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: DAYTON 2 SE, TN **COOP ID: 402360**

Climate Division: TN 1 **NWS Call Sign:** **Elevation: 865 Feet** **Lat: 35˚28N** **Lon: 85˚00W**

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	45.9	26.5	36.2	75+	1960	13	46.0	1974	-15	1985	21	24.1	1977	893	0	.0	.0	13.2	2.2	19.7	.3
Feb	51.6	29.3	40.5	79	1977	26	46.6	1976	-4	1996	4	32.4	1978	688	0	.0	.0	17.7	1.1	15.7	.1
Mar	60.8	36.7	48.8	85+	1963	31	53.7	2000	3	1980	3	42.9	1996	505	1	.0	.0	27.5	.1	9.3	.0
Apr	70.3	44.4	57.4	92	1986	27	62.3	1981	22+	1973	11	52.4	1983	239	10	.0	.1	29.7	.0	2.8	.0
May	77.3	53.5	65.4	94+	1962	19	70.1	1987	30	1963	2	60.7	1997	85	96	.0	.4	31.0	.0	.0	.0
Jun	84.7	61.8	73.3	100+	1988	23	76.6	1986	40	1966	1	69.4	1974	4	250	.1	6.2	30.0	.0	.0	.0
Jul	87.7	66.1	76.9	107	1980	16	81.8	1980	49	1972	7	74.1	1984	0	370	.5	13.8	31.0	.0	.0	.0
Aug	86.9	65.0	76.0	104	1980	10	81.3	1980	49+	1964	13	71.4	1992	0	339	.3	9.8	31.0	.0	.0	.0
Sep	81.0	59.1	70.1	100	1957	1	74.8	1980	30	1967	30	66.9	1996	24	175	.0	3.8	30.0	.0	.0	.0
Oct	70.4	46.1	58.3	90+	1959	5	65.3	1984	23+	1962	26	51.6	1988	238	29	.0	@	30.8	.0	1.6	.0
Nov	58.8	37.3	48.1	83	1961	2	56.1	1985	9	1970	24	41.1	1976	510	1	.0	.0	24.8	@	9.4	.0
Dec	49.0	29.6	39.3	76	1982	4	46.8	1971	-5+	1962	13	31.0	1989	797	0	.0	.0	16.4	1.0	17.8	.1
Ann	68.7	46.3	57.5	107	Jul 1980	16	81.8	Jul 1980	-15	Jan 1985	21	24.1	Jan 1977	3983	1271	.9	34.1	313.1	4.4	76.3	.5

\+ 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: 1956-2001

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

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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	5.51	5.63	2.81	1959	21	9.96	1999	1.10	1986
Feb	4.77	4.47	2.95	1994	11	9.81	1994	.97	1978
Mar	6.32	5.82	5.94	1963	12	13.56	1973	2.08	1988
Apr	4.60	4.30	4.06	1963	29	9.13	1977	.69	1976
May	5.35	5.52	3.63	1973	8	10.41	1984	1.81	1982
Jun	4.10	3.75	3.18	1989	20	11.24	1989	.46	1988
Jul	4.58	3.76	3.23	1967	6	9.78	1994	1.07	1980
Aug	4.10	3.44	4.42	1982	17	10.14	1982	.29	1999
Sep	4.62	3.87	5.40	1977	16	13.37	1977	.76	1978
Oct	3.47	3.31	4.21	1975	17	8.53	1975	.09	2000
Nov	5.19	4.64	3.09	1962	9	9.60	1996	2.02	1971
Dec	5.62	4.96	5.94	1969	30	14.04	1990	1.29	1980
Ann	58.23+	56.63+	5.94+	Dec 1969	30	14.04	Dec 1990	.09	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.2	8.8	3.9	1.6
Feb	11.0	7.3	3.3	1.5
Mar	13.4	9.3	4.1	1.7
Apr	10.6	7.0	3.4	1.4
May	12.3	8.2	3.5	1.5
Jun	11.0	7.1	2.9	1.0
Jul	12.9	8.4	2.9	1.2
Aug	10.1	6.6	2.4	1.0
Sep	9.8	6.4	3.0	1.3
Oct	8.1	5.2	2.2	1.0
Nov	10.3	7.3	3.7	1.8
Dec	11.9	8.1	4.0	1.5
Ann	134.6	89.7	39.3	16.5

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	2.00	2.52	3.27	3.89	4.49	5.10	5.76	6.53	7.52	9.03	10.42
Feb	1.74	2.18	2.83	3.37	3.89	4.42	4.99	5.66	6.51	7.83	9.03
Mar	2.34	2.93	3.78	4.49	5.17	5.86	6.61	7.48	8.59	10.31	11.87
Apr	1.34	1.78	2.43	3.00	3.56	4.14	4.78	5.53	6.51	8.04	9.46
May	2.00	2.50	3.22	3.82	4.39	4.97	5.60	6.33	7.26	8.70	10.01
Jun	1.05	1.44	2.03	2.56	3.08	3.62	4.23	4.95	5.89	7.37	8.76
Jul	1.16	1.59	2.26	2.85	3.43	4.04	4.72	5.53	6.59	8.27	9.83
Aug	.82	1.19	1.79	2.34	2.90	3.50	4.17	4.99	6.07	7.80	9.44
Sep	.89	1.31	1.99	2.61	3.24	3.92	4.69	5.62	6.86	8.84	10.72
Oct	.62	.92	1.43	1.90	2.39	2.91	3.51	4.23	5.19	6.74	8.23
Nov	2.34	2.80	3.43	3.95	4.43	4.92	5.44	6.03	6.78	7.92	8.94
Dec	1.51	2.04	2.85	3.57	4.27	5.00	5.82	6.78	8.05	10.02	11.87
Ann	41.96	45.12	49.17	52.24	54.96	57.59	60.29	63.29	66.91	72.16	76.69

\+ 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: 1956-2001
(3) Derived from 1971-2000 serially complete daily data

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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	1.8	.6	#	#
Feb	1.6	.8	#	#
Mar	.8	.0	#	0
Apr	.1	.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	#	.0	#	0
Dec	.1	#	#	0
Ann	4.4	1.4	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	7.2	1988	7	9.7	1977	7	1988	7	1	1988
Feb	7.5	1979	18	13.3	1979	7	1979	18	1	1980
Mar	8.0	1993	13	8.0	1993	8	1993	13	1	1993
Apr	2.7	1987	3	2.7	1987	0	0	0	0	0
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	.0	0	0	.0	0	0	0	0	0	0
Nov	#	1995	14	#+	1995	#+	1995	14	#+	1995
Dec	1.0	1983	16	1.1	1983	3	2000	3	#+	2000
Ann	8.0	Mar 1993	13	13.3	Feb 1979	8	Mar 1993	13	1+	Mar 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.6	.5	.2	.1	.0
Feb	1.3	.6	.1	@	.0
Mar	.5	.2	.1	@	.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	.0	.0	.0	.0	.0
Dec	.4	@	.0	.0	.0
Ann	3.8	1.3	.4	.1	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.8	.8	.3	.0
Feb	.9	.3	.1	.0
Mar	.3	.1	.1	.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	.0	.0	.0	.0
Dec	@	.0	.0	.0
Ann	3.0	1.2	.5	.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	5/12	5/06	5/02	4/29	4/25	4/22	4/19	4/15	4/09
32	4/22	4/19	4/16	4/14	4/11	4/09	4/07	4/04	3/31
28	4/15	4/10	4/06	4/03	3/31	3/28	3/24	3/20	3/15
24	4/04	3/27	3/22	3/17	3/13	3/09	3/04	2/27	2/19
20	3/14	3/08	3/03	2/28	2/24	2/20	2/17	2/12	2/06
16	3/07	2/27	2/21	2/16	2/11	2/06	2/01	1/26	1/16

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	191	184	179	175	171	167	163	158	151
32	214	208	203	200	196	192	188	184	178
28	241	234	229	225	221	217	213	208	201
24	279	270	264	258	253	248	242	236	227
20	312	303	297	292	287	283	278	273	265
16	>365	339	327	318	311	304	298	290	279

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	893	688	505	239	85	4	0	0	24	238	510	797	3983
60	738	548	359	123	29	0	0	0	5	133	369	642	2946
57	654	464	278	72	12	0	0	0	1	87	290	551	2409
55	595	410	228	47	6	0	0	0	0	63	241	495	2085
50	455	283	129	11	0	0	0	0	0	23	141	354	1396
32	106	22	2	0	0	0	0	0	0	0	3	46	179

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	235	258	521	761	1035	1237	1393	1362	1141	814	484	272	9513
55	12	2	35	118	328	547	680	649	452	164	32	8	3027
57	8	0	22	83	272	487	618	587	393	126	21	2	2619
60	0	0	10	43	196	397	525	494	306	79	10	0	2060
65	0	0	1	10	96	250	370	339	175	29	1	0	1271
70	0	0	0	1	34	122	220	193	76	7	0	0	653

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	94	157	348	568	827	1017	1167	1131	923	605	296	130	94	251	599	1167	1994	3011	4178	5309	6232	6837	7133	7263
45	42	85	227	420	672	867	1012	976	773	451	184	69	42	127	354	774	1446	2313	3325	4301	5074	5525	5709	5778
50	18	35	125	281	517	717	857	821	623	305	100	29	18	53	178	459	976	1693	2550	3371	3994	4299	4399	4428
55	0	11	58	168	364	567	702	666	473	177	44	8	0	11	69	237	601	1168	1870	2536	3009	3186	3230	3238
60	0	0	20	77	224	417	547	511	325	88	10	0	0	0	20	97	321	738	1285	1796	2121	2209	2219	2219
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	50	100	220	364	541	693	800	782	616	380	177	71	50	150	370	734	1275	1968	2768	3550	4166	4546	4723	4794

(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