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: MILAN EXP STN, TN **COOP ID: 406012**

Climate Division: TN 4 **NWS Call Sign:** **Elevation: 426 Feet** **Lat: 35˚54N** **Lon: 88˚44W**

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	44.9	22.9	33.9	78+	1937	15	42.6	1990	-20	1985	21	20.3	1977	964	0	.0	.0	11.2	5.2	23.1	.7
Feb	50.7	25.9	38.3	81+	1962	13	46.5	1990	-23	1951	2	24.5	1978	749	0	.0	.0	15.0	3.2	18.9	.4
Mar	60.3	34.7	47.5	87	1938	21	53.3	1973	7+	1943	3	42.1	1971	542	0	.0	.0	24.8	.3	11.5	.0
Apr	70.3	43.5	56.9	94+	1936	15	63.0	1981	22	2000	9	50.5	1983	259	17	.0	.2	29.1	.0	2.9	.0
May	78.4	53.0	65.7	98	1941	21	72.5	1987	32	1944	7	60.4	1976	96	118	.0	1.6	31.0	.0	.0	.0
Jun	86.2	61.1	73.7	105+	1936	21	76.9	1998	40	2000	7	69.1	1974	3	264	.2	10.2	30.0	.0	.0	.0
Jul	89.6	65.0	77.3	108+	1930	28	81.1	1993	47	1947	23	74.2	1984	0	381	.4	17.8	31.0	.0	.0	.0
Aug	89.0	62.0	75.5	110	1930	9	80.3	1980	43+	1986	29	70.8	1992	2	326	.9	15.1	31.0	.0	.0	.0
Sep	83.0	54.3	68.7	105	1954	5	73.9	1998	31	1942	29	63.6	1974	46	155	.1	6.8	30.0	.0	.0	.0
Oct	72.6	42.1	57.4	96	1953	1	63.7	1971	20	1952	29	51.6	1987	263	25	.0	.3	30.8	.0	3.9	.0
Nov	59.7	34.4	47.1	85+	1931	13	53.1	1985	1	1950	25	38.1	1976	539	1	.0	.0	23.3	.1	11.6	.0
Dec	49.3	26.3	37.8	78+	1933	4	45.6	1971	-10	1989	22	27.5	1989	843	0	.0	.0	15.6	2.4	20.4	.3
Ann	69.5	43.8	56.7	110	Aug 1930	9	81.1	Jul 1993	-23	Feb 1951	2	20.3	Jan 1977	4306	1287	1.6	52.0	302.8	11.2	92.3	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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1930-2001

(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	4.31	4.25	4.60	1930	8	9.69	1999	1.15	1986
Feb	4.31	3.53	3.31	1990	16	11.26	1990	1.77	1978
Mar	5.16	4.66	4.40	1975	28	13.46	1975	1.86	1982
Apr	4.82	4.77	4.76	1979	2	10.01	1979	1.55	1978
May	5.49	4.38	5.28	1998	7	14.52	1983	1.79	1987
Jun	4.51	4.18	4.70	1945	8	10.10	1986	.00	1988
Jul	4.65	4.39	5.12	1936	3	9.74	1988	1.15	1980
Aug	3.03	2.38	3.55	1974	30	11.17	1974	.16	1983
Sep	4.24	3.29	4.30	1970	5	14.91	1982	.01	1998
Oct	3.33	2.87	3.83	1981	18	8.47	1984	.55	2000
Nov	4.89	4.29	5.55	2001	29	8.76	1973	1.14	1998
Dec	5.64	4.50	7.02	1990	22	16.05	1990	.91	1976
Ann	54.38	52.47	7.02	Dec 1990	22	16.05	Dec 1990	.00	Jun 1988

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.8	7.5	3.0	1.2
Feb	9.6	6.8	3.2	.9
Mar	11.4	8.4	3.6	1.5
Apr	10.0	7.6	3.5	1.3
May	10.8	7.9	3.7	1.6
Jun	9.5	6.8	3.0	1.2
Jul	9.2	6.7	3.2	1.3
Aug	6.8	4.4	2.0	.9
Sep	8.2	5.5	2.5	1.0
Oct	7.6	5.3	2.2	.9
Nov	9.9	6.9	3.6	1.5
Dec	10.3	7.3	3.3	1.5
Ann	114.1	81.1	36.8	14.8

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	1.17	1.57	2.19	2.74	3.27	3.83	4.45	5.19	6.15	7.65	9.06
Feb	1.59	2.00	2.58	3.06	3.52	3.99	4.50	5.10	5.85	7.02	8.09
Mar	1.77	2.26	2.97	3.57	4.15	4.74	5.39	6.14	7.11	8.60	9.98
Apr	1.77	2.22	2.87	3.41	3.93	4.46	5.04	5.71	6.56	7.88	9.08
May	1.78	2.31	3.07	3.73	4.36	5.01	5.72	6.56	7.63	9.30	10.85
Jun	1.49	2.13	2.82	3.35	3.83	4.31	4.82	5.40	6.14	7.26	8.27
Jul	1.51	1.95	2.60	3.15	3.69	4.24	4.84	5.55	6.46	7.88	9.18
Aug	.40	.64	1.07	1.49	1.94	2.43	3.00	3.70	4.65	6.21	7.72
Sep	.39	.69	1.26	1.85	2.49	3.22	4.08	5.16	6.65	9.13	11.56
Oct	.93	1.25	1.73	2.14	2.55	2.98	3.45	4.01	4.73	5.87	6.93
Nov	1.63	2.09	2.77	3.35	3.91	4.48	5.10	5.83	6.77	8.23	9.57
Dec	1.30	1.83	2.65	3.39	4.13	4.92	5.79	6.84	8.22	10.41	12.48
Ann	40.52	43.25	46.72	49.34	51.65	53.87	56.16	58.68	61.72	66.11	69.89

\+ 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: 1930-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	3.0	2.0	#	#
Feb	4.0	1.3	#	#
Mar	1.2	.1	#	0
Apr	.0	.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	.3	.0	#	0
Dec	.5	#	#	0
Ann	9.0	3.4	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	6.0	1982	13	14.7	1978	6	1985	5	2	1985
Feb	9.0	1978	21	17.0	1979	9	1979	7	3	1978
Mar	4.0	1971	26	9.5	1971	4	1987	31	#+	1991
Apr	1.0	1971	6	1.0	1971	#	1987	1	#	1987
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	#	1989	20	#	1989	0	0	0	0	0
Nov	2.5	1971	24	4.1	1976	1	1976	14	#+	1976
Dec	2.0	1971	3	2.0+	1989	2+	1991	24	#+	2000
Ann	9.0	Feb 1978	21	17.0	Feb 1979	9	Feb 1979	7	3	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.1	1.6	.4	.1	.0
Feb	1.6	1.3	.5	.2	.0
Mar	.8	.5	.2	.0	.0
Apr	@	@	.0	.0	.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	.2	.1	.0	.0	.0
Dec	.5	.2	.0	.0	.0
Ann	5.2	3.7	1.1	.3	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	4.1	1.9	.3	.0
Feb	3.0	1.8	.7	.0
Mar	.6	.1	.0	.0
Apr	.0	.0	.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	.1	.0	.0	.0
Dec	.4	.0	.0	.0
Ann	8.2	3.8	1.0	.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

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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	5/04	4/29	4/25	4/22	4/19	4/16	4/13	4/09	4/04
32	4/21	4/17	4/14	4/11	4/09	4/07	4/04	4/01	3/28
28	4/16	4/11	4/07	4/04	4/01	3/29	3/26	3/22	3/17
24	4/03	3/29	3/25	3/21	3/18	3/15	3/11	3/07	3/02
20	3/17	3/11	3/06	3/02	2/26	2/22	2/18	2/13	2/07
16	3/06	2/27	2/23	2/18	2/14	2/10	2/06	2/01	1/25

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	9/27	10/01	10/04	10/06	10/08	10/10	10/13	10/15	10/19
32	10/03	10/09	10/12	10/16	10/19	10/22	10/25	10/29	11/03
28	10/13	10/20	10/25	10/30	11/03	11/07	11/11	11/16	11/23
24	10/28	11/03	11/07	11/10	11/14	11/17	11/21	11/25	12/01
20	11/08	11/14	11/19	11/23	11/26	11/30	12/04	12/09	12/15
16	11/22	12/01	12/08	12/13	12/19	12/24	12/29	1/05	1/14

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	183	178	175	171	168	164	160	154
32	208	202	198	195	192	188	185	181	175
28	241	232	226	220	215	210	205	198	189
24	267	258	251	246	240	235	229	222	213
20	301	292	284	278	273	267	261	254	244
16	340	327	318	312	305	299	293	285	274

***** 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	964	749	542	259	96	3	0	2	46	263	539	843	4306
60	809	609	396	146	40	0	0	0	13	153	397	688	3251
57	724	533	312	94	20	0	0	0	5	102	316	600	2706
55	665	480	262	67	12	0	0	0	2	75	267	542	2372
50	522	356	157	21	3	0	0	0	0	29	163	402	1653
32	150	67	6	0	0	0	0	0	0	0	6	73	302

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	209	243	487	747	1045	1251	1404	1347	1099	785	458	253	9328
55	11	12	30	124	344	561	691	634	411	147	29	10	3004
57	8	8	19	92	290	501	629	572	354	112	19	5	2609
60	0	1	9	53	217	411	536	479	272	70	9	0	2057
65	0	0	0	17	118	264	381	326	155	25	1	0	1287
70	0	0	0	3	51	132	229	186	71	6	0	0	678

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	81	141	317	549	840	1049	1203	1151	910	585	293	125	81	222	539	1088	1928	2977	4180	5331	6241	6826	7119	7244
45	40	79	206	411	685	899	1048	996	760	437	190	67	40	119	325	736	1421	2320	3368	4364	5124	5561	5751	5818
50	17	37	122	276	530	749	893	841	611	298	111	32	17	54	176	452	982	1731	2624	3465	4076	4374	4485	4517
55	3	14	64	173	377	599	738	686	462	185	60	10	3	17	81	254	631	1230	1968	2654	3116	3301	3361	3371
60	0	1	27	91	241	451	583	532	321	96	20	0	0	1	28	119	360	811	1394	1926	2247	2343	2363	2363
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	53	99	203	351	543	716	822	774	600	389	181	79	53	152	355	706	1249	1965	2787	3561	4161	4550	4731	4810

(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.
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