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: CANANDAIGUA 3 S, NY **COOP ID: 301152**

Climate Division: NY10 **NWS Call Sign:** **Elevation: 720 Feet** **Lat: 42˚51N** **Lon: 77˚17W**

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	32.0	16.7	24.4	74	1950	26	33.8	1990	-17	1957	15	14.3	1977	1259	0	.0	.0	2.1	15.3	28.2	2.3
Feb	34.0	17.5	25.8	70	1957	26	33.4	1984	-17	1979	18	14.5	1979	1099	0	.0	.0	3.4	12.8	25.7	1.7
Mar	42.5	25.3	33.9	85+	1986	31	40.4	1973	-4+	1993	19	26.3	1984	963	0	.0	.0	8.2	6.2	23.7	.2
Apr	54.4	35.4	44.9	88+	1976	19	49.2	1981	10	1954	4	38.5	1975	603	0	.0	.0	19.0	.5	10.9	.0
May	67.3	46.3	56.8	93+	1979	10	63.4	1991	25	1956	8	51.4	1997	278	24	.0	.3	29.9	.0	.7	.0
Jun	76.4	56.1	66.3	96	1953	22	69.4	1999	34+	1965	4	62.4	1985	52	88	.0	1.2	30.0	.0	.0	.0
Jul	81.2	61.2	71.2	100	1955	23	75.6	1999	41	1965	30	66.7	1992	8	201	.0	3.5	31.0	.0	.0	.0
Aug	79.2	59.8	69.5	101	2001	10	73.2	1995	40	1965	31	66.4	1982	13	154	.0	1.7	31.0	.0	.0	.0
Sep	71.4	52.8	62.1	98	1953	4	65.9	1971	31	2000	29	58.6	1975	114	27	.0	.4	29.9	.0	@	.0
Oct	59.8	42.0	50.9	89+	1954	1	57.3	1971	22+	1965	30	46.0	1972	440	2	.0	.0	26.4	.0	3.4	.0
Nov	47.8	33.5	40.7	84	1950	2	46.3	1975	7+	1958	30	35.5	1976	731	0	.0	.0	12.8	1.6	13.9	.0
Dec	36.8	23.4	30.1	72	2001	6	38.0	1984	-12	1980	25	16.9	1989	1081	0	.0	.0	4.0	9.1	25.2	.4
Ann	56.9	39.2	48.1	101	Aug 2001	10	75.6	Jul 1999	-17+	Feb 1979	18	14.3	Jan 1977	6641	496	.0	7.1	227.7	45.5	131.7	4.6

\+ 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

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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	1.80	1.40	1.73	1998	8	4.80	1978	.44	1977
Feb	1.65	1.52	2.12	1961	26	3.68	1990	.46	1987
Mar	2.36	2.21	2.02	1955	1	4.46	1999	.84	1981
Apr	3.07	2.68	1.92	1969	19	5.63	1993	1.03	1975
May	2.94	2.89	1.76	1949	6	5.99	1989	.81	1995
Jun	3.83	3.54	2.80	1968	26	7.73	1972	.67	1995
Jul	3.14	2.68	2.25	1976	30	11.32	1992	.31	1983
Aug	3.10	3.06	2.62+	1973	15	6.69	1984	.31	1995
Sep	3.58	3.25	3.08	1975	26	10.11	1977	1.35	1973
Oct	2.88	2.61	2.68	1962	12	6.98	1976	.68	1994
Nov	2.83	2.64	2.00	1963	30	6.88	1985	.62	1976
Dec	2.19	1.88	1.83	1978	25	4.19	1978	.76	1976
Ann	33.37	33.65	3.08	Sep 1975	26	11.32	Jul 1992	.31+	Aug 1995

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	15.9	4.8	.6	.1
Feb	13.0	4.5	.6	.1
Mar	14.0	5.9	1.2	.2
Apr	15.0	7.2	2.0	.4
May	13.2	7.7	1.7	.3
Jun	12.6	7.9	2.6	.7
Jul	11.3	6.8	2.1	.5
Aug	12.0	6.7	1.8	.7
Sep	13.3	7.4	2.2	.7
Oct	14.2	6.4	1.6	.4
Nov	14.7	7.1	1.8	.3
Dec	15.3	6.2	1.1	.3
Ann	164.5	78.6	19.3	4.7

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	.42	.58	.85	1.08	1.32	1.57	1.84	2.18	2.61	3.31	3.96
Feb	.55	.70	.93	1.13	1.31	1.51	1.72	1.96	2.28	2.77	3.23
Mar	1.02	1.24	1.53	1.77	2.00	2.23	2.48	2.76	3.12	3.66	4.15
Apr	1.31	1.58	1.97	2.29	2.59	2.90	3.22	3.60	4.07	4.79	5.44
May	1.02	1.30	1.71	2.05	2.37	2.71	3.07	3.50	4.04	4.89	5.66
Jun	1.05	1.41	1.97	2.45	2.92	3.42	3.97	4.62	5.46	6.78	8.02
Jul	.79	1.09	1.55	1.95	2.35	2.77	3.24	3.79	4.52	5.67	6.74
Aug	.88	1.17	1.62	2.00	2.38	2.78	3.21	3.73	4.39	5.44	6.41
Sep	1.39	1.72	2.20	2.59	2.96	3.34	3.75	4.22	4.83	5.75	6.60
Oct	.87	1.15	1.55	1.91	2.25	2.60	2.99	3.45	4.04	4.97	5.82
Nov	1.01	1.28	1.66	1.98	2.29	2.61	2.96	3.36	3.87	4.66	5.39
Dec	.84	1.05	1.34	1.58	1.81	2.04	2.30	2.59	2.96	3.53	4.05
Ann	25.34	26.93	28.95	30.47	31.81	33.10	34.42	35.87	37.62	40.14	42.30

\+ 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)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	63.6	-99.9	2	0
Feb	63.6	-99.9	#	0
Mar	63.6	-99.9	#	0
Apr	#	.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	#	.0	0	0
Dec	-99.9	-99.9	#	0
Ann	-9.9	-9.9	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	63.6	1978	99	63.6	1978	14	1996	13	14	1996
Feb	63.6	1978	99	63.6	1978	#	1999	22	#	1999
Mar	63.6	1978	99	63.6	1978	#	1998	11	#	1998
Apr	#	1978	20	#	1978	3	1996	4	#	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	#	1989	20	#+	1989	0	0	0	0	0
Nov	#	1984	20	#	1984	0	0	0	0	0
Dec	#	1988	18	#	1988	#+	1997	21	#+	1997
Ann	63.6+	Mar 1978	99	63.6+	Mar 1978	14	Jan 1996	13	14	Jan 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	-9.9	-9.9	-9.9	-9.9	-9.9
Feb	-9.9	-9.9	-9.9	-9.9	-9.9
Mar	-9.9	-9.9	-9.9	-9.9	-9.9
Apr	.0	.0	.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	-9.9	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	-9.9	-9.9	-9.9

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	-9.9	-9.9	-9.9	-9.9
Mar	-9.9	-9.9	-9.9	-9.9
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	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	-9.9	-9.9

+ 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	5/24	5/20	5/17	5/14	5/12	5/10	5/07	5/04	4/30
32	5/11	5/07	5/04	5/02	4/29	4/27	4/24	4/21	4/17
28	4/28	4/24	4/22	4/19	4/17	4/15	4/12	4/09	4/05
24	4/18	4/14	4/11	4/09	4/06	4/04	4/02	3/30	3/26
20	4/09	4/05	4/02	3/31	3/28	3/26	3/24	3/21	3/17
16	4/04	3/30	3/27	3/24	3/21	3/19	3/16	3/13	3/08

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	9/24	9/29	10/02	10/05	10/07	10/10	10/13	10/16	10/21
32	10/02	10/07	10/11	10/14	10/17	10/20	10/23	10/27	11/01
28	10/19	10/24	10/27	10/30	11/02	11/05	11/08	11/12	11/16
24	10/28	11/03	11/07	11/11	11/15	11/18	11/22	11/26	12/02
20	11/11	11/17	11/21	11/24	11/27	11/30	12/04	12/08	12/13
16	11/24	11/29	12/03	12/06	12/09	12/12	12/15	12/18	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	163	158	154	151	148	144	141	137	132
32	191	184	179	174	170	166	162	156	149
28	220	213	207	203	198	194	190	184	177
24	247	238	232	226	221	216	211	205	196
20	264	257	252	247	243	239	234	229	222
16	281	275	270	266	262	258	253	248	242

***** 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	1259	1099	963	603	278	52	8	13	114	440	731	1081	6641
60	1104	959	808	454	166	13	0	0	38	296	581	926	5345
57	1011	875	715	367	113	4	0	0	16	220	492	833	4646
55	949	819	653	312	85	2	0	0	8	175	433	771	4207
50	794	679	503	188	34	0	0	0	1	87	294	622	3202
32	295	238	102	4	0	0	0	0	0	0	20	188	847

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	59	64	162	391	769	1026	1216	1164	903	585	278	130	6747
55	0	0	0	9	141	338	503	451	221	46	2	0	1711
57	0	0	0	5	108	281	441	389	169	29	0	0	1422
60	0	0	0	2	67	199	348	296	101	13	0	0	1026
65	0	0	0	0	24	88	201	154	27	2	0	0	496
70	0	0	0	0	6	23	87	55	2	0	0	0	173

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	10	17	65	208	538	798	986	929	677	367	130	32	10	27	92	300	838	1636	2622	3551	4228	4595	4725	4757
45	1	5	33	119	387	648	831	774	527	234	65	10	1	6	39	158	545	1193	2024	2798	3325	3559	3624	3634
50	0	0	12	60	255	498	676	619	382	129	32	2	0	0	12	72	327	825	1501	2120	2502	2631	2663	2665
55	0	0	5	27	148	354	521	464	249	63	11	0	0	0	5	32	180	534	1055	1519	1768	1831	1842	1842
60	0	0	0	10	71	219	366	311	135	21	1	0	0	0	0	10	81	300	666	977	1112	1133	1134	1134
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	3	9	43	118	308	506	660	615	403	194	63	12	3	12	55	173	481	987	1647	2262	2665	2859	2922	2934

(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