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: ONEIDA, TN **COOP ID: 406829**

Climate Division: TN 2 **NWS Call Sign:** **Elevation: 1,440 Feet** **Lat: 36˚30N** **Lon: 84˚32W**

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	43.2	23.7	33.5	74	1970	30	43.3	1974	-26	1985	21	18.7	1977	978	0	.0	.0	10.7	5.8	24.7	1.6
Feb	48.0	26.0	37.0	77+	1962	14	46.0	1990	-10+	1970	4	24.5	1978	784	0	.0	.0	14.2	4.1	20.8	.9
Mar	57.6	32.5	45.1	82+	1963	31	51.7	1973	-11	1980	3	38.6	1971	618	0	.0	.0	23.8	.6	17.2	.1
Apr	67.3	39.5	53.4	90+	1976	20	58.0	1981	18	1983	20	47.8	1983	352	4	.0	.1	27.9	.1	8.7	.0
May	74.5	48.8	61.7	91+	1962	20	68.2	1991	25	1976	4	56.1	1971	173	68	.0	@	30.9	.0	.9	.0
Jun	81.6	58.1	69.9	93+	1969	29	72.7+	1987	33	1966	1	63.4	1972	21	167	.0	2.0	30.0	.0	.0	.0
Jul	85.1	62.9	74.0	102	1980	17	78.2	1993	43	1972	7	70.2	1976	1	280	.1	6.5	31.0	.0	.0	.0
Aug	84.2	60.9	72.6	101	1980	10	78.8	1980	42+	1986	29	69.2	1992	10	245	.1	4.8	31.0	.0	.0	.0
Sep	78.3	54.4	66.4	96+	1975	4	71.4	1998	30+	1983	23	62.1+	1976	61	102	.0	1.6	30.0	.0	.2	.0
Oct	68.2	41.3	54.8	90	1973	4	61.7	1984	17	1962	26	48.2	1976	333	15	.0	@	30.5	.0	6.3	.0
Nov	57.5	33.6	45.6	85	1984	1	54.0	1985	1	1976	30	35.6	1976	584	0	.0	.0	22.9	.2	16.8	.0
Dec	47.0	26.7	36.9	77	1982	5	44.9	1984	-18	1962	13	26.7	1989	874	0	.0	.0	14.4	3.4	23.0	.4
Ann	66.0	42.4	54.2	102	Jul 1980	17	78.8	Aug 1980	-26	Jan 1985	21	18.7	Jan 1977	4789	881	.2	15.0	297.3	14.2	118.6	3.0

\+ 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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1952-2001

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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	4.69	4.43	2.83	1998	8	9.75	1974	1.43	1986
Feb	4.18	4.16	3.33	1962	27	9.33	1991	1.54	1977
Mar	5.51	4.64	4.00	1975	13	13.92	1975	1.25	1987
Apr	4.19	4.04	2.15	1977	4	8.39	1977	1.11	1976
May	5.28	5.27	2.98	1953	6	10.23	1983	1.52	1988
Jun	4.84	4.80	3.53	1962	20	9.29	1998	.57	1980
Jul	5.01	4.93	4.00	1985	27	10.99	1971	.69	1986
Aug	4.54	4.53	2.50	1977	11	8.85	1985	1.88	1984
Sep	3.65	3.64	4.80	1982	3	7.84	1982	.40	1998
Oct	3.67	3.14	2.79	1984	20	8.01	1984	.57	2000
Nov	4.53	4.48	3.75	1986	9	9.18	1986	1.38	1976
Dec	4.78	4.50	3.88	1996	1	9.73	1990	.78	1985
Ann	54.87	55.13	4.80	Sep 1982	3	13.92	Mar 1975	.40	Sep 1998

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.7	8.9	3.3	.9
Feb	10.3	7.9	2.6	1.0
Mar	12.5	10.1	4.0	1.5
Apr	10.4	8.3	2.9	1.0
May	12.1	9.2	3.7	1.4
Jun	10.9	8.2	3.5	1.5
Jul	11.8	9.6	3.3	1.2
Aug	9.6	7.7	2.9	1.1
Sep	8.9	6.5	2.6	.9
Oct	8.0	6.0	2.4	1.1
Nov	10.1	8.3	2.9	1.1
Dec	11.9	8.7	3.2	1.3
Ann	128.2	99.4	37.3	14.0

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	1.93	2.36	2.96	3.46	3.93	4.40	4.91	5.50	6.25	7.39	8.43
Feb	1.58	1.97	2.53	2.99	3.43	3.88	4.37	4.94	5.66	6.77	7.79
Mar	1.77	2.30	3.07	3.73	4.36	5.02	5.74	6.59	7.68	9.37	10.93
Apr	1.52	1.91	2.48	2.96	3.41	3.88	4.38	4.97	5.72	6.87	7.93
May	2.19	2.67	3.35	3.91	4.43	4.96	5.53	6.19	7.02	8.29	9.45
Jun	1.34	1.80	2.50	3.11	3.70	4.32	5.01	5.83	6.88	8.54	10.09
Jul	1.60	2.07	2.78	3.38	3.96	4.56	5.22	5.99	6.98	8.53	9.95
Aug	2.00	2.40	2.97	3.43	3.86	4.29	4.76	5.29	5.97	6.99	7.91
Sep	.87	1.21	1.75	2.22	2.70	3.20	3.76	4.42	5.30	6.68	7.99
Oct	.89	1.24	1.78	2.25	2.72	3.22	3.78	4.45	5.31	6.69	7.98
Nov	1.86	2.28	2.86	3.34	3.79	4.25	4.75	5.32	6.04	7.14	8.14
Dec	1.52	1.98	2.65	3.22	3.78	4.35	4.98	5.72	6.67	8.14	9.51
Ann	41.53	44.18	47.53	50.05	52.28	54.42	56.61	59.03	61.94	66.13	69.73

\+ 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: 1952-2001
(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	3.0	1.0	#	0
Feb	3.3	.0	#	0
Mar	.6	.0	#	0
Apr	.1	.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
Dec	.5	.0	#	0
Ann	7.5	1.0	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	7.0	1984	18	13.0	1985	8	1984	18	2	1984
Feb	6.5	1984	6	11.8	1980	7	1984	6	2	1980
Mar	5.5	1980	2	5.5	1980	5	1980	2	#+	1999
Apr	2.0	1971	7	2.0	1971	3	1987	3	#+	1996
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	#	1980	23	#+	1980	0	0	0	0	0
Dec	4.1	1982	12	4.1	1982	4+	1999	25	#+	1999
Ann	7.0	Jan 1984	18	13.0	Jan 1985	8	Jan 1984	18	2+	Jan 1984

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.1	.8	.4	.2	.0
Feb	.9	.8	.3	.1	.0
Mar	.1	.1	.1	.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	.2	.2	.2	.0	.0
Ann	2.3	1.9	1.0	.4	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	2.6	1.5	.9	.0
Feb	1.9	1.1	.6	.0
Mar	.1	.1	.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	.0
Nov	.0	.0	.0	.0
Dec	.1	@	.0	.0
Ann	4.7	2.7	1.6	.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	5/25	5/20	5/16	5/12	5/09	5/06	5/02	4/28	4/22
32	5/15	5/09	5/04	5/01	4/27	4/23	4/20	4/15	4/09
28	4/29	4/24	4/20	4/17	4/13	4/10	4/07	4/03	3/28
24	4/18	4/12	4/08	4/04	3/31	3/28	3/24	3/20	3/14
20	4/07	3/31	3/25	3/21	3/16	3/12	3/07	3/02	2/22
16	3/22	3/14	3/08	3/04	2/27	2/23	2/18	2/13	2/05

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	9/21	9/25	9/28	9/30	10/03	10/05	10/07	10/10	10/14
32	9/30	10/04	10/07	10/10	10/12	10/15	10/17	10/21	10/25
28	10/09	10/14	10/18	10/22	10/25	10/28	10/31	11/04	11/10
24	10/20	10/27	11/01	11/05	11/09	11/13	11/17	11/22	11/28
20	11/01	11/07	11/12	11/16	11/20	11/23	11/27	12/02	12/08
16	11/12	11/19	11/25	11/29	12/03	12/07	12/11	12/16	12/23

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	167	160	155	150	146	142	137	132	124
32	192	184	178	173	168	163	157	151	143
28	216	208	203	198	194	189	184	179	171
24	249	240	233	227	222	216	210	203	194
20	272	264	258	252	247	243	237	231	223
16	303	294	288	283	278	273	268	261	253

***** 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	978	784	618	352	173	21	1	10	61	333	584	874	4789
60	823	644	468	218	91	4	0	0	19	210	440	719	3636
57	741	566	382	151	55	1	0	0	7	151	359	629	3042
55	683	512	327	113	37	0	0	0	4	117	307	572	2672
50	542	384	207	44	12	0	0	0	0	55	195	430	1869
32	170	76	11	0	0	0	0	0	0	0	9	86	352

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	215	216	416	642	918	1136	1302	1258	1030	705	416	235	8489
55	14	8	18	65	242	446	589	545	344	109	23	9	2412
57	11	6	11	43	198	387	527	483	287	81	15	3	2052
60	0	0	4	20	141	300	434	390	209	47	7	0	1552
65	0	0	0	4	68	167	280	245	102	15	0	0	881
70	0	0	0	0	25	68	142	125	35	3	0	0	398

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	63	99	228	414	685	906	1060	1014	795	468	220	96	63	162	390	804	1489	2395	3455	4469	5264	5732	5952	6048
45	29	46	136	281	530	756	905	859	645	323	131	44	29	75	211	492	1022	1778	2683	3542	4187	4510	4641	4685
50	10	19	69	169	378	606	750	704	495	196	63	18	10	29	98	267	645	1251	2001	2705	3200	3396	3459	3477
55	0	2	31	90	238	457	595	549	351	98	25	2	0	2	33	123	361	818	1413	1962	2313	2411	2436	2438
60	0	0	4	37	126	310	440	394	218	43	4	0	0	0	4	41	167	477	917	1311	1529	1572	1576	1576
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	41	78	170	288	440	606	721	686	515	315	156	60	41	119	289	577	1017	1623	2344	3030	3545	3860	4016	4076

(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