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: GREENEVILLE EXP STN, TN **COOP ID: 403679**

Climate Division: TN 1 **NWS Call Sign:** **Elevation: 1,320 Feet** **Lat: 36˚06N** **Lon: 82˚51W**

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	46.4	20.4	33.4	79	1950	25	44.2	1974	-29+	1985	21	20.5	1977	980	0	.0	.0	13.1	3.7	23.6	.9
Feb	51.1	22.5	36.8	82	1996	24	43.7	1990	-23+	1996	5	26.2	1978	790	0	.0	.0	16.2	2.3	20.6	.5
Mar	59.9	29.0	44.5	86	1998	31	49.4	1973	-9	1993	15	38.7	1971	637	0	.0	.0	25.2	.3	15.9	.1
Apr	68.6	35.6	52.1	90+	1986	27	57.7	1981	18	1982	7	46.9	1983	391	2	.0	.1	28.7	.0	7.5	.0
May	76.7	45.4	61.1	93+	1962	18	66.8	1987	26+	1986	4	57.0	1997	169	45	.0	.1	31.0	.0	.7	.0
Jun	83.6	54.9	69.3	100+	1952	25	73.1	1994	36	1984	1	64.5	1972	19	146	@	3.8	30.0	.0	.0	.0
Jul	87.1	59.9	73.5	103+	1952	28	77.2	1993	45+	1961	10	69.9	1979	0	264	@	10.2	31.0	.0	.0	.0
Aug	86.2	57.8	72.0	100+	1948	28	75.9	1995	43	1999	31	68.9	1976	3	220	.1	7.6	31.0	.0	.0	.0
Sep	81.0	50.3	65.7	102	1953	1	71.0	1998	28+	1999	23	61.5	1976	64	82	.0	2.7	30.0	.0	.2	.0
Oct	70.6	36.7	53.7	93	1953	1	60.9	1984	14	2000	10	47.5	1987	367	14	.0	.0	30.7	.0	6.0	.0
Nov	60.1	28.6	44.4	84	1982	3	53.7	1985	3	1950	25	34.6	1976	620	0	.0	.0	24.5	.1	16.0	.0
Dec	50.4	22.3	36.4	80+	1951	7	43.3	1984	-16+	1962	12	26.5	1989	888	0	.0	.0	16.6	2.0	22.8	.2
Ann	68.5	38.6	53.6	103+	Jul 1952	28	77.2	Jul 1993	-29+	Jan 1985	21	20.5	Jan 1977	4928	773	.1	24.5	308.0	8.4	113.3	1.7

\+ 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	3.53	3.82	2.24	1954	22	6.14	1974	1.55	1983
Feb	3.48	3.66	2.41	1974	3	6.60	1994	.39	1978
Mar	4.31	3.63	3.96	1990	17	8.91	1975	1.52	1985
Apr	3.72	3.36	2.39	1970	28	8.54	2000	.62	1976
May	4.47	3.80	5.03	1984	7	9.22	1984	1.82	1985
Jun	4.22	4.35	2.84	1958	20	8.67	1977	.92	1988
Jul	4.73	4.69	3.15	1960	10	10.54	1984	1.28	1995
Aug	3.80	3.51	2.82	1987	6	7.15	1978	1.09	1972
Sep	3.25	3.16	2.45	1981	16	5.52	1979	1.07	1985
Oct	2.35	2.10	3.34	1964	16	6.33	1972	.14	1991
Nov	3.00	2.88	2.24	1948	28	5.16	1985	.95	1990
Dec	3.42	3.08	2.32	1993	5	7.54	1991	.89	1985
Ann	44.28	45.02	5.03	May 1984	7	10.54	Jul 1984	.14	Oct 1991

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.2	8.0	2.6	.5
Feb	11.1	7.4	2.3	.6
Mar	12.9	8.6	2.6	.7
Apr	11.1	7.5	2.6	.7
May	12.5	8.6	3.0	.9
Jun	11.3	8.0	3.0	1.2
Jul	11.5	8.0	3.5	1.3
Aug	10.2	7.1	2.5	1.0
Sep	8.6	6.1	2.3	.8
Oct	8.6	5.1	1.6	.4
Nov	10.2	6.6	1.8	.7
Dec	11.8	7.2	2.1	.5
Ann	132.0	88.2	29.9	9.3

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	1.65	1.96	2.38	2.73	3.05	3.36	3.71	4.10	4.59	5.33	5.99
Feb	1.11	1.44	1.93	2.35	2.75	3.17	3.63	4.16	4.85	5.93	6.93
Mar	1.48	1.89	2.49	2.99	3.47	3.96	4.50	5.13	5.93	7.18	8.33
Apr	1.29	1.64	2.15	2.58	3.00	3.42	3.89	4.43	5.12	6.19	7.18
May	2.17	2.55	3.07	3.49	3.88	4.27	4.68	5.16	5.75	6.64	7.43
Jun	1.46	1.86	2.44	2.93	3.40	3.88	4.41	5.02	5.81	7.03	8.14
Jul	1.91	2.34	2.96	3.47	3.95	4.43	4.96	5.57	6.34	7.51	8.58
Aug	1.52	1.87	2.36	2.77	3.16	3.56	3.98	4.47	5.09	6.05	6.92
Sep	1.16	1.46	1.91	2.28	2.64	3.00	3.40	3.86	4.46	5.37	6.21
Oct	.47	.68	1.02	1.34	1.66	2.00	2.39	2.86	3.47	4.47	5.41
Nov	1.37	1.64	2.00	2.30	2.57	2.85	3.15	3.49	3.91	4.56	5.14
Dec	1.21	1.53	2.00	2.39	2.77	3.15	3.57	4.06	4.69	5.66	6.55
Ann	34.85	36.75	39.15	40.94	42.51	44.02	45.56	47.25	49.28	52.19	54.67

\+ 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	3.0	1.4	#	#
Feb	2.1	.7	#	0
Mar	.9	.3	#	0
Apr	.2	.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	.0	.0	#	0
Dec	1.0	.0	#	0
Ann	7.2	2.4	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	6.0	1973	8	11.5	1987	6	1973	8	1	1988
Feb	7.0	1996	2	13.8	1996	11	1996	5	2	1996
Mar	13.0	1993	13	13.0+	1993	21	1993	14	2	1993
Apr	5.0	1983	17	5.0	1983	0	0	0	0	0
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	1.0	1993	31	1.0	1993	0	0	0	0	0
Nov	1.0	1972	22	1.0	1972	2	1996	10	#	1996
Dec	5.0	1971	3	7.8	1989	5+	1989	13	1	1989
Ann	13.0	Mar 1993	13	13.8	Feb 1996	21	Mar 1993	14	2+	Feb 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.6	1.2	.3	@	.0
Feb	1.9	1.0	.3	.1	.0
Mar	.8	.4	.2	@	@
Apr	@	@	@	@	.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
Nov	@	@	.0	.0	.0
Dec	.8	.3	.1	.1	.0
Ann	5.1	2.9	.9	.2	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.0	.2	.1	.0
Feb	1.2	.5	.3	.2
Mar	.5	.1	.1	@
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	.0	.0	.0	.0
Dec	.8	.2	.1	.0
Ann	3.5	1.0	.6	.2

+ 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	5/20	5/16	5/12	5/09	5/07	5/04	5/01	4/27	4/23
32	5/11	5/06	5/02	4/29	4/26	4/23	4/20	4/16	4/11
28	5/02	4/27	4/23	4/19	4/16	4/13	4/10	4/06	4/01
24	4/18	4/12	4/08	4/04	4/01	3/29	3/25	3/21	3/16
20	3/31	3/24	3/20	3/16	3/12	3/08	3/04	2/28	2/21
16	3/16	3/08	3/02	2/25	2/21	2/16	2/11	2/05	1/28

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	169	163	159	155	151	147	144	139	133
32	193	185	180	175	171	167	162	157	149
28	218	209	202	196	190	185	179	172	163
24	244	235	229	224	219	214	209	203	194
20	277	268	262	257	251	246	241	235	226
16	319	308	301	294	288	282	275	268	257

***** 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.

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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	980	790	637	391	169	19	0	3	64	367	620	888	4928
60	825	650	483	253	82	3	0	0	20	240	473	733	3762
57	738	566	396	181	47	1	0	0	8	178	389	640	3144
55	680	511	339	140	30	0	0	0	4	142	336	584	2766
50	536	382	211	62	8	0	0	0	1	73	215	439	1927
32	156	64	8	0	0	0	0	0	0	0	11	84	323

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	200	198	394	602	900	1117	1286	1240	1009	671	381	219	8217
55	10	2	12	52	217	427	573	527	323	100	16	6	2265
57	6	0	6	33	171	368	511	465	267	74	9	0	1910
60	0	0	1	15	114	280	418	372	189	43	4	0	1436
65	0	0	0	2	45	146	264	220	82	14	0	0	773
70	0	0	0	0	12	52	126	93	21	3	0	0	307

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	110	260	444	731	944	1100	1062	843	509	246	111	78	188	448	892	1623	2567	3667	4729	5572	6081	6327	6438
45	34	57	155	312	576	794	945	907	693	360	148	58	34	91	246	558	1134	1928	2873	3780	4473	4833	4981	5039
50	11	21	82	195	422	644	790	752	543	230	80	26	11	32	114	309	731	1375	2165	2917	3460	3690	3770	3796
55	2	1	33	107	280	494	635	597	396	125	36	7	2	3	36	143	423	917	1552	2149	2545	2670	2706	2713
60	0	0	7	44	159	346	480	442	263	55	5	0	0	0	7	51	210	556	1036	1478	1741	1796	1801	1801
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	57	94	190	304	477	631	751	720	562	350	179	84	57	151	341	645	1122	1753	2504	3224	3786	4136	4315	4399

(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