4/11	4/05	4/01	3/29	3/25	3/22	3/18	3/14	3/09
20	3/29	3/22	3/17	3/13	3/08	3/04	2/28	2/23	2/15
16	3/17	3/08	3/01	2/23	2/18	2/13	2/07	2/01	1/23

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	164	158	154	150	147	143	139	135	129
32	190	182	176	171	167	163	158	152	144
28	216	208	203	198	194	190	185	180	172
24	250	241	235	230	225	220	215	209	200
20	281	272	266	261	256	251	246	240	232
16	328	315	306	298	291	284	276	267	254

***** 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	930	768	623	372	169	36	3	5	82	339	588	840	4755
60	775	628	471	235	80	7	0	0	27	208	440	685	3556
57	688	544	383	164	43	2	0	0	11	144	356	592	2927
55	630	488	327	124	27	1	0	0	6	108	301	537	2549
50	488	356	203	51	6	0	0	0	1	44	183	393	1725
32	124	41	7	0	0	0	0	0	0	0	5	59	236

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	218	198	406	620	893	1077	1238	1195	981	691	407	242	8166
55	11	0	14	54	206	387	525	482	296	86	14	6	2081
57	7	0	8	34	161	328	463	420	242	60	8	0	1731
60	0	0	2	15	104	244	370	327	168	31	2	0	1263
65	0	0	0	2	39	123	219	177	72	7	0	0	639
70	0	0	0	0	9	43	92	62	19	1	0	0	226

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	88	122	272	470	700	882	1030	993	794	511	262	124	88	210	482	952	1652	2534	3564	4557	5351	5862	6124	6248
45	36	61	160	326	545	732	875	838	644	360	152	63	36	97	257	583	1128	1860	2735	3573	4217	4577	4729	4792
50	13	22	78	205	393	582	720	683	494	220	73	29	13	35	113	318	711	1293	2013	2696	3190	3410	3483	3512
55	0	2	32	105	247	432	565	528	346	116	28	4	0	2	34	139	386	818	1383	1911	2257	2373	2401	2405
60	0	0	4	41	125	285	410	373	211	45	2	0	0	0	4	45	170	455	865	1238	1449	1494	1496	1496
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	65	98	190	305	444	582	702	673	513	333	183	91	65	163	353	658	1102	1684	2386	3059	3572	3905	4088	4179

(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