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: MONTEREY, TN **COOP ID: 406170**

Climate Division: TN 2 **NWS Call Sign:** **Elevation: 1,860 Feet** **Lat: 36˚09N** **Lon: 85˚16W**

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	.0	.0	.0	75	1949	11	.0	0	-1+	1997	11	.0	0	0	0	.0	.0	10.1	5.5	23.9	1.3
Feb	.0	.0	.0	78	1996	24	.0	0	-11	1951	2	.0	0	0	0	.0	.0	13.8	3.6	19.8	.5
Mar	.0	.0	.0	80	1998	31	.0	0	5	1996	9	.0	0	0	0	.0	.0	24.6	.7	13.3	@
Apr	.0	.0	.0	85+	1951	30	.0	0	18	1950	14	.0	0	0	0	.0	.0	28.2	.0	4.3	.0
May	.0	.0	.0	88	1996	25	.0	0	31	1954	4	.0	0	0	0	.0	.0	31.0	.0	.2	.0
Jun	.0	.0	.0	94	1954	28	.0	0	42	2001	2	.0	0	0	0	.0	1.5	30.0	.0	.0	.0
Jul	.0	.0	.0	100+	1952	28	.0	0	51	1972	6	.0	0	0	0	.1	6.2	31.0	.0	.0	.0
Aug	.0	.0	.0	98	1951	31	.0	0	49+	1950	4	.0	0	0	0	.0	4.4	31.0	.0	.0	.0
Sep	.0	.0	.0	99+	1954	6	.0	0	35+	1949	30	.0	0	0	0	.0	1.4	30.0	.0	.0	.0
Oct	.0	.0	.0	89	1953	2	.0	0	22	1948	18	.0	0	0	0	.0	.0	30.4	.0	2.6	.0
Nov	.0	.0	.0	78+	1950	1	.0	0	-7	1950	25	.0	0	0	0	.0	.0	22.9	.2	8.9	.0
Dec	.0	.0	.0	71	1998	7	.0	0	2+	1953	19	.0	0	0	0	.0	.0	11.0	2.3	21.7	.2
Ann	.0	.0	.0	100+	Jul 1952	28	-99.9	0	-11	Feb 1951	2	99.9	0	0	0	.1	13.5	294.0	12.3	94.7	2.0

\+ 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	5.85	5.69	4.53	1949	5	12.44	1974	1.30	1986
Feb	4.66	4.48	3.40	1948	13	8.36	1991	1.70	1978
Mar	6.27	5.43	5.58	1975	13	16.58	1975	2.32	1983
Apr	4.80	4.26	2.85	1977	4	9.02	1977	1.28	1976
May	5.93	5.05	4.45	1973	28	13.13	1973	1.98	1988
Jun	4.87	4.41	3.57	1969	23	12.84	1998	.83	1988
Jul	4.70	4.51	4.72	1979	22	13.22	1979	.85	1997
Aug	4.70	4.41	5.10	1982	31	10.22	1982	2.49	2000
Sep	4.22	3.99	3.30	1958	21	10.05	1977	.41	1984
Oct	3.80	3.22	3.60	1962	3	7.87	1976	.08	2000
Nov	5.35	4.94	3.65	1973	27	10.97	1973	1.19	1976
Dec	6.12	5.68	3.98	1993	5	16.51	1990	1.57	1985
Ann	61.27	60.63	5.58	Mar 1975	13	16.58	Mar 1975	.08	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.5	9.7	4.4	1.5
Feb	11.9	8.2	3.1	1.3
Mar	12.8	9.7	4.3	1.9
Apr	11.6	8.5	3.4	1.4
May	12.1	9.3	4.1	1.6
Jun	11.0	7.9	3.4	1.3
Jul	11.4	8.0	3.1	1.3
Aug	9.3	7.2	3.3	1.3
Sep	9.0	6.3	3.0	1.3
Oct	8.3	5.7	2.5	1.1
Nov	10.5	7.8	3.8	1.8
Dec	12.5	8.6	3.8	1.7
Ann	133.9	96.9	42.2	17.5

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	2.21	2.76	3.54	4.19	4.81	5.44	6.13	6.92	7.93	9.48	10.90
Feb	2.09	2.50	3.07	3.54	3.98	4.42	4.88	5.42	6.10	7.13	8.05
Mar	2.28	2.87	3.72	4.43	5.11	5.80	6.56	7.43	8.55	10.28	11.86
Apr	1.93	2.37	3.00	3.51	4.00	4.50	5.03	5.65	6.43	7.63	8.73
May	2.48	3.02	3.78	4.41	4.99	5.58	6.22	6.95	7.88	9.30	10.58
Jun	1.27	1.73	2.43	3.05	3.67	4.31	5.03	5.88	6.99	8.73	10.37
Jul	1.42	1.87	2.54	3.11	3.67	4.24	4.88	5.63	6.60	8.11	9.51
Aug	1.98	2.41	3.01	3.50	3.96	4.43	4.93	5.51	6.24	7.35	8.36
Sep	1.02	1.41	2.03	2.58	3.12	3.70	4.35	5.12	6.12	7.72	9.22
Oct	.66	1.00	1.55	2.07	2.60	3.18	3.84	4.64	5.70	7.41	9.05
Nov	2.11	2.61	3.31	3.89	4.44	5.00	5.61	6.30	7.19	8.55	9.79
Dec	1.90	2.49	3.35	4.09	4.81	5.55	6.37	7.32	8.56	10.49	12.27
Ann	46.43	49.38	53.11	55.92	58.40	60.78	63.22	65.91	69.15	73.81	77.82

\+ 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	8.2	6.2	1	#
Feb	7.2	3.0	1	#
Mar	3.6	2.1	#	#
Apr	.4	.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
Nov	.8	.0	#	0
Dec	3.3	2.0	#	#
Ann	23.5	13.3	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	8.0	1973	8	25.0	1979	9	1996	8	4	1977
Feb	12.0	1998	4	31.0	1979	17	1979	9	5	1979
Mar	10.1	1993	13	18.9	1993	6+	1996	22	1	1996
Apr	5.5	1971	7	5.5	1971	3	1971	7	#+	1993
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	.0	0	0	.0	0	#+	1993	31	#+	1993
Nov	3.0	1976	12	5.5	1976	3	1996	10	#+	1996
Dec	4.0	1974	2	11.0	1997	9	1997	31	1+	2000
Ann	12.0	Feb 1998	4	31.0	Feb 1979	17	Feb 1979	9	5	Feb 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.7	2.5	1.1	.4	.0
Feb	3.4	2.4	.9	.3	@
Mar	1.7	1.1	.5	.2	@
Apr	.1	.1	@	@	.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	.6	.4	@	.0	.0
Dec	1.9	1.1	.3	.0	.0
Ann	11.4	7.6	2.8	.9	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.8	4.1	1.3	.0
Feb	4.7	2.2	1.3	.3
Mar	1.6	.3	.1	.0
Apr	.1	@	.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	.3	@	.0	.0
Dec	2.1	.4	.1	.0
Ann	15.6	7.0	2.8	.3

+ 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	5/19	5/13	5/08	5/04	5/01	4/27	4/23	4/19	4/13
32	5/04	4/29	4/24	4/21	4/18	4/14	4/11	4/07	4/01
28	4/17	4/12	4/09	4/06	4/03	4/01	3/29	3/25	3/21
24	4/10	4/04	3/31	3/28	3/24	3/21	3/18	3/14	3/08
20	3/28	3/22	3/18	3/14	3/10	3/07	3/03	2/26	2/20
16	3/18	3/11	3/06	3/01	2/25	2/20	2/16	2/10	2/03

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	9/29	10/04	10/07	10/10	10/13	10/16	10/18	10/22	10/27
32	10/05	10/13	10/19	10/24	10/28	11/02	11/07	11/13	11/21
28	10/16	10/27	11/04	11/11	11/17	11/23	11/30	12/08	12/19
24	11/08	11/18	11/25	12/01	12/06	12/12	12/18	12/25	1/03
20	11/20	11/30	12/08	12/14	12/20	12/27	1/02	1/10	1/20
16	12/02	12/12	12/19	12/26	12/31	1/06	1/12	1/20	1/30

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	188	180	174	169	164	160	155	149	141
32	220	211	204	198	193	188	182	175	166
28	262	250	241	234	227	220	213	204	192
24	284	274	267	262	256	251	245	238	229
20	319	307	299	291	284	278	270	262	250
16	339	329	321	315	309	303	297	289	279

***** 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	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	68	109	274	460	717	959	1105	1055	855	549	240	69	68	177	451	911	1628	2587	3692	4747	5602	6151	6391	6460
45	33	59	170	325	562	809	950	900	705	403	131	27	33	92	262	587	1149	1958	2908	3808	4513	4916	5047	5074
50	13	23	95	206	407	659	795	745	555	265	58	8	13	36	131	337	744	1403	2198	2943	3498	3763	3821	3829
55	0	3	45	115	255	509	640	590	410	149	12	0	0	3	48	163	418	927	1567	2157	2567	2716	2728	2728
60	0	0	15	53	130	360	485	436	273	71	1	0	0	0	15	68	198	558	1043	1479	1752	1823	1824	1824
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	40	77	178	285	445	654	770	728	559	336	157	37	40	117	295	580	1025	1679	2449	3177	3736	4072	4229	4266

(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