

Climatology of the United States

No. 20

1971-2000

Station: BOISE CITY 2 E, OK

COOP ID: 340908

Climate Division: OK 3

NWS Call Sign:

Elevation: 4,145 Feet Lat: 36°44N

Lon: 102°29W

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	50.0	18.7	34.4	80+	1951	26	43.6	1986	-24	1959	4	22.7	1979	950	0	.0	.0	17.1	4.1	29.4	1.3
Feb	54.8	22.5	38.7	85	1963	1	47.5	2000	-16	1951	1	26.0	1978	738	0	.0	.0	19.2	2.7	24.5	.8
Mar	62.5	29.1	45.8	88+	1963	28	51.6	1972	-12	1948	11	41.1	1998	595	0	.0	.0	26.2	.7	18.7	.0
Apr	70.7	37.3	54.0	97	1965	22	61.3	1981	12	1979	4	47.6	1997	342	11	.0	.6	28.3	.0	7.1	.0
May	78.6	46.8	62.7	102	2000	30	68.8	1996	20	1979	4	57.2	1983	145	72	.3	3.6	30.7	.0	.7	.0
Jun	88.7	56.5	72.6	109	1998	29	77.8	1994	37	1951	2	67.9	1982	16	244	2.5	14.4	30.0	.0	.0	.0
Jul	92.8	61.5	77.2	107	1964	4	81.9	1980	49+	1972	4	74.1	1990	0	377	3.4	22.9	31.0	.0	.0	.0
Aug	90.3	60.2	75.3	105	1964	18	79.8	2000	40	1964	28	70.8	1979	2	321	.7	18.9	31.0	.0	.0	.0
Sep	83.6	52.3	68.0	105	1995	5	74.0	1998	25	1985	30	62.6	1974	49	138	.3	8.1	29.8	.0	.4	.0
Oct	73.5	40.2	56.9	96	2000	3	59.6	1998	9	1993	30	52.2	1984	258	6	.0	.5	30.1	@	4.2	.0
Nov	59.6	28.4	44.0	87	1980	8	50.6	1999	-7	1976	28	36.6	1972	630	0	.0	.0	23.0	.9	19.7	.1
Dec	51.0	20.8	35.9	84	1955	23	43.0	1980	-13+	1978	9	23.5	1983	904	0	.0	.0	17.3	3.4	28.3	1.1
Ann	71.3	39.5	55.5	109	Jun 1998	29	81.9	Jul 1980	-24	Jan 1959	4	22.7	Jan 1979	4629	1169	7.2	69.0	313.7	11.8	133.0	3.3

+ 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

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No. 20

1971-2000

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

Station: BOISE CITY 2 E, OK

COOP ID: 340908

Climate Division: OK 3

NWS Call Sign:

Elevation: 4,145 Feet Lat: 36°44N

Lon: 102°29W

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	.39	.28	.70	2001	27	1.30	1999	.00+	1998	3.4	1.5	.1	.0	.00	.05	.12	.18	.24	.31	.39	.49	.61	.82	1.03
Feb	.43	.27	1.20	1990	20	1.85	1978	.00+	2000	3.1	1.5	.1	@	.00	.00	.03	.10	.19	.28	.40	.54	.74	1.07	1.42
Mar	1.19	.92	1.62	1957	4	4.67	2000	.05	1997	4.9	2.9	.9	.2	.06	.12	.26	.42	.60	.82	1.08	1.43	1.91	2.75	3.58
Apr	1.46	1.07	2.13	1952	20	4.66	1999	.05	1978	4.7	3.4	1.0	.3	.15	.25	.45	.66	.88	1.12	1.42	1.78	2.28	3.11	3.92
May	2.58	2.56	3.05	1988	31	6.21	1988	.12	1974	7.0	5.0	1.8	.5	.40	.62	1.00	1.35	1.72	2.12	2.58	3.15	3.90	5.13	6.31
Jun	3.04	2.82	4.72	1996	26	8.97	1989	.38	1976	7.0	5.0	2.1	.8	.43	.68	1.11	1.53	1.98	2.46	3.03	3.72	4.65	6.17	7.64
Jul	2.69	2.30	2.90	1986	13	7.32	1998	.35	1983	7.1	5.3	1.9	.5	.54	.78	1.18	1.54	1.91	2.30	2.74	3.27	3.98	5.11	6.18
Aug	2.85	2.43	3.90	1986	30	6.69	1997	.52	1976	6.3	4.9	1.9	.9	.63	.90	1.32	1.69	2.07	2.47	2.92	3.46	4.17	5.30	6.37
Sep	1.49	1.51	2.31	1969	1	4.10	1988	.00	2000	4.6	3.5	1.0	.3	.12	.28	.52	.74	.96	1.21	1.49	1.83	2.30	3.05	3.77
Oct	1.20	.67	2.96	2000	24	5.77	2000	.00+	1980	3.4	2.3	.8	.2	.00	.01	.10	.23	.41	.65	.96	1.38	2.00	3.11	4.26
Nov	.71	.49	2.10	1948	1	3.16	1972	.00+	2000	3.2	2.0	.4	.1	.00	.00	.14	.28	.41	.56	.72	.91	1.18	1.59	2.00
Dec	.50	.44	1.10	1997	23	2.21	1997	.00+	2000	2.8	1.6	.3	@	.00	.00	.10	.18	.27	.37	.48	.63	.82	1.14	1.45
Ann	18.53	18.05	4.72	Jun 1996	26	8.97	Jun 1989	.00+	Dec 2000	57.5	38.9	12.3	3.8	12.55	13.69	15.15	16.27	17.27	18.25	19.25	20.37	21.73	23.72	25.45

+ 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

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

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Station: BOISE CITY 2 E, OK

COOP ID: 340908

Climate Division: OK 3

NWS Call Sign:

Elevation: 4,145 Feet

Lat: 36°44N

Lon: 102°29W

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	6.0	6.0	#	#	10.5	1990	19	17.5	1993	9	1983	22	2	1983	3.0	2.2	.9	.3	@	5.8	1.8	.7	.0
Feb	4.1	2.0	#	#	12.0	1990	20	21.0	1990	8	1978	17	3	1978	1.6	1.3	.5	.2	@	2.1	1.1	.6	.0
Mar	5.6	5.0	#	#	11.0	1998	18	22.5	1998	12	1973	31	1	1984	2.0	1.8	.9	.5	@	1.4	.7	.3	.1
Apr	2.2	.0	#	0	12.0	1988	1	12.5	1994	8	1983	4	1	1983	.8	.7	.4	.2	@	.4	.2	.1	.0
May	.4	.0	#	0	12.0	1978	3	12.0	1978	12	1978	3	#	1978	@	@	@	@	@	@	@	@	@
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	.1	.0	#	0	2.0	1984	28	4.0	1984	4	1984	29	#+	1996	.1	.1	.0	.0	.0	.1	@	.0	.0
Oct	1.1	.0	#	0	9.0	1991	31	12.0	1991	6	1979	31	#+	1999	.3	.3	.2	.1	.0	.1	.1	@	.0
Nov	2.9	1.5	#	0	6.0	1972	28	18.0	1972	8	1972	21	1	1980	1.3	1.2	.4	.1	.0	1.2	.5	.1	.0
Dec	4.8	3.8	#	#	12.0	1995	18	14.0+	1995	8	1971	3	3	1983	2.4	1.7	.9	.3	.1	2.9	1.6	.6	.0
Ann	27.2	18.3	N/A	N/A	12.0+	Dec 1995	18	22.5	Mar 1998	12+	May 1978	3	3+	Dec 1983	11.5	9.3	4.2	1.7	.1	14.0	6.0	2.4	.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

Complete documentation available from:

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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	5/19	5/14	5/11	5/08	5/05	5/02	4/29	4/25	4/20
32	5/13	5/07	5/03	4/30	4/27	4/24	4/20	4/16	4/11
28	4/29	4/24	4/21	4/18	4/15	4/12	4/09	4/06	4/01
24	4/20	4/15	4/12	4/08	4/06	4/03	3/31	3/27	3/22
20	4/14	4/07	4/02	3/29	3/25	3/21	3/16	3/11	3/04
16	4/01	3/26	3/22	3/18	3/14	3/11	3/07	3/03	2/25
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	9/19	9/24	9/28	10/01	10/04	10/07	10/10	10/13	10/18
32	9/27	10/02	10/06	10/09	10/12	10/15	10/18	10/21	10/26
28	10/08	10/13	10/17	10/21	10/24	10/27	10/30	11/03	11/08
24	10/19	10/25	10/28	10/31	11/03	11/06	11/09	11/13	11/18
20	10/29	11/03	11/07	11/10	11/13	11/16	11/19	11/22	11/28
16	11/05	11/11	11/15	11/19	11/22	11/25	11/29	12/03	12/08
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	172	165	160	155	151	147	143	137	130
32	190	182	176	172	167	163	158	152	144
28	212	204	199	195	191	187	183	177	170
24	234	226	220	215	211	206	201	195	187
20	260	251	244	238	232	227	221	214	205
16	277	268	262	257	252	247	242	236	227

* 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	950	738	595	342	145	16	0	2	49	258	630	904	4629
60	795	598	441	217	69	3	0	0	13	130	481	749	3496
57	702	517	354	155	39	1	0	0	4	74	397	656	2899
55	641	465	297	120	25	0	0	0	1	48	343	595	2535
50	496	337	174	53	6	0	0	0	0	12	221	450	1749
32	106	48	3	0	0	0	0	0	0	0	15	78	250

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	179	233	432	659	950	1218	1400	1341	1079	771	375	197	8834
55	1	7	12	89	262	528	687	628	391	106	13	1	2725
57	0	3	7	64	214	469	625	566	334	70	8	0	2360
60	0	0	1	35	151	382	532	473	252	33	2	0	1861
65	0	0	0	11	72	244	377	321	138	6	0	0	1169
70	0	0	0	2	26	132	225	179	62	0	0	0	626

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	60	110	239	446	725	993	1169	1112	849	542	197	72	60	170	409	855	1580	2573	3742	4854	5703	6245	6442	6514
45	20	49	141	313	571	843	1014	957	701	393	108	27	20	69	210	523	1094	1937	2951	3908	4609	5002	5110	5137
50	1	14	65	193	421	693	859	802	555	259	44	3	1	15	80	273	694	1387	2246	3048	3603	3862	3906	3909
55	0	0	21	97	276	544	704	647	412	140	10	0	0	0	21	118	394	938	1642	2289	2701	2841	2851	2851
60	0	0	1	36	157	397	549	492	275	62	0	0	0	0	1	37	194	591	1140	1632	1907	1969	1969	1969
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	91	135	220	324	458	628	747	720	543	377	174	92	91	226	446	770	1228	1856	2603	3323	3866	4243	4417	4509

(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.

- | | |
|---|---|
| <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