

Climatography of the United States

No. 20

1971-2000

Station: MARTIN UNIV OF TENN BRA, TN

COOP ID: 405681

Climate Division: TN 4

NWS Call Sign:

Elevation: 340 Feet

Lat: 36° 20N

Lon: 88° 52W

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	43.6	24.3	34.0	77	1943	24	43.3	1990	-18	1942	8	19.3	1977	962	0	.0	.0	10.5	6.0	23.4	.9
Feb	49.5	28.0	38.8	81	1962	13	47.0	1990	-14	1951	2	23.7	1978	735	0	.0	.0	14.8	3.6	18.1	.2
Mar	59.4	37.0	48.2	86+	1963	30	53.4	1976	-2	1960	5	42.2	1975	521	1	.0	.0	24.8	.3	11.2	.0
Apr	69.2	45.7	57.5	90+	1987	22	63.4	1981	23	1992	3	51.3	1983	245	19	.0	.1	29.0	.0	2.8	.0
May	78.0	55.2	66.6	98	1977	22	73.7	1987	31	1966	10	59.3	1976	88	138	.0	1.7	31.0	.0	.0	.0
Jun	86.6	64.0	75.3	106	1952	30	78.4	1998	44+	1992	22	70.3	1974	2	311	.1	10.9	30.0	.0	.0	.0
Jul	90.4	68.1	79.3	104	1952	27	84.5	1993	48	1947	23	75.4	1976	0	442	.5	18.9	31.0	.0	.0	.0
Aug	89.5	65.5	77.5	106+	1954	15	82.5	1980	44	1986	29	72.6	1976	1	389	.4	15.6	31.0	.0	.0	.0
Sep	83.0	57.7	70.4	105	1954	5	76.8	1998	33	1983	22	64.1	1974	32	192	.1	6.6	30.0	.0	.0	.0
Oct	72.4	45.6	59.0	95	1953	1	65.3	1971	22+	1952	29	52.0	1976	224	36	.0	.2	30.8	.0	2.9	.0
Nov	59.3	36.8	48.1	86	1937	1	54.6	1999	0	1950	25	39.4	1976	510	2	.0	.0	23.1	.1	10.3	.0
Dec	48.3	28.3	38.3	78+	1951	31	47.7	1971	-13+	1989	22	26.3	1983	827	0	.0	.0	14.9	2.9	20.1	.3
Ann	69.1	46.4	57.8	106+	Aug 1954	15	84.5	Jul 1993	-18	Jan 1942	8	19.3	Jan 1977	4147	1530	1.1	54.0	300.9	12.9	88.8	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: 1936-2001

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

043-A

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: MARTIN UNIV OF TENN BRA, TN

COOP ID: 405681

Climate Division: TN 4

NWS Call Sign:

Elevation: 340 Feet Lat: 36°20N

Lon: 88°52W

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	3.76	3.86	5.52	1937	21	8.20	1974	1.29	1981	10.1	6.6	2.7	1.0	1.21	1.57	2.10	2.55	2.98	3.43	3.92	4.49	5.23	6.38	7.44
Feb	4.31	3.81	4.40	1956	17	12.82	1989	1.16	1978	9.2	6.7	2.9	1.3	1.33	1.74	2.35	2.87	3.38	3.91	4.48	5.16	6.04	7.41	8.67
Mar	4.93	4.36	6.04	1952	22	14.70	1975	1.98	1995	11.0	8.2	3.2	1.3	1.79	2.25	2.92	3.48	4.01	4.56	5.15	5.84	6.73	8.09	9.34
Apr	5.13	4.83	3.93	1969	9	11.38	1973	1.98	1976	11.0	8.1	3.7	1.6	2.08	2.55	3.22	3.77	4.29	4.81	5.38	6.03	6.86	8.13	9.28
May	5.23	4.97	3.90	1957	23	11.30	1983	1.65	1982	11.1	8.4	3.8	1.6	2.02	2.50	3.20	3.77	4.32	4.87	5.48	6.17	7.06	8.42	9.66
Jun	4.50	4.18	5.25	1970	13	11.57	1998	.37	1988	9.7	7.0	2.9	1.3	1.36	1.79	2.43	2.98	3.51	4.07	4.68	5.39	6.32	7.77	9.11
Jul	4.80	4.81	9.20	1975	20	13.53	1975	.64	1993	8.7	6.5	3.1	1.6	1.01	1.45	2.15	2.79	3.44	4.13	4.91	5.84	7.07	9.05	10.91
Aug	3.11	2.47	4.38	1970	20	8.15	1971	.35	1999	7.2	4.7	2.2	1.0	.50	.76	1.22	1.64	2.09	2.57	3.13	3.80	4.71	6.18	7.58
Sep	3.61	3.40	4.13	1970	19	8.85	1977	.31	1978	7.8	5.3	2.5	1.1	.65	.97	1.50	1.99	2.50	3.04	3.66	4.40	5.40	7.00	8.52
Oct	3.59	3.22	3.78	1980	18	11.19	1984	.72	2000	7.4	5.5	2.5	.9	1.05	1.39	1.90	2.35	2.78	3.23	3.73	4.31	5.07	6.26	7.37
Nov	4.98	4.69	7.25	1957	19	11.47	1988	1.95	1976	10.2	7.4	3.5	1.5	1.85	2.32	2.99	3.55	4.08	4.62	5.21	5.89	6.76	8.10	9.33
Dec	5.18	4.37	4.10	1972	8	14.56	1990	.81	1976	9.9	7.1	3.2	1.5	1.15	1.63	2.39	3.08	3.76	4.49	5.31	6.29	7.58	9.64	11.58
Ann	53.13	51.67	9.20	Jul 1975	20	14.70	Mar 1975	.31	Sep 1978	113.3	81.5	36.2	15.7	40.51	43.02	46.20	48.59	50.70	52.73	54.80	57.09	59.84	63.79	67.19

+ 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: 1936-2001

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

Complete documentation available from:
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Climate Division: TN 4

NWS Call Sign:

Elevation: 340 Feet

Lat: 36°20N

Lon: 88°52W

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	2.0	.5	#	0	7.0	1985	20	15.5	1985	8	1977	7	4	1977	.9	.7	.3	.2	.0	.9	.2	.0	.0
Feb	2.6	1.3	#	0	11.0	1985	1	19.0	1985	3	1971	13	1	1982	1.0	.8	.1	.1	.1	.4	.1	.0	.0
Mar	.6	.0	#	0	4.0	1987	31	4.0	1987	3	1975	10	#+	1993	.2	.2	.1	.0	.0	.2	.1	.0	.0
Apr	#	.0	0	0	#	1973	9	#+	1973	0	0	0	0	0	.0	.0	.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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.2	.0	#	0	4.0	1976	15	4.0	1976	4	1976	15	#+	1976	.1	.1	@	.0	.0	.1	.1	.0	.0
Dec	.2	.0	#	0	1.5	1983	27	2.0	1983	1	1973	20	#+	1990	.3	.2	.0	.0	.0	.1	.0	.0	.0
Ann	5.6	1.8	N/A	N/A	11.0	Feb 1985	1	19.0	Feb 1985	8	Jan 1977	7	4	Jan 1977	2.5	2.0	.5	.3	.1	1.7	.5	.0	.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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Climate Division: TN 4

NWS Call Sign:

Elevation: 340 Feet

Lat: 36°20N

Lon: 88°52W

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	4/29	4/25	4/22	4/19	4/16	4/14	4/11	4/08	4/04
32	4/20	4/16	4/13	4/10	4/08	4/06	4/03	3/31	3/27
28	4/13	4/07	4/03	3/31	3/27	3/24	3/20	3/16	3/11
24	4/05	3/29	3/25	3/21	3/17	3/13	3/09	3/04	2/26
20	3/22	3/15	3/10	3/05	3/01	2/25	2/21	2/16	2/08
16	3/06	2/27	2/21	2/17	2/13	2/08	2/04	1/29	1/20
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	10/03	10/06	10/08	10/11	10/13	10/16	10/19	10/23
32	10/08	10/13	10/17	10/20	10/23	10/25	10/28	11/01	11/06
28	10/21	10/27	10/31	11/04	11/07	11/10	11/14	11/18	11/23
24	11/01	11/07	11/12	11/15	11/19	11/22	11/26	11/30	12/06
20	11/09	11/17	11/23	11/27	12/02	12/06	12/11	12/16	12/24
16	11/18	11/27	12/03	12/08	12/12	12/17	12/23	12/29	1/08
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	193	188	184	180	177	173	170	166	160
32	215	209	204	200	197	193	189	184	178
28	249	241	234	229	224	219	213	207	198
24	271	262	256	251	246	241	236	230	221
20	302	293	286	280	275	269	264	257	248
16	349	329	319	310	303	296	288	279	267

* 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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COOP ID: 405681

Climate Division: TN 4 NWS Call Sign: Elevation: 340 Feet Lat: 36° 20N Lon: 88° 52W

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	962	735	521	245	88	2	0	1	32	224	510	827	4147
60	807	600	377	136	36	0	0	0	8	123	371	681	3139
57	725	521	296	86	18	0	0	0	3	80	294	593	2616
55	666	470	247	60	11	0	0	0	1	57	247	536	2295
50	525	348	148	18	2	0	0	0	0	19	150	403	1613
32	159	68	6	0	0	0	0	0	0	0	7	89	329

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	220	258	509	764	1074	1299	1465	1411	1150	836	489	284	9759
55	14	15	37	133	372	609	752	698	461	179	39	19	3328
57	11	11	24	100	317	549	690	636	403	140	26	14	2921
60	0	5	12	59	241	459	597	543	318	91	13	8	2346
65	0	0	1	19	138	311	442	389	192	36	2	0	1530
70	0	0	0	4	65	174	291	246	96	10	0	0	886

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	72	140	313	545	845	1066	1222	1166	917	604	295	122	72	212	525	1070	1915	2981	4203	5369	6286	6890	7185	7307
45	35	77	206	400	690	916	1067	1011	767	452	189	64	35	112	318	718	1408	2324	3391	4402	5169	5621	5810	5874
50	15	34	117	278	535	766	912	856	617	314	111	30	15	49	166	444	979	1745	2657	3513	4130	4444	4555	4585
55	4	11	63	168	383	616	757	701	470	199	58	11	4	15	78	246	629	1245	2002	2703	3173	3372	3430	3441
60	0	2	27	88	243	467	602	546	332	106	23	0	0	2	29	117	360	827	1429	1975	2307	2413	2436	2436
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	47	93	196	338	545	727	834	789	607	396	177	71	47	140	336	674	1219	1946	2780	3569	4176	4572	4749	4820

(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.

- 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/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