

Climatography of the United States No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: CROSSVILLE EXP STN, TN

1971-2000

COOP ID: 402202

Climate Division: TN 2

NWS Call Sign:

Elevation: 1,810 Feet Lat: 36°01N Lon: 85°08W

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	42.6	22.6	32.6	74	1943	17	43.7	1974	-25	1985	21	18.0	1977	1004	0	.0	.0	9.9	6.8	24.9	2.0
Feb	47.3	25.7	36.5	77	1932	10	43.3	1976	-15	1996	5	26.1	1978	799	0	.0	.0	13.3	4.7	20.1	.8
Mar	56.1	34.1	45.1	81+	1921	21	50.7	1973	-6	1980	3	37.9	1971	618	0	.0	.0	22.5	1.1	14.7	.1
Apr	65.2	42.0	53.6	91	1925	24	58.7	1981	14	1923	1	48.5	1983	347	6	.0	.0	27.4	.1	5.3	.0
May	73.3	50.5	61.9	95	1941	22	67.8	1991	28+	1931	8	57.6+	1989	162	65	.0	@	30.8	.0	.3	.0
Jun	80.4	58.1	69.3	102+	1934	26	72.0	1986	33	1947	1	64.9	1974	18	146	.1	1.1	30.0	.0	.0	.0
Jul	84.1	62.2	73.2	102	1930	13	77.8	1993	40	1926	15	70.0	1976	4	256	@	4.5	31.0	.0	.0	.0
Aug	83.2	60.4	71.8	102+	1930	9	76.1	1995	41+	1917	26	67.4	1992	8	218	.0	3.2	31.0	.0	.0	.0
Sep	77.4	54.1	65.8	103	1925	6	70.1	1998	27	1927	23	62.5	1974	63	85	.0	1.3	30.0	.0	.1	.0
Oct	67.5	42.3	54.9	90+	1919	1	62.6	1984	16+	1952	30	47.8	1988	332	18	.0	.0	30.0	.0	5.3	.0
Nov	56.3	34.8	45.6	80	1935	3	53.8	1985	-7	1950	25	37.4	1976	585	1	.0	.0	21.5	.4	13.8	.0
Dec	46.6	26.5	36.6	72+	1956	7	46.1	1984	-17+	1962	13	24.7	1989	882	0	.0	.0	13.5	3.9	21.3	.5
Ann	65.0	42.8	53.9	103	Sep 1925	6	77.8	Jul 1993	-25	Jan 1985	21	18.0	Jan 1977	4822	795	.1	10.1	290.9	17.0	105.8	3.4

+ 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: 1912-2001

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

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Climate Division: TN 2

NWS Call Sign:

Elevation: 1,810 Feet Lat: 36°01N

Lon: 85°08W

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	5.78	5.60	4.44	1949	5	10.97	1974	1.32	1986	14.8	9.7	4.2	1.5	2.26	2.80	3.56	4.19	4.79	5.40	6.05	6.81	7.78	9.26	10.61
Feb	4.79	4.50	4.50	1939	3	10.01	1991	1.30	1978	12.5	8.1	3.3	1.3	1.97	2.41	3.02	3.53	4.01	4.50	5.02	5.62	6.39	7.56	8.62
Mar	6.37	5.62	5.34	1975	13	16.52	1975	2.40	1983	14.1	9.8	4.3	1.7	2.19	2.80	3.67	4.41	5.12	5.85	6.65	7.58	8.77	10.61	12.30
Apr	4.78	4.31	4.45	1921	16	11.26	1994	1.44	1976	12.4	8.6	3.0	1.2	1.81	2.25	2.89	3.42	3.93	4.44	5.00	5.65	6.47	7.74	8.90
May	5.87	5.44	7.07	1973	28	14.99	1973	2.42	1988	13.0	9.0	3.9	1.6	2.29	2.83	3.61	4.25	4.86	5.47	6.14	6.92	7.90	9.41	10.79
Jun	4.81	4.09	4.87	1998	5	13.09	1998	.96	1988	11.3	7.8	3.0	1.3	1.01	1.45	2.16	2.80	3.44	4.13	4.91	5.84	7.08	9.05	10.91
Jul	5.04	4.51	3.63	1967	29	9.72	1984	1.06	1993	11.9	8.1	3.4	1.6	1.89	2.36	3.03	3.60	4.13	4.68	5.27	5.96	6.84	8.19	9.42
Aug	3.81	3.52	4.60	2001	11	6.78	1982	1.51	1973	10.1	6.7	2.6	1.2	1.80	2.13	2.58	2.95	3.29	3.63	4.00	4.41	4.94	5.72	6.43
Sep	3.84	3.62	3.96	1944	29	8.34	1975	.39	1984	9.8	6.3	2.4	1.2	.80	1.15	1.71	2.23	2.74	3.29	3.92	4.66	5.65	7.23	8.72
Oct	3.71	3.08	4.46	1995	5	8.66	1984	.32	2000	8.9	5.5	2.4	1.1	.77	1.11	1.66	2.15	2.65	3.19	3.79	4.52	5.47	7.00	8.45
Nov	5.29	5.37	3.81	1975	12	9.21	1983	1.78	1971	11.8	7.8	3.4	1.7	2.22	2.70	3.38	3.93	4.45	4.98	5.54	6.19	7.02	8.28	9.42
Dec	6.20	5.02	4.56	1996	1	16.73	1990	1.71	1985	13.5	8.6	3.9	1.7	1.95	2.54	3.41	4.16	4.88	5.63	6.45	7.42	8.66	10.60	12.39
Ann	60.29	60.22	7.07	May 1973	28	16.73	Dec 1990	.32	Oct 2000	144.1	96.0	39.8	17.1	45.90	48.76	52.38	55.10	57.50	59.80	62.17	64.77	67.90	72.40	76.27

+ 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: 1912-2001

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

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Station: CROSSVILLE EXP STN, TN

COOP ID: 402202

Climate Division: TN 2

NWS Call Sign:

Elevation: 1,810 Feet

Lat: 36°01N

Lon: 85°08W

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	4.4	3.0	1	#	7.0	1973	8	15.6	1996	8	1996	12	3	1977	3.7	1.8	.5	.1	.0	5.4	2.1	.5	.0
Feb	4.7	2.1	1	#	6.5	1979	7	23.5	1979	11	1996	3	3	1979	2.8	1.6	.6	.2	.0	4.2	1.7	.7	.1
Mar	2.8	.8	#	#	9.0	1993	13	19.0	1996	17	1993	15	2	1996	1.4	.9	.3	.1	.0	1.6	.5	.3	.2
Apr	.4	.0	#	0	3.7	1971	7	3.7	1971	4	1987	3	#+	1993	.1	.1	.1	.0	.0	.1	.1	.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	.5	1989	20	.5+	1993	1+	1993	31	#+	1993	.1	.0	.0	.0	.0	.1	.0	.0	.0
Nov	.4	.0	#	0	3.0	1976	12	4.0	1996	3+	1996	10	#+	1996	.3	.1	.1	.0	.0	.2	.1	.0	.0
Dec	1.3	.9	#	#	5.0	1997	27	5.0	1997	7	1997	31	1+	2000	1.6	.6	.1	@	.0	1.6	.3	.1	.0
Ann	14.0	6.8	N/A	N/A	9.0	Mar 1993	13	23.5	Feb 1979	17	Mar 1993	15	3+	Feb 1979	10.0	5.1	1.7	.4	.0	13.2	4.8	1.6	.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

Complete documentation available from:

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COOP ID: 402202

Climate Division: TN 2

NWS Call Sign:

Elevation: 1,810 Feet

Lat: 36°01N

Lon: 85°08W

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	5/23	5/17	5/13	5/09	5/06	5/02	4/29	4/25	4/19
32	5/10	5/03	4/28	4/24	4/20	4/16	4/11	4/07	3/31
28	4/23	4/17	4/14	4/11	4/08	4/05	4/02	3/29	3/24
24	4/14	4/09	4/05	4/01	3/29	3/26	3/22	3/18	3/13
20	4/10	4/02	3/27	3/22	3/18	3/13	3/09	3/03	2/23
16	3/18	3/12	3/07	3/03	2/27	2/24	2/20	2/15	2/09
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	10/02	10/04	10/06	10/08	10/10	10/12	10/15
32	9/28	10/04	10/08	10/12	10/15	10/19	10/23	10/27	11/02
28	10/11	10/15	10/19	10/22	10/25	10/28	10/30	11/03	11/08
24	10/22	10/28	11/01	11/05	11/08	11/11	11/15	11/19	11/25
20	11/03	11/08	11/11	11/14	11/17	11/20	11/23	11/27	12/02
16	11/11	11/19	11/25	11/29	12/04	12/08	12/13	12/19	12/27
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	174	166	161	157	152	148	144	139	131
32	208	198	190	184	178	172	166	158	148
28	219	212	207	203	199	195	191	187	180
24	247	239	233	228	223	219	214	208	200
20	271	262	255	249	243	238	232	225	216
16	301	294	288	283	279	274	270	264	256

* 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: CROSSVILLE EXP STN, TN

COOP ID: 402202

Climate Division: TN 2 NWS Call Sign: Elevation: 1,810 Feet Lat: 36°01N Lon: 85°08W

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	1004	799	618	347	162	18	4	8	63	332	585	882	4822
60	849	659	469	217	82	3	0	0	19	212	442	727	3679
57	761	575	383	152	48	1	0	0	7	154	361	642	3084
55	704	520	329	115	32	0	0	0	4	121	309	583	2717
50	560	391	210	48	9	0	0	0	0	59	199	441	1917
32	172	67	12	0	0	0	0	0	0	0	11	96	358

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	191	192	417	649	926	1118	1276	1234	1012	709	417	236	8377
55	10	1	21	74	245	428	563	521	326	117	25	10	2341
57	5	0	13	50	199	369	501	459	270	88	17	7	1978
60	0	0	6	25	140	281	408	366	191	53	8	0	1478
65	0	0	0	6	65	146	256	218	85	18	1	0	795
70	0	0	0	1	22	49	123	100	24	4	0	0	323

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	57	99	236	429	688	890	1038	995	781	476	236	96	57	156	392	821	1509	2399	3437	4432	5213	5689	5925	6021
45	26	47	142	297	534	740	883	840	631	333	144	49	26	73	215	512	1046	1786	2669	3509	4140	4473	4617	4666
50	4	18	74	186	385	590	728	685	481	206	74	19	4	22	96	282	667	1257	1985	2670	3151	3357	3431	3450
55	0	2	34	103	249	440	573	530	340	109	33	1	0	2	36	139	388	828	1401	1931	2271	2380	2413	2414
60	0	0	4	44	129	291	418	375	207	48	4	0	0	0	4	48	177	468	886	1261	1468	1516	1520	1520
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	33	64	147	262	425	587	704	674	499	303	142	56	33	97	244	506	931	1518	2222	2896	3395	3698	3840	3896

(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