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: CROSSVILLE AP, TN **COOP ID: 402197**

Climate Division: TN 2 **NWS Call Sign: CSV** **Elevation: 1,867 Feet** **Lat: 35˚57N** **Lon: 85˚05W**

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	43.9	26.3	35.1	70	1975	28	45.6	1974	-21+	1985	20	22.1	1977	928	0	.0	.0	10.5	5.6	22.3	.9
Feb	48.7	29.4	39.1	79	1962	13	46.9	1976	-16	1996	5	28.7	1978	727	0	.0	.0	14.2	3.6	17.9	.4
Mar	57.4	36.7	47.1	81+	1963	31	54.0	1973	-2+	1960	5	39.7	1971	557	0	.0	.0	23.6	.8	12.2	@
Apr	66.4	44.0	55.2	88	1986	27	60.3	1994	22+	1987	1	50.0	1983	301	7	.0	.0	27.8	.0	3.9	.0
May	73.8	52.2	63.0	91	1962	13	68.4	1987	27	1976	4	57.9	1976	142	80	.0	.0	31.0	.0	.1	.0
Jun	80.7	60.1	70.4	99	1988	24	73.8	1994	33	1956	3	66.0	1974	14	175	.0	1.1	30.0	.0	.0	.0
Jul	84.0	64.7	74.4	101	1980	16	79.5	1993	46	1961	10	70.9	1976	0	289	@	4.4	31.0	.0	.0	.0
Aug	83.2	63.2	73.2	99	1983	21	77.2	1995	42	1956	22	69.5	1992	4	258	.0	3.2	31.0	.0	.0	.0
Sep	77.3	56.8	67.1	99	1954	5	72.3	1998	33+	1956	21	61.4	1974	62	122	.0	.8	30.0	.0	.0	.0
Oct	67.5	44.8	56.2	86+	1954	4	63.8	1984	19	1954	31	49.7	1988	296	21	.0	.0	30.2	.0	3.3	.0
Nov	56.6	37.1	46.9	79	1987	1	54.6	1985	5	1955	29	39.3	1976	545	1	.0	.0	21.9	.3	11.3	.0
Dec	47.6	30.0	38.8	72	1982	4	48.4	1984	-17	1962	13	28.6	1989	813	0	.0	.0	14.0	3.2	19.2	.3
Ann	65.6	45.4	55.5	101	Jul 1980	16	79.5	Jul 1993	-21+	Jan 1985	20	22.1	Jan 1977	4389	953	@	9.5	295.2	13.5	90.2	1.6

+ 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: 1954-2001

(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	5.15	4.68	3.30	1998	7	10.10	1974	.79	1986
Feb	4.33	4.26	2.19	1956	17	7.44	1994	.84	1978
Mar	6.07	4.97	4.37	1980	20	15.34	1975	1.95	1986
Apr	4.60	3.88	4.13	1977	4	11.07	1977	1.59	1992
May	5.48	5.09	6.29	1973	27	10.84	1984	1.80	1988
Jun	4.73	4.82	3.80	1972	28	14.15	1998	.87	1990
Jul	5.13	4.76	3.82	1959	24	11.70	1979	1.40	1993
Aug	4.07	4.04	3.81	1991	9	7.83	1982	.91	1972
Sep	3.91	3.64	3.07	1962	16	9.00	1989	.66	1984
Oct	3.24	2.68	3.74	1977	8	7.20	1981	.01	2000
Nov	5.23	5.21	4.36	1996	30	9.52	1996	1.74	1976
Dec	5.16	4.45	4.27	1990	22	12.75	1990	1.75	1985
Ann	57.10	54.53	6.29	May 1973	27	15.34	Mar 1975	.01	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.6	8.9	3.9	1.3
Feb	12.1	8.5	3.2	1.1
Mar	13.9	10.0	3.9	1.6
Apr	11.5	7.7	3.0	1.2
May	12.4	8.6	3.7	1.5
Jun	11.5	8.0	3.0	1.3
Jul	11.7	8.8	3.4	1.5
Aug	9.2	6.2	2.9	1.2
Sep	9.2	6.0	2.4	1.2
Oct	8.3	5.3	2.1	.9
Nov	11.2	7.7	3.6	1.6
Dec	12.9	8.5	3.7	1.3
Ann	137.5	94.2	38.8	15.7

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	1.68	2.17	2.89	3.50	4.09	4.70	5.37	6.15	7.15	8.71	10.15
Feb	1.79	2.18	2.74	3.20	3.63	4.07	4.54	5.08	5.77	6.81	7.77
Mar	1.90	2.48	3.34	4.07	4.78	5.51	6.32	7.27	8.49	10.39	12.15
Apr	1.51	1.95	2.59	3.14	3.66	4.20	4.80	5.49	6.38	7.77	9.05
May	2.52	3.00	3.66	4.20	4.70	5.21	5.75	6.36	7.14	8.31	9.36
Jun	.96	1.39	2.08	2.72	3.36	4.05	4.83	5.76	7.00	8.98	10.85
Jul	1.71	2.19	2.91	3.51	4.09	4.70	5.35	6.12	7.11	8.64	10.05
Aug	1.47	1.85	2.40	2.86	3.30	3.76	4.25	4.82	5.55	6.68	7.72
Sep	.95	1.32	1.89	2.40	2.90	3.43	4.02	4.73	5.66	7.12	8.50
Oct	.34	.58	1.03	1.48	1.97	2.51	3.15	3.95	5.04	6.85	8.61
Nov	2.13	2.61	3.29	3.85	4.37	4.91	5.48	6.14	6.98	8.26	9.43
Dec	1.79	2.28	2.99	3.59	4.16	4.74	5.39	6.13	7.09	8.57	9.93
Ann	42.46	45.34	49.01	51.77	54.22	56.57	58.99	61.66	64.87	69.52	73.51

\+ 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: 1954-2001
(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	3.8	3.3	#	0	10.0	1975	12	11.2	1996	10	1975	13	1+	1996	2.2	1.7	.6	.2	@	5.5	1.5	.6	@
Feb	3.6	1.8	#	0	6.0	1971	8	17.1	1979	12	1996	3	2+	1996	1.9	1.7	.5	.2	.0	3.1	1.2	.6	.1
Mar	2.0	.0	#	0	18.0	1993	13	20.5	1993	18	1993	14	2	1993	1.0	.8	.2	@	@	.9	.3	.2	.1
Apr	.4	.0	#	0	3.0	1971	6	5.0	1987	4	1987	3	#	1987	.3	.2	.1	.0	.0	.1	.1	.0	.0
May	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	2000	.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	#+	1993	31	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.3	#	#	0	2.2	1996	10	2.2	1996	2	1996	10	#	1996	.2	.2	.0	.0	.0	.1	.0	.0	.0
Dec	1.0	.5	#	0	3.9	1997	30	8.6	1997	4+	1997	30	#	1997	.9	.7	@	.0	.0	1.0	.2	.0	.0
Ann	11.1	5.6	N/A	N/A	18.0	Mar 1993	13	20.5	Mar 1993	18	Mar 1993	14	2+	Feb 1996	6.5	5.3	1.4	.4	@	10.7	3.3	1.4	.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	5/19	5/13	5/08	5/04	5/01	4/27	4/23	4/19	4/13
32	4/28	4/23	4/19	4/16	4/13	4/10	4/06	4/03	3/28
28	4/21	4/15	4/10	4/07	4/03	3/31	3/27	3/23	3/17
24	4/12	4/04	3/29	3/25	3/20	3/16	3/11	3/05	2/26
20	3/19	3/13	3/08	3/04	2/28	2/25	2/21	2/16	2/09
16	3/13	3/06	3/01	2/25	2/21	2/17	2/13	2/08	2/01

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	10/02	10/04	10/07	10/09	10/11	10/14	10/18
32	10/04	10/09	10/13	10/16	10/19	10/22	10/25	10/28	11/02
28	10/13	10/20	10/25	10/29	11/01	11/05	11/09	11/14	11/20
24	10/31	11/05	11/09	11/12	11/15	11/18	11/21	11/24	11/29
20	11/08	11/15	11/20	11/24	11/28	12/02	12/06	12/12	12/19
16	11/19	11/27	12/03	12/08	12/13	12/17	12/23	12/29	1/06

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	178	171	166	162	158	154	150	145	138
32	209	202	197	192	188	184	180	175	168
28	237	228	222	217	211	206	201	194	185
24	266	257	250	244	239	233	228	221	211
20	297	288	282	277	272	267	262	256	248
16	319	309	302	297	292	287	282	276	268

***** 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)

Base — Heating Degree Days (1)

Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	928	727	557	301	142	14	0	4	62	296	545	813	4389
60	775	587	412	176	68	2	0	0	20	180	404	659	3283
57	690	503	329	116	38	0	0	0	9	125	322	575	2707
55	632	450	278	84	24	0	0	0	5	94	272	517	2356
50	492	322	171	28	7	0	0	0	0	40	166	381	1607
32	134	36	7	0	0	0	0	0	0	0	6	69	252

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	229	234	473	695	961	1152	1312	1277	1051	748	451	279	8862
55	14	3	31	89	273	462	599	564	365	130	27	14	2571
57	10	1	20	61	224	402	537	502	309	98	17	10	2191
60	2	0	10	31	161	314	444	409	231	60	9	1	1672
65	0	0	0	7	80	175	289	258	122	21	1	0	953
70	0	0	0	1	30	70	150	127	49	5	0	0	432

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	76	126	274	470	724	919	1074	1038	816	509	257	121	76	202	476	946	1670	2589	3663	4701	5517	6026	6283	6404
45	37	64	167	332	569	769	919	883	666	357	158	61	37	101	268	600	1169	1938	2857	3740	4406	4763	4921	4982
50	13	27	91	215	416	619	764	728	517	236	83	30	13	40	131	346	762	1381	2145	2873	3390	3626	3709	3739
55	1	5	39	116	273	469	609	573	370	129	36	7	1	6	45	161	434	903	1512	2085	2455	2584	2620	2627
60	0	0	8	54	151	322	454	418	239	53	7	0	0	0	8	62	213	535	989	1407	1646	1699	1706	1706
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	37	74	165	285	453	620	744	713	533	314	145	60	37	111	276	561	1014	1634	2378	3091	3624	3938	4083	4143

(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