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: MCALESTER MUNICIPAL AP, OK **COOP ID: 345664**

Climate Division: OK 6 **NWS Call Sign: MLC** **Elevation: 760 Feet** **Lat: 34˚54N** **Lon: 95˚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	49.6	28.2	38.9	80	1957	9	47.0	1990	-14	1977	10	27.8	1978	809	0	.0	.0	14.9	3.3	22.6	.2
Feb	56.0	33.1	44.6	92+	1996	21	53.0	1976	-6	1985	2	32.2	1978	580	0	.0	.1	19.1	2.2	14.7	.2
Mar	64.9	41.6	53.3	94	1974	31	60.3	1974	9	1980	2	48.3	1975	368	5	.0	.1	27.8	.2	6.1	.0
Apr	73.4	49.6	61.5	94	1987	18	68.0	1981	25+	1957	13	55.9	1983	144	38	.0	.2	29.8	.0	.9	.0
May	80.0	58.6	69.3	98	1998	31	74.7	1996	34	1954	4	64.2	1976	40	173	.0	.8	31.0	.0	.0	.0
Jun	87.9	67.3	77.6	106	1953	21	81.3	1977	45	1983	1	73.7	1983	1	378	.2	10.1	30.0	.0	.0	.0
Jul	93.3	71.3	82.3	112	1954	17	89.0	1980	51+	1967	15	78.6	1989	0	537	3.7	22.8	31.0	.0	.0	.0
Aug	93.7	70.2	82.0	110+	1956	6	87.9	1980	51+	1989	8	76.9	1992	0	525	4.8	24.0	31.0	.0	.0	.0
Sep	85.5	62.9	74.2	110	1998	4	81.9	1998	34	1984	30	66.8	1974	20	296	.8	9.0	30.0	.0	.0	.0
Oct	75.5	51.4	63.5	99	1953	1	67.3	1971	19	1993	31	56.3	1976	112	65	.0	1.0	30.8	.0	.9	.0
Nov	62.4	40.7	51.6	85+	1955	13	58.9	1999	9	1976	29	44.1	1976	414	9	.0	.0	26.3	.1	7.3	.0
Dec	52.5	31.6	42.1	80+	1966	7	48.2	1971	-5	1989	23	30.1	1983	711	0	.0	.0	19.5	1.7	18.1	.2
Ann	72.9	50.5	61.7	112	Jul 1954	17	89.0	Jul 1980	-14	Jan 1977	10	27.8	Jan 1978	3199	2026	9.5	68.1	321.2	7.5	70.6	.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: 1953-2001

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

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: MCALESTER MUNICIPAL AP, OK **COOP ID: 345664**

Climate Division: OK 6 **NWS Call Sign: MLC** **Elevation: 760 Feet** **Lat: 34˚54N** **Lon: 95˚47W**

Precipitation (inches)

Precipitation Totals

Means/Medians(1)

Month	Mean	Median
Jan	2.28	1.97
Feb	2.75	2.45
Mar	3.97	3.63
Apr	4.18	4.31
May	5.88	5.70
Jun	4.53	4.08
Jul	2.78	2.34
Aug	2.71	2.25
Sep	4.66	4.82
Oct	4.59	3.18
Nov	3.98	3.55
Dec	2.99	2.23
Ann	45.30	45.72

Extremes

Month	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	4.35	1982	30	6.49	1998	.01	1986
Feb	2.95	1985	23	7.07	1997	.12	1995
Mar	4.03	1985	29	8.90	1985	.93	1971
Apr	6.54	1996	22	10.75	1990	.21	1987
May	5.79	1960	18	12.50	1990	1.00	1988
Jun	3.28	1957	1	8.86	1975	.50	1988
Jul	5.76	1960	23	6.67	1994	.02	1999
Aug	4.44	1964	15	6.88	1971	.04	2000
Sep	4.21	1974	20	10.89	1974	.27	1978
Oct	8.06	1981	13	17.43	1981	.66+	1992
Nov	7.34	1973	24	9.81	1973	.46	1989
Dec	3.67	2001	16	8.34	1987	.19	1981
Ann	8.06	Oct 1981	13	17.43	Oct 1981	.01	Jan 1986

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.0	3.9	1.3	.3
Feb	6.2	3.4	1.6	.7
Mar	8.2	5.6	2.6	1.0
Apr	8.2	5.7	2.4	1.1
May	10.0	7.0	3.7	1.9
Jun	8.3	6.1	3.3	1.4
Jul	5.9	3.9	1.7	1.1
Aug	5.8	3.7	2.0	.6
Sep	6.9	5.0	2.8	1.4
Oct	7.7	5.1	2.4	1.4
Nov	6.8	4.7	2.3	1.0
Dec	6.8	4.4	1.8	.7
Ann	87.8	58.5	27.9	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	.24	.42	.73	1.05	1.39	1.77	2.23	2.79	3.55	4.82	6.05
Feb	.34	.56	.95	1.33	1.73	2.18	2.71	3.36	4.23	5.67	7.07
Mar	1.21	1.59	2.15	2.64	3.11	3.59	4.13	4.76	5.57	6.85	8.02
Apr	.81	1.18	1.80	2.36	2.94	3.55	4.25	5.09	6.21	8.00	9.71
May	1.88	2.44	3.26	3.97	4.65	5.35	6.12	7.03	8.19	10.00	11.68
Jun	1.31	1.74	2.39	2.95	3.50	4.07	4.70	5.45	6.42	7.93	9.34
Jul	.14	.30	.62	1.00	1.42	1.93	2.55	3.35	4.47	6.39	8.31
Aug	.27	.46	.83	1.21	1.62	2.08	2.62	3.31	4.24	5.79	7.30
Sep	.76	1.16	1.84	2.48	3.14	3.86	4.69	5.69	7.04	9.21	11.30
Oct	.52	.88	1.52	2.16	2.84	3.60	4.50	5.61	7.12	9.60	12.03
Nov	.76	1.11	1.69	2.23	2.78	3.37	4.04	4.84	5.91	7.64	9.27
Dec	.39	.63	1.05	1.47	1.91	2.39	2.96	3.65	4.59	6.13	7.61
Ann	29.51	32.47	36.31	39.26	41.91	44.49	47.17	50.16	53.82	59.17	63.84

\+ 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: 1953-2001
(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: MCALESTER MUNICIPAL AP, OK **COOP ID: 345664**

Climate Division: OK 6 **NWS Call Sign: MLC** **Elevation: 760 Feet** **Lat: 34°54N** **Lon: 95°47W**

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	3.0	.7	#	0	9.0	1988	6	13.1	1977	9+	1988	8	1+	1995	1.2	.9	.3	.2	.0	2.8	1.0	.5	.0
Feb	2.2	.4	#	0	10.1	1975	23	13.4	1979	9	1985	2	2	1985	1.0	.7	.2	.2	@	1.7	.8	.5	.0
Mar	.7	.0	#	0	4.0	1971	2	7.0	1989	7+	1989	7	1	1989	.3	.3	.1	.0	.0	.3	.2	.1	.0
Apr	#	.0	0	0	#	1973	9	#	1973	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1996	.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	#	1993	29	#	1993	#	1993	30	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.3	.0	#	0	3.0	1980	17	3.0	1980	1+	1995	11	#	1995	.2	.2	@	.0	.0	.2	.0	.0	.0
Dec	.9	.0	#	0	6.0	1975	25	6.0	1975	3	1975	25	#	1990	.5	.4	.1	@	.0	.8	@	.0	.0
Ann	7.1	1.1	N/A	N/A	10.1	Feb 1975	23	13.4	Feb 1979	9+	Jan 1988	8	2	Feb 1985	3.2	2.5	.7	.4	@	5.8	2.0	1.1	.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: MCALESTER MUNICIPAL AP, OK **COOP ID: 345664**

Climate Division: OK 6 **NWS Call Sign: MLC** **Elevation: 760 Feet** **Lat: 34˚54N** **Lon: 95˚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	4/26	4/20	4/16	4/12	4/09	4/06	4/02	3/29	3/24
32	4/15	4/09	4/04	4/01	3/28	3/25	3/21	3/17	3/11
28	4/06	3/30	3/25	3/21	3/17	3/13	3/08	3/03	2/24
24	3/21	3/14	3/09	3/04	2/28	2/24	2/19	2/12	0/00
20	3/09	3/01	2/23	2/18	2/13	2/08	2/02	1/25	0/00
16	3/08	2/24	2/15	2/07	1/31	1/23	1/13	12/30	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	10/06	10/13	10/17	10/21	10/25	10/29	11/02	11/07	11/13
32	10/15	10/21	10/26	10/30	11/02	11/06	11/10	11/15	11/21
28	10/23	10/31	11/06	11/11	11/16	11/20	11/25	12/01	12/09
24	11/07	11/14	11/19	11/23	11/28	12/02	12/07	12/14	0/00
20	11/15	11/24	11/30	12/05	12/10	12/15	12/22	12/30	0/00
16	11/26	12/07	12/15	12/22	12/28	1/05	1/13	1/26	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	226	216	209	204	198	193	187	180	171
32	247	237	230	224	218	212	206	199	189
28	279	267	258	250	243	236	229	220	208
24	>365	295	284	277	271	266	260	253	245
20	>365	337	321	310	301	292	283	273	259
16	>365	>365	>365	339	326	316	306	296	283

***** 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: MCALESTER MUNICIPAL AP, OK **COOP ID: 345664**

Climate Division: OK 6 **NWS Call Sign: MLC** **Elevation: 760 Feet** **Lat: 34˚54N** **Lon: 95˚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	809	580	368	144	40	1	0	0	20	112	414	711	3199
60	658	450	229	60	10	0	0	0	5	43	283	562	2300
57	573	377	162	28	4	0	0	0	1	21	216	476	1858
55	515	331	124	16	1	0	0	0	0	11	177	420	1595
50	380	232	56	2	0	0	0	0	0	2	100	292	1064
32	68	29	0	0	0	0	0	0	0	0	3	33	133

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	282	380	660	885	1157	1367	1560	1548	1266	976	588	344	11013
55	16	37	71	210	445	677	847	835	576	274	73	19	4080
57	12	27	46	163	385	617	785	773	517	222	51	13	3611
60	4	17	21	105	299	527	692	680	431	151	28	6	2961
65	0	0	5	38	173	378	537	525	296	65	9	0	2026
70	0	0	0	9	82	236	382	374	183	20	0	0	1286

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	104	201	422	649	907	1123	1307	1299	1018	725	365	152	104	305	727	1376	2283	3406	4713	6012	7030	7755	8120	8272
45	51	120	286	501	752	973	1152	1144	868	572	245	80	51	171	457	958	1710	2683	3835	4979	5847	6419	6664	6744
50	19	63	172	359	597	823	997	989	718	422	143	38	19	82	254	613	1210	2033	3030	4019	4737	5159	5302	5340
55	5	34	98	229	444	673	842	834	569	281	74	16	5	39	137	366	810	1483	2325	3159	3728	4009	4083	4099
60	0	9	46	125	297	523	687	679	426	166	31	1	0	9	55	180	477	1000	1687	2366	2792	2958	2989	2990
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	69	133	261	406	601	784	887	869	686	462	219	96	69	202	463	869	1470	2254	3141	4010	4696	5158	5377	5473

(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