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: CLARKSVILLE SEWAGE PLT, TN **COOP ID: 401790**

Climate Division: TN 3 **NWS Call Sign:** **Elevation: 382 Feet** **Lat: 36˚33N** **Lon: 87˚21W**

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	45.4	25.0	35.2	80	1972	24	44.1	1998	-17	1963	24	20.8	1977	924	0	.0	.0	11.9	5.1	23.6	.8
Feb	51.1	28.6	39.9	82+	1962	13	47.8	1990	-11	1951	2	26.2	1978	705	0	.0	.0	15.0	2.4	18.9	.5
Mar	61.2	36.4	48.8	87+	1963	31	55.0	1973	0	1980	3	43.1	1971	504	1	.0	.0	25.0	.3	12.1	@
Apr	71.0	44.4	57.7	92+	1955	16	63.3	1981	22	1982	6	49.5	1983	242	24	.0	.2	29.1	.0	3.4	.0
May	78.7	53.8	66.3	95+	1951	19	71.9	1991	32+	1978	2	61.3	1971	93	132	.0	1.6	31.0	.0	.1	.0
Jun	86.4	62.9	74.7	108+	1952	28	77.8	1998	42	1966	1	69.7	1974	4	295	.2	10.3	30.0	.0	.0	.0
Jul	90.4	67.5	79.0	110+	1952	27	83.6	1993	47	1968	5	75.7	1976	0	432	.6	18.9	31.0	.0	.0	.0
Aug	89.1	65.4	77.3	107	1954	16	82.4	1995	44	1986	29	72.7	1982	2	381	.7	15.2	31.0	.0	.0	.0
Sep	82.9	58.2	70.6	106	1954	5	77.0	1998	32	1983	23	65.6	1974	33	199	.2	6.7	30.0	.0	@	.0
Oct	72.2	45.2	58.7	97	1953	1	65.5	1971	20	1981	24	52.0	1976	242	47	.0	.1	30.7	.0	2.6	.0
Nov	60.1	36.2	48.2	86	1971	2	55.0	1985	-2	1950	25	39.3	1976	507	1	.0	.0	23.5	.1	11.7	.0
Dec	49.4	28.9	39.2	80	1951	31	47.8	1971	-12	1989	22	27.7	1989	802	0	.0	.0	15.1	2.7	20.1	.3
Ann	69.8	46.0	58.0	110+	Jul 1952	27	83.6	Jul 1993	-17	Jan 1963	24	20.8	Jan 1977	4058	1512	1.7	53.0	303.3	10.6	92.5	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: 1948-2001

(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	4.10	4.09	4.24	1956	30	9.74	1999	.89	1971
Feb	4.20	3.94	3.24	1989	14	10.80	1989	1.72	1980
Mar	5.41	4.53	6.08	1975	12	17.28	1975	1.96	1987
Apr	4.26	3.76	3.50	1979	2	9.77	1983	.81	1986
May	5.01	4.71	4.80	1983	18	12.59	1983	.86	1977
Jun	4.43	3.87	4.13	1960	28	11.12	1998	.46	1988
Jul	4.28	4.03	3.05+	1972	28	9.78	1981	1.49	1997
Aug	3.33	3.16	3.87	1963	29	9.42	1974	.68	1987
Sep	3.76	3.72	5.80	1979	14	12.55	1979	.76	1998
Oct	3.25	3.07	4.02	2001	13	6.66	1985	.37	1987
Nov	4.60	3.97	4.21	1948	19	9.65	1973	1.37	1976
Dec	5.15	5.01	3.80	1964	4	12.54	1990	1.06	1976
Ann	51.78	53.05	6.08	Mar 1975	12	17.28	Mar 1975	.37	Oct 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.1	7.3	2.9	1.1
Feb	10.8	6.5	3.0	1.3
Mar	13.7	8.3	3.7	1.4
Apr	11.6	7.5	2.8	1.0
May	12.1	7.9	3.6	1.4
Jun	10.7	7.2	2.9	1.3
Jul	10.0	7.0	2.9	1.3
Aug	9.1	5.9	2.2	.9
Sep	9.2	5.8	2.8	1.0
Oct	8.6	5.4	2.2	.9
Nov	11.7	7.1	3.5	1.5
Dec	12.1	7.0	3.2	1.6
Ann	131.7	82.9	35.7	14.7

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	1.04	1.42	2.02	2.55	3.07	3.61	4.23	4.95	5.90	7.40	8.80
Feb	1.64	2.02	2.58	3.04	3.47	3.92	4.40	4.95	5.65	6.74	7.72
Mar	1.82	2.33	3.08	3.71	4.32	4.95	5.64	6.44	7.47	9.07	10.54
Apr	1.19	1.59	2.21	2.74	3.26	3.81	4.42	5.13	6.06	7.52	8.87
May	1.61	2.08	2.78	3.38	3.96	4.56	5.22	5.98	6.97	8.51	9.93
Jun	1.07	1.48	2.13	2.71	3.28	3.88	4.56	5.37	6.42	8.09	9.66
Jul	1.59	1.99	2.57	3.05	3.51	3.97	4.48	5.06	5.81	6.97	8.02
Aug	.99	1.31	1.78	2.19	2.59	3.00	3.46	3.99	4.69	5.77	6.78
Sep	1.09	1.44	1.98	2.45	2.90	3.38	3.90	4.52	5.32	6.58	7.75
Oct	.87	1.18	1.65	2.06	2.46	2.89	3.36	3.91	4.64	5.78	6.85
Nov	1.59	2.02	2.66	3.19	3.70	4.23	4.80	5.47	6.33	7.66	8.88
Dec	1.41	1.90	2.64	3.29	3.93	4.59	5.33	6.20	7.34	9.12	10.78
Ann	38.93	41.47	44.69	47.12	49.26	51.32	53.43	55.76	58.57	62.61	66.09

\+ 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: 1948-2001
(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	2.7	1.4	#	0	5.5	1978	26	11.7	1977	6	1977	11	1	1977	1.3	.9	.4	.1	.0	1.7	.5	.2	.0
Feb	3.4	1.5	#	0	7.0	1979	7	16.9	1978	7	1979	7	2	1978	1.4	.8	.5	.2	.0	1.6	1.0	.2	.0
Mar	.3	.0	#	0	4.0	1987	30	4.0	1987	3	1980	1	#+	1980	.1	.1	.1	.0	.0	.1	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	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	.1	.0	#	0	1.1	1971	24	1.1+	1976	#+	1976	30	#+	1976	.2	@	.0	.0	.0	.0	.0	.0	.0
Dec	.4	.0	#	0	1.5	1983	19	2.5	1989	#+	1976	31	#+	1976	.7	.2	.0	.0	.0	.0	.0	.0	.0
Ann	6.9	2.9	N/A	N/A	7.0	Feb 1979	7	16.9	Feb 1978	7	Feb 1979	7	2	Feb 1978	3.7	2.0	1.0	.3	.0	3.4	1.5	.4	.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	5/09	5/03	4/28	4/25	4/21	4/17	4/14	4/09	4/03
32	4/27	4/22	4/19	4/16	4/14	4/11	4/08	4/05	3/31
28	4/17	4/11	4/07	4/03	3/31	3/27	3/24	3/20	3/14
24	4/09	4/01	3/27	3/22	3/17	3/13	3/08	3/03	2/23
20	3/23	3/16	3/11	3/07	3/03	2/27	2/23	2/18	2/11
16	3/10	3/03	2/26	2/21	2/17	2/13	2/08	2/03	1/27

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	10/04	10/07	10/10	10/13	10/15	10/18	10/22	10/27
32	10/04	10/09	10/13	10/17	10/20	10/24	10/27	10/31	11/06
28	10/18	10/24	10/29	11/01	11/05	11/08	11/12	11/16	11/23
24	10/31	11/06	11/10	11/14	11/17	11/21	11/24	11/29	12/04
20	11/06	11/14	11/20	11/25	11/30	12/05	12/10	12/16	12/24
16	11/18	11/28	12/05	12/12	12/18	12/24	12/30	1/06	1/17

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	198	190	184	179	174	169	164	158	150
32	213	205	199	194	189	184	179	173	165
28	243	235	228	223	218	214	208	202	194
24	272	263	256	250	244	239	233	226	216
20	301	291	284	277	271	265	259	251	241
16	337	323	314	307	300	294	287	278	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

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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	924	705	504	242	93	4	0	2	33	242	507	802	4058
60	772	569	361	136	39	0	0	0	9	144	366	654	3050
57	687	491	280	88	20	0	0	0	3	98	287	566	2520
55	629	439	233	62	12	0	0	0	2	73	239	509	2198
50	490	319	135	20	3	0	0	0	0	30	141	376	1514
32	137	52	4	0	0	0	0	0	0	0	4	72	269

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	236	272	524	771	1062	1281	1455	1403	1157	829	488	293	9771
55	15	15	39	143	361	591	742	690	468	189	34	17	3304
57	11	10	25	109	307	531	680	628	410	152	22	12	2897
60	3	4	13	68	232	441	587	535	325	104	11	8	2331
65	0	0	1	24	132	295	432	381	199	47	1	0	1512
70	0	0	0	6	61	163	280	238	101	17	0	0	866

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	78	138	313	545	823	1051	1218	1163	923	597	287	125	78	216	529	1074	1897	2948	4166	5329	6252	6849	7136	7261
45	38	73	205	402	668	901	1063	1008	773	448	182	65	38	111	316	718	1386	2287	3350	4358	5131	5579	5761	5826
50	15	35	118	275	513	751	908	853	623	306	103	30	15	50	168	443	956	1707	2615	3468	4091	4397	4500	4530
55	2	9	57	162	362	601	753	698	475	185	51	8	2	11	68	230	592	1193	1946	2644	3119	3304	3355	3363
60	0	1	20	88	226	452	598	543	334	94	18	1	0	1	21	109	335	787	1385	1928	2262	2356	2374	2375
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	53	97	208	350	536	715	830	794	609	387	189	83	53	150	358	708	1244	1959	2789	3583	4192	4579	4768	4851

(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