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: ALLARDT, TN **COOP ID: 400081**

Climate Division: TN 2 **NWS Call Sign:** **Elevation: 1,675 Feet** **Lat: 36˚23N** **Lon: 84˚53W**

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	25.4	34.5	74	1952	1	44.6	1974	-27	1985	21	20.3	1977	946	0	.0	.0	10.6	5.3	22.2	1.1
Feb	48.6	28.3	38.5	77	1962	13	46.4	1976	-16	1951	2	26.6	1978	744	0	.0	.0	14.8	3.5	18.1	.5
Mar	57.5	35.5	46.5	89	1929	25	52.6	1973	-4+	1943	4	39.8	1996	574	0	.0	.0	24.0	.6	12.4	.1
Apr	66.8	42.8	54.8	90+	1940	1	59.7	1981	15	1936	4	49.6	1983	311	6	.0	.0	28.4	.0	4.1	.0
May	73.9	51.0	62.5	95	1941	22	68.0	1987	26+	1947	9	57.8	1997	144	65	.0	.0	30.9	.0	.2	.0
Jun	80.6	58.9	69.8	104	1936	29	72.8	1998	35+	1936	1	65.7	1974	17	159	.0	.7	30.0	.0	.0	.0
Jul	83.8	63.1	73.5	103+	1930	28	77.5	1980	42	1945	16	70.6	1979	0	261	.1	3.3	31.0	.0	.0	.0
Aug	82.9	61.4	72.2	103	1943	27	76.4	1983	36	1946	31	68.5	1992	5	226	@	2.2	31.0	.0	.0	.0
Sep	77.1	55.4	66.3	102	1954	5	71.5	1998	29	1942	29	62.3	1974	62	99	.0	.8	30.0	.0	.0	.0
Oct	67.4	44.2	55.8	92	1941	6	63.0	1984	17	1948	19	49.2	1988	305	20	.0	.0	30.3	.0	3.0	.0
Nov	56.5	36.3	46.4	85	1957	2	54.2	1985	-8	1950	25	38.4	1976	558	0	.0	.0	21.9	.3	11.3	.0
Dec	47.2	29.0	38.1	73	1982	4	47.4	1984	-17	1962	13	25.9	1989	834	0	.0	.0	14.3	3.1	19.5	.3
Ann	65.5	44.3	54.9	104	Jun 1936	29	77.5	Jul 1980	-27	Jan 1985	21	20.3	Jan 1977	4500	836	.1	7.0	297.2	12.8	90.8	2.0

\+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1928-2001

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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	4.91	5.01	3.60	1946	7	9.05	1974	.93	1986
Feb	4.08	3.60	4.40	1939	3	8.20	1994	1.72	1980
Mar	5.46	4.54	4.00	1929	23	15.26	1975	1.63	1986
Apr	4.12	3.58	3.90	1977	4	8.72	1998	.94	1976
May	5.64	5.44	4.43	1986	23	10.29	1984	2.09	1988
Jun	5.18	4.70	6.75	1928	29	9.13	1999	.32	1988
Jul	5.14	4.41	4.10	1941	4	13.01	1972	.67	1997
Aug	4.66	4.47	3.64	1998	16	11.53	1974	1.16	1983
Sep	3.71	3.61	4.95	1944	29	10.17	1989	.22	1998
Oct	3.21	2.63	3.94	1962	3	7.51	1984	.39	2000
Nov	4.66	4.01	4.24	1996	30	10.31	1996	1.47	1976
Dec	4.95	4.05	4.37	1969	30	12.19	1990	1.20	1985
Ann	55.72	55.92	6.75	Jun 1928	29	15.26	Mar 1975	.22	Sep 1998

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.6	8.7	3.7	1.3
Feb	11.4	7.9	3.0	.9
Mar	12.7	9.1	3.6	1.2
Apr	11.6	7.9	2.9	.8
May	12.7	8.9	3.7	1.6
Jun	12.3	8.4	3.3	1.8
Jul	11.6	7.8	3.7	1.4
Aug	9.5	6.7	2.9	1.4
Sep	9.2	6.1	2.8	1.0
Oct	8.1	5.4	2.3	.8
Nov	10.2	7.5	3.3	1.3
Dec	12.4	8.8	3.5	1.1
Ann	134.3	93.2	38.7	14.6

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	1.89	2.35	3.00	3.54	4.05	4.58	5.14	5.80	6.63	7.92	9.09
Feb	1.69	2.07	2.59	3.02	3.43	3.84	4.28	4.79	5.43	6.42	7.31
Mar	1.90	2.42	3.17	3.80	4.40	5.02	5.70	6.49	7.50	9.06	10.49
Apr	1.48	1.87	2.43	2.90	3.34	3.80	4.30	4.89	5.63	6.78	7.83
May	2.60	3.09	3.78	4.33	4.84	5.36	5.91	6.54	7.34	8.54	9.62
Jun	1.31	1.79	2.55	3.22	3.87	4.57	5.34	6.26	7.47	9.37	11.15
Jul	1.40	1.88	2.62	3.27	3.91	4.58	5.31	6.19	7.33	9.11	10.78
Aug	1.66	2.10	2.73	3.27	3.78	4.30	4.86	5.53	6.37	7.67	8.87
Sep	.70	1.03	1.57	2.08	2.59	3.14	3.76	4.52	5.52	7.14	8.67
Oct	.77	1.07	1.54	1.96	2.37	2.81	3.30	3.88	4.65	5.86	7.00
Nov	1.90	2.33	2.93	3.43	3.89	4.37	4.88	5.47	6.22	7.37	8.41
Dec	1.58	2.05	2.75	3.34	3.91	4.50	5.15	5.91	6.89	8.42	9.83
Ann	42.65	45.25	48.54	51.01	53.19	55.28	57.42	59.78	62.61	66.69	70.19

\+ 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: 1928-2001
(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	5.2	2.3	1	1
Feb	5.7	3.2	1	#
Mar	2.5	1.0	#	#
Apr	.3	.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	.1	.0	#	0
Nov	.4	.0	#	0
Dec	1.9	.6	#	#
Ann	16.1	7.1	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	7.8	1996	7	27.4	1977	9+	1996	12	4	1977
Feb	13.2	1998	4	24.1	1979	17	1998	4	3	1998
Mar	14.1	1993	13	17.0	1993	16	1993	14	2	1993
Apr	5.0	1983	18	5.0	1983	#+	1998	8	#+	1998
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	1.5	1993	31	1.5	1993	1	1993	31	#	1993
Nov	3.5	1976	11	5.0	1976	4	1976	11	#+	1999
Dec	5.0	1971	3	9.2	1997	8	1997	31	2	2000
Ann	14.1	Mar 1993	13	27.4	Jan 1977	17	Feb 1998	4	4	Jan 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.0	2.2	.7	.3	.0
Feb	2.2	1.6	.5	.2	@
Mar	1.4	1.1	.2	@	@
Apr	.1	.1	@	@	.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
Nov	.4	.2	@	.0	.0
Dec	1.1	.7	.2	@	.0
Ann	8.2	5.9	1.6	.5	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.3	3.4	1.9	.0
Feb	4.3	2.3	1.2	.2
Mar	1.1	.4	.2	.1
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
Nov	.2	@	.0	.0
Dec	1.4	.3	.1	.0
Ann	13.3	6.4	3.4	.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

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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	5/20	5/14	5/10	5/07	5/03	4/30	4/26	4/22	4/16
32	5/06	4/29	4/25	4/21	4/17	4/14	4/10	4/05	3/30
28	4/18	4/13	4/09	4/06	4/04	4/01	3/29	3/25	3/20
24	4/14	4/08	4/04	3/31	3/28	3/25	3/21	3/17	3/11
20	3/28	3/22	3/17	3/12	3/08	3/05	2/28	2/23	2/17
16	3/18	3/12	3/07	3/03	2/27	2/23	2/19	2/14	2/07

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	10/03	10/05	10/08	10/10	10/12	10/15	10/18
32	10/06	10/09	10/12	10/14	10/16	10/18	10/20	10/23	10/26
28	10/13	10/19	10/24	10/27	10/31	11/03	11/07	11/11	11/17
24	10/28	11/03	11/06	11/10	11/13	11/16	11/19	11/23	11/28
20	11/02	11/09	11/14	11/18	11/22	11/26	11/30	12/05	12/12
16	11/18	11/25	11/29	12/03	12/07	12/11	12/15	12/19	12/26

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	176	169	165	160	157	153	149	144	137
32	200	194	189	185	181	177	173	168	161
28	229	223	218	213	209	205	201	196	189
24	252	244	238	234	229	224	219	214	206
20	287	277	270	264	258	252	246	239	229
16	309	300	293	288	282	277	272	265	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

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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	946	744	574	311	144	17	0	5	62	305	558	834	4500
60	796	604	427	184	67	2	0	0	19	188	415	679	3381
57	709	522	342	123	36	0	0	0	7	132	333	596	2800
55	651	471	290	89	23	0	0	0	4	101	282	537	2448
50	512	343	178	31	6	0	0	0	0	44	174	400	1688
32	152	51	7	0	0	0	0	0	0	0	6	79	295

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	229	231	456	685	944	1133	1284	1244	1027	738	439	269	8679
55	15	7	25	84	253	443	571	531	341	126	24	14	2434
57	12	2	16	58	205	383	509	469	284	94	16	10	2058
60	5	0	7	28	143	295	416	376	206	57	7	0	1540
65	0	0	0	6	65	159	261	226	99	20	0	0	836
70	0	0	0	0	21	59	123	102	32	4	0	0	341

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	73	124	272	480	725	919	1057	1022	815	520	256	112	73	197	469	949	1674	2593	3650	4672	5487	6007	6263	6375
45	35	62	173	342	570	769	902	867	665	368	157	58	35	97	270	612	1182	1951	2853	3720	4385	4753	4910	4968
50	12	28	95	219	417	619	747	712	516	237	83	24	12	40	135	354	771	1390	2137	2849	3365	3602	3685	3709
55	1	7	41	123	273	469	592	557	367	130	37	4	1	8	49	172	445	914	1506	2063	2430	2560	2597	2601
60	0	0	5	58	148	320	437	403	232	55	6	0	0	0	5	63	211	531	968	1371	1603	1658	1664	1664
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	39	76	167	295	451	621	738	707	526	314	145	59	39	115	282	577	1028	1649	2387	3094	3620	3934	4079	4138

(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