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: NEWARK INTL AP, NJ **COOP ID: 286026**

Climate Division: NJ 1 **NWS Call Sign: EWR** **Elevation: 7 Feet** **Lat: 40˚43N** **Lon: 74˚10W**

Temperature (˚F)

Month	Mean (1)			Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
	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	38.1	24.4	31.3	74	1950	26	40.1	1998	-8	1985	21	20.3	1977	1030	0	.0	.0	5.0	8.8	23.4	.5
Feb	41.1	26.6	33.8	76	1949	15	40.8	1998	-2+	1961	2	22.9	1979	869	0	.0	.0	7.0	5.4	20.1	.2
Mar	50.1	34.2	42.2	86+	1990	13	47.8	2000	7	1980	1	35.8	1984	697	2	.0	.0	16.2	.7	11.9	.0
Apr	60.8	43.7	52.3	94	1990	27	56.5	1994	16	1982	7	46.6	1975	375	10	.0	.2	27.3	@	1.4	.0
May	71.4	54.1	62.7	99	1996	20	67.9	1991	35	1966	10	59.2	1997	126	70	.0	1.8	30.9	.0	.0	.0
Jun	80.2	63.5	71.9	102+	1952	26	76.7	1994	46+	1972	11	67.3	1982	13	236	.1	4.9	30.0	.0	.0	.0
Jul	85.2	69.1	77.2	105+	1949	4	81.5	1993	54+	1979	5	73.7	2000	1	394	.7	9.7	31.0	.0	.0	.0
Aug	83.2	67.7	75.5	105	2001	9	78.7	1988	45	1982	29	72.0	1982	6	347	.1	6.9	31.0	.0	.0	.0
Sep	75.7	59.9	67.8	105	1953	2	70.6	1971	39+	1950	25	63.8	1975	42	142	@	1.5	30.0	.0	.0	.0
Oct	64.7	48.2	56.4	92	1949	10	62.0	1971	28	1969	24	51.7	1988	269	18	.0	.0	30.4	.0	.4	.0
Nov	53.7	39.1	46.4	85	1950	1	51.3	1994	15	1955	29	39.3	1976	543	1	.0	.0	20.8	.1	6.2	.0
Dec	43.0	29.8	36.4	76	1998	7	42.2	1982	-1	1980	26	24.9	1989	872	0	.0	.0	8.6	3.9	18.3	.1
Ann	62.3	46.7	54.5	105+	Aug 2001	9	81.5	Jul 1993	-8	Jan 1985	21	20.3	Jan 1977	4843	1220	.9	25.0	268.2	18.9	81.7	.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: 1948-2001

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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	3.98	3.69	2.95	1979	21	10.10	1979	.45	1981
Feb	2.96	2.74	2.36	1973	2	4.94	1979	1.28	1980
Mar	4.21	3.64	2.71	1993	13	11.14	1983	1.10	1981
Apr	3.92	3.21	2.82	1986	16	11.14	1983	1.17	1985
May	4.46	3.77	3.92	1979	23	10.22	1984	1.31	1977
Jun	3.40	3.50	2.97	1992	5	6.40	1975	.41	1999
Jul	4.68	4.68	3.54	1997	24	9.98	1988	1.01	1999
Aug	4.02	3.42	5.93	1971	27	10.63	1971	.36	1995
Sep	4.01	3.41	6.22	1999	16	9.38	1999	1.03	1972
Oct	3.16	3.30	4.04	1996	19	6.92	1996	.54	2000
Nov	3.88	3.02	6.73	1977	8	11.53	1977	.51	1976
Dec	3.57	3.55	2.77	1983	22	9.47	1983	.63	1980
Ann	46.25	45.14	6.73	Nov 1977	8	11.53	Nov 1977	.36	Aug 1995

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.5	6.8	2.9	1.0
Feb	9.9	5.9	2.1	.6
Mar	10.9	7.0	2.9	.9
Apr	10.8	6.8	2.4	1.0
May	11.7	7.6	3.1	1.1
Jun	10.7	6.3	2.2	1.0
Jul	10.0	7.0	3.1	1.2
Aug	9.6	6.1	2.7	1.1
Sep	9.0	6.2	2.7	1.0
Oct	8.3	5.2	2.2	.9
Nov	9.5	5.9	2.7	1.0
Dec	10.7	6.4	2.6	1.0
Ann	121.6	77.2	31.6	11.8

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	1.03	1.41	1.99	2.49	3.00	3.52	4.11	4.80	5.71	7.14	8.48
Feb	1.25	1.52	1.90	2.21	2.50	2.79	3.11	3.47	3.93	4.62	5.26
Mar	1.32	1.72	2.31	2.82	3.31	3.82	4.38	5.04	5.89	7.21	8.43
Apr	1.20	1.57	2.13	2.61	3.07	3.55	4.08	4.70	5.50	6.75	7.91
May	1.53	1.96	2.57	3.09	3.59	4.10	4.66	5.31	6.14	7.43	8.62
Jun	.99	1.31	1.80	2.22	2.63	3.06	3.53	4.09	4.81	5.95	7.00
Jul	1.31	1.75	2.43	3.02	3.59	4.19	4.85	5.64	6.66	8.25	9.74
Aug	.86	1.23	1.82	2.36	2.90	3.47	4.12	4.89	5.91	7.54	9.08
Sep	1.26	1.65	2.21	2.69	3.16	3.65	4.18	4.80	5.60	6.86	8.01
Oct	.84	1.14	1.60	2.00	2.39	2.81	3.27	3.81	4.53	5.64	6.69
Nov	.78	1.13	1.70	2.22	2.75	3.32	3.96	4.73	5.74	7.38	8.93
Dec	.78	1.11	1.64	2.11	2.58	3.09	3.66	4.34	5.24	6.67	8.02
Ann	34.29	36.64	39.65	41.91	43.91	45.84	47.82	50.01	52.65	56.46	59.74

\+ 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: 1948-2001
(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	8.9	7.1	1	1
Feb	8.4	5.6	1	1
Mar	4.3	2.6	#	0
Apr	.8	.0	#	0
May	#	.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
Nov	.6	#	#	0
Dec	3.0	2.1	#	0
Ann	26.0	17.4	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	18.0	1996	7	33.3	1978	31+	1996	11	8	1996
Feb	18.0	1994	11	33.4	1994	19+	1983	12	6	1978
Mar	11.9	1993	13	16.8	1993	13+	1993	15	2+	1993
Apr	12.8	1982	6	13.8	1982	11	1982	7	1	1982
May	#	1977	9	#	1977	0	0	0	#	2000
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	0	0	0	0	0
Nov	5.3	1989	23	5.7	1989	5	1989	24	#	1995
Dec	13.9	2000	30	14.9	2000	12	2000	31	2	1995
Ann	18.0+	Jan 1996	7	33.4	Feb 1994	31+	Jan 1996	11	8	Jan 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.9	2.4	.9	.4	.1
Feb	4.1	1.9	.9	.4	.1
Mar	2.3	1.1	.6	.2	@
Apr	.4	.2	.1	@	@
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	.4	.2	.1	@	.0
Dec	2.3	.8	.3	.1	@
Ann	14.4	6.6	2.9	1.1	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	9.4	5.1	2.4	.7
Feb	6.8	4.1	2.2	.7
Mar	2.3	1.5	.6	.1
Apr	.2	.1	.1	@
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	.2	.1	@	.0
Dec	2.1	.8	.3	@
Ann	21.0	11.7	5.6	1.5

+ 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	4/24	4/21	4/18	4/16	4/14	4/12	4/10	4/08	4/04
32	4/15	4/11	4/08	4/06	4/03	4/01	3/30	3/27	3/23
28	4/07	4/02	3/30	3/27	3/24	3/22	3/19	3/15	3/11
24	3/29	3/25	3/22	3/19	3/16	3/14	3/11	3/07	3/03
20	3/25	3/19	3/15	3/11	3/08	3/04	3/01	2/24	2/18
16	3/20	3/11	3/05	2/28	2/23	2/18	2/13	2/06	1/29

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	10/13	10/18	10/22	10/24	10/27	10/30	11/02	11/05	11/10
32	10/22	10/28	11/01	11/04	11/07	11/10	11/13	11/17	11/23
28	11/11	11/16	11/19	11/22	11/24	11/26	11/29	12/02	12/06
24	11/17	11/22	11/26	11/29	12/02	12/06	12/09	12/13	12/18
20	11/30	12/06	12/10	12/14	12/17	12/20	12/24	12/28	1/03
16	12/07	12/14	12/19	12/24	12/28	1/01	1/05	1/11	1/18

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	212	206	202	198	195	192	188	184	179
32	240	232	226	221	217	213	208	202	194
28	263	257	252	248	244	240	236	231	225
24	283	275	270	265	261	256	251	246	238
20	311	302	295	289	284	278	273	266	256
16	342	330	322	314	307	300	293	284	272

***** 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	1030	869	697	375	126	13	1	6	42	269	543	872	4843
60	891	733	552	240	47	1	0	0	7	165	410	731	3777
57	798	649	460	166	21	0	0	0	2	110	326	638	3170
55	736	593	401	123	11	0	0	0	1	81	273	582	2801
50	594	460	263	47	1	0	0	0	0	31	158	437	1991
32	182	97	15	0	0	0	0	0	0	0	3	85	382

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	124	145	348	628	974	1217	1421	1368	1093	777	451	208	8754
55	1	1	14	68	271	527	708	655	404	128	25	3	2805
57	0	0	9	49	218	467	646	593	346	94	16	2	2440
60	0	0	5	28	149	378	553	501	263	56	8	1	1942
65	0	0	2	10	70	236	394	347	142	18	1	0	1220
70	0	0	0	3	28	124	248	201	65	4	0	0	673

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	38	54	163	398	734	984	1181	1129	862	540	244	76	38	92	255	653	1387	2371	3552	4681	5543	6083	6327	6403
45	13	22	83	263	579	834	1026	974	712	387	138	35	13	35	118	381	960	1794	2820	3794	4506	4893	5031	5066
50	1	4	40	144	427	684	871	819	562	248	68	9	1	5	45	189	616	1300	2171	2990	3552	3800	3868	3877
55	0	0	13	71	279	534	716	664	414	135	27	2	0	0	13	84	363	897	1613	2277	2691	2826	2853	2855
60	0	0	4	32	157	385	561	509	270	58	8	0	0	0	4	36	193	578	1139	1648	1918	1976	1984	1984
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	15	26	80	206	432	664	830	792	560	292	115	31	15	41	121	327	759	1423	2253	3045	3605	3897	4012	4043

(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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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