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: NESHAMINY FALLS, PA **COOP ID: 366194**

Climate Division: PA 3 **NWS Call Sign:** **Elevation: 60 Feet** **Lat: 40˚09N** **Lon: 74˚57W**

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	40.8	18.9	29.9	72	1995	15	39.8	1998	-11	1984	22	19.3	1977	1091	0	.0	.0	6.1	5.6	27.6	.7
Feb	44.1	19.9	32.0	73+	1991	4	40.9	1976	-3	1996	5	20.9	1979	923	0	.0	.0	8.8	2.0	23.7	.3
Mar	53.0	28.4	40.7	88	1998	31	47.6	1976	-1	1984	10	33.2	1984	754	0	.0	.0	19.4	.4	19.4	@
Apr	63.7	38.0	50.9	94+	1990	26	55.6	1994	16	1982	7	45.8	1975	426	1	.0	.3	28.3	.0	6.7	.0
May	73.7	48.0	60.9	96+	1987	29	65.5	1998	32	1986	4	56.8	1997	168	39	.0	1.5	31.0	.0	.2	.0
Jun	82.6	58.1	70.4	102	1964	30	74.8	1994	34	1984	4	65.7	1982	17	179	.1	6.1	30.0	.0	.0	.0
Jul	86.9	63.2	75.1	102+	1980	21	79.8	1999	45+	1982	2	70.9	1984	1	312	.4	10.2	31.0	.0	.0	.0
Aug	85.4	61.4	73.4	102	2001	10	77.7	1978	37	1987	25	69.7	1982	2	262	.1	8.6	31.0	.0	.0	.0
Sep	78.5	53.3	65.9	98+	1983	6	69.8	1998	30	1991	28	61.2	1984	63	90	.0	2.2	30.0	.0	.1	.0
Oct	67.7	40.5	54.1	88+	1979	23	60.2	1973	20	1988	31	47.3	1988	352	13	.0	.0	30.9	.0	4.1	.0
Nov	56.4	31.6	44.0	82	1993	15	49.2	1999	11	1989	24	37.0	1976	630	0	.0	.0	25.0	@	15.3	.0
Dec	45.5	24.1	34.8	76	1998	8	41.1	1984	-10	1980	26	23.3	1989	936	0	.0	.0	10.9	2.6	26.1	.2
Ann	64.9	40.5	52.7	102+	Aug 2001	10	79.8	Jul 1999	-11	Jan 1984	22	19.3	Jan 1977	5363	896	.6	28.9	282.4	10.6	123.2	1.2

\+ 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

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

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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	3.86	3.64	2.73	1979	21	9.84	1979	.45	1981
Feb	3.03	2.75	2.75	1973	2	6.22	1979	.86	1980
Mar	4.26	4.07	2.34	1967	7	8.43	1983	1.32	1981
Apr	3.95	3.69	3.54	1986	16	9.40	1983	.80	1985
May	4.84	4.40	2.82	1979	23	9.14	1978	1.22	1986
Jun	4.11	3.64	5.14	1973	29	12.55	1989	.74	1999
Jul	5.35	5.07	4.37	1969	28	10.33	1984	1.10	1983
Aug	4.83	3.96	6.85	1971	27	14.25	1971	.59	1995
Sep	4.92	4.01	5.83	1999	16	12.29	1975	1.19	1978
Oct	3.46	3.21	3.88	1966	19	7.44	1995	.88	1994
Nov	3.85	3.25	5.07	1972	8	11.51	1972	.50	1976
Dec	3.78	3.32	4.20	1992	11	8.09	1973	.66	1980
Ann	50.24	49.07	6.85	Aug 1971	27	14.25	Aug 1971	.45	Jan 1981

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.0	7.1	2.9	1.0
Feb	9.0	6.2	2.2	.6
Mar	9.5	7.3	3.3	1.1
Apr	10.0	6.7	2.8	1.0
May	11.0	8.0	3.1	1.3
Jun	10.0	6.7	2.5	.9
Jul	9.3	6.8	3.3	1.6
Aug	8.2	6.1	2.8	1.5
Sep	8.8	6.3	3.2	1.5
Oct	7.8	5.5	2.2	1.1
Nov	8.6	6.1	2.6	1.1
Dec	9.2	5.8	2.2	.9
Ann	111.4	78.6	33.1	13.6

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	1.10	1.47	2.03	2.51	2.98	3.47	4.01	4.65	5.48	6.77	7.98
Feb	1.19	1.47	1.87	2.20	2.51	2.83	3.17	3.57	4.07	4.85	5.55
Mar	1.64	2.04	2.60	3.07	3.52	3.97	4.46	5.02	5.75	6.85	7.86
Apr	1.34	1.71	2.26	2.72	3.16	3.62	4.12	4.70	5.45	6.61	7.68
May	1.85	2.30	2.94	3.48	3.99	4.50	5.07	5.72	6.54	7.82	8.98
Jun	.96	1.35	1.95	2.49	3.02	3.59	4.23	4.99	5.98	7.56	9.05
Jul	1.71	2.21	2.96	3.61	4.23	4.87	5.57	6.39	7.45	9.10	10.63
Aug	1.18	1.64	2.34	2.97	3.59	4.24	4.97	5.84	6.98	8.78	10.47
Sep	1.27	1.73	2.45	3.08	3.70	4.35	5.08	5.94	7.06	8.84	10.50
Oct	1.15	1.48	1.96	2.37	2.76	3.17	3.61	4.13	4.79	5.82	6.77
Nov	.95	1.31	1.87	2.36	2.86	3.38	3.96	4.65	5.56	6.99	8.34
Dec	.69	1.03	1.58	2.10	2.62	3.19	3.83	4.61	5.64	7.31	8.89
Ann	36.73	39.37	42.74	45.29	47.54	49.72	51.96	54.43	57.42	61.74	65.46

\+ 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)

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	3.4	3.0	2	1	12.0	1987	22	12.0	1987	23	1996	8	8	1982	1.1	.7	.3	.1	.1	.9	.5	.0	.0
Feb	4.0	.3	1	1	17.0	1983	11	20.0	1983	23	1979	19	6	1979	.9	.7	.3	.1	.1	2.8	1.8	1.2	.4
Mar	2.8	.0	#	#	7.5	1984	9	9.3	1978	9	1993	13	2	1993	.6	.4	.3	.1	.0	.7	.4	.2	.0
Apr	.2	.0	#	0	5.0	1982	6	5.0	1982	9	1997	1	1	1997	.1	.1	.1	@	.0	.1	@	@	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	#	.0	#	0	#	1997	16	#+	1997	4	1989	23	#+	1997	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	2.7	1.0	#	#	8.0	2000	30	9.5	1990	8	2000	31	1+	2000	.6	.4	.2	.1	.0	1.1	.8	.1	.0
Ann	13.1	4.3	N/A	N/A	17.0	Feb 1983	11	20.0	Feb 1983	23+	Jan 1996	8	8	Jan 1982	3.3	2.3	1.2	.4	.2	5.6	3.5	1.5	.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	5/22	5/17	5/14	5/11	5/09	5/06	5/03	4/30	4/25
32	5/03	4/29	4/26	4/24	4/22	4/19	4/17	4/14	4/10
28	4/24	4/19	4/16	4/13	4/10	4/07	4/04	4/01	3/27
24	4/13	4/08	4/04	4/01	3/29	3/26	3/23	3/19	3/14
20	3/29	3/24	3/20	3/17	3/14	3/12	3/08	3/05	2/28
16	3/25	3/17	3/11	3/06	3/01	2/24	2/19	2/13	2/05

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	9/27	9/30	10/04	10/07	10/10	10/13	10/17	10/22
32	9/30	10/06	10/11	10/15	10/18	10/22	10/26	10/30	11/05
28	10/12	10/19	10/23	10/27	10/31	11/04	11/08	11/13	11/19
24	10/24	10/31	11/05	11/09	11/13	11/17	11/21	11/26	12/03
20	11/10	11/17	11/22	11/27	12/01	12/06	12/10	12/16	12/23
16	11/25	12/02	12/08	12/12	12/16	12/20	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	174	166	160	155	150	146	141	135	127
32	205	196	189	184	179	174	169	162	154
28	231	221	215	209	203	198	192	186	176
24	254	245	238	233	228	223	217	211	202
20	291	281	273	267	261	255	249	242	231
16	325	313	304	297	289	282	275	266	253

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1091	923	754	426	168	17	1	2	63	352	630	936	5363
60	936	783	599	282	77	2	0	0	20	226	481	781	4187
57	843	699	507	205	42	0	0	0	8	163	394	688	3549
55	781	643	449	159	26	0	0	0	4	128	338	626	3154
50	633	510	309	71	5	0	0	0	1	61	210	480	2280
32	193	130	29	0	0	0	0	0	0	0	6	95	453

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	126	131	299	564	894	1151	1334	1283	1017	685	365	182	8031
55	0	0	5	33	207	461	621	570	331	99	7	0	2334
57	0	0	1	19	161	402	559	508	275	73	4	0	2002
60	0	0	0	7	103	314	466	415	196	42	1	0	1544
65	0	0	0	1	39	179	312	262	90	13	0	0	896
70	0	0	0	0	9	77	171	128	26	3	0	0	414

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	30	38	141	364	685	928	1112	1054	799	488	196	47	30	68	209	573	1258	2186	3298	4352	5151	5639	5835	5882
45	6	15	72	226	530	778	957	899	649	337	97	17	6	21	93	319	849	1627	2584	3483	4132	4469	4566	4583
50	1	1	30	124	377	628	802	744	499	202	43	5	1	2	32	156	533	1161	1963	2707	3206	3408	3451	3456
55	0	0	10	57	237	478	647	589	354	100	14	0	0	0	10	67	304	782	1429	2018	2372	2472	2486	2486
60	0	0	2	21	125	329	492	434	220	38	2	0	0	0	2	23	148	477	969	1403	1623	1661	1663	1663
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	22	33	103	237	429	613	753	709	518	311	135	36	22	55	158	395	824	1437	2190	2899	3417	3728	3863	3899

(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