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: CHEATHAM LOCK AND DAM, TN **COOP ID: 401663**

Climate Division: TN 3 **NWS Call Sign:** **Elevation: 392 Feet** **Lat: 36˚19N** **Lon: 87˚13W**

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	45.8	22.5	34.2	76	1972	25	43.9	1974	-18	1982	17	21.4	1977	957	0	.0	.0	14.0	3.5	23.2	.9
Feb	51.4	24.5	38.0	83	1996	23	47.5	1976	-5	1979	10	24.7	1978	757	0	.0	.0	17.5	1.7	19.1	.3
Mar	61.7	32.6	47.2	86+	1981	31	53.7	1974	0	1998	12	41.8	1993	552	0	.0	.0	26.9	.2	13.2	@
Apr	70.0	39.9	55.0	90+	1989	27	60.6	1999	19+	1989	11	49.2	1997	313	12	.0	.1	29.0	.0	6.5	.0
May	77.9	49.7	63.8	94	1987	21	71.7	1987	29+	1971	3	55.8	1997	143	106	.0	.9	31.0	.0	.4	.0
Jun	85.8	59.0	72.4	103	1988	25	75.6	1986	38	1984	1	67.6	1974	10	231	.2	9.1	30.0	.0	.0	.0
Jul	90.2	64.3	77.3	105+	1980	16	81.5	1986	46+	1972	7	73.8	1996	0	379	.7	18.2	31.0	.0	.0	.0
Aug	89.3	62.6	76.0	105	1983	23	80.6	1983	42+	1986	29	72.3	1992	2	341	1.2	15.6	31.0	.0	.0	.0
Sep	82.8	55.2	69.0	102	1990	8	75.3	1998	33	1983	26	63.1	1989	49	168	.2	6.7	30.0	.0	.0	.0
Oct	71.8	42.7	57.3	93	1998	1	63.9	1971	19+	1997	28	50.5	1988	276	35	.0	.1	30.7	.0	4.4	.0
Nov	60.1	33.4	46.8	85+	1987	2	53.4	1999	6	1997	18	39.5	1976	549	1	.0	.0	24.5	.1	13.7	.0
Dec	50.5	26.3	38.4	78+	1982	3	47.2	1984	-13	1989	22	25.7	1989	825	0	.0	.0	18.2	1.7	20.1	.3
Ann	69.8	42.7	56.3	105+	Aug 1983	23	81.5	Jul 1986	-18	Jan 1982	17	21.4	Jan 1977	4433	1273	2.3	50.7	313.8	7.2	100.6	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: 1971-2001

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

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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	3.85	3.45	2.79	1974	10	9.90	1999	.93	1986
Feb	4.33	3.85	4.20	1989	14	11.88	1989	1.19	1978
Mar	5.51	4.87	4.45	1975	12	14.69	1975	1.40	1987
Apr	4.21	3.66	4.55	1998	17	9.87	1998	1.14	1976
May	5.43	5.29	5.85	1991	27	10.88	1983	1.26	1987
Jun	4.61	4.20	5.80	1991	22	10.82	1998	.15	1988
Jul	4.47	4.38	4.20	1972	28	8.24	1972	.40	1983
Aug	2.84	2.59	2.72	1978	26	6.38	1971	.87	1983
Sep	3.80	3.15	4.48	1979	14	10.19	1974	.00	1978
Oct	3.23	2.96	4.02	2001	14	6.82	1984	.64	1987
Nov	4.49	3.85	4.76	1973	27	11.26	1973	.91	1999
Dec	4.98	4.06	4.80	1978	8	12.38	1990	1.48	1976
Ann	51.75	51.04	5.85	May 1991	27	14.69	Mar 1975	.00	Sep 1978

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.6	6.8	2.8	.9
Feb	9.1	6.7	3.0	1.1
Mar	11.2	8.5	3.4	1.4
Apr	9.3	7.9	2.9	.9
May	10.2	8.2	3.5	1.9
Jun	8.4	6.7	3.3	1.3
Jul	8.8	7.5	3.3	1.2
Aug	7.0	5.5	2.1	.7
Sep	7.6	5.8	2.7	1.1
Oct	7.4	5.7	2.1	.9
Nov	9.5	7.2	3.0	1.2
Dec	10.0	7.3	3.2	1.6
Ann	108.1	83.8	35.3	14.2

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	1.13	1.49	2.04	2.52	2.98	3.47	4.00	4.63	5.44	6.72	7.90
Feb	1.50	1.91	2.50	3.01	3.49	3.98	4.52	5.16	5.96	7.21	8.37
Mar	1.71	2.24	3.02	3.68	4.33	5.00	5.74	6.60	7.72	9.46	11.07
Apr	1.18	1.58	2.18	2.71	3.23	3.77	4.37	5.07	5.99	7.43	8.77
May	2.12	2.62	3.34	3.93	4.49	5.07	5.68	6.40	7.31	8.70	9.98
Jun	.97	1.39	2.07	2.68	3.30	3.96	4.71	5.61	6.79	8.68	10.47
Jul	1.21	1.63	2.28	2.84	3.40	3.98	4.62	5.39	6.38	7.94	9.39
Aug	.86	1.13	1.53	1.88	2.22	2.57	2.95	3.41	3.99	4.91	5.76
Sep	.90	1.45	2.07	2.57	3.04	3.51	4.03	4.63	5.40	6.59	7.69
Oct	.91	1.22	1.69	2.09	2.48	2.89	3.35	3.89	4.58	5.68	6.69
Nov	1.27	1.69	2.34	2.90	3.45	4.02	4.66	5.41	6.38	7.91	9.33
Dec	1.55	2.02	2.72	3.33	3.91	4.51	5.18	5.96	6.96	8.53	9.98
Ann	36.95	39.83	43.50	46.29	48.77	51.17	53.64	56.37	59.68	64.48	68.63

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

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	7.0	1988	7	7.0	1988	7	1988	7	2	1978	.8	.5	.3	.1	.0	1.4	1.0	.3	.0
Feb	3.3	1.3	#	0	8.5	1979	7	15.0	1979	8	1979	9	2	1979	1.0	.8	.3	.2	.0	.9	.6	.2	.0
Mar	.3	.0	#	0	4.0	1980	1	4.0	1980	4	1980	1	#+	1987	.2	.1	.1	.0	.0	.1	@	.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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.1	.0	#	0	2.0	1971	24	2.0	1971	1+	1996	10	#+	1996	.1	.1	.0	.0	.0	@	.0	.0	.0
Dec	.0	.0	#	0	.3	1988	9	.3	1988	2	1983	19	#+	2000	.1	.0	.0	.0	.0	.0	.0	.0	.0
Ann	5.2	1.3	N/A	N/A	8.5	Feb 1979	7	15.0	Feb 1979	8	Feb 1979	9	2+	Feb 1979	2.2	1.5	.7	.3	.0	2.4	1.6	.5	.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	5/16	5/10	5/07	5/03	4/30	4/27	4/24	4/20	4/15
32	5/05	4/29	4/25	4/21	4/18	4/14	4/10	4/06	3/31
28	4/19	4/14	4/11	4/08	4/06	4/03	3/31	3/28	3/23
24	4/15	4/08	4/04	3/31	3/27	3/23	3/19	3/15	3/08
20	4/04	3/27	3/22	3/17	3/12	3/08	3/03	2/25	2/17
16	3/17	3/10	3/05	2/28	2/24	2/19	2/15	2/09	2/02

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	9/26	9/30	10/03	10/05	10/07	10/10	10/12	10/15	10/19
32	10/05	10/10	10/13	10/17	10/20	10/22	10/26	10/29	11/03
28	10/20	10/25	10/28	10/31	11/03	11/06	11/09	11/13	11/17
24	10/27	11/03	11/08	11/12	11/15	11/19	11/23	11/28	12/04
20	11/02	11/10	11/16	11/21	11/26	11/30	12/05	12/11	12/19
16	11/19	11/27	12/03	12/07	12/12	12/16	12/21	12/27	1/03

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	181	174	168	164	159	155	150	145	138
32	206	199	193	189	184	180	175	170	162
28	232	225	220	215	211	207	202	197	189
24	261	251	244	238	233	227	221	214	204
20	292	281	272	265	258	251	244	235	223
16	319	309	302	296	290	285	279	271	261

***** 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	957	757	552	313	143	10	0	2	49	276	549	825	4433
60	802	617	405	191	73	2	0	0	16	170	408	670	3354
57	710	538	321	132	44	0	0	0	7	120	328	584	2784
55	656	486	268	99	30	0	0	0	4	92	278	526	2439
50	511	360	161	38	10	0	0	0	0	41	173	387	1681
32	133	64	6	0	0	0	0	0	0	0	7	67	277

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	199	232	476	689	986	1211	1402	1363	1109	782	450	266	9165
55	8	9	26	98	303	521	689	650	423	161	31	11	2930
57	0	5	16	71	255	461	627	588	366	127	20	7	2543
60	0	0	8	40	191	373	534	495	285	84	11	0	2021
65	0	0	0	12	106	231	379	341	168	35	1	0	1273
70	0	0	0	3	47	113	232	200	81	12	0	0	688

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	92	155	334	482	762	991	1171	1128	890	563	280	136	92	247	581	1063	1825	2816	3987	5115	6005	6568	6848	6984
45	45	85	219	346	607	841	1016	973	740	413	177	72	45	130	349	695	1302	2143	3159	4132	4872	5285	5462	5534
50	22	44	127	225	455	691	861	818	590	277	103	32	22	66	193	418	873	1564	2425	3243	3833	4110	4213	4245
55	1	14	64	129	309	541	706	663	443	165	50	8	1	15	79	208	517	1058	1764	2427	2870	3035	3085	3093
60	0	1	25	66	183	392	551	508	305	86	16	1	0	1	26	92	275	667	1218	1726	2031	2117	2133	2134
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	67	123	241	328	498	662	783	751	585	379	191	96	67	190	431	759	1257	1919	2702	3453	4038	4417	4608	4704

(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