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: ESSEX FELLS SERV BLDG, NJ **COOP ID: 282768**

Climate Division: NJ 1 **NWS Call Sign:** **Elevation: 350 Feet** **Lat: 40˚50N** **Lon: 74˚17W**

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	36.3	18.9	27.6	72	1950	27	36.3	1998	-14	1985	21	18.3	1977	1159	0	.0	.0	3.4	10.4	28.4	1.4
Feb	39.6	20.6	30.1	75	1985	25	37.2	1998	-7	1955	3	18.9	1979	977	0	.0	.0	5.6	7.0	24.8	.6
Mar	49.2	28.6	38.9	89	1986	31	45.3	1977	-3+	1967	19	31.9	1984	810	0	.0	.0	14.8	1.3	21.3	.1
Apr	60.3	37.9	49.1	94	1976	20	52.3	1991	15+	1954	4	45.0	1972	477	0	.0	.2	25.8	@	7.4	.0
May	71.1	47.8	59.5	98	1962	20	65.7	1991	26	1978	1	56.0	1983	196	24	.0	.6	30.8	.0	.4	.0
Jun	79.1	56.7	67.9	100	1952	27	72.0	1994	38+	1980	11	63.4	1982	36	122	.0	2.6	30.0	.0	.0	.0
Jul	84.3	62.2	73.3	103	1966	4	77.8	1999	45+	1963	9	69.9	1984	1	257	.2	6.5	31.0	.0	.0	.0
Aug	82.5	60.1	71.3	105	2001	10	74.9	1988	36	1982	29	66.5	1982	8	204	.0	3.6	31.0	.0	.0	.0
Sep	75.0	52.4	63.7	103	1953	3	67.1	1998	30+	1951	30	58.4	1984	92	53	.0	1.0	30.0	.0	.1	.0
Oct	64.0	40.8	52.4	90	1954	14	58.5	1971	21+	1969	24	48.2	1988	396	6	.0	.0	30.0	.0	4.9	.0
Nov	52.7	33.4	43.1	84	1950	2	48.5	1975	12+	1958	30	37.8	1976	658	0	.0	.0	19.2	.1	14.8	.0
Dec	41.2	24.3	32.8	74	1998	8	39.9	1998	-7	1950	28	20.8	1989	1000	0	.0	.0	6.3	5.2	26.0	.2
Ann	61.3	40.3	50.8	105	Aug 2001	10	77.8	Jul 1999	-14	Jan 1985	21	18.3	Jan 1977	5810	666	.2	14.5	257.9	24.0	128.1	2.3

\+ 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: 1949-2001

(3) Derived from 1971-2000 serially complete daily data

Issue Date: February 2004

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Climate Division: NJ 1 **NWS Call Sign:** **Elevation: 350 Feet** **Lat: 40˚50N** **Lon: 74˚17W**

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	4.10	3.27	3.45	1979	25	11.59	1979	.66	1981
Feb	3.05	2.74	2.80	2001	6	6.82	1981	.90	1980
Mar	4.13	3.79	4.01	1977	23	9.82	1983	1.80	1981
Apr	4.60	3.72	6.60	1984	5	11.46	1983	1.17	1985
May	4.93	4.11	6.30	1968	29	13.24	1984	.57	1993
Jun	4.48	3.73	5.88	1973	30	11.99	1972	1.07	1999
Jul	4.74	4.55	3.98	1987	15	12.67	1975	.75	1999
Aug	4.39	4.35	6.70	1971	28	11.29	1971	1.10	1996
Sep	5.11	5.04	5.22	1966	22	12.11	1999	1.19	1980
Oct	4.02	4.16	5.20	1973	30	7.57	1995	.75	1994
Nov	4.23	3.68	5.20	1977	8	10.56	1977	.23	1976
Dec	4.12	3.81	3.10	1973	21	10.74	1973	.30	1989
Ann	51.90	50.95	6.70	Aug 1971	28	13.24	May 1984	.23	Nov 1976

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.8	6.5	3.0	1.2
Feb	6.5	5.6	2.0	.7
Mar	7.8	6.4	3.2	1.2
Apr	8.6	7.1	3.2	1.6
May	9.7	8.2	3.3	1.3
Jun	8.9	7.1	3.0	1.3
Jul	8.6	7.2	3.3	1.5
Aug	8.1	6.8	2.8	1.2
Sep	7.7	6.5	3.3	1.6
Oct	6.7	5.5	2.6	1.3
Nov	7.2	6.1	2.9	1.6
Dec	8.0	6.4	3.0	1.4
Ann	95.6	79.4	35.6	15.9

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	.95	1.33	1.93	2.47	3.00	3.57	4.21	4.98	5.98	7.57	9.07
Feb	1.01	1.30	1.72	2.08	2.43	2.79	3.18	3.63	4.22	5.13	5.97
Mar	1.61	2.00	2.54	2.99	3.42	3.85	4.32	4.86	5.56	6.61	7.58
Apr	1.21	1.64	2.31	2.89	3.47	4.08	4.75	5.55	6.59	8.23	9.76
May	1.10	1.55	2.28	2.93	3.58	4.28	5.06	5.99	7.22	9.17	11.02
Jun	1.21	1.64	2.29	2.85	3.41	3.99	4.64	5.41	6.41	7.97	9.43
Jul	1.05	1.49	2.18	2.81	3.43	4.10	4.85	5.75	6.93	8.81	10.59
Aug	1.36	1.78	2.40	2.93	3.44	3.98	4.57	5.26	6.15	7.54	8.82
Sep	1.50	1.99	2.72	3.35	3.96	4.60	5.30	6.13	7.20	8.88	10.44
Oct	1.16	1.54	2.12	2.62	3.10	3.61	4.17	4.83	5.69	7.03	8.28
Nov	.97	1.36	1.98	2.54	3.09	3.68	4.35	5.14	6.17	7.82	9.38
Dec	.71	1.08	1.68	2.24	2.82	3.44	4.16	5.02	6.18	8.04	9.82
Ann	38.89	41.46	44.72	47.18	49.35	51.44	53.59	55.95	58.80	62.91	66.44

\+ 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: 1949-2001
(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	6.6	5.7	1	#	6.0	1971	1	16.0	1971	11	1984	18	8	1982	1.5	1.4	.6	.2	.0	3.6	1.0	.3	.0
Feb	3.9	2.0	1	#	10.7	1995	4	20.0	1972	27	1983	12	5+	1994	1.3	.8	.4	.1	@	3.9	2.0	1.0	.1
Mar	2.1	1.0	1	0	15.0	1993	14	15.0	1993	13	1978	10	10	1978	.7	.6	.4	.2	@	.8	.4	.1	.0
Apr	.8	.0	#	0	6.5	1982	7	12.5	1982	13	1982	7	1	1982	.2	.2	.1	.1	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	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	1.0	1979	10	1.0	1979	#	1979	11	#	1979	.1	@	.0	.0	.0	.0	.0	.0	.0
Nov	.1	.0	#	0	1.0	1977	30	1.2	1978	#+	1996	28	#+	1996	.1	.1	.0	.0	.0	.0	.0	.0	.0
Dec	2.7	.0	#	0	8.0	1990	28	9.5	1981	5	1981	17	4	1981	.7	.6	.2	.1	.0	.6	.4	.1	.0
Ann	16.3	8.7	N/A	N/A	15.0	Mar 1993	14	20.0	Feb 1972	27	Feb 1983	12	10	Mar 1978	4.6	3.7	1.7	.7	@	8.9	3.8	1.5	.1

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

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	9/17	9/22	9/26	9/29	10/02	10/05	10/08	10/12	10/17
32	9/29	10/05	10/09	10/12	10/16	10/19	10/23	10/27	11/02
28	10/17	10/22	10/25	10/28	10/31	11/03	11/06	11/10	11/15
24	10/27	11/02	11/06	11/10	11/13	11/16	11/20	11/24	11/30
20	11/10	11/16	11/19	11/23	11/26	11/29	12/02	12/06	12/11
16	11/20	11/27	12/01	12/05	12/09	12/13	12/17	12/22	12/29

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	167	160	155	150	146	142	138	132	125
32	200	192	186	180	176	171	165	159	151
28	227	218	212	206	201	196	191	185	176
24	254	245	239	233	228	223	218	212	203
20	274	266	260	255	251	246	241	236	228
16	300	291	284	278	273	267	261	255	245

***** 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	1159	977	810	477	196	36	1	8	92	396	658	1000	5810
60	1004	837	655	329	94	7	0	0	32	260	508	845	4571
57	911	753	562	245	52	2	0	0	13	190	419	752	3899
55	849	697	501	194	32	1	0	0	7	149	360	690	3480
50	697	557	357	90	6	0	0	0	1	72	226	544	2550
32	238	151	38	0	0	0	0	0	0	0	7	138	572

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	102	99	251	513	851	1077	1279	1219	951	632	339	161	7474
55	0	0	1	16	169	387	566	506	268	69	3	0	1985
57	0	0	0	7	127	329	504	444	214	47	1	0	1673
60	0	0	0	2	76	243	411	351	142	24	0	0	1249
65	0	0	0	0	24	122	257	204	53	6	0	0	666
70	0	0	0	0	5	43	122	88	11	0	0	0	269

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	18	29	102	303	618	851	1046	986	722	404	161	35	18	47	149	452	1070	1921	2967	3953	4675	5079	5240	5275
45	3	10	49	178	463	701	891	831	572	263	82	10	3	13	62	240	703	1404	2295	3126	3698	3961	4043	4053
50	0	0	18	95	318	551	736	676	422	149	33	3	0	0	18	113	431	982	1718	2394	2816	2965	2998	3001
55	0	0	6	39	190	403	581	521	284	69	9	0	0	0	6	45	235	638	1219	1740	2024	2093	2102	2102
60	0	0	2	18	95	261	426	366	160	25	3	0	0	0	2	20	115	376	802	1168	1328	1353	1356	1356
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	11	20	71	184	369	552	708	660	458	247	92	21	11	31	102	286	655	1207	1915	2575	3033	3280	3372	3393

(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