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: CANOE BROOK, NJ **COOP ID: 281335**

Climate Division: NJ 1 **NWS Call Sign:** **Elevation: 180 Feet** **Lat: 40˚45N** **Lon: 74˚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	38.7	18.2	28.5	73	1950	27	38.3	1998	-25	1935	28	18.2	1977	1133	0	.0	.0	4.3	9.1	28.4	2.0
Feb	41.5	19.7	30.6	76	1954	17	38.8	1998	-26	1934	9	19.5	1978	962	0	.0	.0	6.1	6.2	24.9	1.3
Mar	50.6	28.8	39.7	89	1998	31	45.6	2000	-6	1934	1	33.5	1984	783	0	.0	.0	15.1	1.2	20.9	@
Apr	61.7	37.9	49.8	94	1976	19	52.9	1998	12	1954	4	44.4	1975	456	0	.0	.2	26.3	.1	8.3	.0
May	72.4	47.7	60.1	97	1962	20	65.9	1991	25	1986	10	56.0	1971	180	27	.0	1.0	30.9	.0	.8	.0
Jun	80.9	57.2	69.1	102+	1943	26	72.9	1999	31+	1932	8	65.1	1982	25	146	@	3.4	30.0	.0	.0	.0
Jul	85.8	62.2	74.0	103+	1954	31	79.6	1999	41+	1939	23	70.1	2000	2	281	.7	8.2	31.0	.0	.0	.0
Aug	84.0	60.8	72.4	104+	1944	5	76.2	1988	35	1934	30	69.2	1982	4	232	.0	5.3	31.0	.0	.0	.0
Sep	76.7	52.8	64.8	99	1983	12	68.8	1998	26+	1947	27	60.8	1975	71	64	.0	1.3	30.0	.0	.1	.0
Oct	65.8	40.4	53.1	93+	1941	5	58.3	1990	13	1936	28	48.0	1987	376	7	.0	.0	30.3	.0	5.8	.0
Nov	54.6	33.0	43.8	84	1950	3	48.3	1994	-5	1938	26	37.6	1976	636	0	.0	.0	20.1	@	15.7	.0
Dec	43.6	24.1	33.9	76+	1998	5	40.4	1998	-16	1933	28	22.0	1989	967	0	.0	.0	7.5	4.6	25.8	.2
Ann	63.0	40.2	51.7	104+	Aug 1944	5	79.6	Jul 1999	-26	Feb 1934	9	18.2	Jan 1977	5595	757	.7	19.4	262.6	21.2	130.7	3.5

+ 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: 1931-2001

(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	4.13	3.53	2.92	1979	21	10.49	1979	.51	1981
Feb	3.00	2.62	2.45	1965	8	6.10	1981	.99	1987
Mar	4.17	3.75	3.16	1969	25	9.61	1983	1.47+	1995
Apr	4.22	3.76	3.50	1984	5	11.38	1983	.83	1985
May	4.74	4.65	4.46	1968	29	10.71	1984	.95	1993
Jun	4.41	3.83	5.75	1992	6	11.21	1972	.96	1971
Jul	4.73	4.45	5.06	1997	25	12.65	1975	1.22	1977
Aug	4.74	3.99	8.76	1971	28	14.15	1971	1.32	1984
Sep	5.03	4.20	7.60	1999	17	12.76	1999	1.65	1972
Oct	4.18	4.12	4.77	1973	30	8.76	1990	.71	2000
Nov	4.41	3.72	5.29	1972	9	10.79	1972	.39	1976
Dec	3.85	3.73	3.03	1948	31	10.87	1983	.29	1989
Ann	51.61	47.54	8.76	Aug 1971	28	14.15	Aug 1971	.29	Dec 1989

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.2	6.7	2.7	1.1
Feb	8.8	5.8	2.0	.7
Mar	9.9	6.6	3.1	1.2
Apr	10.6	6.8	2.9	1.3
May	12.6	8.1	3.4	1.3
Jun	11.0	6.9	2.8	1.2
Jul	10.9	7.4	3.2	1.3
Aug	10.2	6.3	3.0	1.3
Sep	9.4	6.3	3.2	1.4
Oct	9.0	5.7	2.6	1.2
Nov	9.7	6.2	2.8	1.5
Dec	9.5	6.0	2.8	1.2
Ann	121.8	78.8	34.5	14.7

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	1.09	1.48	2.08	2.60	3.12	3.66	4.26	4.98	5.91	7.37	8.74
Feb	1.04	1.32	1.74	2.08	2.42	2.76	3.13	3.57	4.13	4.99	5.79
Mar	1.52	1.92	2.48	2.95	3.40	3.86	4.36	4.94	5.69	6.83	7.88
Apr	1.29	1.69	2.28	2.80	3.30	3.82	4.39	5.06	5.92	7.27	8.52
May	1.41	1.86	2.54	3.12	3.69	4.28	4.93	5.69	6.68	8.23	9.66
Jun	1.29	1.71	2.34	2.89	3.42	3.97	4.58	5.30	6.23	7.68	9.03
Jul	1.38	1.83	2.50	3.09	3.66	4.25	4.91	5.68	6.68	8.25	9.70
Aug	1.33	1.78	2.46	3.05	3.63	4.24	4.91	5.71	6.74	8.35	9.86
Sep	1.39	1.86	2.59	3.22	3.84	4.49	5.20	6.05	7.15	8.89	10.50
Oct	1.05	1.44	2.05	2.59	3.12	3.68	4.31	5.06	6.03	7.58	9.02
Nov	1.08	1.50	2.14	2.71	3.28	3.87	4.54	5.33	6.37	8.01	9.55
Dec	.63	.96	1.52	2.05	2.60	3.19	3.87	4.69	5.80	7.59	9.30
Ann	38.29	40.91	44.24	46.76	48.98	51.12	53.32	55.75	58.67	62.90	66.54

\+ 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: 1931-2001
(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	7.7	5.2	2	1
Feb	7.2	4.3	2	1
Mar	4.3	2.2	1	#
Apr	.7	.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
Nov	.6	#	#	#
Dec	3.1	2.5	#	#
Ann	23.6	14.2	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	11.8	1978	20	20.5	1984	22	1996	9	11	1996
Feb	12.0	1978	7	21.6	1979	19	1983	14	11	1978
Mar	9.5	1993	14	17.5	1993	15	1993	14	6	1978
Apr	8.0	1982	6	12.0	1982	12	1982	7	1	1982
May	.0	0	0	.0	0	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	#	1979	10	#+	1979	#+	1979	10	#+	1979
Nov	5.0	1989	23	5.0	1989	5	1989	23	#+	1997
Dec	8.8	1990	28	12.8	2000	10	1995	21	4	1995
Ann	12.0	Feb 1978	7	21.6	Feb 1979	22	Jan 1996	9	11+	Jan 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.5	2.3	.9	.5	.1
Feb	2.8	2.2	1.0	.4	.1
Mar	1.6	1.1	.6	.3	.0
Apr	.3	.2	.1	@	.0
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	.2	.2	.1	@	.0
Dec	1.4	1.0	.4	.2	.0
Ann	9.8	7.0	3.1	1.4	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	11.6	7.8	4.7	1.1
Feb	10.5	7.7	4.9	1.5
Mar	3.8	2.6	1.9	.7
Apr	.4	.3	.2	@
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	.4	.1	@	.0
Dec	2.8	1.9	.9	.1
Ann	29.5	20.4	12.6	3.4

+ 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	5/25	5/21	5/17	5/15	5/12	5/09	5/07	5/03	4/29
32	5/13	5/08	5/05	5/02	4/30	4/27	4/24	4/21	4/17
28	4/29	4/24	4/20	4/17	4/14	4/10	4/07	4/03	3/29
24	4/14	4/09	4/06	4/03	4/01	3/29	3/27	3/24	3/19
20	4/04	3/29	3/25	3/22	3/19	3/16	3/12	3/08	3/03
16	3/23	3/18	3/14	3/11	3/08	3/05	3/02	2/26	2/21

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	9/21	9/25	9/28	10/01	10/03	10/05	10/08	10/11	10/15
32	10/01	10/06	10/09	10/12	10/15	10/18	10/21	10/24	10/29
28	10/11	10/16	10/20	10/23	10/26	10/29	11/01	11/04	11/09
24	10/27	11/01	11/05	11/09	11/12	11/15	11/19	11/23	11/29
20	11/07	11/13	11/18	11/22	11/26	11/29	12/03	12/08	12/15
16	11/20	11/27	12/01	12/05	12/08	12/12	12/16	12/20	12/27

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	162	156	151	147	143	140	136	131	125
32	189	182	176	172	168	163	159	154	146
28	219	210	204	199	194	190	184	178	170
24	246	239	233	229	224	220	216	210	203
20	277	268	262	256	251	246	241	234	226
16	298	290	284	279	274	270	265	259	251

***** 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	1133	962	783	456	180	25	2	4	71	376	636	967	5595
60	978	822	628	309	81	4	0	0	21	242	486	812	4383
57	885	738	535	226	43	1	0	0	8	174	398	719	3727
55	823	682	474	176	26	0	0	0	4	136	341	657	3319
50	676	544	330	77	4	0	0	0	0	63	210	511	2415
32	225	149	29	0	0	0	0	0	0	0	5	115	523

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	115	111	269	534	869	1110	1303	1251	982	653	359	172	7728
55	0	0	1	20	182	420	590	538	296	76	4	0	2127
57	0	0	0	9	137	361	528	476	241	53	2	0	1807
60	0	0	0	3	83	274	435	383	164	27	0	0	1369
65	0	0	0	0	27	146	281	232	64	7	0	0	757
70	0	0	0	0	5	56	145	106	14	0	0	0	326

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	20	27	105	303	618	869	1054	1004	742	407	167	39	20	47	152	455	1073	1942	2996	4000	4742	5149	5316	5355
45	4	6	49	180	463	719	899	849	592	267	82	13	4	10	59	239	702	1421	2320	3169	3761	4028	4110	4123
50	0	0	21	96	315	569	744	694	443	151	38	3	0	0	21	117	432	1001	1745	2439	2882	3033	3071	3074
55	0	0	8	47	189	419	589	539	298	72	12	0	0	0	8	55	244	663	1252	1791	2089	2161	2173	2173
60	0	0	3	15	96	278	435	384	177	24	2	0	0	0	3	18	114	392	827	1211	1388	1412	1414	1414
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	14	23	75	188	377	567	714	675	469	259	100	27	14	37	112	300	677	1244	1958	2633	3102	3361	3461	3488

(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