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: BATH, NY **COOP ID: 300448**

Climate Division: NY 1 **NWS Call Sign:** **Elevation: 1,120 Feet** **Lat: 42˚21N** **Lon: 77˚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	31.5	12.4	22.0	67	1967	25	31.3	1990	-24	1984	21	12.2	1977	1334	0	.0	.0	1.7	16.5	29.5	5.1
Feb	34.3	12.9	23.6	69	1997	28	31.5	1998	-25	1979	18	12.0	1979	1159	0	.0	.0	3.1	12.9	26.5	5.1
Mar	43.6	21.1	32.4	84	1986	31	40.3	1973	-18	1993	19	22.4	1984	1012	0	.0	.0	8.7	5.7	26.2	1.3
Apr	55.9	31.8	43.9	90	1990	29	47.9	1985	8	1982	7	37.6	1975	636	0	.0	@	19.9	.4	17.4	.0
May	68.4	41.7	55.1	94	1996	20	61.0	1991	23+	1974	5	48.7	1997	319	11	.0	.2	29.9	.0	4.6	.0
Jun	76.8	50.6	63.7	93+	1999	28	66.7	1973	28	1983	9	59.4	1985	92	53	.0	1.1	30.0	.0	.1	.0
Jul	81.2	55.0	68.1	101	1988	16	71.7	1987	35	1963	9	64.4	2000	25	122	@	2.7	31.0	.0	.0	.0
Aug	79.4	53.3	66.4	100	2001	10	70.3	1973	28+	1982	30	60.9	1982	54	96	.0	1.5	31.0	.0	.1	.0
Sep	71.5	46.0	58.8	93+	1964	10	63.8	1971	24+	1979	20	55.5	1975	195	9	.0	.3	29.9	.0	2.0	.0
Oct	60.1	35.5	47.8	86	1963	7	55.5	1971	14	1965	29	43.7	1976	532	0	.0	.0	25.3	.0	12.2	.0
Nov	47.1	28.7	37.9	77	1982	3	43.1	1975	1+	1996	29	32.4	1976	814	0	.0	.0	11.8	2.0	20.8	.0
Dec	35.9	19.0	27.5	70+	2001	6	34.1	1984	-16+	1993	28	13.9	1989	1164	0	.0	.0	3.1	10.1	27.9	1.8
Ann	57.1	34.0	45.6	101	Jul 1988	16	71.7	Jul 1987	-25	Feb 1979	18	12.0	Feb 1979	7336	291	@	5.8	225.4	47.6	167.3	13.3

\+ 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: 1953-2001

(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	1.84	1.53	3.00	1999	12	7.38	1999	.17	1980
Feb	1.68	1.68	2.80	1971	14	4.36	1971	.09	1987
Mar	2.23	2.38	1.55	1991	4	4.39	1980	.76	2000
Apr	2.77	2.68	1.70	1961	25	5.17	1993	.41	1982
May	2.84	2.80	2.32	1968	31	6.85	1989	.55	1993
Jun	3.94	3.73	4.67	1994	14	13.06	1972	.20	1991
Jul	3.23	3.00	2.00	1979	15	8.15	1992	.90	1983
Aug	2.67	2.34	2.90	1996	9	6.02	1994	1.06	1982
Sep	3.52	3.10	3.68	1987	13	8.32	1987	1.13	1983
Oct	2.62	2.39	2.58	1955	15	6.78	1990	.46	1982
Nov	2.71	2.31	2.06	1993	28	5.15+	1993	.59	1976
Dec	2.15	2.03	1.82	1978	25	4.54	1977	.23	1998
Ann	32.20	31.78	4.67	Jun 1994	14	13.06	Jun 1972	.09	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.9	4.6	.9	.3
Feb	9.8	4.6	.8	.1
Mar	11.5	6.2	1.3	.2
Apr	11.9	6.8	1.8	.3
May	11.7	7.2	1.7	.4
Jun	11.8	7.4	2.3	.7
Jul	10.7	6.5	2.1	.6
Aug	9.6	6.1	1.5	.6
Sep	11.1	6.6	2.3	.8
Oct	11.3	5.8	1.4	.6
Nov	12.0	6.4	1.5	.4
Dec	12.0	5.2	1.2	.2
Ann	134.3	73.4	18.8	5.2

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	.26	.42	.68	.94	1.20	1.50	1.83	2.25	2.81	3.72	4.59
Feb	.37	.52	.77	.99	1.22	1.45	1.72	2.04	2.46	3.13	3.76
Mar	.82	1.03	1.33	1.58	1.82	2.07	2.34	2.65	3.04	3.66	4.21
Apr	1.03	1.29	1.66	1.97	2.26	2.57	2.89	3.28	3.76	4.51	5.19
May	.70	.97	1.38	1.75	2.11	2.50	2.93	3.44	4.10	5.16	6.15
Jun	.78	1.13	1.71	2.24	2.78	3.36	4.01	4.80	5.84	7.51	9.10
Jul	1.23	1.53	1.96	2.32	2.66	3.00	3.38	3.81	4.37	5.22	5.99
Aug	1.07	1.32	1.67	1.95	2.22	2.50	2.79	3.14	3.57	4.23	4.84
Sep	1.07	1.40	1.90	2.33	2.75	3.18	3.66	4.22	4.94	6.07	7.12
Oct	.64	.89	1.27	1.61	1.95	2.30	2.70	3.17	3.79	4.77	5.69
Nov	.87	1.13	1.51	1.83	2.15	2.47	2.82	3.24	3.77	4.61	5.37
Dec	.55	.76	1.07	1.35	1.62	1.90	2.22	2.60	3.10	3.88	4.61
Ann	23.74	25.40	27.52	29.11	30.53	31.89	33.30	34.84	36.71	39.41	41.74

+ 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: 1953-2001
(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	9.7	6.5	4	3
Feb	13.2	12.0	5	3
Mar	7.0	7.4	3	1
Apr	1.5	.5	#	#
May	.1	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.1	.0	#	0
Nov	3.0	1.5	1	#
Dec	11.8	10.9	2	1
Ann	46.4	38.8	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	12.0	1978	18	41.0	1978	39	1978	25	18	1978
Feb	16.0	1971	14	25.0	1971	33	1978	12	29	1978
Mar	10.0	1971	4	14.5	1971	36	1993	15	19	1978
Apr	6.5	1974	9	8.0	1987	9	1982	8	1	1984
May	1.5	1977	9	1.5	1977	2	1977	9	#+	1995
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	1.0	1972	19	1.0	1972	#+	1988	26	#+	1988
Nov	13.5	1995	15	13.5	1995	14	1995	15	4	1995
Dec	21.0	1978	25	26.1	1978	25	1978	31	8	1978
Ann	21.0	Dec 1978	25	41.0	Jan 1978	39	Jan 1978	25	29	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.2	4.0	1.1	.4	.1
Feb	4.2	3.2	1.1	.4	@
Mar	4.0	2.7	1.0	.4	.1
Apr	.9	.6	.2	.1	.0
May	@	@	.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	.1	@	.0	.0	.0
Nov	1.6	1.1	.4	.3	@
Dec	4.9	3.1	.9	.4	.1
Ann	20.9	14.7	4.7	2.0	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	17.2	10.3	3.7	.0
Feb	17.7	12.3	8.9	3.5
Mar	7.8	4.2	2.9	.7
Apr	1.0	.3	.1	.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	.0
Nov	3.0	1.5	.5	.1
Dec	11.5	6.2	3.0	.2
Ann	58.2	34.8	19.1	4.5

+ 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	6/15	6/10	6/06	6/03	5/31	5/28	5/25	5/21	5/15
32	5/30	5/25	5/22	5/20	5/17	5/14	5/12	5/09	5/04
28	5/16	5/11	5/08	5/05	5/02	4/30	4/27	4/23	4/19
24	5/02	4/27	4/23	4/20	4/17	4/14	4/11	4/07	4/02
20	4/19	4/14	4/11	4/08	4/06	4/03	4/01	3/29	3/24
16	4/08	4/04	4/01	3/30	3/28	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	9/01	9/06	9/10	9/13	9/16	9/19	9/22	9/25	9/30
32	9/11	9/17	9/20	9/24	9/27	9/29	10/03	10/06	10/12
28	9/20	9/26	9/30	10/04	10/08	10/11	10/15	10/19	10/25
24	10/05	10/12	10/17	10/21	10/25	10/29	11/02	11/07	11/14
20	10/19	10/26	10/31	11/04	11/07	11/11	11/15	11/20	11/26
16	11/02	11/09	11/13	11/17	11/21	11/25	11/29	12/03	12/10

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	126	120	115	111	107	103	99	95	88
32	152	145	140	136	132	128	123	118	111
28	179	172	166	162	157	153	149	143	136
24	216	207	201	195	190	185	179	173	164
20	240	231	225	220	215	210	204	198	189
16	260	252	247	242	238	233	229	223	216

***** 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	1334	1159	1012	636	319	92	25	54	195	532	814	1164	7336
60	1179	1019	857	486	194	30	4	11	86	383	664	1009	5922
57	1086	935	764	398	134	12	0	3	44	300	574	916	5166
55	1024	879	702	341	101	6	0	0	26	248	514	854	4695
50	869	739	552	213	41	1	0	0	5	141	369	699	3629
32	357	286	136	7	0	0	0	0	0	2	35	238	1061

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	46	51	148	361	715	951	1120	1065	804	493	211	97	6062
55	0	0	0	6	103	267	407	352	140	26	0	0	1301
57	0	0	0	3	74	213	345	292	97	15	0	0	1039
60	0	0	0	1	41	141	255	208	49	6	0	0	701
65	0	0	0	0	11	53	122	96	9	0	0	0	291
70	0	0	0	0	2	11	39	29	1	0	0	0	82

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	10	51	180	474	718	875	824	574	272	87	14	4	14	65	245	719	1437	2312	3136	3710	3982	4069	4083
45	0	1	24	99	328	568	720	669	426	158	42	4	0	1	25	124	452	1020	1740	2409	2835	2993	3035	3039
50	0	0	9	54	202	420	565	514	290	82	16	0	0	0	9	63	265	685	1250	1764	2054	2136	2152	2152
55	0	0	3	23	110	281	411	361	171	33	3	0	0	0	3	26	136	417	828	1189	1360	1393	1396	1396
60	0	0	0	5	45	161	260	217	84	6	0	0	0	0	0	5	50	211	471	688	772	778	778	778
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	1	7	43	127	304	456	569	529	361	179	56	7	1	8	51	178	482	938	1507	2036	2397	2576	2632	2639

(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