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: HIGHTSTOWN 2 W, NJ **COOP ID: 283951**

Climate Division: NJ 2 **NWS Call Sign:** **Elevation: 100 Feet** **Lat: 40˚16N** **Lon: 74˚34W**

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	38.6	21.5	30.1	73	1932	14	39.5	1998	-16	1935	28	19.1	1977	1085	0	.0	.0	5.2	8.8	26.7	.9
Feb	41.1	23.4	32.3	75	1985	25	38.9	1998	-8+	1935	1	20.9	1979	917	0	.0	.0	6.7	6.1	23.0	.5
Mar	50.1	31.2	40.7	88	1998	31	45.7	2000	2	1967	19	34.2	1984	755	0	.0	.0	15.8	.9	17.7	.0
Apr	61.0	39.4	50.2	93+	1976	19	53.5	1994	18	1982	7	45.1	1975	445	0	.0	.2	26.1	@	6.0	.0
May	71.6	48.9	60.3	96	1962	19	65.6	1991	28	1978	1	56.9+	1973	173	26	.0	.8	30.8	.0	.3	.0
Jun	80.2	57.9	69.1	100+	1933	9	72.6	1994	35	1938	1	65.6	1972	21	143	.0	3.6	30.0	.0	.0	.0
Jul	85.0	63.2	74.1	105	1936	9	78.4	1999	45	1986	4	70.7	2000	0	282	.1	8.0	31.0	.0	.0	.0
Aug	83.2	61.6	72.4	102+	1955	2	76.0	1988	40+	1965	31	69.1	1992	2	232	.0	4.6	31.0	.0	.0	.0
Sep	76.2	54.0	65.1	103	1953	2	68.6	1980	31+	1947	27	61.8	1984	57	61	.0	1.2	30.0	.0	.0	.0
Oct	65.2	42.3	53.8	95	1941	5	59.5	1971	22+	1936	28	49.3	1988	356	7	.0	.0	30.3	.0	4.3	.0
Nov	54.2	34.6	44.4	82	1950	1	49.2	1975	0	1938	26	38.5	1976	618	0	.0	.0	20.2	.1	12.8	.0
Dec	43.5	26.7	35.1	76	1998	8	40.4	1998	-6	1948	27	22.8	1989	928	0	.0	.0	8.7	4.2	23.0	.1
Ann	62.5	42.1	52.3	105	Jul 1936	9	78.4	Jul 1999	-16	Jan 1935	28	19.1	Jan 1977	5357	751	.1	18.4	265.8	20.1	113.8	1.5

\+ 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	3.75	3.59	2.64	1979	21	8.64	1979	.37	1981
Feb	2.75	2.60	2.32	1973	2	5.03	1972	.93	1980
Mar	3.95	3.88	2.55	1953	13	8.01	1983	1.54	1981
Apr	3.94	3.74	2.61	1986	17	8.27	1983	1.01	1985
May	4.42	4.39	3.13	1968	29	8.98	1989	.86	1993
Jun	3.95	3.92	5.30	1938	27	9.37	1996	.83	1971
Jul	4.96	4.23	5.54	1989	6	12.08	1987	1.53	1998
Aug	4.85	4.22	7.16	1971	27	12.04	1971	1.07	1972
Sep	4.28	3.48	5.60	1999	17	11.70	1975	.95	1997
Oct	3.44	3.53	3.42	1973	30	6.21	1972	.77	1994
Nov	3.66	2.88	2.82	1977	8	8.19	1972	.35	1976
Dec	3.73	3.52	2.81	1992	11	7.75	1983	.31	1989
Ann	47.68	47.47	7.16	Aug 1971	27	12.08	Jul 1987	.31	Dec 1989

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.6	6.8	2.7	.9
Feb	9.3	5.9	1.9	.6
Mar	10.6	6.8	2.8	1.0
Apr	11.2	6.8	2.9	.9
May	12.3	7.8	3.0	1.2
Jun	11.2	6.6	2.6	1.1
Jul	10.4	6.8	3.3	1.6
Aug	9.5	6.6	2.9	1.5
Sep	9.2	5.7	3.0	1.3
Oct	8.9	5.5	2.2	1.1
Nov	9.5	5.7	2.5	1.2
Dec	10.2	6.6	2.5	1.1
Ann	122.9	77.6	32.3	13.5

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	1.06	1.42	1.96	2.42	2.88	3.36	3.89	4.51	5.32	6.59	7.77
Feb	1.18	1.42	1.77	2.06	2.32	2.59	2.88	3.21	3.63	4.27	4.85
Mar	1.44	1.81	2.35	2.79	3.22	3.66	4.13	4.68	5.38	6.47	7.46
Apr	1.29	1.66	2.21	2.68	3.13	3.60	4.10	4.70	5.47	6.65	7.75
May	1.28	1.70	2.34	2.88	3.42	3.97	4.59	5.31	6.25	7.72	9.08
Jun	.96	1.33	1.91	2.42	2.93	3.47	4.07	4.78	5.72	7.20	8.58
Jul	1.44	1.91	2.62	3.23	3.83	4.45	5.14	5.96	7.01	8.66	10.19
Aug	1.23	1.69	2.39	3.02	3.63	4.28	5.01	5.86	6.99	8.76	10.42
Sep	1.08	1.49	2.11	2.66	3.20	3.77	4.41	5.17	6.16	7.72	9.19
Oct	1.12	1.44	1.93	2.34	2.73	3.14	3.59	4.11	4.79	5.83	6.80
Nov	.87	1.22	1.75	2.23	2.70	3.21	3.77	4.44	5.32	6.71	8.02
Dec	.71	1.04	1.59	2.09	2.61	3.16	3.79	4.54	5.55	7.16	8.69
Ann	35.49	37.89	40.94	43.25	45.28	47.24	49.25	51.47	54.15	58.01	61.34

\+ 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

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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	7.2	5.0	1	1	13.8	1996	8	21.5	1996	19	1996	10	7	1996	3.8	2.4	.9	.3	.1	8.1	4.2	1.7	.3
Feb	7.4	4.3	1	1	17.0	1983	12	24.0	1978	18	1983	13	7	1978	3.1	1.8	1.0	.3	.1	7.4	4.3	2.1	.4
Mar	3.5	1.1	#	#	9.0	1993	14	15.4	1993	10	1978	4	4	1978	1.5	1.2	.4	.1	.0	2.6	1.6	.6	@
Apr	.9	.0	#	0	6.0	1996	10	6.0	1996	5	1982	7	#+	2000	.4	.3	.2	@	.0	.3	.2	@	.0
May	#	.0	0	0	#	1977	10	#	1977	0	0	0	0	0	.0	.0	.0	.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	.1	.0	0	0	1.6	1979	11	1.6	1979	0	0	0	0	0	.1	.1	.0	.0	.0	.0	.0	.0	.0
Nov	.4	.0	#	0	6.0	1989	23	6.0	1989	6	1989	23	#+	1995	.2	.1	.1	@	.0	.2	.1	@	.0
Dec	3.1	2.1	#	#	9.1	2000	31	17.0	2000	15	2000	31	2	1995	1.7	1.2	.3	.1	.0	2.5	1.0	.2	@
Ann	22.6	12.5	N/A	N/A	17.0	Feb 1983	12	24.0	Feb 1978	19	Jan 1996	10	7+	Jan 1996	10.8	7.1	2.9	.8	.2	21.1	11.4	4.6	.7

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

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	9/26	9/29	10/02	10/05	10/07	10/10	10/14	10/18
32	10/02	10/07	10/10	10/13	10/15	10/18	10/21	10/24	10/28
28	10/14	10/19	10/23	10/26	10/29	11/01	11/04	11/07	11/12
24	10/27	11/02	11/06	11/10	11/13	11/17	11/20	11/24	11/30
20	11/13	11/19	11/24	11/28	12/01	12/05	12/08	12/13	12/19
16	11/26	12/03	12/08	12/13	12/17	12/21	12/25	12/30	1/06

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	166	160	155	151	148	144	140	135	129
32	193	186	181	177	173	169	165	160	153
28	221	214	209	204	200	196	191	186	179
24	254	247	241	237	233	228	224	218	211
20	288	279	273	268	263	258	253	247	238
16	319	309	302	296	290	285	279	272	262

***** 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	1085	917	755	445	173	21	0	2	57	356	618	928	5357
60	930	777	600	297	75	3	0	0	14	224	468	773	4161
57	837	693	507	214	39	0	0	0	5	158	380	680	3513
55	775	637	446	165	22	0	0	0	2	122	323	618	3110
50	629	503	303	69	3	0	0	0	0	54	194	474	2229
32	197	122	21	0	0	0	0	0	0	0	4	97	441

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	135	129	290	545	876	1112	1305	1253	994	674	376	192	7881
55	0	0	1	21	185	422	592	540	306	83	5	0	2155
57	0	0	0	10	140	362	530	478	249	58	2	0	1829
60	0	0	0	3	83	274	437	385	168	30	0	0	1380
65	0	0	0	0	26	143	282	232	61	7	0	0	751
70	0	0	0	0	4	51	141	102	10	0	0	0	308

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	32	41	131	330	648	889	1079	1024	772	450	195	58	32	73	204	534	1182	2071	3150	4174	4946	5396	5591	5649
45	9	16	66	206	495	739	924	869	622	305	107	26	9	25	91	297	792	1531	2455	3324	3946	4251	4358	4384
50	1	2	31	110	344	589	769	714	475	186	53	6	1	3	34	144	488	1077	1846	2560	3035	3221	3274	3280
55	0	0	9	53	210	440	614	559	330	94	21	0	0	0	9	62	272	712	1326	1885	2215	2309	2330	2330
60	0	0	3	20	111	296	459	404	201	39	5	0	0	0	3	23	134	430	889	1293	1494	1533	1538	1538
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	21	28	80	194	388	584	733	695	494	267	110	34	21	49	129	323	711	1295	2028	2723	3217	3484	3594	3628

(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