

Climatography of the United States

No. 20

1971-2000

Station: MURFREESBORO 5 N, TN

COOP ID: 406371

Climate Division: TN 3

NWS Call Sign:

Elevation: 550 Feet

Lat: 35°55N

Lon: 86°23W

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	45.5	25.3	35.4	78	1949	10	44.0	1974	-14	1966	30	21.6	1977	918	0	.0	.0	12.5	4.5	22.6	.8
Feb	50.6	27.8	39.2	83	1962	13	47.0	1990	-10	1996	5	27.1	1978	723	0	.0	.0	15.8	2.4	18.6	.4
Mar	60.0	36.5	48.3	86	1982	20	54.3	1973	2	1980	3	42.3	1971	521	2	.0	.0	25.2	.3	12.3	.0
Apr	69.5	44.2	56.9	89+	1955	18	62.7	1981	21	1992	3	51.9	1983	259	15	.0	.0	29.1	.0	3.8	.0
May	77.4	54.0	65.7	96+	1962	18	72.1	1987	32	1976	4	61.1	1994	93	114	.0	1.0	31.0	.0	@	.0
Jun	85.3	62.6	74.0	103+	1952	28	76.9	1998	41+	1966	1	69.8	1974	4	272	.2	8.5	30.0	.0	.0	.0
Jul	89.1	67.1	78.1	108	1952	28	81.4	1980	51	1961	10	75.7+	1976	0	406	.4	16.3	31.0	.0	.0	.0
Aug	88.6	64.8	76.7	109	1954	16	81.5	1983	44	1997	24	72.3	1992	1	362	.5	14.0	31.0	.0	.0	.0
Sep	82.5	57.4	70.0	107	1954	5	75.8	1998	34	1949	30	65.9	1974	32	179	.1	5.5	30.0	.0	.0	.0
Oct	72.0	44.1	58.1	95	1954	5	64.9	1971	23+	1952	22	51.3	1987	252	37	.0	.1	30.6	.0	3.6	.0
Nov	60.1	36.4	48.3	86	1984	1	55.2	1985	-3	1950	25	40.3	1976	503	1	.0	.0	24.5	.1	11.4	.0
Dec	49.6	28.7	39.2	76+	1964	24	48.9	1984	-8	1989	23	28.5	1989	801	0	.0	.0	17.0	2.4	19.9	.2
Ann	69.2	45.7	57.5	109	Aug 1954	16	81.5	Aug 1983	-14	Jan 1966	30	21.6	Jan 1977	4107	1388	1.2	45.4	307.7	9.7	92.2	1.4

+ 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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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: MURFREESBORO 5 N, TN

COOP ID: 406371

Climate Division: TN 3

NWS Call Sign:

Elevation: 550 Feet Lat: 35°55N

Lon: 86°23W

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	4.59	4.49	3.95	1974	11	10.68	1974	.84	1986	10.7	7.6	3.4	1.2	1.58	2.01	2.64	3.18	3.69	4.21	4.79	5.46	6.31	7.64	8.86
Feb	3.96	3.61	3.76	1951	1	7.54	1990	1.21	1978	9.1	6.6	2.7	1.1	1.41	1.78	2.32	2.77	3.21	3.65	4.13	4.70	5.42	6.53	7.55
Mar	5.84	4.65	6.41	1975	13	14.84	1975	2.16	1987	11.5	8.7	3.8	1.6	2.02	2.57	3.38	4.06	4.71	5.37	6.10	6.95	8.04	9.72	11.27
Apr	4.22	4.08	3.06	1974	4	7.36	1974	1.33	1976	9.6	6.9	3.0	1.2	1.41	1.81	2.39	2.89	3.37	3.86	4.40	5.03	5.84	7.09	8.25
May	5.25	5.10	3.68	2000	25	11.50	1983	1.46	1988	10.8	7.6	3.6	1.6	1.98	2.47	3.17	3.76	4.31	4.88	5.49	6.20	7.10	8.49	9.76
Jun	4.57	4.10	5.43	1970	21	10.57	1998	.41	1988	10.0	7.0	3.3	1.3	1.04	1.46	2.13	2.73	3.33	3.97	4.68	5.54	6.66	8.45	10.14
Jul	4.91	4.90	5.44	1975	20	10.79	1989	1.16	1997	9.6	6.8	3.2	1.5	1.64	2.11	2.79	3.37	3.92	4.49	5.12	5.85	6.79	8.25	9.59
Aug	3.63	3.34	3.24	1963	29	7.15	1982	1.21	1991	8.3	6.0	2.6	.9	1.36	1.70	2.18	2.59	2.97	3.37	3.79	4.29	4.92	5.89	6.78
Sep	4.53	4.61	8.13	1986	4	11.44	1986	.31	1984	8.1	5.8	3.0	1.4	.80	1.20	1.86	2.48	3.11	3.80	4.58	5.53	6.79	8.82	10.76
Oct	3.45	3.06	4.50	1975	17	8.81	1984	.34	1987	7.3	5.2	2.7	.9	.85	1.18	1.68	2.12	2.57	3.03	3.55	4.17	4.98	6.26	7.46
Nov	4.80	4.68	4.67	1973	27	10.60	1988	.98	1976	9.1	6.8	3.3	1.5	1.47	1.93	2.61	3.19	3.75	4.34	4.99	5.75	6.72	8.25	9.67
Dec	5.23	4.21	4.30	1966	9	13.27	1990	1.60+	1985	10.6	7.7	3.6	1.6	1.57	2.06	2.81	3.45	4.07	4.72	5.44	6.28	7.37	9.07	10.64
Ann	54.98	53.47	8.13	Sep 1986	4	14.84	Mar 1975	.31	Sep 1984	114.7	82.7	38.2	15.8	39.59	42.58	46.40	49.30	51.87	54.35	56.90	59.73	63.15	68.11	72.39

+ 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:
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COOP ID: 406371

Climate Division: TN 3

NWS Call Sign:

Elevation: 550 Feet

Lat: 35°55N

Lon: 86°23W

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	1.9	.8	#	#	5.0	1978	20	7.0	1988	7	1988	9	1	1988	1.2	.8	.2	.1	.0	1.5	.6	.2	.0
Feb	1.3	.1	#	#	5.0	1985	2	7.0	1996	7	1979	10	2	1979	.6	.4	.1	@	.0	.8	.4	.2	.0
Mar	.5	.0	#	0	4.7	1993	13	4.9	1993	7	1993	14	#+	1996	.2	.2	.1	.0	.0	.1	@	.0	.0
Apr	.0	.0	#	0	1.0	1971	7	1.0	1971	#+	1973	10	#+	1973	@	@	.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	31	#	1993	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	#	.0	#	0	#	1995	6	#+	1995	#+	1996	7	#+	1996	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.3	.0	#	0	1.4	1997	30	2.9	1997	1+	1997	30	#+	1997	.3	.2	.0	.0	.0	.2	.0	.0	.0
Ann	4.0	.9	N/A	N/A	5.0+	Feb 1985	2	7.0+	Feb 1996	7+	Mar 1993	14	2	Feb 1979	2.3	1.6	.4	.1	.0	2.6	1.0	.4	.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

Complete documentation available from:

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No. 20 1971-2000

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Climate Division: TN 3

NWS Call Sign:

Elevation: 550 Feet

Lat: 35° 55N

Lon: 86° 23W

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	5/06	5/01	4/28	4/25	4/22	4/19	4/16	4/13	4/08
32	4/24	4/20	4/17	4/15	4/13	4/10	4/08	4/05	4/01
28	4/18	4/12	4/09	4/06	4/03	3/31	3/28	3/24	3/19
24	4/04	3/29	3/25	3/21	3/18	3/14	3/11	3/06	2/28
20	3/16	3/10	3/06	3/03	2/28	2/24	2/21	2/17	2/11
16	3/07	2/27	2/22	2/18	2/14	2/10	2/05	1/31	1/24
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	10/12	10/15	10/18	10/21	10/25
32	10/05	10/11	10/15	10/19	10/22	10/26	10/29	11/03	11/09
28	10/19	10/24	10/28	11/01	11/04	11/07	11/11	11/15	11/20
24	10/30	11/05	11/10	11/14	11/17	11/21	11/25	11/29	12/06
20	11/11	11/18	11/23	11/27	12/01	12/05	12/09	12/14	12/21
16	11/26	12/04	12/10	12/15	12/20	12/25	12/30	1/05	1/13
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	189	184	179	176	173	169	166	162	156
32	213	206	200	196	192	188	184	179	172
28	235	228	223	219	215	211	206	201	194
24	268	260	254	249	244	239	234	228	220
20	298	291	285	280	276	271	266	261	253
16	341	328	320	313	307	301	294	287	276

* 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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Station: MURFREESBORO 5 N, TN

COOP ID: 406371

Climate Division: TN 3 NWS Call Sign: Elevation: 550 Feet Lat: 35°55N Lon: 86°23W

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	918	723	521	259	93	4	0	1	32	252	503	801	4107
60	763	583	377	145	37	0	0	0	8	149	361	646	3069
57	679	502	296	93	18	0	0	0	3	101	281	562	2535
55	620	451	247	65	11	0	0	0	1	76	233	504	2208
50	478	325	148	21	2	0	0	0	0	30	133	368	1505
32	121	46	5	0	0	0	0	0	0	0	2	61	235

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	226	247	509	746	1044	1259	1429	1385	1138	808	490	283	9564
55	12	9	38	121	342	569	716	672	449	170	30	13	3141
57	9	4	25	89	287	509	654	610	391	134	19	9	2740
60	0	0	13	50	213	419	561	517	306	89	8	0	2176
65	0	0	2	15	114	272	406	362	179	37	1	0	1388
70	0	0	0	2	48	141	251	217	84	12	0	0	755

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	141	311	525	810	1035	1193	1151	915	584	301	139	92	233	544	1069	1879	2914	4107	5258	6173	6757	7058	7197
45	45	74	202	386	655	885	1038	996	765	434	192	76	45	119	321	707	1362	2247	3285	4281	5046	5480	5672	5748
50	22	37	113	258	502	735	883	841	615	293	113	38	22	59	172	430	932	1667	2550	3391	4006	4299	4412	4450
55	3	8	58	155	354	585	728	686	467	179	57	11	3	11	69	224	578	1163	1891	2577	3044	3223	3280	3291
60	0	0	20	79	220	435	573	531	325	89	21	0	0	0	20	99	319	754	1327	1858	2183	2272	2293	2293
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	57	99	205	337	528	702	817	782	606	387	192	87	57	156	361	698	1226	1928	2745	3527	4133	4520	4712	4799

(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