

Climatology of the United States

No. 20 1971-2000

Station: CHATTANOOGA 3 NE, OK

COOP ID: 341706

Climate Division: OK 7

NWS Call Sign:

Elevation: 1,154 Feet Lat: 34° 27N

Lon: 98° 37W

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	50.6	23.8	37.2	86	1950	25	43.5	1990	-9+	1966	23	27.2	1979	863	0	.0	.0	18.7	2.5	24.0	.1
Feb	56.8	28.1	42.5	92	1996	22	50.1	1976	-5	1951	2	30.2	1978	632	0	.0	.1	20.8	1.3	15.7	.1
Mar	64.9	35.7	50.3	99	1971	27	55.0	1974	9+	1965	20	46.1	1996	455	0	.0	.4	28.7	.1	7.7	.0
Apr	74.2	45.4	59.8	100	1972	12	65.8	1981	20	1975	3	54.3	1973	192	37	@	1.8	29.8	.0	1.6	.0
May	83.3	56.1	69.7	111+	2000	24	76.8	1996	34+	1954	3	65.6	1976	42	187	.9	8.6	31.0	.0	.0	.0
Jun	92.8	65.8	79.3	116+	1994	27	83.7	1984	46	1964	1	75.5	1982	1	429	4.5	21.8	30.0	.0	.0	.0
Jul	98.6	69.4	84.0	113	1996	7	89.2	1980	53+	1961	10	79.9	1975	0	589	14.3	28.7	31.0	.0	.0	.0
Aug	97.3	68.6	83.0	115	1964	6	87.8	2000	50+	1962	26	77.4	1992	0	557	12.7	27.1	31.0	.0	.0	.0
Sep	88.7	61.1	74.9	113	2000	5	82.1	1998	34+	1983	21	67.4	1974	14	311	3.9	16.0	30.0	.0	.0	.0
Oct	77.8	49.0	63.4	105	1977	1	67.4	1979	16	1993	31	57.0	1976	111	61	.2	4.0	30.9	.0	.7	.0
Nov	63.2	36.0	49.6	88	1980	8	55.9	1999	12	1993	26	44.3	1972	464	1	.0	.0	26.6	@	9.0	.0
Dec	52.8	26.8	39.8	85+	1950	2	44.0	1980	-13	1989	23	29.0	1983	781	0	.0	.0	21.5	1.5	20.7	.1
Ann	75.1	47.2	61.1	116+	Jun 1994	27	89.2	Jul 1980	-13	Dec 1989	23	27.2	Jan 1979	3555	2172	36.5	108.5	330.0	5.4	79.4	.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

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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	Median	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	1.06	.98	1.83	1999	30	3.32	1973	.00+	1986	3.2	2.2	.8	.2	.00	.00	.21	.39	.57	.78	1.02	1.33	1.73	2.42	3.09	
Feb	1.49	.93	2.09	1985	23	3.96	1990	.00+	1996	3.7	3.1	1.1	.3	.00	.16	.43	.67	.91	1.18	1.49	1.86	2.37	3.20	4.00	
Mar	2.49	2.19	2.65	2000	23	5.46	1985	.03	1997	4.8	4.0	1.9	.7	.36	.56	.92	1.27	1.63	2.02	2.48	3.04	3.80	5.04	6.22	
Apr	2.66	2.40	3.16	1962	24	5.84	1997	.00	1987	4.8	4.0	2.0	.8	.32	.65	1.10	1.48	1.87	2.27	2.73	3.28	4.01	5.17	6.28	
May	4.86	5.05	6.41	1951	17	13.16	1982	.00	1988	6.8	5.4	2.8	1.6	.28	.74	1.49	2.21	2.96	3.80	4.78	5.99	7.63	10.33	12.95	
Jun	4.03	3.67	4.47	1989	4	10.53	1989	.51	1980	5.8	5.2	2.6	1.4	.95	1.32	1.91	2.44	2.96	3.52	4.14	4.88	5.86	7.40	8.85	
Jul	2.22	1.86	5.35	1973	30	7.86	1973	.00+	1983	3.9	3.4	1.5	.6	.00	.20	.58	.93	1.30	1.70	2.18	2.75	3.55	4.86	6.14	
Aug	2.56	1.90	3.30	1969	23	8.73	1996	.00+	2000	4.7	3.8	1.7	.8	.00	.18	.58	.98	1.41	1.89	2.46	3.16	4.14	5.77	7.37	
Sep	3.26	2.79	6.33	1969	22	9.75	1991	.06	1979	5.3	4.5	2.0	1.0	.15	.32	.70	1.13	1.63	2.23	2.97	3.92	5.27	7.58	9.90	
Oct	3.12	2.11	4.50	1960	18	12.49	2000	.08	1992	4.8	3.5	1.9	.9	.14	.29	.64	1.05	1.53	2.11	2.82	3.74	5.05	7.30	9.56	
Nov	1.77	1.05	2.42	1963	19	6.75	1992	.00	1999	3.7	3.0	1.2	.6	.09	.25	.52	.78	1.06	1.37	1.73	2.19	2.80	3.82	4.81	
Dec	1.60	1.04	3.01	1984	31	6.65	1984	.00	1977	3.6	2.7	1.0	.5	.01	.06	.22	.41	.66	.97	1.36	1.88	2.64	3.98	5.34	
Ann	31.12	30.55	6.41	May 1951	17	13.16	May 1982	.00+	Aug 2000	55.1	44.8	20.5	9.4	20.68	22.65	25.20	27.15	28.90	30.60	32.37	34.34	36.74	40.24	43.30	

+ 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															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	.5	.0	#	0	9.0	1988	7	9.0	1988	5	1977	9	1	1973	.5	.3	.1	.1	.0	.1	.1	.1	.0
Feb	.7	.0	#	0	3.0	1986	10	5.0	1986	#	1998	5	#	1998	.4	.3	@	.0	.0	.0	.0	.0	.0
Mar	.1	.0	#	0	2.0	1989	21	3.0	1989	#	1995	1	#	1995	.1	.1	.0	.0	.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	#	1993	30	#	1993	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.0	.0	#	0	1.0	1980	17	1.0	1980	#+	2000	8	#+	2000	@	@	.0	.0	.0	.0	.0	.0	.0
Dec	.3	.0	#	0	5.0	2000	26	5.0	2000	3	1984	5	#+	2000	.3	.2	.1	@	.0	.1	.0	.0	.0
Ann	1.6	.0	N/A	N/A	9.0	Jan 1988	7	9.0	Jan 1988	5	Jan 1977	9	1	Jan 1973	1.3	.9	.2	.1	.0	.2	.1	.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	4/28	4/23	4/20	4/17	4/14	4/11	4/08	4/05	3/31
32	4/16	4/12	4/10	4/08	4/06	4/03	4/01	3/30	3/26
28	4/08	4/02	3/29	3/25	3/22	3/19	3/15	3/11	3/05
24	3/30	3/22	3/16	3/11	3/06	3/01	2/25	2/19	2/11
20	3/16	3/07	3/01	2/23	2/18	2/13	2/08	2/02	1/24
16	3/04	2/22	2/15	2/08	2/02	1/27	1/20	1/11	12/25
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	10/06	10/11	10/15	10/19	10/22	10/25	10/28	11/01	11/07
32	10/18	10/24	10/28	11/01	11/04	11/08	11/11	11/15	11/21
28	10/25	10/31	11/05	11/08	11/12	11/16	11/19	11/24	11/30
24	11/02	11/10	11/15	11/20	11/24	11/29	12/03	12/09	12/16
20	11/12	11/20	11/26	12/01	12/05	12/10	12/14	12/20	12/28
16	11/21	12/02	12/09	12/16	12/22	12/29	1/06	1/16	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	214	206	200	195	190	185	180	174	166
32	231	225	220	216	212	208	204	199	193
28	259	250	244	239	234	229	224	218	210
24	289	280	274	268	263	257	251	245	236
20	324	312	303	296	289	282	275	266	255
16	>365	>365	344	329	319	309	300	289	275

* 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)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Below													
65	863	632	455	192	42	1	0	0	14	111	464	781	3555
60	708	499	304	97	12	0	0	0	3	41	323	626	2613
57	616	421	221	57	5	0	0	0	0	18	247	535	2120
55	555	371	171	37	2	0	0	0	0	10	201	476	1823
50	411	257	76	9	0	0	0	0	0	1	110	335	1199
32	58	30	0	0	0	0	0	0	0	0	2	33	123

Cooling Degree Days (1)

Base	Cooling Degree Days (1)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Above													
32	218	322	568	834	1168	1418	1612	1580	1287	973	529	275	10784
55	3	19	25	181	458	728	899	867	597	270	38	5	4090
57	1	13	13	141	398	668	837	805	537	216	24	2	3655
60	0	7	4	92	312	578	744	712	449	146	10	0	3054
65	0	0	0	37	187	429	589	557	311	61	1	0	2172
70	0	0	0	10	93	286	434	404	192	19	0	0	1438

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	114	218	427	655	970	1199	1386	1348	1077	775	356	143	114	332	759	1414	2384	3583	4969	6317	7394	8169	8525	8668
45	46	129	295	508	815	1049	1231	1193	927	620	233	67	46	175	470	978	1793	2842	4073	5266	6193	6813	7046	7113
50	14	62	175	365	660	899	1076	1038	777	469	135	27	14	76	251	616	1276	2175	3251	4289	5066	5535	5670	5697
55	1	25	91	233	506	749	921	883	627	326	68	5	1	26	117	350	856	1605	2526	3409	4036	4362	4430	4435
60	0	4	36	125	356	599	766	728	482	197	25	0	0	4	40	165	521	1120	1886	2614	3096	3293	3318	3318
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	106	170	294	428	633	781	883	865	700	496	236	117	106	276	570	998	1631	2412	3295	4160	4860	5356	5592	5709

(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 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/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