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: MIDDLETOWN 2 NW, NY **COOP ID: 305310**

Climate Division: NY 5 **NWS Call Sign:** **Elevation: 700 Feet** **Lat: 41˚28N** **Lon: 74˚27W**

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	35.4	17.5	26.5	64	1974	27	34.7	1990	-23	1994	27	17.8	1977	1194	0	.0	.0	2.6	12.2	28.1	2.1
Feb	39.2	19.3	29.3	73	1954	16	36.2	1981	-18	1955	3	19.3	1979	1001	0	.0	.0	4.3	8.0	24.6	1.2
Mar	49.0	27.8	38.4	85	1998	31	44.2	1973	-7	1967	19	31.5	1984	824	0	.0	.0	13.7	1.7	20.9	@
Apr	61.3	38.4	49.9	92	1976	18	53.7	1985	13	1954	4	45.1	1975	455	0	.0	.2	25.8	.0	6.2	.0
May	72.3	48.7	60.5	93+	1962	19	66.2	1991	29	1966	10	56.4	1973	172	33	.0	.4	30.9	.0	@	.0
Jun	79.7	57.1	68.4	97	1952	26	71.6	1999	38	1953	3	64.5	1972	25	128	.0	1.7	30.0	.0	.0	.0
Jul	84.0	62.0	73.0	101+	1995	16	77.1	1999	43+	1963	9	69.4	2000	1	248	@	4.2	31.0	.0	.0	.0
Aug	82.4	60.6	71.5	97+	1955	5	74.7	1980	41	1982	29	67.6	1992	6	207	.0	2.0	31.0	.0	.0	.0
Sep	74.8	53.5	64.2	100	1953	3	67.5	1998	27	1991	29	60.0	1975	76	52	.0	.6	30.0	.0	@	.0
Oct	64.2	42.6	53.4	88	1963	7	59.6	1971	20	1952	26	48.8	1988	366	6	.0	.0	29.7	.0	2.9	.0
Nov	51.4	33.9	42.7	78+	1982	2	48.5	1975	10	1964	23	37.8	1995	670	0	.0	.0	16.1	.5	13.5	.0
Dec	39.7	23.8	31.8	71	1998	7	38.6	1982	-21	1951	17	18.5	1989	1030	0	.0	.0	4.5	6.9	25.1	.3
Ann	61.1	40.4	50.8	101+	Jul 1995	16	77.1	Jul 1999	-23	Jan 1994	27	17.8	Jan 1977	5820	674	@	9.1	249.6	29.3	121.3	3.6

\+ 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: 1951-2001

(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	3.08	2.85	2.15	1978	9	8.01	1979	.51	1981
Feb	2.51	2.29	1.94	1965	8	5.74	1981	.21	1987
Mar	3.32	3.02	2.45	1999	22	6.41	1977	.14	1981
Apr	3.96	4.00	2.82	1997	1	9.62	1983	1.34	1971
May	4.59	4.19	3.42	1968	29	10.03	1984	1.02	1993
Jun	4.28	3.79	4.25	1952	1	10.38	1998	.83	1999
Jul	4.07	3.42	5.51	1959	21	10.61	1988	1.46	1993
Aug	3.84	3.81	5.70	1955	18	9.13	1990	.34	1981
Sep	4.14	3.38	4.87	1952	1	8.24	1999	1.18	1984
Oct	3.44	3.45	4.56	1959	7	8.49	1995	1.47	1982
Nov	3.58	3.12	2.93	1977	8	7.73	1972	1.01	1976
Dec	3.19	2.90	2.87	1990	4	8.79	1973	.70	1980
Ann	44.00	42.75	5.70	Aug 1955	18	10.61	Jul 1988	.14	Mar 1981

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.9	6.5	2.2	.5
Feb	7.4	5.3	2.0	.4
Mar	8.6	6.5	2.2	.8
Apr	9.7	7.1	3.1	1.1
May	11.7	8.3	3.2	1.1
Jun	10.5	7.8	2.9	1.1
Jul	9.3	7.2	2.9	.9
Aug	9.0	6.2	2.4	1.2
Sep	9.0	6.4	2.8	1.4
Oct	8.6	6.0	2.3	.8
Nov	8.9	6.3	2.5	1.0
Dec	8.9	6.3	2.3	.8
Ann	110.5	79.9	30.8	11.1

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	.76	1.05	1.50	1.90	2.30	2.71	3.18	3.73	4.45	5.59	6.66
Feb	.73	.97	1.33	1.64	1.94	2.26	2.61	3.02	3.55	4.38	5.16
Mar	1.00	1.32	1.79	2.20	2.59	3.00	3.45	3.98	4.66	5.73	6.72
Apr	1.44	1.81	2.35	2.80	3.22	3.66	4.14	4.69	5.40	6.49	7.49
May	1.52	1.95	2.59	3.14	3.66	4.20	4.79	5.48	6.37	7.75	9.02
Jun	1.22	1.62	2.24	2.77	3.29	3.84	4.44	5.15	6.07	7.51	8.86
Jul	1.26	1.65	2.22	2.72	3.19	3.69	4.24	4.88	5.70	6.99	8.19
Aug	.97	1.33	1.89	2.38	2.87	3.38	3.96	4.64	5.52	6.93	8.24
Sep	1.23	1.63	2.22	2.72	3.22	3.74	4.30	4.97	5.84	7.19	8.44
Oct	1.29	1.62	2.08	2.46	2.82	3.19	3.60	4.06	4.66	5.58	6.41
Nov	1.43	1.76	2.23	2.61	2.98	3.35	3.75	4.21	4.79	5.68	6.50
Dec	.81	1.11	1.58	1.98	2.39	2.81	3.29	3.85	4.58	5.74	6.83
Ann	33.62	35.69	38.30	40.26	41.99	43.65	45.35	47.23	49.48	52.72	55.50

\+ 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: 1951-2001
(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	-99.9	-99.9	1	0
Feb	-99.9	-99.9	1	0
Mar	-99.9	-99.9	0	0
Apr	#	.0	0	0
May	#	.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
Dec	-99.9	-99.9	1	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	#	1995	11	#+	1995	15	1978	20	12	1978
Feb	#	1995	99	#+	1995	10	1993	19	7	1993
Mar	#	1987	12	#	1987	0	0	0	0	0
Apr	#	1990	8	#	1990	0	0	0	0	0
May	#	1977	9	#	1977	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	#	1978	9	#+	1978	0	0	0	0	0
Nov	#	1994	23	#+	1994	#	1983	30	#	1983
Dec	.0	0	0	.0	0	16	1992	13	7	1995
Ann	#+	Feb 1995	99	#+	Feb 1995	16	Dec 1992	13	12	Jan 1978

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	-9.9	-9.9	-9.9	-9.9	-9.9
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	-9.9	-9.9	-9.9	-9.9	-9.9
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	.0	.0	.0	.0
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	5/12	5/08	5/05	5/03	5/01	4/29	4/26	4/24	4/20
32	4/28	4/24	4/21	4/19	4/17	4/15	4/13	4/10	4/07
28	4/18	4/15	4/12	4/10	4/08	4/06	4/04	4/02	3/29
24	4/12	4/08	4/04	4/02	3/30	3/28	3/25	3/22	3/18
20	4/03	3/30	3/27	3/25	3/22	3/20	3/17	3/14	3/10
16	3/26	3/21	3/18	3/15	3/12	3/09	3/06	3/02	2/26

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	9/22	9/27	9/30	10/03	10/06	10/09	10/12	10/15	10/20
32	10/03	10/08	10/11	10/14	10/17	10/20	10/23	10/27	11/01
28	10/17	10/23	10/27	10/31	11/03	11/06	11/10	11/14	11/19
24	10/29	11/05	11/09	11/13	11/17	11/21	11/25	11/30	12/06
20	11/12	11/18	11/22	11/25	11/28	12/01	12/04	12/08	12/14
16	11/23	11/28	12/02	12/05	12/08	12/11	12/15	12/18	12/24

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	170	165	161	157	154	150	145	139
32	202	196	191	186	182	178	174	169	163
28	226	220	215	211	208	204	200	196	189
24	256	247	241	236	231	226	221	215	207
20	272	264	259	254	250	246	241	236	228
16	292	285	280	275	271	266	262	256	249

***** 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	1194	1001	824	455	172	25	1	6	76	366	670	1030	5820
60	1039	861	669	309	78	4	0	0	21	233	521	875	4610
57	946	777	576	227	42	1	0	0	8	166	432	782	3957
55	884	721	515	179	25	0	0	0	4	128	375	720	3551
50	729	582	372	82	5	0	0	0	0	58	243	573	2644
32	251	169	48	0	0	0	0	0	0	0	12	155	635

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	80	92	247	535	884	1093	1270	1224	966	663	332	148	7534
55	0	0	2	24	196	403	557	511	279	78	5	0	2055
57	0	0	0	12	150	344	495	449	223	54	2	0	1729
60	0	0	0	4	94	257	402	356	147	27	0	0	1287
65	0	0	0	0	33	128	248	207	52	6	0	0	674
70	0	0	0	0	7	42	111	88	9	0	0	0	257

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	13	21	98	316	653	868	1039	992	738	429	150	30	13	34	132	448	1101	1969	3008	4000	4738	5167	5317	5347
45	0	5	45	191	499	718	884	837	588	282	77	7	0	5	50	241	740	1458	2342	3179	3767	4049	4126	4133
50	0	0	20	100	349	568	729	682	438	165	31	2	0	0	20	120	469	1037	1766	2448	2886	3051	3082	3084
55	0	0	5	47	210	419	574	527	296	77	11	0	0	0	5	52	262	681	1255	1782	2078	2155	2166	2166
60	0	0	4	16	105	277	419	372	172	26	3	0	0	0	4	20	125	402	821	1193	1365	1391	1394	1394
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	2	11	64	185	389	569	713	674	459	240	72	12	2	13	77	262	651	1220	1933	2607	3066	3306	3378	3390

(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