

Climatology of the United States

No. 20

1971-2000

Station: FREDERICK, OK

COOP ID: 343353

Climate Division: OK 7

NWS Call Sign:

Elevation: 1,285 Feet Lat: 34° 23N

Lon: 99° 01W

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	50.7	26.0	38.4	90	1911	31	46.3	1990	-10	1909	12	26.9	1979	826	0	.0	.0	18.8	2.9	23.2	.0
Feb	56.9	30.7	43.8	93	1917	25	51.4+	2000	-5	1933	8	31.2	1978	597	0	.0	@	19.8	1.8	14.7	@
Mar	65.7	38.8	52.3	104	1971	27	57.2	1974	3	1948	11	46.8	1975	398	1	.1	.5	27.7	.1	6.5	.0
Apr	74.4	47.9	61.2	103	1972	12	66.6	1981	23	1936	2	55.3	1973	165	49	@	1.7	29.5	.0	.8	.0
May	82.7	57.4	70.1	110	2000	24	76.9	1996	25	1907	31	65.1	1983	40	196	.9	8.2	31.0	.0	.0	.0
Jun	91.3	66.7	79.0	115	1994	28	83.4	1980	40	1983	1	73.7	1983	2	420	4.2	19.3	30.0	.0	.0	.0
Jul	96.9	71.3	84.1	114+	1936	19	90.9	1980	52+	1924	5	79.7	1990	0	592	11.9	27.6	31.0	.0	.0	.0
Aug	95.3	69.8	82.6	117	1943	3	87.9	1983	48	1915	31	76.3	1992	0	545	10.1	25.4	31.0	.0	.0	.0
Sep	86.9	62.1	74.5	111+	1947	1	82.3	1998	34	1912	26	66.7	1974	16	300	2.5	14.3	30.0	.0	.0	.0
Oct	76.2	50.4	63.3	104	1977	1	67.6	1979	17	1917	30	55.9	1976	117	64	.2	2.7	30.6	@	.5	.0
Nov	62.3	38.0	50.2	93	1914	5	57.0	1999	9	1911	29	42.9	1972	449	4	.0	@	25.9	.2	7.6	.0
Dec	52.6	28.7	40.7	87	1926	7	45.4	1979	-11	1989	23	28.6	1983	756	0	.0	.0	20.2	2.1	20.0	.2
Ann	74.3	49.0	61.7	117	Aug 1943	3	90.9	Jul 1980	-11	Dec 1989	23	26.9	Jan 1979	3366	2171	29.9	99.7	325.5	7.1	73.3	.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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1905-2001

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

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**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: FREDERICK, OK

COOP ID: 343353

Climate Division: OK 7

NWS Call Sign:

Elevation: 1,285 Feet Lat: 34°23N

Lon: 99°01W

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	1.13	1.24	2.03	1939	8	4.38	1973	.00+	1986	3.6	2.2	.9	.2	.00	.04	.17	.32	.51	.73	1.01	1.36	1.87	2.75	3.64
Feb	1.42	1.14	2.55	1911	18	4.06	1987	.00	1991	4.7	3.1	1.1	.3	.06	.19	.40	.60	.83	1.08	1.38	1.75	2.26	3.10	3.93
Mar	2.37	2.32	2.85	1953	30	5.72	1990	.04	1997	5.4	3.9	1.8	.7	.22	.39	.71	1.04	1.40	1.81	2.29	2.89	3.71	5.08	6.42
Apr	2.52	2.18	3.25	1922	7	6.70	1997	.04	1987	6.0	4.2	1.7	.8	.21	.39	.72	1.07	1.45	1.89	2.42	3.07	3.98	5.49	6.99
May	4.68	4.41	4.95	1922	8	11.67	1982	.32	1988	7.5	5.7	3.2	1.5	.57	.94	1.60	2.25	2.95	3.71	4.61	5.72	7.22	9.69	12.09
Jun	4.05	3.25	6.39	1975	22	9.74	2000	.51	1971	6.2	4.6	2.7	1.4	.84	1.21	1.80	2.34	2.89	3.47	4.13	4.92	5.97	7.64	9.22
Jul	2.13	2.28	3.45	1915	20	5.02	1990	.00	1980	4.6	2.9	1.3	.7	.07	.23	.53	.83	1.17	1.56	2.02	2.60	3.41	4.76	6.09
Aug	2.89	3.14	3.59	1977	28	7.75	1977	.00+	2000	5.9	4.1	1.7	.9	.00	.22	.69	1.14	1.62	2.16	2.80	3.58	4.66	6.47	8.23
Sep	3.30	3.17	5.90	1969	22	8.16	1976	.00+	1998	6.0	4.2	2.0	1.0	.00	.32	.90	1.42	1.96	2.56	3.26	4.10	5.26	7.16	9.01
Oct	3.26	2.34	4.35	2000	22	15.16	2000	.00	1992	5.9	4.1	1.9	.9	.06	.24	.64	1.09	1.61	2.22	2.97	3.94	5.31	7.65	9.99
Nov	1.77	1.37	2.30	1919	27	7.99	1992	.00+	1999	4.6	3.0	1.3	.6	.00	.21	.54	.83	1.11	1.43	1.79	2.21	2.80	3.75	4.67
Dec	1.50	1.08	4.20	1999	3	5.52	1999	.00+	1996	4.0	2.8	1.0	.3	.00	.08	.30	.52	.77	1.06	1.41	1.84	2.44	3.46	4.48
Ann	31.02	29.68	6.39	Jun 1975	22	15.16	Oct 2000	.00+	Aug 2000	64.4	44.8	20.6	9.3	20.08	22.12	24.78	26.82	28.66	30.45	32.31	34.38	36.92	40.64	43.89

+ 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: 1905-2001

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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: FREDERICK, OK

COOP ID: 343353

Climate Division: OK 7

NWS Call Sign:

Elevation: 1,285 Feet

Lat: 34°23N

Lon: 99°01W

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	1.5	.0	#	0	6.0	1988	7	9.0	1988	9	1988	7	1	1988	.5	.4	.3	.1	.0	.8	.6	.2	.0
Feb	1.8	.0	#	0	4.5	1978	9	12.0	1978	3+	1982	26	#+	1988	1.1	.8	.2	.0	.0	.2	.1	.0	.0
Mar	.1	.0	#	0	2.0	1971	3	2.0	1971	1	1971	3	#+	1975	.1	.1	.0	.0	.0	@	.0	.0	.0
Apr	.0	.0	#	0	.0	0	0	.0	0	#	1973	8	#	1973	.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	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.3	.0	#	0	3.0	1980	17	3.0	1980	3	1980	17	#+	1980	.2	.2	.1	.0	.0	.2	@	.0	.0
Dec	.7	.0	#	0	3.0	1971	3	5.0	1971	1	1982	11	#+	1990	.3	.2	.1	.0	.0	.0	.0	.0	.0
Ann	4.4	.0	N/A	N/A	6.0	Jan 1988	7	12.0	Feb 1978	9	Jan 1988	7	1	Jan 1988	2.2	1.7	.7	.1	.0	1.2	.7	.2	.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:

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Climate Division: **OK 7**

NWS Call Sign:

Elevation: **1,285 Feet**

Lat: **34°23N**

Lon: **99°01W**

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	4/23	4/18	4/14	4/11	4/08	4/06	4/03	3/30	3/25
32	4/14	4/08	4/04	4/01	3/29	3/26	3/22	3/18	3/13
28	4/05	3/30	3/25	3/21	3/17	3/13	3/09	3/04	2/25
24	3/26	3/16	3/10	3/04	2/27	2/22	2/16	2/10	1/31
20	3/11	3/02	2/24	2/19	2/14	2/09	2/04	1/28	1/20
16	3/03	2/21	2/14	2/08	2/02	1/27	1/19	1/10	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	10/13	10/19	10/23	10/27	10/30	11/02	11/06	11/10	11/16
32	10/21	10/27	11/01	11/05	11/09	11/12	11/16	11/21	11/27
28	10/25	11/02	11/07	11/12	11/16	11/20	11/25	11/30	12/08
24	11/10	11/18	11/23	11/28	12/03	12/07	12/12	12/17	12/25
20	11/19	11/27	12/02	12/07	12/12	12/17	12/21	12/27	1/04
16	11/26	12/05	12/13	12/19	12/25	12/31	1/08	1/18	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	218	213	208	204	199	195	190	182
32	244	237	232	228	224	220	216	211	204
28	271	261	255	249	243	238	232	226	216
24	314	302	293	285	278	271	263	254	241
20	337	323	313	306	299	292	285	276	264
16	>365	>365	351	335	325	315	307	297	284

* 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)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	826	597	398	165	40	2	0	0	16	117	449	756	3366
60	675	467	255	80	11	0	0	0	3	46	313	602	2452
57	589	392	180	45	4	0	0	0	0	23	241	516	1990
55	531	345	138	28	2	0	0	0	0	13	198	458	1713
50	394	242	62	7	0	0	0	0	0	2	111	322	1140
32	73	32	0	0	0	0	0	0	0	0	3	37	145

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	270	363	627	874	1179	1409	1615	1568	1274	970	547	304	11000
55	15	32	52	212	468	719	902	855	584	270	52	12	4173
57	11	23	32	169	408	659	840	793	524	218	35	8	3720
60	4	14	13	114	322	569	747	700	437	148	18	1	3087
65	0	0	1	49	196	420	592	545	300	64	4	0	2171
70	0	0	0	15	101	280	437	394	184	20	0	0	1431

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	112	226	429	663	959	1182	1386	1335	1055	746	347	150	112	338	767	1430	2389	3571	4957	6292	7347	8093	8440	8590
45	51	134	297	514	804	1032	1231	1180	905	592	230	70	51	185	482	996	1800	2832	4063	5243	6148	6740	6970	7040
50	20	67	183	370	649	882	1076	1025	756	444	132	28	20	87	270	640	1289	2171	3247	4272	5028	5472	5604	5632
55	1	29	97	242	496	732	921	870	606	305	63	4	1	30	127	369	865	1597	2518	3388	3994	4299	4362	4366
60	0	6	47	136	346	583	766	715	461	181	26	0	0	6	53	189	535	1118	1884	2599	3060	3241	3267	3267
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	98	169	273	412	621	783	899	867	687	468	221	115	98	267	540	952	1573	2356	3255	4122	4809	5277	5498	5613

(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.
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.

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| <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 |
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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