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: ENID, OK **COOP ID: 342912**

Climate Division: OK 2 **NWS Call Sign:** **Elevation: 1,245 Feet** **Lat: 36˚25N** **Lon: 97˚52W**

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	44.2	21.9	33.1	84	1943	22	42.2	1990	-14+	1905	15	19.0	1979	991	0	.0	.0	13.2	5.6	23.5	.3
Feb	50.7	26.5	38.6	92	1918	24	49.5	1976	-20	1905	13	24.8	1978	743	0	.0	@	16.6	3.2	16.7	.3
Mar	59.8	34.6	47.2	100	1907	19	52.5	1986	0	1960	3	40.8	1984	553	0	.0	@	25.5	.5	9.1	.0
Apr	69.4	45.2	57.3	101	1972	11	64.8	1981	18	1936	2	50.8	1983	253	22	@	.4	29.3	.0	1.4	.0
May	78.7	56.8	67.8	104	1985	30	73.4	1996	28	1909	1	63.1	1976	54	138	.2	3.0	31.0	.0	.0	.0
Jun	88.4	65.7	77.1	111	1918	24	82.2	1990	29	1903	8	72.3	1992	3	364	1.4	16.2	30.0	.0	.0	.0
Jul	94.4	70.8	82.6	115	1936	18	88.8	1980	39	1903	22	79.6	1972	0	546	7.6	25.3	31.0	.0	.0	.0
Aug	92.8	68.8	80.8	118	1936	12	88.0	2000	45	1915	31	70.3	1992	4	493	6.3	23.3	31.0	.0	.0	.0
Sep	84.6	60.6	72.6	109+	1918	13	81.2	1998	33	1985	30	64.4	1974	28	255	1.2	11.2	30.0	.0	.0	.0
Oct	73.2	47.8	60.5	100	1910	1	65.1	1979	17+	1917	30	54.4	1976	173	34	.0	1.3	30.6	.0	.8	.0
Nov	57.5	34.6	46.1	92	1915	5	55.7	1999	9+	1911	29	40.3	1972	569	0	.0	.0	22.8	.5	9.3	.0
Dec	46.8	25.3	36.1	85	1955	24	41.5	1999	-10+	1989	22	21.2	1983	898	0	.0	.0	15.0	3.1	20.4	.5
Ann	70.0	46.6	58.3	118	Aug 1936	12	88.8	Jul 1980	-20	Feb 1905	13	19.0	Jan 1979	4269	1852	16.7	80.7	306.0	12.9	81.2	1.1

\+ 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: 1894-2001

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

Issue Date: February 2004

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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	1.14	.98	2.67	1921	22	3.25	1999	.00+	1986
Feb	1.64	1.35	3.14	1997	21	4.54	1997	.00	1991
Mar	2.55	2.09	2.76	1974	10	8.75	1973	.04	1971
Apr	3.25	2.98	8.30	1912	28	7.62	1994	.42	1987
May	4.87	4.14	8.15	1957	16	10.28	1987	1.05	1988
Jun	4.39	4.27	4.90	1916	5	9.51	1999	.15	1990
Jul	2.76	2.80	8.30	1960	4	5.61	1996	.00	1980
Aug	3.37	2.66	4.40	1906	8	9.72	1992	.00	1982
Sep	3.16	2.93	5.50	1913	12	7.21	1986	.02	2000
Oct	3.39	2.38	15.68	1973	11	15.84	1973	.20	1993
Nov	2.34	2.64	4.34	1994	20	4.86	1998	.04	1989
Dec	1.39	1.16	2.31	1944	4	4.02	1991	.01	1976
Ann	34.25	32.79	15.68	Oct 1973	11	15.84	Oct 1973	.00+	Feb 1991

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.4	2.6	.8	.2
Feb	5.4	3.0	.9	.5
Mar	7.4	4.6	1.9	.7
Apr	7.6	5.1	2.3	.8
May	9.8	7.2	3.4	1.4
Jun	8.8	6.2	3.0	1.5
Jul	6.6	4.3	2.0	.7
Aug	7.1	4.3	2.2	1.2
Sep	7.4	4.5	2.0	1.1
Oct	6.0	3.9	2.1	.9
Nov	6.9	3.8	1.6	.6
Dec	5.9	2.7	.9	.4
Ann	84.3	52.2	23.1	10.0

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	.00	.05	.21	.38	.57	.79	1.06	1.39	1.87	2.68	3.49
Feb	.07	.20	.44	.67	.93	1.23	1.57	2.01	2.61	3.60	4.58
Mar	.24	.42	.76	1.12	1.50	1.94	2.46	3.11	4.01	5.50	6.96
Apr	.65	.94	1.42	1.86	2.30	2.77	3.31	3.96	4.81	6.18	7.48
May	1.34	1.81	2.51	3.12	3.72	4.34	5.04	5.86	6.93	8.60	10.16
Jun	.88	1.28	1.93	2.52	3.12	3.75	4.48	5.35	6.50	8.34	10.09
Jul	.22	.51	.96	1.36	1.78	2.24	2.76	3.41	4.27	5.67	7.02
Aug	.12	.38	.86	1.35	1.88	2.49	3.22	4.13	5.38	7.49	9.56
Sep	.33	.56	1.00	1.44	1.91	2.45	3.08	3.86	4.93	6.71	8.45
Oct	.19	.38	.79	1.25	1.77	2.39	3.14	4.09	5.44	7.74	10.03
Nov	.19	.35	.66	.98	1.34	1.75	2.23	2.85	3.70	5.12	6.52
Dec	.06	.13	.28	.46	.67	.93	1.25	1.66	2.25	3.26	4.28
Ann	21.49	23.84	26.92	29.30	31.44	33.54	35.73	38.17	41.17	45.57	49.43

\+ 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: 1894-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	2.3	1.1	#	0
Feb	2.1	.0	1	0
Mar	1.7	.0	#	0
Apr	.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
Nov	.6	.0	#	0
Dec	1.3	.5	#	0
Ann	8.0	1.6	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	3.5	1975	2	7.0	1975	6+	2000	28	3	1974
Feb	12.0	1971	23	18.0	1971	19	1982	12	9	1982
Mar	9.3	1994	9	13.0	1988	13	1999	14	1+	1999
Apr	.1	1997	9	.1	1997	#	1997	9	#	1997
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	#	1993	30	#	1993	0	0	0	0	0
Nov	6.0	1988	20	6.0	1988	1	1971	23	#+	2000
Dec	6.0	1972	15	6.0	1972	6	1972	15	1	2000
Ann	12.0	Feb 1971	23	18.0	Feb 1971	19	Feb 1982	12	9	Feb 1982

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.4	.7	.3	.0	.0
Feb	1.1	.8	.3	.2	.1
Mar	.6	.5	.1	.1	.0
Apr	@	.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	.3	.2	.1	.1	.0
Dec	.8	.5	.1	@	.0
Ann	4.2	2.7	.9	.4	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.1	.2	.0	.0
Feb	.9	.1	.0	.0
Mar	.1	.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	.1	.0	.0	.0
Dec	1.1	.3	.1	.0
Ann	3.3	.6	.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

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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	4/22	4/19	4/17	4/14	4/12	4/10	4/07	4/03
32	4/17	4/12	4/09	4/06	4/04	4/01	3/29	3/26	3/21
28	4/13	4/06	4/01	3/28	3/24	3/21	3/16	3/12	3/05
24	3/30	3/24	3/19	3/15	3/12	3/08	3/04	2/27	2/21
20	3/21	3/12	3/06	3/01	2/24	2/19	2/14	2/08	1/30
16	3/12	3/04	2/25	2/20	2/15	2/09	2/04	1/29	1/20

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	10/05	10/11	10/14	10/18	10/21	10/23	10/27	10/30	11/05
32	10/20	10/25	10/28	10/31	11/03	11/05	11/08	11/11	11/16
28	10/25	10/31	11/04	11/08	11/11	11/15	11/18	11/23	11/28
24	11/08	11/13	11/17	11/20	11/24	11/27	11/30	12/04	12/10
20	11/10	11/18	11/23	11/28	12/02	12/07	12/12	12/17	12/25
16	11/17	11/28	12/05	12/12	12/18	12/24	12/30	1/07	1/18

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	204	199	195	192	188	185	182	178	172
32	230	224	219	216	212	209	205	201	195
28	253	246	240	235	231	227	222	217	209
24	280	272	266	261	256	252	247	241	233
20	316	304	295	288	281	274	266	257	245
16	344	329	319	311	303	296	288	279	266

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	991	743	553	253	54	3	0	4	28	173	569	898	4269
60	837	613	406	145	16	0	0	0	8	78	425	743	3271
57	747	536	321	95	6	0	0	0	2	43	344	651	2745
55	687	486	269	68	3	0	0	0	0	27	293	592	2425
50	544	371	161	24	0	0	0	0	0	6	184	450	1740
32	155	95	8	0	0	0	0	0	0	0	11	90	359

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	187	280	478	759	1107	1351	1569	1512	1217	884	432	216	9992
55	6	27	26	137	397	661	856	799	527	197	24	5	3662
57	4	21	16	104	338	601	794	737	469	151	15	2	3252
60	1	14	8	64	255	511	701	644	385	94	6	0	2683
65	0	0	0	22	138	364	546	493	255	34	0	0	1852
70	0	0	0	5	59	228	391	349	152	8	0	0	1192

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	78	165	349	594	901	1150	1350	1306	1024	699	279	99	78	243	592	1186	2087	3237	4587	5893	6917	7616	7895	7994
45	30	93	230	448	746	1000	1195	1151	874	546	175	41	30	123	353	801	1547	2547	3742	4893	5767	6313	6488	6529
50	6	43	138	313	591	850	1040	996	725	399	93	16	6	49	187	500	1091	1941	2981	3977	4702	5101	5194	5210
55	1	14	75	192	436	700	885	841	577	266	42	2	1	15	90	282	718	1418	2303	3144	3721	3987	4029	4031
60	0	3	30	101	291	550	730	686	434	154	15	0	0	3	33	134	425	975	1705	2391	2825	2979	2994	2994
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	57	113	219	365	586	774	894	867	679	435	164	65	57	170	389	754	1340	2114	3008	3875	4554	4989	5153	5218

(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:
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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