

Climatography of the United States

No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: MUSKOGEE, OK

1971-2000

COOP ID: 346130

Climate Division: OK 6

NWS Call Sign:

Elevation: 518 Feet Lat: 35°43N Lon: 95°17W

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	47.0	25.2	36.1	79+	1950	25	44.8	1990	-9	1977	10	24.0	1979	896	0	.0	.0	14.4	3.6	21.7	.3
Feb	53.3	29.9	41.6	90	1996	22	50.9	1976	-4	1996	4	29.7	1978	656	0	.0	@	18.3	2.3	14.4	.2
Mar	62.7	38.0	50.4	93+	1974	31	54.5	1974	-2	1948	12	44.0	1975	455	0	.0	.1	27.8	.2	6.4	.0
Apr	71.7	47.6	59.7	94	1960	6	65.7	1981	22	1957	13	54.4	1983	187	26	.0	.3	29.8	.0	1.0	.0
May	79.2	58.2	68.7	95+	1951	29	73.9	1987	34	1981	11	63.4	1976	43	157	.0	1.1	31.0	.0	.0	.0
Jun	86.6	66.4	76.5	104+	1953	20	80.4	1977	47	1998	6	73.2	1974	2	346	.1	10.7	30.0	.0	.0	.0
Jul	93.1	71.0	82.1	114	1954	13	87.8	1980	49	1971	31	78.9	1989	0	527	4.2	24.2	31.0	.0	.0	.0
Aug	92.6	68.9	80.8	112+	1956	6	86.1	1980	51+	1967	13	74.4	1992	1	490	5.3	22.5	31.0	.0	.0	.0
Sep	84.6	61.4	73.0	109	2000	1	80.7	1998	34	1984	30	64.5	1974	23	263	.9	9.3	30.0	.0	.0	.0
Oct	74.2	50.0	62.1	97	1953	1	65.6	1971	24	1957	26	55.6	1976	136	46	.0	.6	30.8	.0	.9	.0
Nov	60.3	37.9	49.1	84+	1955	13	56.9	1999	10	1976	29	42.4	1976	480	3	.0	.0	24.9	.2	7.4	.0
Dec	50.1	29.1	39.6	81	1951	31	46.8	1984	-7	1989	22	26.4	1983	788	0	.0	.0	17.0	2.2	17.6	.1
Ann	71.3	48.6	60.0	114	Jul 1954	13	87.8	Jul 1980	-9	Jan 1977	10	24.0	Jan 1979	3667	1858	10.5	68.8	316.0	8.5	69.4	.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: 1948-2001

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

070-A

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Elevation: 518 Feet Lat: 35°43N

Lon: 95°17W

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	1.94	1.87	2.37	2001	28	5.00	1990	.00	1986	6.3	3.7	1.2	.5	.20	.43	.75	1.03	1.32	1.63	1.98	2.40	2.96	3.86	4.72
Feb	2.20	1.81	2.92	2001	23	4.82	1990	.04	1996	6.3	4.4	1.6	.6	.40	.59	.91	1.21	1.52	1.85	2.23	2.69	3.29	4.27	5.21
Mar	3.67	3.06	2.94	1977	27	9.05	1973	.26	1971	8.1	6.0	2.8	1.0	.94	1.29	1.82	2.29	2.76	3.24	3.79	4.44	5.28	6.61	7.86
Apr	3.97	3.71	5.62	1976	20	8.26	1976	.43	1987	8.4	6.3	2.9	1.1	1.02	1.39	1.97	2.48	2.98	3.51	4.10	4.80	5.71	7.15	8.49
May	5.40	5.36	6.06	1957	25	9.67+	1990	1.11	1972	10.0	7.7	4.0	1.7	2.20	2.70	3.40	3.97	4.52	5.07	5.66	6.35	7.21	8.54	9.75
Jun	5.09	4.43	3.75	2000	20	13.46	1973	.96	1990	8.5	6.6	3.4	1.9	1.22	1.69	2.44	3.10	3.76	4.46	5.24	6.16	7.38	9.31	11.13
Jul	2.71	1.98	7.16	1961	15	6.60	1995	.09	1991	4.9	3.7	1.9	.8	.17	.33	.67	1.04	1.46	1.94	2.53	3.28	4.33	6.10	7.87
Aug	2.42	2.33	3.72	1987	26	5.34	1997	.00	2000	5.7	3.7	1.5	.6	.29	.60	1.01	1.35	1.70	2.07	2.49	2.99	3.65	4.71	5.71
Sep	4.97	4.12	7.47	1993	14	11.74	1996	.21	1978	7.8	5.8	2.9	1.5	.87	1.31	2.04	2.71	3.41	4.16	5.02	6.06	7.45	9.69	11.82
Oct	4.14	2.92	7.70	1986	1	11.93	1981	.75+	1989	6.6	4.9	2.3	1.2	.47	.78	1.36	1.94	2.56	3.25	4.06	5.06	6.43	8.69	10.89
Nov	4.09	3.83	3.78	1972	1	7.59	1992	.21	1989	7.1	5.3	2.8	1.4	.92	1.30	1.90	2.43	2.97	3.55	4.19	4.96	5.98	7.59	9.11
Dec	3.17	2.49	3.34	1992	14	9.27	1987	.15	1996	6.6	4.6	2.1	1.1	.43	.69	1.15	1.59	2.05	2.56	3.15	3.87	4.85	6.45	7.99
Ann	43.77	43.69	7.70	Oct 1986	1	13.46	Jun 1973	.00+	Aug 2000	86.3	62.7	29.4	13.4	30.22	32.82	36.16	38.71	40.98	43.18	45.46	47.98	51.06	55.53	59.41

+ 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

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Station: MUSKOGEE, OK

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NWS Call Sign:

Elevation: 518 Feet

Lat: 35°43N

Lon: 95°17W

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	2.0	.5	#	0	7.0	1977	9	12.0	1977	6	1995	18	2	1995	1.1	.7	.4	.1	.0	.0	.0	.0	.0
Feb	3.0	.5	#	0	9.5	1975	24	14.5	1975	10	1975	24	3	1986	.9	.6	.3	.2	.0	.3	.2	.1	.1
Mar	.9	.0	#	0	7.0	1989	6	12.5	1989	#+	1975	29	#+	1975	.2	.2	.1	.1	.0	.0	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	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	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	0	.3	1993	30	.3	1993	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.2	.0	#	0	1.8	1975	26	1.8	1975	2	1975	26	#+	2000	.1	.1	.0	.0	.0	.1	.0	.0	.0
Dec	1.2	.5	#	0	5.0	1987	15	6.0	1989	3+	1990	29	#+	1990	.8	.4	.1	.1	.0	.0	.0	.0	.0
Ann	7.3	1.5	N/A	N/A	9.5	Feb 1975	24	14.5	Feb 1975	10	Feb 1975	24	3	Feb 1986	3.1	2.0	.9	.5	.0	.4	.2	.1	.1

+ 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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Lat: 35° 43N

Lon: 95° 17W

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	4/27	4/22	4/19	4/16	4/14	4/11	4/08	4/05	4/01
32	4/13	4/09	4/05	4/02	3/30	3/28	3/25	3/21	3/16
28	4/03	3/28	3/23	3/20	3/16	3/13	3/09	3/05	2/27
24	3/27	3/19	3/13	3/08	3/04	2/27	2/22	2/16	2/08
20	3/12	3/04	2/26	2/21	2/17	2/12	2/07	2/01	1/24
16	3/13	3/01	2/20	2/12	2/05	1/29	1/21	1/11	12/28
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	10/12	10/15	10/19	10/22	10/25	10/28	11/01	11/07
32	10/17	10/23	10/27	10/30	11/02	11/05	11/08	11/12	11/17
28	10/29	11/04	11/09	11/13	11/16	11/20	11/24	11/28	12/05
24	11/05	11/11	11/16	11/20	11/24	11/28	12/02	12/07	12/14
20	11/15	11/22	11/27	12/01	12/05	12/09	12/14	12/19	12/26
16	11/14	11/26	12/05	12/13	12/20	12/27	1/04	1/14	1/29
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	212	204	199	195	190	186	181	176	169
32	237	229	224	220	216	212	207	202	195
28	270	261	255	249	244	239	234	227	218
24	295	285	277	271	265	259	253	245	235
20	323	312	304	297	291	285	278	270	259
16	>365	>365	331	319	310	302	294	285	274

* 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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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	896	656	455	187	43	2	0	1	23	136	480	788	3667
60	742	527	309	89	11	0	0	0	6	55	343	638	2720
57	652	450	229	49	4	0	0	0	1	28	269	552	2234
55	596	401	182	30	1	0	0	0	0	15	224	495	1944
50	454	290	93	6	0	0	0	0	0	3	134	362	1342
32	100	49	2	0	0	0	0	0	0	0	6	61	218

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	228	317	570	829	1137	1335	1550	1511	1230	933	519	297	10456
55	10	26	37	169	425	645	837	798	540	235	47	17	3786
57	4	19	22	128	366	585	775	736	481	185	31	12	3344
60	1	12	9	78	280	495	682	643	396	120	16	5	2737
65	0	0	0	26	157	346	527	490	263	46	3	0	1858
70	0	0	0	5	70	208	372	342	157	11	0	0	1165

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	105	208	416	647	914	1119	1317	1296	1012	712	339	142	105	313	729	1376	2290	3409	4726	6022	7034	7746	8085	8227
45	48	125	283	499	759	969	1162	1141	862	559	221	71	48	173	456	955	1714	2683	3845	4986	5848	6407	6628	6699
50	15	63	176	356	604	819	1007	986	712	408	130	33	15	78	254	610	1214	2033	3040	4026	4738	5146	5276	5309
55	2	26	96	225	449	669	852	831	565	268	64	13	2	28	124	349	798	1467	2319	3150	3715	3983	4047	4060
60	0	8	42	127	301	519	697	676	420	155	23	0	0	8	50	177	478	997	1694	2370	2790	2945	2968	2968
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	70	134	255	405	609	776	891	863	678	452	200	85	70	204	459	864	1473	2249	3140	4003	4681	5133	5333	5418

(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/normal/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