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: MADILL, OK **COOP ID: 345468**

Climate Division: OK 8 **NWS Call Sign:** **Elevation: 770 Feet** **Lat: 34˚07N** **Lon: 96˚47W**

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	50.1	27.5	38.8	82+	1952	25	44.5	1986	1	1977	10	28.8	1979	812	0	.0	.0	17.9	2.4	18.5	.0
Feb	56.4	32.3	44.4	93	1996	22	53.5	1976	1+	1951	2	32.0	1978	582	0	.0	.1	20.6	1.0	11.1	.0
Mar	64.3	40.0	52.2	97	1974	31	58.2	1974	7	1948	11	47.3	1975	400	1	.0	.1	28.7	.1	4.6	.0
Apr	72.8	49.4	61.1	96	1972	12	66.1	1981	26	1975	3	56.4	1997	153	36	.0	.5	30.0	.0	.6	.0
May	80.5	59.7	70.1	99	1985	30	75.4+	1998	35	1954	4	65.7	1976	30	188	.0	3.2	31.0	.0	.0	.0
Jun	88.3	67.5	77.9	109	1980	27	82.5	1980	47	1954	4	74.6	1989	0	387	.6	15.1	30.0	.0	.0	.0
Jul	94.0	71.9	83.0	110	1980	17	91.2	1998	53	1972	6	78.6	1976	0	555	6.2	25.6	31.0	.0	.0	.0
Aug	93.6	70.0	81.8	111	1964	5	87.6	1980	53+	1989	8	76.3	1992	0	522	6.3	25.3	31.0	.0	.0	.0
Sep	85.9	62.9	74.4	110	1998	5	82.0	1998	37+	1989	24	65.6	1974	18	300	1.7	12.3	30.0	.0	.0	.0
Oct	75.6	51.5	63.6	100	1963	4	67.1	2000	22	1993	31	56.9	1976	110	63	.0	1.6	30.8	.0	.3	.0
Nov	62.8	40.0	51.4	88	1948	4	59.3	1999	14+	1959	17	45.0	1972	415	6	.0	.0	26.6	.1	5.6	.0
Dec	53.4	31.2	42.3	86	1955	24	48.2	1984	-8+	1989	22	29.6	1983	704	0	.0	.0	21.0	1.3	14.8	.1
Ann	73.1	50.3	61.8	111	Aug 1964	5	91.2	Jul 1998	-8+	Dec 1989	22	28.8	Jan 1979	3224	2058	14.8	83.8	328.6	4.9	55.5	.1

\+ 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: MADILL, OK

COOP ID: 345468

Climate Division: OK 8 **NWS Call Sign:** **Elevation: 770 Feet** **Lat: 34˚07N** **Lon: 96˚47W**

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	2.14	1.93	3.99	1989	26	5.92	1989	.00	1986
Feb	2.42	2.53	3.57	1966	9	5.79	1997	.00	1996
Mar	3.67	3.28	4.68	1977	27	8.36	1985	.59	1972
Apr	3.53	2.95	5.17	1959	18	8.97	1990	.62	1987
May	5.25	5.07	5.12	1968	17	10.10	1982	.50	1996
Jun	5.05	4.47	6.57	1957	1	17.18	1991	1.34	1977
Jul	2.27	2.45	4.23	1950	23	6.78	1994	.00+	1998
Aug	2.78	2.31	4.30	1974	11	9.02	1974	.00	2000
Sep	4.53	3.58	6.33	1980	28	12.02	1974	.45	1982
Oct	4.79	3.73	10.17	1981	13	25.80	1981	.42	1978
Nov	3.11	2.84	3.34	1994	15	7.42	1996	.00	1995
Dec	2.62	2.22	2.56	1992	14	7.07	1987	.16	1981
Ann	42.16	39.83	10.17	Oct 1981	13	25.80	Oct 1981	.00+	Aug 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.5	4.1	1.6	.4
Feb	5.0	4.1	1.8	.9
Mar	6.5	5.0	2.6	1.1
Apr	6.8	5.6	2.4	1.1
May	8.4	6.5	3.5	1.7
Jun	7.2	5.7	3.3	1.7
Jul	4.5	3.3	1.6	.6
Aug	5.0	3.5	1.5	.8
Sep	6.1	5.1	2.6	1.5
Oct	6.6	5.2	3.0	1.4
Nov	5.9	4.5	2.4	1.1
Dec	5.4	4.5	1.8	.9
Ann	72.9	57.1	28.1	13.2

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	.19	.43	.78	1.09	1.41	1.76	2.16	2.64	3.29	4.33	5.33
Feb	.16	.40	.78	1.13	1.51	1.92	2.40	2.98	3.78	5.08	6.34
Mar	.90	1.25	1.78	2.26	2.73	3.22	3.78	4.44	5.30	6.66	7.94
Apr	.88	1.21	1.72	2.18	2.63	3.10	3.63	4.26	5.09	6.39	7.61
May	1.28	1.78	2.54	3.22	3.90	4.61	5.41	6.35	7.59	9.55	11.40
Jun	1.31	1.79	2.52	3.17	3.80	4.47	5.21	6.09	7.24	9.06	10.76
Jul	.00	.15	.50	.85	1.22	1.66	2.17	2.80	3.68	5.16	6.62
Aug	.11	.34	.74	1.15	1.59	2.09	2.68	3.42	4.43	6.12	7.78
Sep	.70	1.09	1.75	2.37	3.02	3.73	4.54	5.54	6.87	9.03	11.11
Oct	.56	.93	1.61	2.28	2.99	3.78	4.71	5.85	7.41	9.98	12.47
Nov	.43	.83	1.36	1.80	2.23	2.69	3.21	3.82	4.63	5.91	7.11
Dec	.34	.55	.92	1.29	1.67	2.10	2.59	3.21	4.04	5.39	6.71
Ann	28.35	30.97	34.35	36.93	39.24	41.49	43.82	46.40	49.56	54.16	58.17

\+ 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: MADILL, OK **COOP ID: 345468**

Climate Division: OK 8 **NWS Call Sign:** **Elevation: 770 Feet** **Lat: 34°07N** **Lon: 96°47W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	2.3	1.0	#	0
Feb	2.3	.0	#	0
Mar	.0	.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	.2	.0	#	0
Dec	1.2	.0	#	0
Ann	6.0	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	9.6	1992	18	11.6	1992	5	1977	11	1	1978
Feb	7.0	1979	7	16.4	1978	7	1979	7	2	1978
Mar	.3	1995	3	.3	1995	1	1971	3	#	1971
Apr	.0	0	0	.0	0	0	0	0	0	0
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	3.0	1976	14	3.1	1976	2	1990	26	#+	1990
Dec	10.0	1975	25	10.0	1975	6	1975	25	#+	2000
Ann	10.0	Dec 1975	25	16.4	Feb 1978	7	Feb 1979	7	2	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.9	.9	.2	.1	.0
Feb	.9	.8	.3	.1	.0
Mar	.1	.0	.0	.0	.0
Apr	.0	.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	.2	.1	.1	.0	.0
Dec	.2	.2	.2	.1	.1
Ann	2.3	2.0	.8	.3	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.9	.4	.1	.0
Feb	1.1	.7	.4	.0
Mar	.0	.0	.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	@	.0	.0	.0
Dec	.3	.1	.1	.0
Ann	2.3	1.2	.6	.0

+ 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: MADILL, OK **COOP ID: 345468**

Climate Division: OK 8 **NWS Call Sign:** **Elevation: 770 Feet** **Lat: 34˚07N** **Lon: 96˚47W**

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	4/18	4/14	4/10	4/08	4/05	4/02	3/31	3/27	3/23
32	4/08	4/03	3/30	3/27	3/24	3/22	3/19	3/15	3/10
28	3/29	3/22	3/17	3/13	3/09	3/05	2/28	2/23	2/16
24	3/13	3/06	3/01	2/24	2/20	2/16	2/11	2/06	1/29
20	3/10	3/02	2/24	2/18	2/13	2/09	2/03	1/28	1/20
16	3/02	2/20	2/13	2/07	2/01	1/25	1/17	1/06	0/00

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	10/15	10/20	10/24	10/27	10/30	11/02	11/05	11/09	11/14
32	10/22	10/28	11/02	11/06	11/09	11/13	11/17	11/21	11/28
28	11/03	11/09	11/13	11/17	11/21	11/25	11/28	12/03	12/09
24	11/10	11/17	11/22	11/27	12/01	12/05	12/09	12/15	12/22
20	11/19	11/28	12/04	12/10	12/15	12/20	12/25	1/01	1/10
16	11/29	12/08	12/15	12/21	12/27	1/02	1/10	1/21	0/00

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	225	219	214	211	207	204	200	196	189
32	251	244	238	233	229	225	220	215	207
28	287	277	269	263	256	250	244	236	226
24	314	303	296	289	283	277	271	263	253
20	342	327	317	309	302	295	287	278	265
16	>365	>365	>365	350	331	320	310	300	288

***** 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: MADILL, OK **COOP ID: 345468**

Climate Division: OK 8 **NWS Call Sign:** **Elevation: 770 Feet** **Lat: 34˚07N** **Lon: 96˚47W**

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	812	582	400	153	30	0	0	0	18	110	415	704	3224
60	658	452	257	65	7	0	0	0	4	41	281	554	2319
57	567	377	182	32	2	0	0	0	0	19	213	468	1860
55	511	331	141	18	1	0	0	0	0	10	173	411	1596
50	370	229	65	2	0	0	0	0	0	2	94	283	1045
32	50	26	0	0	0	0	0	0	0	0	2	27	105

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	261	372	624	873	1181	1377	1578	1545	1272	977	583	346	10989
55	9	33	51	201	469	687	865	832	582	273	64	17	4083
57	3	23	31	155	408	627	803	770	522	221	44	12	3619
60	1	14	13	98	320	537	710	677	436	150	23	5	2984
65	0	0	1	36	188	387	555	522	300	63	6	0	2058
70	0	0	0	8	90	242	400	372	185	19	0	0	1316

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	146	256	474	694	967	1165	1355	1331	1071	781	406	196	146	402	876	1570	2537	3702	5057	6388	7459	8240	8646	8842
45	78	158	334	545	812	1015	1200	1176	921	629	278	104	78	236	570	1115	1927	2942	4142	5318	6239	6868	7146	7250
50	30	88	213	399	657	865	1045	1021	771	476	171	46	30	118	331	730	1387	2252	3297	4318	5089	5565	5736	5782
55	6	38	120	263	502	715	890	866	621	331	94	17	6	44	164	427	929	1644	2534	3400	4021	4352	4446	4463
60	0	12	56	148	352	565	735	711	476	203	42	5	0	12	68	216	568	1133	1868	2579	3055	3258	3300	3305
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	102	167	297	439	646	801	905	887	716	505	243	124	102	269	566	1005	1651	2452	3357	4244	4960	5465	5708	5832

(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