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: WATERTOWN, NY **COOP ID: 309000**

Climate Division: NY 9 **NWS Call Sign:** **Elevation: 497 Feet** **Lat: 43˚59N** **Lon: 75˚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	28.0	9.1	18.6	66	1950	26	30.3	1990	-34	1981	4	5.1	1994	1439	0	.0	.0	1.4	18.2	29.2	9.6
Feb	30.2	10.5	20.4	64	2000	28	30.9	1981	-31+	1961	2	6.4	1979	1251	0	.0	.0	1.8	15.6	26.1	7.9
Mar	39.9	21.8	30.9	82	1990	16	39.6	1973	-21	1950	3	22.4	1984	1059	0	.0	.0	6.4	7.8	25.0	1.7
Apr	52.8	34.6	43.7	92	1990	29	49.3	1987	2	1972	7	36.7	1975	638	0	.0	@	17.8	.5	13.0	.0
May	66.1	46.7	56.4	89	1998	17	63.0	1998	23	1966	7	51.0	1997	285	18	.0	.0	29.7	.0	1.1	.0
Jun	74.6	55.9	65.3	96	1933	29	70.3	1999	30	1945	1	60.6	1985	72	79	.0	.3	30.0	.0	.0	.0
Jul	79.4	61.0	70.2	98	1931	2	72.8	1988	41	1953	25	65.2	1992	9	171	.0	1.4	31.0	.0	.0	.0
Aug	77.6	59.5	68.6	97	1988	4	72.8	1973	36	1940	24	64.5	1982	23	133	.0	.9	31.0	.0	.0	.0
Sep	69.3	50.9	60.1	96	1953	4	65.2	1999	27	1947	26	56.8	1978	166	19	.0	.3	29.9	.0	.4	.0
Oct	57.1	39.3	48.2	85	1926	4	54.9	1971	15	1936	27	43.1	1974	521	1	.0	.0	24.1	.0	7.6	.0
Nov	44.9	30.1	37.5	76	1938	7	44.1	1999	-3	1933	16	32.3	1996	824	0	.0	.0	10.2	2.9	17.5	.0
Dec	33.4	17.2	25.3	69	2001	6	33.8	1982	-39	1933	29	7.4	1989	1230	0	.0	.0	2.7	12.5	27.6	3.8
Ann	54.4	36.4	45.4	98	Jul 1931	2	72.8+	Jul 1988	-39	Dec 1933	29	5.1	Jan 1994	7517	421	.0	2.9	216.0	57.5	147.5	23.0

\+ 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: 1926-2001

(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	3.54	3.31	2.13	1998	8	7.18	1999	.80	1981
Feb	2.48	2.15	2.43	1954	17	5.16	1971	.43	1978
Mar	2.86	3.02	1.47	1985	5	4.75	1991	.78+	1984
Apr	3.06	2.91	1.94	1973	2	6.08	1993	.78	1999
May	3.33	3.31	2.94	1992	10	7.29	1976	1.19	1980
Jun	3.40	3.09	3.33	1970	27	6.76	1986	.55	1995
Jul	3.32	2.96	3.50	1999	4	7.49	1972	.79	1979
Aug	3.95	3.98	4.86	1949	18	8.81	1981	1.01	1993
Sep	4.59	4.49	4.65	1975	26	7.92	1975	2.50	1990
Oct	3.77	3.43	2.27	1980	26	7.74	1995	.96	1984
Nov	4.51	4.37	3.49	1927	17	7.18	1989	1.91	1981
Dec	3.76	3.54	2.70	1951	17	7.50	1983	1.46	1981
Ann	42.57	40.92	4.86	Aug 1949	18	8.81	Aug 1981	.43	Feb 1978

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	17.4	9.9	1.7	.3
Feb	13.3	7.6	1.3	.2
Mar	12.9	7.4	1.8	.4
Apr	11.6	7.7	1.9	.5
May	12.1	7.9	1.9	.4
Jun	11.9	7.5	2.3	.5
Jul	10.0	6.4	1.9	.7
Aug	10.8	7.0	2.7	1.1
Sep	12.3	8.4	3.1	1.0
Oct	12.9	8.5	2.4	.6
Nov	15.2	10.3	3.2	.6
Dec	17.2	10.3	2.1	.2
Ann	157.6	98.9	26.3	6.5

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	1.31	1.64	2.12	2.51	2.89	3.28	3.70	4.19	4.82	5.78	6.66
Feb	.84	1.07	1.41	1.70	1.98	2.27	2.58	2.95	3.42	4.15	4.82
Mar	1.04	1.30	1.69	2.02	2.33	2.64	2.99	3.39	3.90	4.69	5.41
Apr	1.01	1.30	1.72	2.08	2.43	2.79	3.19	3.65	4.24	5.16	6.01
May	1.12	1.44	1.90	2.29	2.67	3.05	3.47	3.97	4.60	5.58	6.48
Jun	.98	1.31	1.79	2.21	2.62	3.05	3.53	4.08	4.81	5.94	6.99
Jul	.96	1.27	1.75	2.16	2.56	2.98	3.45	3.99	4.70	5.81	6.85
Aug	1.29	1.66	2.21	2.68	3.13	3.60	4.11	4.71	5.48	6.68	7.78
Sep	2.47	2.84	3.33	3.72	4.08	4.44	4.81	5.23	5.76	6.54	7.24
Oct	1.35	1.70	2.21	2.65	3.06	3.48	3.94	4.48	5.16	6.22	7.19
Nov	2.37	2.74	3.24	3.63	3.99	4.35	4.73	5.16	5.70	6.50	7.21
Dec	1.53	1.87	2.36	2.76	3.14	3.53	3.94	4.42	5.03	5.96	6.81
Ann	33.60	35.41	37.69	39.39	40.88	42.31	43.77	45.37	47.29	50.05	52.40

+ 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: 1926-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	34.1	26.9	8	4
Feb	22.0	20.7	11	6
Mar	14.5	14.2	5	4
Apr	3.5	2.0	#	2
May	#	#	#	0
Jun	.0	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.3	#	#	0
Nov	8.7	5.6	1	0
Dec	20.3	20.3	4	2
Ann	103.4	89.7	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	20.0	1994	5	90.3	1977	42	1977	31	23	1984
Feb	18.0	1972	20	51.0	1993	50+	1977	2	31	1977
Mar	19.0	1971	4	42.6	1971	31+	1978	4	19+	1978
Apr	8.0	1975	4	14.5	1975	14	1971	1	2+	1975
May	.5	1976	20	.5+	1977	#+	1977	9	#	2000
Jun	.0	0	0	.0	0	0	0	0	#	1988
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	4.0	1972	19	4.0	1972	4	1972	19	#	1992
Nov	14.0	1995	17	32.8	1995	15	1976	25	2+	2000
Dec	22.0	1995	11	108.2	1985	35+	1985	30	16	1985
Ann	22.0	Dec 1995	11	108.2	Dec 1985	50+	Feb 1977	2	31	Feb 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	12.8	9.0	4.2	2.0	.4
Feb	9.5	6.7	2.8	1.3	.2
Mar	6.9	4.3	1.6	.9	.1
Apr	1.9	1.3	.4	.1	.0
May	.1	.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	.2	.1	.0	.0	.0
Nov	4.0	2.6	1.0	.5	.0
Dec	10.4	7.1	3.2	1.9	.1
Ann	45.8	31.1	13.2	6.7	.8

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	25.1	20.1	16.0	11.0
Feb	23.8	21.3	18.5	12.1
Mar	16.0	12.5	10.9	6.8
Apr	2.5	1.6	.9	@
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	.2	@	.0	.0
Nov	5.2	2.3	1.2	.3
Dec	19.5	14.6	10.3	3.8
Ann	92.3	72.4	57.8	34.0

+ 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	6/05	5/30	5/26	5/23	5/19	5/16	5/13	5/09	5/03
32	5/14	5/10	5/08	5/06	5/04	5/02	4/29	4/27	4/23
28	4/30	4/27	4/25	4/23	4/21	4/19	4/17	4/15	4/11
24	4/22	4/18	4/16	4/13	4/11	4/09	4/07	4/04	3/31
20	4/13	4/09	4/06	4/04	4/02	3/30	3/28	3/25	3/21
16	4/07	4/03	4/01	3/29	3/27	3/25	3/23	3/20	3/16

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	9/16	9/20	9/22	9/25	9/27	9/29	10/01	10/04	10/07
32	9/23	9/27	9/30	10/03	10/05	10/08	10/11	10/14	10/18
28	10/07	10/11	10/14	10/17	10/19	10/21	10/24	10/27	10/31
24	10/16	10/21	10/25	10/28	10/31	11/03	11/06	11/09	11/14
20	10/27	11/01	11/04	11/07	11/10	11/12	11/15	11/18	11/23
16	11/08	11/12	11/16	11/18	11/21	11/24	11/27	11/30	12/05

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	149	142	137	133	130	126	122	117	111
32	169	164	160	157	154	151	148	144	139
28	196	191	187	184	181	177	174	170	165
24	221	215	210	206	202	198	194	189	182
20	240	233	229	225	221	217	213	209	202
16	257	251	246	242	238	235	231	226	220

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1439	1251	1059	638	285	72	9	23	166	521	824	1230	7517
60	1284	1111	904	490	168	22	0	2	71	373	674	1075	6174
57	1191	1027	811	403	114	8	0	0	37	291	584	982	5448
55	1129	971	749	348	84	4	0	0	22	241	524	920	4992
50	974	831	598	225	33	0	0	0	4	136	379	772	3952
32	459	370	167	11	0	0	0	0	0	2	43	307	1359

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	43	43	131	363	756	997	1185	1133	843	505	209	99	6307
55	0	0	0	11	127	311	472	420	175	31	0	0	1547
57	0	0	0	6	95	255	410	358	130	19	0	0	1273
60	0	0	0	2	56	179	317	267	73	8	0	0	902
65	0	0	0	0	18	79	171	133	19	1	0	0	421
70	0	0	0	0	4	22	64	45	2	0	0	0	137

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	4	6	49	184	523	771	951	901	620	297	95	12	4	10	59	243	766	1537	2488	3389	4009	4306	4401	4413
45	2	1	21	107	377	621	796	746	471	182	47	6	2	3	24	131	508	1129	1925	2671	3142	3324	3371	3377
50	0	0	8	55	244	472	641	591	329	100	19	0	0	0	8	63	307	779	1420	2011	2340	2440	2459	2459
55	0	0	2	27	139	331	486	439	209	46	5	0	0	0	2	29	168	499	985	1424	1633	1679	1684	1684
60	0	0	0	10	72	203	334	286	109	16	0	0	0	0	0	10	82	285	619	905	1014	1030	1030	1030
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	34	105	301	486	637	594	368	158	45	5	0	0	34	139	440	926	1563	2157	2525	2683	2728	2733

(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