

Climatology of the United States

No. 20

1971-2000

Station: ASHEVILLE, NC

COOP ID: 310301

Climate Division: NC 1

NWS Call Sign:

Elevation: 2,240 Feet Lat: 35° 36N Lon: 82° 32W

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	46.1	26.6	36.4	78	1999	27	48.3	1974	-17	1985	21	23.8	1977	888	0	.0	.0	12.5	3.4	20.8	.4
Feb	50.3	29.1	39.7	78+	1989	15	45.9	1976	-5	1996	5	31.4	1978	708	0	.0	.0	16.0	2.4	16.7	@
Mar	58.0	36.2	47.1	87	1985	30	52.0	1997	4	1980	3	41.2	1996	555	0	.0	.0	24.4	.4	10.4	.0
Apr	66.8	43.8	55.3	89+	2001	10	60.7	1981	22	1982	7	50.8	1983	297	6	.0	.0	28.2	.1	2.8	.0
May	74.3	52.1	63.2	93	1996	19	68.0	1998	30	1989	8	58.8	1989	126	71	.0	.2	30.8	.0	@	.0
Jun	80.8	59.6	70.2	98	1952	28	73.9	1981	39	1966	1	66.1+	1974	14	171	.0	1.4	30.0	.0	.0	.0
Jul	84.3	63.5	73.9	98+	1993	8	78.0	1993	49+	1963	11	70.7	1979	0	277	.0	5.8	31.0	.0	.0	.0
Aug	82.9	62.4	72.7	99	1983	20	75.3	1980	46	1986	29	69.5	1992	1	238	.0	3.3	31.0	.0	.0	.0
Sep	76.9	56.4	66.7	95+	1954	6	71.7	1998	33	1967	30	63.4	1976	46	96	.0	.6	30.0	.0	.0	.0
Oct	67.7	45.0	56.4	88+	1954	3	63.6	1984	23+	1962	27	50.1	1988	287	18	.0	.0	30.1	.0	2.0	.0
Nov	57.8	36.8	47.3	83	1950	1	56.1	1985	1	1950	25	40.8	1976	530	0	.0	.0	23.5	.2	10.0	.0
Dec	49.6	29.8	39.7	81	1951	31	48.0	1984	-8	1983	25	30.6	1989	785	0	.0	.0	16.2	1.9	18.5	.2
Ann	66.3	45.1	55.7	99	Aug 1983	20	78.0	Jul 1993	-17	Jan 1985	21	23.8	Jan 1977	4237	877	.0	11.3	303.7	8.4	81.2	.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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1947-2001

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

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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: ASHEVILLE, NC

COOP ID: 310301

Climate Division: NC 1

NWS Call Sign:

Elevation: 2,240 Feet Lat: 35°36N

Lon: 82°32W

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	3.07	2.72	3.34	1995	14	7.56	1998	.58	1981	10.9	6.8	1.9	.4	.96	1.25	1.68	2.05	2.41	2.78	3.19	3.67	4.29	5.26	6.15
Feb	3.19	3.48	2.96	1984	13	6.34	1984	.21	1978	9.8	6.2	2.0	.7	.72	1.01	1.48	1.90	2.32	2.77	3.27	3.87	4.65	5.91	7.09
Mar	3.89	3.45	2.79	1994	27	8.95	1975	.71	1985	12.1	7.1	2.3	1.0	1.24	1.61	2.15	2.62	3.07	3.54	4.05	4.65	5.42	6.62	7.73
Apr	3.16	3.15	3.39	1957	4	6.23	1998	.23	1976	9.4	6.0	2.2	.6	.75	1.04	1.50	1.92	2.33	2.76	3.25	3.83	4.59	5.80	6.94
May	3.53	3.43	2.72	1976	29	5.86	1972	.64	1988	11.5	7.2	2.1	.7	1.14	1.48	1.97	2.39	2.80	3.22	3.68	4.22	4.91	5.99	6.99
Jun	3.24	2.99	3.08	1983	30	7.81	1989	.61	1986	11.5	7.6	2.0	.5	1.00	1.31	1.77	2.16	2.54	2.93	3.37	3.88	4.53	5.56	6.51
Jul	2.97	2.67	2.16	1970	21	6.43	1991	.60	1983	11.7	6.9	1.8	.4	.85	1.13	1.56	1.93	2.29	2.67	3.08	3.58	4.21	5.21	6.14
Aug	3.34	2.79	2.92	1961	24	7.12	1992	.40	1997	11.0	6.9	1.8	.7	.67	.97	1.46	1.91	2.36	2.85	3.40	4.07	4.94	6.35	7.69
Sep	3.01	2.59	3.50	1964	29	7.49	1989	.07	1985	8.4	5.7	2.1	.7	.43	.68	1.11	1.53	1.96	2.44	3.00	3.68	4.60	6.09	7.54
Oct	2.40	2.17	3.55	1964	4	6.33	1990	.00	2000	7.5	4.4	1.5	.5	.20	.46	.85	1.20	1.56	1.96	2.41	2.97	3.71	4.91	6.07
Nov	2.93	2.70	2.97	1977	6	6.95	1979	.92	1981	8.9	5.4	1.9	.6	1.19	1.46	1.84	2.15	2.45	2.75	3.07	3.44	3.91	4.63	5.29
Dec	2.59	2.82	2.67	1958	28	6.11	1983	.52	1985	9.7	5.8	1.7	.5	.66	.90	1.28	1.61	1.94	2.29	2.67	3.13	3.73	4.67	5.55
Ann	37.32	36.93	3.55	Oct 1964	4	8.95	Mar 1975	.00	Oct 2000	122.4	76.0	23.3	7.3	26.18	28.33	31.08	33.17	35.04	36.84	38.70	40.77	43.27	46.91	50.07

+ 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: 1947-2001

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

Complete documentation available from:
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Station: ASHEVILLE, NC

COOP ID: 310301

Climate Division: NC 1

NWS Call Sign:

Elevation: 2,240 Feet

Lat: 35°36N

Lon: 82°32W

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	4.3	3.6	#	#	14.0	1998	27	14.2	1998	14	1998	27	2	1996	3.5	1.3	.4	.1	@	3.5	1.2	.7	@
Feb	3.1	1.8	#	#	8.0	1979	18	17.7	1979	7	1979	18	1	1996	2.9	1.0	.3	.1	.0	2.2	.5	.1	.0
Mar	2.5	.8	#	#	16.0	1993	13	20.3	1993	20	1993	14	4	1993	1.9	.7	.2	@	@	.9	.4	.2	.2
Apr	.8	#	#	0	14.0	1987	3	16.0	1987	15	1987	4	2	1987	.3	.2	.1	@	@	.2	.1	.1	.1
May	.0	.0	0	0	.2	1992	7	.2	1992	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	.7	1993	31	.7	1993	#	1993	31	#	1993	@	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.5	.0	#	0	3.0	2000	19	3.1	1974	2	2000	19	#+	2000	.7	.2	@	.0	.0	.1	.0	.0	.0
Dec	2.1	.9	#	#	7.5	1971	3	8.0	2000	5	1974	1	1+	2000	2.6	.6	.2	.1	.0	1.3	.3	@	.0
Ann	13.3	7.1	N/A	N/A	16.0	Mar 1993	13	20.3	Mar 1993	20	Mar 1993	14	4	Mar 1993	11.9	4.0	1.2	.3	@	8.2	2.5	1.1	.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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Climate Division: NC 1

NWS Call Sign:

Elevation: 2,240 Feet

Lat: 35° 36N

Lon: 82° 32W

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	5/09	5/04	4/30	4/27	4/24	4/21	4/18	4/14	4/09
32	4/26	4/21	4/17	4/14	4/12	4/09	4/06	4/03	3/29
28	4/14	4/08	4/04	3/31	3/27	3/24	3/20	3/16	3/10
24	4/04	3/28	3/23	3/19	3/15	3/11	3/07	3/02	2/23
20	3/18	3/11	3/06	3/02	2/27	2/23	2/19	2/14	2/07
16	3/09	3/01	2/24	2/19	2/14	2/10	2/05	1/30	1/22
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	10/01	10/05	10/07	10/10	10/12	10/14	10/16	10/19	10/23
32	10/08	10/14	10/18	10/21	10/25	10/28	10/31	11/04	11/10
28	10/20	10/26	10/31	11/04	11/08	11/11	11/15	11/20	11/27
24	11/05	11/10	11/14	11/17	11/20	11/23	11/26	11/30	12/05
20	11/17	11/24	11/29	12/03	12/07	12/10	12/14	12/19	12/26
16	12/01	12/09	12/15	12/21	12/26	12/31	1/05	1/11	1/20
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	185	180	176	173	170	167	164	160	155
32	215	208	203	199	195	191	187	182	175
28	249	241	235	229	225	220	215	208	200
24	273	264	258	253	249	244	239	233	225
20	308	299	293	287	282	277	272	266	257
16	347	334	325	318	312	306	299	291	281

* 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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Climate Division: NC 1 NWS Call Sign: Elevation: 2,240 Feet Lat: 35°36N Lon: 82°32W

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	888	708	555	297	126	14	0	1	46	287	530	785	4237
60	735	568	407	170	54	2	0	0	11	170	386	630	3133
57	649	484	323	111	27	0	0	0	4	116	304	545	2563
55	591	429	270	79	16	0	0	0	2	87	253	487	2214
50	452	301	160	26	3	0	0	0	0	35	147	350	1474
32	107	26	4	0	0	0	0	0	0	0	3	51	191

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	242	242	472	699	968	1147	1300	1260	1040	754	463	289	8876
55	13	2	25	88	271	457	587	547	352	128	23	12	2505
57	10	0	15	60	220	397	525	485	294	95	14	8	2123
60	2	0	7	29	154	308	432	392	211	57	6	0	1598
65	0	0	0	6	71	171	277	238	96	18	0	0	877
70	0	0	0	0	23	68	135	103	26	3	0	0	358

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	89	132	288	495	748	931	1081	1041	827	534	275	133	89	221	509	1004	1752	2683	3764	4805	5632	6166	6441	6574
45	37	67	176	352	594	781	926	886	677	384	160	70	37	104	280	632	1226	2007	2933	3819	4496	4880	5040	5110
50	12	26	92	230	439	631	771	731	527	244	84	29	12	38	130	360	799	1430	2201	2932	3459	3703	3787	3816
55	0	3	38	130	290	481	616	576	380	132	35	7	0	3	41	171	461	942	1558	2134	2514	2646	2681	2688
60	0	0	6	57	163	332	461	421	239	54	5	0	0	0	6	63	226	558	1019	1440	1679	1733	1738	1738
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	53	85	171	296	462	626	749	715	536	318	156	77	53	138	309	605	1067	1693	2442	3157	3693	4011	4167	4244

(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