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: ITHACA CORNELL UNIV, NY **COOP ID: 304174**

Climate Division: NY10 **NWS Call Sign:** **Elevation: 960 Feet** **Lat: 42˚27N** **Lon: 76˚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	31.2	13.9	22.6	68+	1967	26	32.7	1990	-25+	1957	16	13.6	1977	1316	0	.0	.0	1.7	18.0	29.2	4.8
Feb	33.2	13.7	23.5	67	1997	28	31.6	1984	-25	1961	2	11.4	1979	1163	0	.0	.0	2.6	14.4	25.9	4.6
Mar	42.3	22.4	32.4	85	1977	31	39.9	1973	-17	1993	19	23.5	1984	1012	0	.0	.0	7.4	7.2	24.4	.9
Apr	54.5	33.1	43.8	89	1990	29	48.7	1991	11	1982	7	36.8	1975	637	0	.0	.0	18.5	.6	14.6	.0
May	67.3	43.4	55.4	93	1996	20	61.8	1991	22+	1978	4	50.4	1997	311	12	.0	.1	29.4	.0	3.2	.0
Jun	75.7	53.1	64.4	102	1933	29	67.6	1973	31+	1986	3	59.5	1985	80	62	.0	.6	30.0	.0	.1	.0
Jul	80.1	57.2	68.7	103	1936	9	72.2	1999	38	1963	9	65.4	2000	16	129	.0	1.8	31.0	.0	.0	.0
Aug	78.7	55.9	67.3	98	1931	6	70.4	1980	32	1965	30	63.8	1982	30	100	.0	.8	31.0	.0	.0	.0
Sep	70.9	47.9	59.4	100	1931	12	62.8	1999	24+	1991	30	56.2	1975	178	9	.0	.2	29.8	.0	.9	.0
Oct	59.4	37.3	48.4	91+	1953	1	55.1	1971	15	1928	30	43.9	1972	516	0	.0	.0	24.8	.0	8.7	.0
Nov	47.2	30.6	38.9	81	1950	2	44.4	1975	-4	1976	30	32.8	1976	783	0	.0	.0	10.9	2.3	17.2	@
Dec	36.1	20.3	28.2	69	1998	7	34.6	1982	-19	1988	12	14.2	1989	1140	0	.0	.0	2.9	11.1	27.4	1.5
Ann	56.4	35.7	46.1	103	Jul 1936	9	72.2	Jul 1999	-25+	Feb 1961	2	11.4	Feb 1979	7182	312	.0	3.5	220.0	53.6	151.6	11.8

\+ 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	2.12	1.66	1.87	1996	20	6.37	1978	.52	1980
Feb	2.06	1.82	1.72	1958	28	3.83	1971	.56	1980
Mar	2.56	2.40	2.06	1999	4	5.09	1980	.69	1981
Apr	3.29	3.08	2.13	1993	11	8.16	1993	1.24	1975
May	3.22	2.87	2.07	1944	7	8.07	1984	.81	1999
Jun	3.87	3.76	3.55	1972	22	11.79	1972	1.07	1991
Jul	3.54	3.26	4.60	1935	8	8.44	1976	.92	1983
Aug	3.39	3.36	3.96+	1947	16	8.46	1994	1.05	1995
Sep	3.84	3.46	3.90	2001	25	9.13	1977	1.54	1983
Oct	3.23	2.85	5.08	1981	28	8.36	1981	.84	1982
Nov	3.10	2.88	4.02	1996	9	6.05	1972	.95	1978
Dec	2.49	2.11	2.22	1942	30	4.90	1983	1.00	1988
Ann	36.71	36.61	5.08	Oct 1981	28	11.79	Jun 1972	.52	Jan 1980

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	15.8	5.9	.8	.2
Feb	13.0	5.2	.9	.2
Mar	13.6	6.0	1.3	.3
Apr	13.6	7.8	2.1	.3
May	13.3	7.8	2.0	.4
Jun	12.5	8.1	2.5	.8
Jul	11.7	7.7	2.2	.6
Aug	11.0	6.7	2.3	.7
Sep	12.8	7.6	2.8	.8
Oct	13.2	7.1	1.5	.7
Nov	13.9	7.2	1.8	.3
Dec	14.8	6.4	1.4	.2
Ann	159.2	83.5	21.6	5.5

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	.53	.73	1.04	1.31	1.58	1.87	2.18	2.56	3.05	3.83	4.55
Feb	.73	.92	1.20	1.44	1.67	1.90	2.15	2.45	2.83	3.41	3.95
Mar	1.10	1.33	1.65	1.92	2.17	2.42	2.69	3.00	3.39	3.98	4.52
Apr	1.28	1.58	2.02	2.38	2.72	3.06	3.44	3.87	4.43	5.27	6.05
May	1.11	1.41	1.86	2.23	2.59	2.96	3.36	3.83	4.43	5.37	6.23
Jun	1.45	1.82	2.33	2.77	3.18	3.60	4.05	4.58	5.25	6.28	7.23
Jul	1.30	1.63	2.11	2.51	2.89	3.28	3.71	4.20	4.82	5.79	6.67
Aug	1.41	1.72	2.16	2.51	2.85	3.19	3.56	3.98	4.51	5.33	6.07
Sep	1.49	1.84	2.35	2.77	3.17	3.58	4.02	4.53	5.17	6.17	7.07
Oct	.97	1.28	1.74	2.13	2.52	2.92	3.36	3.87	4.54	5.58	6.55
Nov	1.27	1.55	1.95	2.28	2.59	2.91	3.25	3.64	4.14	4.90	5.59
Dec	.97	1.20	1.53	1.80	2.06	2.32	2.61	2.94	3.35	4.00	4.59
Ann	27.67	29.46	31.73	33.44	34.95	36.40	37.89	39.53	41.50	44.35	46.79

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

Snow Fall >= Thresholds

Snow Depth >= Thresholds

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	18.8	14.2	5	4	15.0	1978	18	54.0	1978	27	1978	22	14	1994	12.2	5.6	1.5	.7	.2	20.7	15.4	10.0	3.2
Feb	14.1	13.0	5	4	16.0	1972	20	37.1	1972	21	1972	25	16	1978	9.5	4.9	1.3	.5	.1	20.5	15.6	11.2	4.5
Mar	11.7	8.5	3	1	16.5	1984	30	34.1	1993	28	1993	18	18	1993	6.9	3.4	1.3	.6	.2	10.2	5.9	4.1	1.9
Apr	3.7	2.1	#	#	6.5	1982	7	14.5	1983	11	1984	1	1	1996	2.2	1.2	.4	.3	.0	2.4	1.1	.6	.1
May	.1	.0	#	0	2.0	1977	9	3.0	1977	2	1977	9	#	1977	.1	.1	.0	.0	.0	@	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.5	.0	#	0	5.0	1988	22	6.5	1988	5	1988	22	#+	1993	.3	.1	.1	@	.0	.1	.1	@	.0
Nov	6.1	5.0	1	#	9.6	1993	1	19.1	1995	12	1995	16	4	1995	4.2	1.9	.5	.3	.0	4.9	2.0	1.2	.1
Dec	13.0	13.1	2	2	12.0	1978	25	23.4	1995	13	1978	27	5	1995	9.1	4.3	1.1	.4	@	13.3	6.7	3.7	.4
Ann	68.0	55.9	N/A	N/A	16.5	Mar 1984	30	54.0	Jan 1978	28	Mar 1993	18	18	Mar 1993	44.5	21.5	6.2	2.8	.5	72.1	46.8	30.8	10.2

+ 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	6/09	6/05	6/02	5/30	5/27	5/23	5/19	5/14
32	5/28	5/23	5/20	5/17	5/14	5/12	5/09	5/05	5/01
28	5/12	5/08	5/05	5/03	4/30	4/28	4/25	4/22	4/18
24	4/29	4/26	4/23	4/21	4/19	4/17	4/15	4/13	4/10
20	4/16	4/12	4/09	4/06	4/04	4/01	3/30	3/27	3/23
16	4/08	4/04	4/01	3/29	3/27	3/24	3/22	3/18	3/14

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	133	125	120	115	111	107	102	97	89
32	159	152	148	144	141	137	133	129	123
28	186	180	175	171	167	164	160	155	148
24	216	209	203	199	194	190	185	180	172
20	245	237	231	226	222	217	212	206	198
16	270	262	256	250	246	241	235	229	221

***** 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	1316	1163	1012	637	311	80	16	30	178	516	783	1140	7182
60	1161	1023	857	488	187	24	1	3	73	367	633	985	5802
57	1068	939	764	400	128	9	0	0	36	284	543	892	5063
55	1006	883	702	344	96	4	0	0	21	233	484	830	4603
50	851	743	553	217	39	0	0	0	4	128	342	677	3554
32	340	293	138	8	0	0	0	0	0	1	30	220	1030

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	46	53	149	361	725	972	1136	1093	822	508	237	104	6206
55	0	0	0	7	107	287	423	380	153	27	1	0	1385
57	0	0	0	4	78	231	361	318	108	16	0	0	1116
60	0	0	0	1	44	156	268	228	55	6	0	0	758
65	0	0	0	0	12	62	129	100	9	0	0	0	312
70	0	0	0	0	2	14	38	26	0	0	0	0	80

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	5	10	61	187	484	738	895	850	594	289	99	15	5	15	76	263	747	1485	2380	3230	3824	4113	4212	4227
45	0	1	33	106	344	588	740	695	445	179	50	6	0	1	34	140	484	1072	1812	2507	2952	3131	3181	3187
50	0	0	13	57	218	439	585	540	310	91	20	1	0	0	13	70	288	727	1312	1852	2162	2253	2273	2274
55	0	0	5	25	122	299	430	386	188	38	6	0	0	0	5	30	152	451	881	1267	1455	1493	1499	1499
60	0	0	0	10	58	178	282	247	99	6	0	0	0	0	0	10	68	246	528	775	874	880	880	880
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	6	39	115	293	460	583	550	357	164	52	6	0	6	45	160	453	913	1496	2046	2403	2567	2619	2625

(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