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: BARTLESVILLE 2 W, OK **COOP ID: 340548**

Climate Division: OK 3 **NWS Call Sign: BVO** **Elevation: 715 Feet** **Lat: 36˚45N** **Lon: 96˚00W**

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	23.7	35.4	79	1950	25	43.8	1990	-15	1949	30	23.5	1979	919	0	.0	.0	13.9	4.6	24.3	.7
Feb	53.6	28.6	41.1	91+	1962	12	51.5	1976	-15	1996	4	29.5	1978	673	0	.0	@	16.8	2.9	18.3	.4
Mar	63.7	38.0	50.9	94	1974	31	55.5	1974	-8	1948	12	44.8	1996	441	1	.0	.1	26.7	.3	10.3	.0
Apr	73.5	47.5	60.5	104	1972	12	68.6	1981	9	1957	13	54.2	1983	176	41	@	.7	29.7	.0	1.7	.0
May	80.5	56.9	68.7	96+	1953	31	73.2	1987	30+	1954	4	64.4	1976	40	155	.0	2.2	31.0	.0	@	.0
Jun	88.8	65.5	77.2	104	1980	27	81.2	1990	41	1956	2	73.3	1992	1	365	.5	14.3	30.0	.0	.0	.0
Jul	94.5	69.9	82.2	115	1954	14	89.1	1980	48	1971	31	79.0	1989	0	533	5.2	24.8	31.0	.0	.0	.0
Aug	94.0	67.8	80.9	111+	1970	8	86.7	1983	46+	1949	22	74.5	1992	1	495	6.1	23.7	31.0	.0	.0	.0
Sep	85.3	60.1	72.7	109+	2000	1	80.1	1998	29	1995	23	65.1	1974	28	259	1.2	10.0	30.0	.0	.2	.0
Oct	74.9	48.3	61.6	97	1963	8	65.4	1973	16	1993	31	55.8	1976	149	42	.0	1.0	30.7	.0	1.9	.0
Nov	60.5	37.0	48.8	86	1989	11	56.3	1999	3	1976	29	42.5	1976	491	3	.0	.0	24.2	.2	11.0	.0
Dec	49.6	27.3	38.5	80+	1948	14	44.2	1982	-13	1989	23	25.2	1983	824	0	.0	.0	16.0	2.8	21.4	.4
Ann	72.2	47.6	59.9	115	Jul 1954	14	89.1	Jul 1980	-15+	Feb 1996	4	23.5	Jan 1979	3743	1894	13.0	76.8	311.0	10.8	89.1	1.5

\+ 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

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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	1.44	1.21	1.84	1975	31	4.18	1973	.00+	1986
Feb	1.93	1.54	4.44	1985	23	6.87	1985	.04	1991
Mar	3.43	3.00	3.10	1974	11	8.83	1973	.24	1971
Apr	3.84	3.82	3.57	1994	11	9.66	1995	.13	1989
May	4.76	4.31	4.85	2000	9	10.31	2000	.83	1994
Jun	4.50	3.49	4.55	1957	12	15.06	1995	.38	1988
Jul	3.03	2.94	5.15	1986	13	7.41	1994	.04	1980
Aug	2.86	2.56	5.50	1986	8	7.90	1977	.13	2000
Sep	4.42	3.88	7.07	1986	30	14.61	1986	.29	2000
Oct	3.51	3.19	4.25	1972	22	7.59	1986	.34	1978
Nov	3.21	3.36	4.01	1979	21	6.61	1985	.00	1976
Dec	2.06	1.62	3.47	1991	20	5.72	1991	.16	1981
Ann	38.99	37.98	7.07	Sep 1986	30	15.06	Jun 1995	.00+	Jan 1986

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.3	3.2	.9	.3
Feb	5.7	3.4	1.3	.3
Mar	8.4	5.8	2.5	1.1
Apr	8.4	5.9	2.7	1.1
May	10.3	7.4	3.4	1.5
Jun	8.8	6.1	3.1	1.3
Jul	6.5	4.6	2.0	.8
Aug	6.6	4.4	1.8	.9
Sep	7.5	5.5	2.5	1.4
Oct	6.9	4.6	2.3	1.1
Nov	6.5	4.2	2.2	1.0
Dec	5.7	3.7	1.5	.5
Ann	87.6	58.8	26.2	11.3

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	.16	.42	.65	.89	1.15	1.44	1.79	2.28	3.07	3.84
Feb	.18	.32	.58	.85	1.14	1.47	1.87	2.36	3.03	4.16	5.26
Mar	.59	.89	1.39	1.86	2.34	2.86	3.46	4.18	5.15	6.71	8.20
Apr	.80	1.15	1.71	2.23	2.74	3.30	3.92	4.67	5.66	7.24	8.74
May	1.21	1.66	2.35	2.97	3.57	4.20	4.91	5.75	6.85	8.58	10.20
Jun	.91	1.32	1.98	2.58	3.19	3.84	4.58	5.47	6.64	8.52	10.31
Jul	.25	.45	.85	1.27	1.73	2.26	2.89	3.69	4.79	6.63	8.45
Aug	.40	.63	1.04	1.44	1.85	2.31	2.84	3.49	4.36	5.79	7.17
Sep	.67	1.04	1.68	2.29	2.93	3.62	4.42	5.40	6.71	8.84	10.89
Oct	.58	.88	1.40	1.88	2.38	2.92	3.54	4.29	5.29	6.93	8.49
Nov	.15	.43	.90	1.37	1.88	2.45	3.12	3.95	5.09	6.98	8.83
Dec	.16	.30	.57	.85	1.17	1.53	1.96	2.50	3.25	4.52	5.76
Ann	25.85	28.33	31.53	33.99	36.19	38.33	40.56	43.03	46.05	50.46	54.30

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	3.1	1.6	#	0
Feb	2.4	.5	#	0
Mar	1.4	.0	#	0
Apr	.0	.0	0	0
May	.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	.5	.0	#	0
Dec	.9	.0	#	0
Ann	8.3	2.1	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	6.5	1988	7	10.5	1988	11	1988	7	3	1979
Feb	7.5	1982	9	12.5	1978	9	1980	8	1+	1993
Mar	8.0	1994	9	10.0	1994	5+	1999	14	#	2000
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	#	1997
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	#	1996	22	#	1996	#	1996	22	0	0
Nov	4.0	1971	23	4.6	1972	4	1971	23	#	1995
Dec	8.0	2000	13	8.0	2000	10	2000	14	3	2000
Ann	8.0+	Dec 2000	13	12.5	Feb 1978	11	Jan 1988	7	3+	Dec 2000

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.1	1.1	.4	.1	.0
Feb	1.4	.9	.2	.1	.0
Mar	.7	.4	.2	.1	.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	.5	.1	.1	.0	.0
Dec	.9	.4	.1	.1	.0
Ann	5.6	2.9	1.0	.4	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	4.2	1.8	.8	.1
Feb	2.5	1.2	.4	.0
Mar	.4	.2	.1	.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	2.2	.8	.3	@
Ann	9.5	4.0	1.6	.1

+ Also occurred on an earlier date(s) #Denotes trace amounts

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	5/02	4/27	4/23	4/20	4/18	4/15	4/12	4/09	4/04
32	4/19	4/15	4/11	4/08	4/06	4/03	3/31	3/28	3/23
28	4/11	4/06	4/02	3/30	3/27	3/24	3/21	3/17	3/12
24	4/02	3/27	3/23	3/19	3/15	3/12	3/08	3/04	2/25
20	3/27	3/18	3/12	3/07	3/02	2/25	2/20	2/14	2/06
16	3/12	3/05	2/27	2/23	2/18	2/14	2/09	2/04	1/27

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	9/25	9/29	10/03	10/06	10/08	10/11	10/14	10/17	10/22
32	10/03	10/09	10/14	10/18	10/22	10/26	10/30	11/03	11/10
28	10/20	10/25	10/29	11/01	11/04	11/07	11/10	11/13	11/19
24	10/30	11/05	11/09	11/13	11/16	11/19	11/23	11/27	12/03
20	11/02	11/10	11/15	11/20	11/24	11/28	12/03	12/08	12/15
16	11/10	11/20	11/27	12/03	12/09	12/15	12/21	12/29	1/08

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	194	187	182	177	173	168	164	159	151
32	221	213	208	203	199	194	189	184	176
28	244	236	230	225	221	216	212	206	198
24	268	260	254	249	245	240	236	230	222
20	299	288	279	272	266	259	252	244	233
16	327	313	304	297	291	284	277	269	258

***** 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	919	673	441	176	40	1	0	1	28	149	491	824	3743
60	765	543	299	88	10	0	0	0	8	62	354	673	2802
57	674	466	223	50	3	0	0	0	3	32	279	585	2315
55	614	417	179	32	1	0	0	0	0	19	234	528	2024
50	472	306	94	8	0	0	0	0	0	4	142	392	1418
32	104	57	2	0	0	0	0	0	0	0	7	72	242

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	208	311	585	855	1138	1354	1556	1517	1221	916	510	271	10442
55	5	27	49	197	426	664	843	804	531	222	47	14	3829
57	2	20	31	155	366	604	781	742	474	173	31	9	3388
60	1	13	15	102	280	514	688	649	389	110	16	4	2781
65	0	0	1	41	155	365	533	495	259	42	3	0	1894
70	0	0	0	11	67	226	378	344	155	10	0	0	1191

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	75	166	365	622	893	1115	1311	1273	988	672	299	99	75	241	606	1228	2121	3236	4547	5820	6808	7480	7779	7878
45	30	96	245	475	738	965	1156	1118	838	520	192	53	30	126	371	846	1584	2549	3705	4823	5661	6181	6373	6426
50	8	47	144	333	584	815	1001	963	688	374	108	22	8	55	199	532	1116	1931	2932	3895	4583	4957	5065	5087
55	1	19	76	212	431	665	846	808	541	241	53	6	1	20	96	308	739	1404	2250	3058	3599	3840	3893	3899
60	0	6	33	117	281	515	691	653	397	140	18	0	0	6	39	156	437	952	1643	2296	2693	2833	2851	2851
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	65	127	245	398	589	760	870	835	650	436	188	77	65	192	437	835	1424	2184	3054	3889	4539	4975	5163	5240

(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