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: RAY BROOK, NY **COOP ID: 306957**

Climate Division: NY 3 **NWS Call Sign:** **Elevation: 1,620 Feet** **Lat: 44˚18N** **Lon: 74˚06W**

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	25.7	2.7	14.2	61	1995	16	25.8	1990	-35+	1994	28	3.1	1994	1575	0	.0	.0	.7	22.3	30.4	13.8
Feb	29.0	3.4	16.2	60+	2000	28	26.4	1984	-34	1972	23	4.2	1979	1368	0	.0	.0	1.2	18.6	27.3	12.7
Mar	38.5	13.1	25.8	79	1990	16	33.8	1973	-25+	1980	3	17.8	1984	1216	0	.0	.0	5.6	10.3	29.0	6.1
Apr	50.7	26.6	38.7	89	1990	29	44.2	1986	-5	1972	8	30.8	1975	790	0	.0	.0	14.4	1.7	22.3	.2
May	64.9	38.3	51.6	89	1989	20	56.8	1998	18+	1978	1	45.6	1997	418	2	.0	.0	27.6	@	9.1	.0
Jun	73.2	47.7	60.5	93+	1994	19	65.0	1999	26+	1986	4	55.6	2000	164	23	.0	.2	29.7	.0	.9	.0
Jul	77.6	52.2	64.9	93	1995	15	67.8	1975	33+	2001	27	58.6	2000	68	66	.0	.5	31.0	.0	.0	.0
Aug	75.9	50.3	63.1	96	1988	4	67.1	1973	28	1976	31	59.1	2000	102	41	.0	.4	31.0	.0	.1	.0
Sep	67.3	42.5	54.9	93	1999	5	59.4	1971	22+	1991	30	51.7	1978	305	1	.0	@	29.2	.0	4.8	.0
Oct	55.0	32.7	43.9	79+	1990	8	51.9	1971	9+	1972	21	38.6	1974	655	0	.0	.0	20.1	.3	16.2	.0
Nov	41.7	24.0	32.9	69+	1975	8	38.9	1979	-5+	1972	24	27.6	1976	965	0	.0	.0	7.4	6.6	24.6	.4
Dec	30.2	10.6	20.4	61	1998	7	29.2	1998	-31+	1993	28	3.4	1989	1383	0	.0	.0	1.3	18.5	29.7	7.4
Ann	52.5	28.7	40.6	96	Aug 1988	4	67.8	Jul 1975	-35+	Jan 1994	28	3.1	Jan 1994	9009	133	.0	1.1	199.2	78.3	194.4	40.6

\+ 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: 1971-2001

(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	2.69	2.72	1.73	1998	8	7.04	1998	.63	1981
Feb	2.12	2.01	1.27	1971	14	5.65	1981	.63	1987
Mar	2.75	2.86	2.10	1971	5	4.24	1971	.94	1983
Apr	3.00	2.62	1.41	1982	18	6.90	2000	1.04	1986
May	3.30	3.23	2.42	1971	21	7.14	2000	.98	1975
Jun	3.91	4.04	3.21	1998	26	9.42	1998	1.24	1991
Jul	3.95	3.57	2.25	1998	1	7.01	1998	1.76	1979
Aug	4.16	4.33	2.55	1989	5	7.59	1983	1.30	1973
Sep	4.10	3.96	3.40	1999	17	7.81	1981	1.13	1972
Oct	3.40	3.04	2.34	1977	18	7.12	1977	1.02	1994
Nov	3.52	3.60	4.00	1996	9	6.47	1996	1.47	1978
Dec	2.91	2.47	1.75	1984	29	7.34	1983	.80	1989
Ann	39.81	38.94	4.00	Nov 1996	9	9.42	Jun 1998	.63+	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	18.9	7.7	1.1	.2
Feb	14.1	5.6	.8	.2
Mar	15.6	7.4	1.6	.1
Apr	15.1	8.0	1.5	.4
May	15.5	8.8	1.7	.2
Jun	15.2	8.5	2.6	.5
Jul	14.0	8.5	2.4	.8
Aug	14.8	8.9	2.7	.8
Sep	14.2	8.3	2.4	.7
Oct	15.8	8.3	1.9	.5
Nov	17.7	9.0	2.0	.4
Dec	18.9	8.2	1.4	.3
Ann	189.8	97.2	22.1	5.1

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	.77	1.02	1.41	1.74	2.07	2.41	2.79	3.24	3.81	4.72	5.56
Feb	.67	.87	1.17	1.42	1.67	1.92	2.20	2.53	2.95	3.61	4.22
Mar	1.36	1.60	1.91	2.17	2.40	2.64	2.89	3.17	3.52	4.06	4.54
Apr	1.28	1.56	1.94	2.25	2.54	2.83	3.15	3.51	3.97	4.67	5.31
May	1.12	1.43	1.89	2.27	2.64	3.03	3.44	3.93	4.55	5.51	6.40
Jun	1.19	1.56	2.12	2.60	3.06	3.54	4.07	4.69	5.50	6.75	7.91
Jul	1.84	2.19	2.66	3.05	3.40	3.76	4.14	4.58	5.12	5.95	6.69
Aug	2.21	2.55	3.00	3.36	3.69	4.01	4.36	4.75	5.23	5.96	6.60
Sep	1.68	2.06	2.59	3.02	3.43	3.85	4.29	4.81	5.46	6.46	7.37
Oct	1.28	1.60	2.05	2.43	2.79	3.16	3.55	4.02	4.60	5.50	6.33
Nov	1.73	2.03	2.44	2.77	3.07	3.37	3.69	4.05	4.51	5.20	5.81
Dec	.95	1.22	1.63	1.98	2.31	2.66	3.04	3.48	4.05	4.94	5.75
Ann	31.79	33.41	35.45	36.97	38.31	39.59	40.89	42.32	44.03	46.48	48.57

\+ 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: 1971-2001
(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	27.6	24.8	11	10
Feb	21.8	20.2	13	13
Mar	19.4	17.9	14	16
Apr	10.7	7.9	3	#
May	1.1	.0	#	0
Jun	.0	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.1	.0	#	0
Oct	1.9	.4	#	0
Nov	15.1	16.6	1	#
Dec	25.3	23.9	6	6
Ann	123.0	111.7	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	14.0	1986	27	48.0	1987	30	1978	22	21	1994
Feb	19.0	1978	8	43.7	1993	44	1978	8	28	1978
Mar	22.0	1993	14	51.8	1971	46	1971	5	35	1971
Apr	20.0	2000	10	35.1	1975	34	1971	11	26	1971
May	10.0	1976	20	11.7	1976	3	1996	13	#+	1997
Jun	.1	1980	11	.1	1980	#	1998	4	#	1998
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	1.2	1986	16	1.2	1986	1	1986	16	#	1986
Oct	5.5	1977	16	10.5	1988	3	1997	23	#+	2000
Nov	9.4	1993	1	24.5	1971	10	1996	28	5	1976
Dec	12.0	1973	22	46.0	1978	23	1997	31	18	1995
Ann	22.0	Mar 1993	14	51.8	Mar 1971	46	Mar 1971	5	35	Mar 1971

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	18.1	10.0	2.2	.6	.2
Feb	13.3	6.7	2.0	.9	.1
Mar	12.3	6.8	1.8	1.0	.2
Apr	6.0	3.4	1.3	.5	.1
May	.9	.3	.1	.1	@
Jun	@	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	@	.0	.0	.0
Oct	2.3	.7	.2	@	.0
Nov	9.7	5.0	1.4	.5	.0
Dec	16.2	8.4	1.9	.9	.2
Ann	78.9	41.3	10.9	4.5	.8

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	-9.9	-9.9	-9.9	-9.9
May	.2	.1	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.1	.0	.0	.0
Oct	.1	.0	.0	.0
Nov	-9.9	-9.9	-9.9	-9.9
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	7/10	7/03	6/28	6/23	6/19	6/15	6/10	6/05	5/29
32	6/18	6/12	6/08	6/04	6/01	5/29	5/25	5/21	5/15
28	5/29	5/24	5/21	5/18	5/15	5/12	5/09	5/06	5/01
24	5/08	5/04	5/02	4/29	4/27	4/25	4/23	4/20	4/16
20	5/01	4/27	4/24	4/22	4/20	4/18	4/15	4/13	4/09
16	4/21	4/17	4/14	4/11	4/09	4/07	4/04	4/01	3/28

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	8/13	8/19	8/23	8/26	8/29	9/01	9/05	9/09	9/14
32	9/02	9/06	9/09	9/12	9/14	9/16	9/19	9/22	9/25
28	9/12	9/17	9/21	9/24	9/27	9/30	10/04	10/07	10/13
24	9/24	9/29	10/03	10/06	10/09	10/12	10/15	10/19	10/24
20	10/10	10/15	10/19	10/22	10/25	10/28	11/01	11/05	11/10
16	10/24	10/29	11/01	11/05	11/07	11/10	11/14	11/17	11/22

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	97	88	81	76	71	65	60	53	44
32	125	118	113	108	104	100	96	90	83
28	152	146	142	138	134	131	127	123	117
24	181	175	171	167	164	161	157	152	146
20	206	200	195	191	188	184	180	175	169
16	233	226	220	216	212	207	203	198	191

***** 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	1575	1368	1216	790	418	164	68	102	305	655	965	1383	9009
60	1420	1228	1061	640	276	72	14	29	169	502	815	1228	7454
57	1327	1144	968	552	202	36	4	10	104	413	725	1135	6620
55	1265	1088	906	495	159	21	1	4	71	356	665	1073	6104
50	1110	948	751	357	77	3	0	0	22	227	515	918	4928
32	570	464	249	46	0	0	0	0	0	9	88	407	1833

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	17	21	56	246	608	849	1020	962	686	377	113	47	5002
55	0	0	0	4	54	180	308	253	67	11	0	0	877
57	0	0	0	2	35	135	250	197	41	6	0	0	666
60	0	0	0	0	16	81	166	123	16	2	0	0	404
65	0	0	0	0	2	23	66	41	1	0	0	0	133
70	0	0	0	0	0	3	13	7	0	0	0	0	23

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	0	3	20	102	374	607	769	712	450	185	47	5	0	3	23	125	499	1106	1875	2587	3037	3222	3269	3274
45	0	0	9	55	241	460	614	557	314	103	18	0	0	0	9	64	305	765	1379	1936	2250	2353	2371	2371
50	0	0	1	25	141	320	459	404	189	44	5	0	0	0	1	26	167	487	946	1350	1539	1583	1588	1588
55	0	0	0	9	70	195	309	260	95	13	1	0	0	0	0	9	79	274	583	843	938	951	952	952
60	0	0	0	2	29	96	176	140	40	1	0	0	0	0	0	2	31	127	303	443	483	484	484	484
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	20	80	247	377	486	447	278	118	29	0	0	0	20	100	347	724	1210	1657	1935	2053	2082	2082

(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