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: ARCOLA, NC **COOP ID: 310241**

Climate Division: NC 3 **NWS Call Sign:** **Elevation: 330 Feet** **Lat: 36˚17N** **Lon: 77˚59W**

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	51.9	26.9	39.4	76+	1999	24	49.1	1974	-7	1985	21	29.2	1977	794	0	.0	.0	15.9	1.8	22.7	.1
Feb	55.2	28.7	42.0	82+	1996	28	50.1	1976	-3+	1996	5	33.0	1978	645	0	.0	.0	17.3	.9	18.4	.1
Mar	63.6	35.1	49.4	90+	1990	13	55.2	1976	11	1996	9	43.9	1996	485	0	.0	.1	27.0	.2	11.4	.0
Apr	73.1	42.7	57.9	95	1985	21	61.8	1977	19	1985	10	52.6	1987	227	13	.0	.5	29.4	.0	3.7	.0
May	79.9	52.8	66.4	96	1996	20	71.6	1991	29	1963	2	61.6	1992	61	103	.0	2.0	31.0	.0	.1	.0
Jun	87.1	60.7	73.9	102	1959	30	78.6	1981	40+	1988	19	70.6	1992	3	270	.1	9.6	30.0	.0	.0	.0
Jul	90.8	65.5	78.2	104	1959	1	82.3	1977	47+	1988	5	74.9	2000	0	409	.8	16.8	31.0	.0	.0	.0
Aug	89.5	63.9	76.7	103+	1999	5	81.0	1980	43	1986	29	72.2	1992	1	363	.3	12.3	31.0	.0	.0	.0
Sep	84.4	57.0	70.7	100	1983	12	75.8	1980	36+	2001	30	66.4	1994	25	196	@	3.6	30.0	.0	.0	.0
Oct	74.7	44.3	59.5	93	1998	1	68.2	1984	20	1992	20	53.4	1994	226	55	.0	.2	30.7	.0	2.6	.0
Nov	66.4	36.3	51.4	85+	1974	4	59.9	1985	13	1970	25	45.4	1995	415	5	.0	.0	27.3	.0	11.4	.0
Dec	56.1	30.0	43.1	79+	1998	5	51.6	1971	3	1980	26	34.8	1989	681	0	.0	.0	20.1	.7	18.8	.0
Ann	72.7	45.3	59.1	104	Jul 1959	1	82.3	Jul 1977	-7	Jan 1985	21	29.2	Jan 1977	3563	1414	1.2	45.1	320.7	3.6	89.1	.2

\+ 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: 1957-2001

(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	3.94	3.87	2.41	1984	11	7.71	1998	1.13	1981
Feb	3.45	3.34	3.72	1984	14	7.69	1984	.95	1978
Mar	4.45	4.41	3.54	1998	9	8.74	1998	1.26	1985
Apr	3.27	3.34	5.01	1987	16	7.88	1987	.47	1985
May	3.98	3.91	3.98	1984	30	9.23	1984	.51	1987
Jun	4.15	3.80	4.71	1973	29	9.33	1995	1.06	1975
Jul	4.89	4.60	5.54	2000	24	12.10	1975	.88	1977
Aug	4.93	4.73	4.61	1958	26	13.17	1986	.51	1980
Sep	4.23	2.91	8.45	1999	16	22.71	1999	.25	1990
Oct	3.79	3.42	8.18	1972	6	9.85	1972	.03	2000
Nov	3.31	3.11	3.58	1963	7	11.87	1985	1.11	1991
Dec	3.16	2.99	2.98	1958	29	6.23	1973	.48	1988
Ann	47.55	46.76	8.45	Sep 1999	16	22.71	Sep 1999	.03	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.0	7.6	3.0	1.0
Feb	8.6	6.2	2.5	.9
Mar	10.2	7.5	3.5	1.0
Apr	8.1	6.4	2.3	.7
May	9.3	6.7	2.8	1.1
Jun	8.9	6.5	2.8	1.0
Jul	9.3	6.9	3.3	1.7
Aug	8.9	7.0	3.2	1.5
Sep	7.1	5.2	2.4	1.2
Oct	7.0	4.9	2.3	1.1
Nov	7.7	5.1	2.2	.8
Dec	9.4	6.3	2.4	.6
Ann	105.5	76.3	32.7	12.6

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	1.74	2.09	2.58	2.98	3.36	3.73	4.13	4.59	5.18	6.06	6.86
Feb	1.22	1.55	2.02	2.42	2.79	3.18	3.60	4.10	4.73	5.70	6.59
Mar	1.72	2.13	2.72	3.21	3.68	4.15	4.66	5.25	6.01	7.16	8.22
Apr	.87	1.18	1.65	2.07	2.48	2.91	3.38	3.95	4.69	5.85	6.93
May	1.15	1.53	2.10	2.60	3.08	3.58	4.13	4.78	5.63	6.95	8.18
Jun	1.27	1.67	2.26	2.76	3.25	3.76	4.31	4.97	5.81	7.13	8.35
Jul	1.34	1.80	2.51	3.12	3.73	4.36	5.06	5.89	6.97	8.67	10.25
Aug	1.25	1.71	2.43	3.06	3.69	4.35	5.08	5.96	7.10	8.90	10.59
Sep	.45	.76	1.35	1.94	2.57	3.28	4.12	5.17	6.59	8.95	11.25
Oct	.48	.78	1.32	1.85	2.40	3.02	3.74	4.63	5.83	7.80	9.71
Nov	.93	1.24	1.72	2.13	2.54	2.96	3.43	3.98	4.70	5.83	6.88
Dec	.93	1.23	1.68	2.07	2.45	2.85	3.28	3.80	4.47	5.51	6.48
Ann	35.96	38.26	41.17	43.36	45.30	47.16	49.07	51.17	53.70	57.34	60.47

\+ 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: 1957-2001
(3) Derived from 1971-2000 serially complete daily data

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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	1.1	.0	#	#
Feb	2.2	.0	#	#
Mar	1.4	.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	0
Nov	.1	.0	#	0
Dec	.7	.0	#	0
Ann	5.5	.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	8.1	2000	25	8.2	1996	11	2000	26	2+	2000
Feb	13.5	1989	17	17.0	1979	8	1979	19	2	1979
Mar	6.6	1980	2	11.1	1980	11	1980	3	1	1980
Apr	.3	1983	19	.3	1983	#	1983	19	#	1983
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	.0	0	0	.0	0	0	0	0	0	0
Nov	2.1	1987	12	2.1	1987	1+	2000	20	#+	2000
Dec	4.0	2000	4	4.6	1989	8	1980	11	2	1980
Ann	13.5	Feb 1989	17	17.0	Feb 1979	11+	Jan 2000	26	2+	Jan 2000

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.8	.6	.1	@	.0
Feb	1.1	.9	.2	.1	.1
Mar	.7	.5	.2	.1	.0
Apr	@	.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	.1	.1	.0	.0	.0
Dec	.4	.3	@	.0	.0
Ann	3.1	2.4	.5	.2	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.4	.8	.5	@
Feb	2.1	.7	.2	.0
Mar	.5	.2	.1	@
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	.3	.1	.0	.0
Ann	4.4	1.8	.8	@

+ 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	5/14	5/09	5/05	5/01	4/28	4/25	4/22	4/18	4/12
32	4/28	4/23	4/19	4/16	4/13	4/10	4/07	4/03	3/29
28	4/17	4/11	4/07	4/03	3/31	3/28	3/24	3/20	3/14
24	4/05	3/29	3/24	3/19	3/15	3/11	3/07	3/02	2/23
20	3/23	3/13	3/06	3/01	2/23	2/18	2/12	2/05	1/27
16	3/11	3/01	2/21	2/14	2/08	2/02	1/26	1/17	1/05

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	10/06	10/09	10/12	10/15	10/17	10/20	10/24	10/28
32	10/07	10/13	10/16	10/19	10/22	10/25	10/28	11/01	11/06
28	10/18	10/24	10/29	11/01	11/05	11/08	11/12	11/16	11/22
24	10/30	11/05	11/10	11/14	11/18	11/22	11/26	12/01	12/08
20	11/06	11/17	11/25	12/02	12/08	12/15	12/22	12/30	1/10
16	12/02	12/12	12/20	12/26	1/01	1/07	1/14	1/22	2/03

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	191	183	178	173	169	165	160	155	147
32	213	205	200	196	192	188	183	178	171
28	244	235	229	223	218	213	207	201	192
24	276	266	259	253	247	241	235	228	218
20	320	307	298	291	284	278	271	263	252
16	>365	351	335	326	319	313	306	299	289

***** 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	794	645	485	227	61	3	0	1	25	226	415	681	3563
60	640	505	337	116	16	0	0	0	6	134	281	533	2568
57	556	427	254	68	6	0	0	0	2	91	210	446	2060
55	498	374	204	44	2	0	0	0	1	67	169	390	1749
50	362	251	106	10	0	0	0	0	0	27	88	265	1109
32	55	19	1	0	0	0	0	0	0	0	0	25	100

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	284	298	539	777	1065	1257	1432	1384	1161	851	580	368	9996
55	14	9	29	131	354	567	719	671	472	206	60	19	3251
57	10	6	17	94	295	507	657	609	413	167	40	13	2828
60	1	0	7	52	213	417	564	516	327	117	21	7	2242
65	0	0	0	13	103	270	409	363	196	55	5	0	1414
70	0	0	0	2	35	140	254	220	94	20	0	0	765

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	100	151	319	541	809	1017	1178	1125	911	585	337	155	100	251	570	1111	1920	2937	4115	5240	6151	6736	7073	7228
45	48	81	200	398	654	867	1023	970	761	432	213	80	48	129	329	727	1381	2248	3271	4241	5002	5434	5647	5727
50	18	39	111	266	500	717	868	815	611	290	122	39	18	57	168	434	934	1651	2519	3334	3945	4235	4357	4396
55	4	14	52	156	352	567	713	660	461	170	58	17	4	18	70	226	578	1145	1858	2518	2979	3149	3207	3224
60	0	0	22	79	214	418	558	505	316	83	21	0	0	0	22	101	315	733	1291	1796	2112	2195	2216	2216
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	76	112	216	352	524	680	798	763	604	382	230	111	76	188	404	756	1280	1960	2758	3521	4125	4507	4737	4848

(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