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: MULLEN 21 NW, NE **COOP ID: 255702**

Climate Division: NE 3 **NWS Call Sign:** **Elevation: 3,460 Feet** **Lat: 42˚15N** **Lon: 101˚20W**

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	37.2	10.2	23.7	70+	1997	21	33.0	1990	-29	1963	19	7.1	1979	1281	0	.0	.0	5.0	12.3	30.7	8.0
Feb	42.8	15.3	29.1	76	1995	26	36.9	1991	-30	1979	2	15.9	1978	1006	0	.0	.0	8.1	8.3	27.5	4.1
Mar	50.2	22.3	36.3	84	1997	21	44.0	1986	-17	1998	11	28.0	1996	892	0	.0	.0	14.7	5.4	27.2	1.2
Apr	60.5	31.8	46.2	96	1989	23	53.4	1981	-3	1968	4	40.1+	1997	566	0	.0	.1	21.3	1.0	16.1	.0
May	70.9	42.2	56.6	96	1967	25	63.2	1977	12	1954	3	50.4	1995	281	18	.0	.3	29.3	@	3.4	.0
Jun	81.8	51.6	66.7	103	1968	25	74.4	1988	30	1969	14	60.5	1982	77	127	.3	4.3	29.8	.0	.1	.0
Jul	88.5	57.3	72.9	108	1954	13	76.5	1980	36+	1971	30	66.8	1992	9	254	1.5	12.5	31.0	.0	.0	.0
Aug	87.2	56.0	71.6	109	1954	3	77.5	1983	30	1974	4	66.8	1992	17	222	.4	10.6	31.0	.0	@	.0
Sep	78.0	44.9	61.5	101	1975	1	67.6	1998	15+	1984	30	56.7	1993	160	53	.1	4.3	29.3	.0	2.8	.0
Oct	65.4	32.9	49.2	95+	1992	3	51.9	1973	-2	1991	31	46.2	1984	491	0	.0	.3	26.0	.4	14.8	@
Nov	48.8	21.0	34.9	86	1999	9	44.8	1999	-18	1976	27	22.1	1985	904	0	.0	.0	12.8	5.7	26.8	1.2
Dec	40.5	12.7	26.6	75	1990	11	33.1	1980	-34	1989	22	8.7	1983	1190	0	.0	.0	7.2	10.2	30.4	5.0
Ann	62.7	33.2	47.9	109	Aug 1954	3	77.5	Aug 1983	-34	Dec 1989	22	7.1	Jan 1979	6874	674	2.3	32.4	245.5	43.3	179.8	19.5

\+ 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

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: MULLEN 21 NW, NE **COOP ID: 255702**

Climate Division: NE 3 **NWS Call Sign:** **Elevation: 3,460 Feet** **Lat: 42˚15N** **Lon: 101˚20W**

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	.62	.55	1.25	1988	19	2.07	1988	.00	1972
Feb	.62	.51	1.15	1971	19	2.33	1987	.00	1979
Mar	1.59	1.26	1.90	1949	30	3.89	1987	.00	1978
Apr	2.55	2.19	2.79	1971	20	5.43	1993	.34	1992
May	3.59	3.73	5.05	1955	26	8.19	1988	.64	1992
Jun	3.39	3.27	4.10	1986	10	7.59	1983	.41	1976
Jul	3.24	2.89	5.93	2001	27	7.38	1981	.80	1999
Aug	2.36	2.19	3.96	1968	8	5.11	1997	.14	1973
Sep	1.79	1.47	3.93	1995	30	5.76	1995	.15	1976
Oct	1.54	1.23	2.51	2000	29	4.59	1995	.17	1999
Nov	1.24	.82	2.00	1979	5	4.55	1979	.04	1974
Dec	.60	.58	1.30	1948	23	1.56	1987	.00	1979
Ann	23.13	23.24	5.93	Jul 2001	27	8.19	May 1988	.00+	Dec 1979

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.2	2.0	.1	@
Feb	5.1	2.1	.2	@
Mar	7.7	4.6	.9	.1
Apr	9.5	5.5	1.5	.6
May	10.6	6.7	2.4	.9
Jun	9.7	6.4	2.1	.8
Jul	9.3	5.7	2.1	.8
Aug	7.7	4.9	1.5	.4
Sep	6.9	3.8	1.0	.3
Oct	5.8	3.0	.8	.3
Nov	5.5	2.9	.8	.3
Dec	5.2	2.1	.1	.0
Ann	88.2	49.7	13.5	4.5

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	.05	.12	.23	.32	.41	.51	.63	.77	.96	1.26	1.56
Feb	.04	.10	.20	.29	.39	.49	.62	.77	.97	1.31	1.63
Mar	.23	.44	.71	.93	1.15	1.39	1.65	1.96	2.37	3.01	3.62
Apr	.57	.81	1.18	1.52	1.85	2.21	2.62	3.10	3.73	4.74	5.69
May	1.09	1.44	1.95	2.38	2.81	3.25	3.73	4.30	5.04	6.19	7.26
Jun	.84	1.15	1.65	2.09	2.52	2.98	3.49	4.10	4.89	6.15	7.33
Jul	1.07	1.38	1.83	2.21	2.58	2.96	3.38	3.86	4.49	5.46	6.35
Aug	.61	.83	1.18	1.48	1.78	2.09	2.44	2.85	3.39	4.24	5.03
Sep	.31	.46	.72	.97	1.22	1.49	1.81	2.18	2.69	3.51	4.29
Oct	.18	.29	.51	.73	.96	1.21	1.51	1.89	2.39	3.23	4.05
Nov	.12	.21	.37	.54	.73	.94	1.19	1.51	1.94	2.66	3.36
Dec	.05	.12	.22	.31	.40	.49	.61	.74	.92	1.22	1.50
Ann	14.29	15.91	18.03	19.68	21.17	22.62	24.15	25.85	27.94	31.01	33.71

\+ 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: MULLEN 21 NW, NE **COOP ID: 255702**

Climate Division: NE 3 **NWS Call Sign:** **Elevation: 3,460 Feet** **Lat: 42°15N** **Lon: 101°20W**

Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	7.4	5.3	4	3	18.0	1988	19	29.8	1988	24+	1988	20	20	1979	5.0	2.8	.6	.2	@	15.3	9.3	5.8	2.4
Feb	6.4	4.9	3	2	8.0	1971	19	20.3	1987	15+	1988	6	10	1993	4.3	2.8	.5	.2	.0	11.3	6.0	3.3	1.2
Mar	13.2	12.2	2	2	12.0	1977	12	33.0+	1987	20	1977	13	6	1987	5.3	4.2	1.6	.7	@	8.9	5.2	3.4	.5
Apr	8.8	4.0	1	#	18.0	1995	18	46.5	1995	18	1984	3	8	1995	2.9	2.2	1.2	.6	.2	3.1	1.4	.9	.2
May	.3	.0	#	0	4.0	1979	10	4.0	1979	4	1979	10	#+	1997	.2	.1	.1	.0	.0	@	@	.0	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	#+	2000	30	#+	2000	.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	1.3	.0	#	0	12.0	1985	29	16.0	1985	12	1985	29	1	1985	.5	.3	.2	.1	@	.3	.1	.1	@
Oct	3.2	2.0	#	#	12.0	1995	23	17.0	1995	13	1995	24	2	1995	1.2	1.0	.4	.1	.1	1.6	.7	.4	.1
Nov	9.6	7.0	2	1	18.0	1984	10	27.0	1998	18	1984	10	8	1998	3.9	2.8	1.2	.5	.1	8.6	5.6	3.5	.9
Dec	7.6	7.0	3	2	7.0	2000	11	16.0	1983	16	1983	24	12	1983	5.0	3.3	.9	.2	.0	13.1	7.4	4.3	2.6
Ann	57.8	42.4	N/A	N/A	18.0+	Apr 1995	18	46.5	Apr 1995	24+	Jan 1988	20	20	Jan 1979	28.3	19.5	6.7	2.6	.4	62.2	35.7	21.7	7.9

+ 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: MULLEN 21 NW, NE **COOP ID: 255702**

Climate Division: NE 3 **NWS Call Sign:** **Elevation: 3,460 Feet** **Lat: 42˚15N** **Lon: 101˚20W**

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	6/21	6/13	6/08	6/03	5/29	5/25	5/20	5/15	5/07
32	5/27	5/23	5/19	5/17	5/14	5/11	5/09	5/05	5/01
28	5/18	5/13	5/09	5/06	5/03	4/30	4/27	4/24	4/19
24	5/10	5/05	5/02	4/29	4/26	4/23	4/20	4/17	4/12
20	4/27	4/21	4/17	4/14	4/11	4/08	4/04	3/31	3/26
16	4/15	4/10	4/06	4/02	3/30	3/27	3/23	3/20	3/14

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	8/28	9/02	9/06	9/09	9/12	9/15	9/18	9/22	9/27
32	9/05	9/11	9/15	9/18	9/22	9/25	9/29	10/03	10/09
28	9/16	9/21	9/25	9/28	10/01	10/03	10/06	10/10	10/15
24	9/23	9/29	10/03	10/07	10/10	10/14	10/17	10/22	10/27
20	10/02	10/08	10/13	10/17	10/20	10/24	10/28	11/01	11/07
16	10/12	10/18	10/22	10/25	10/29	11/01	11/04	11/08	11/14

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	133	124	117	111	105	100	94	87	77
32	152	145	139	134	130	126	121	115	108
28	169	163	158	153	149	145	141	136	129
24	187	180	175	171	167	163	158	153	146
20	218	209	202	197	192	187	181	175	166
16	232	225	220	216	212	208	204	199	192

***** 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: MULLEN 21 NW, NE **COOP ID: 255702**

Climate Division: NE 3 **NWS Call Sign:** **Elevation: 3,460 Feet** **Lat: 42˚15N** **Lon: 101˚20W**

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	1281	1006	892	566	281	77	9	17	160	491	904	1190	6874
60	1126	866	737	421	163	28	1	3	75	337	754	1035	5546
57	1033	782	644	338	108	13	0	1	40	248	664	942	4813
55	971	732	582	286	79	8	0	0	24	193	611	881	4367
50	824	601	436	173	29	1	0	0	5	84	471	737	3361
32	350	219	71	5	0	0	0	0	0	1	118	285	1049

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	92	137	202	428	760	1040	1268	1228	883	532	204	118	6892
55	0	5	0	19	126	358	555	515	218	11	7	1	1815
57	0	0	0	11	93	304	493	454	174	5	0	0	1534
60	0	0	0	5	55	229	400	363	118	1	0	0	1171
65	0	0	0	0	18	127	254	222	53	0	0	0	674
70	0	0	0	0	4	57	129	109	18	0	0	0	317

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	5	31	82	223	494	778	997	959	628	298	68	18	5	36	118	341	835	1613	2610	3569	4197	4495	4563	4581
45	0	4	38	135	351	628	842	804	486	181	29	1	0	4	42	177	528	1156	1998	2802	3288	3469	3498	3499
50	0	0	10	74	221	481	687	649	352	94	9	0	0	0	10	84	305	786	1473	2122	2474	2568	2577	2577
55	0	0	2	31	122	336	532	494	233	42	0	0	0	0	2	33	155	491	1023	1517	1750	1792	1792	1792
60	0	0	0	10	52	210	382	346	135	11	0	0	0	0	0	10	62	272	654	1000	1135	1146	1146	1146
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	18	36	87	171	312	494	637	618	408	233	69	29	18	54	141	312	624	1118	1755	2373	2781	3014	3083	3112

(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