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: CONFLUENCE 1 SW DAM, PA **COOP ID: 361705**

Climate Division: PA 9 **NWS Call Sign:** **Elevation: 1,490 Feet** **Lat: 39˚48N** **Lon: 79˚22W**

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	37.2	15.9	26.6	76	1950	26	36.5	1974	-30	1994	22	14.3	1977	1193	0	.0	.0	4.8	11.4	29.0	3.6
Feb	41.3	17.2	29.3	74+	1997	28	36.2	1976	-20	1996	5	17.0	1979	1002	0	.0	.0	6.5	7.5	25.3	2.9
Mar	51.2	25.0	38.1	85	1998	31	46.1	1973	-8	1978	2	31.4	1984	834	0	.0	.0	15.4	2.6	24.0	.4
Apr	62.9	33.8	48.4	92	1976	19	52.9	1985	12+	1995	5	43.8	1975	500	0	.0	.1	24.4	.2	14.2	.0
May	73.3	43.7	58.5	93+	1991	27	65.6	1991	23	1978	2	51.3	1994	237	36	.0	.5	30.5	.0	3.0	.0
Jun	81.8	52.5	67.2	98+	1953	22	70.7	1971	32+	1977	8	62.8	1972	40	105	.0	2.9	30.0	.0	.1	.0
Jul	85.4	57.1	71.3	104	1988	17	75.0	1988	36	1988	1	68.1	1996	6	199	.2	6.1	31.0	.0	.0	.0
Aug	84.1	56.2	70.2	101+	1988	3	74.5	1988	33	1986	30	66.5	1992	16	175	.1	4.3	31.0	.0	.0	.0
Sep	77.0	49.1	63.1	99+	1953	3	68.1	1971	23	1957	28	58.6	1994	109	50	.0	1.1	30.0	.0	.7	.0
Oct	65.4	37.2	51.3	91	1953	1	58.5	1971	16+	1952	21	46.2	1976	430	5	.0	.0	28.3	.0	10.2	.0
Nov	52.6	28.9	40.8	79+	1950	1	48.0	1985	4+	1951	21	34.1+	1996	728	0	.0	.0	17.0	1.1	20.6	.0
Dec	41.3	21.0	31.2	79	1982	3	38.6	1982	-18+	1989	24	17.1	1989	1049	0	.0	.0	7.2	7.4	26.9	1.4
Ann	62.8	36.5	49.7	104	Jul 1988	17	75.0	Jul 1988	-30	Jan 1994	22	14.3	Jan 1977	6144	570	.3	15.0	256.1	30.2	154.0	8.3

\+ 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: 1948-2001

(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	3.54	3.52	1.78	1974	11	6.00	1999	1.08	1981
Feb	2.97	2.85	2.41	2000	19	6.31	1986	.70	1978
Mar	3.85	3.64	3.05	1972	13	6.83	1994	1.43	1990
Apr	3.97	3.88	2.18	1984	5	6.88	1972	1.60	1971
May	4.47	4.66	2.40	1968	24	8.38	1996	1.61	1993
Jun	4.02	3.81	3.17	1964	19	7.64	1989	1.72	1991
Jul	4.76	4.30	3.24	1985	9	8.44	1985	1.63	1988
Aug	3.74	3.45	3.73	1979	27	8.11	1994	1.46	1983
Sep	4.06	3.83	4.08	1971	14	8.61	1971	.65	1985
Oct	3.01	2.98	4.93	1954	16	8.17	1976	.61	1994
Nov	3.63	3.36	2.46	1985	27	11.75	1985	.76	1976
Dec	3.50	3.34	2.66	1974	2	7.70	1990	1.46	1998
Ann	45.52	45.37	4.93	Oct 1954	16	11.75	Nov 1985	.61	Oct 1994

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	16.9	8.7	2.1	.3
Feb	14.2	7.1	1.7	.3
Mar	14.6	9.1	2.3	.6
Apr	15.1	9.3	2.4	.6
May	15.0	9.6	3.1	.7
Jun	12.9	8.5	2.8	.7
Jul	13.3	9.2	3.3	1.1
Aug	12.2	7.8	2.5	.7
Sep	12.3	8.3	2.7	.9
Oct	11.3	6.6	2.0	.5
Nov	14.0	8.2	2.3	.6
Dec	16.4	8.2	2.0	.5
Ann	168.2	100.6	29.2	7.5

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	1.23	1.56	2.05	2.46	2.85	3.25	3.69	4.21	4.86	5.88	6.82
Feb	.97	1.26	1.67	2.02	2.36	2.72	3.10	3.55	4.13	5.03	5.85
Mar	1.70	2.04	2.52	2.91	3.28	3.65	4.04	4.49	5.06	5.93	6.71
Apr	1.80	2.15	2.64	3.03	3.40	3.77	4.17	4.62	5.19	6.06	6.84
May	2.01	2.41	2.96	3.41	3.82	4.24	4.69	5.20	5.85	6.83	7.71
Jun	1.67	2.04	2.56	2.98	3.38	3.78	4.21	4.71	5.34	6.31	7.18
Jul	1.82	2.27	2.90	3.42	3.92	4.43	4.98	5.62	6.43	7.67	8.81
Aug	1.49	1.84	2.32	2.73	3.11	3.50	3.92	4.40	5.01	5.95	6.81
Sep	1.41	1.79	2.35	2.82	3.27	3.74	4.24	4.83	5.59	6.75	7.83
Oct	.92	1.21	1.63	2.00	2.35	2.72	3.13	3.60	4.22	5.18	6.07
Nov	1.12	1.47	1.98	2.42	2.84	3.29	3.77	4.34	5.08	6.22	7.29
Dec	1.55	1.86	2.30	2.65	2.98	3.31	3.67	4.08	4.60	5.38	6.09
Ann	35.79	37.75	40.22	42.06	43.68	45.24	46.82	48.56	50.65	53.65	56.21

+ 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	18.9	18.8	4	3	16.2	1996	8	38.6	1978	21+	1996	13	11	1994	9.6	6.8	2.3	1.0	.1	18.6	11.7	8.3	3.5
Feb	11.8	9.8	4	3	9.0	1972	20	31.8	1979	21+	1979	19	13	1979	6.9	4.8	1.2	.5	.0	16.0	10.4	6.2	2.3
Mar	8.6	5.5	1	1	17.0	1993	14	44.0	1999	23	1993	16	8	1978	4.7	3.3	.9	.4	.1	7.3	3.8	1.8	.9
Apr	1.6	1.0	#	#	5.0	1982	9	6.5	1987	5	1987	5	1	1982	1.1	.7	.2	@	.0	1.0	.2	.1	.0
May	#	.0	#	0	#	1989	7	#	1989	#	1989	7	#	1989	.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	.5	1974	4	.5+	1980	1	1980	26	#+	2000	.1	.0	.0	.0	.0	@	.0	.0	.0
Nov	4.4	2.4	#	#	21.0	1995	15	41.5	1995	19	1995	16	5	1995	2.5	1.5	.4	.2	@	3.0	1.1	.6	.1
Dec	9.6	8.0	2	1	17.0	1992	11	23.5	1974	16	1992	12	6	1989	6.1	4.0	1.1	.3	.1	9.6	4.0	1.5	.3
Ann	54.9	45.5	N/A	N/A	21.0	Nov 1995	15	44.0	Mar 1999	23	Mar 1993	16	13	Feb 1979	31.0	21.1	6.1	2.4	.3	55.5	31.2	18.5	7.1

+ 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	6/11	6/04	5/30	5/26	5/22	5/19	5/15	5/10	5/03
32	5/26	5/20	5/16	5/13	5/10	5/07	5/03	4/29	4/24
28	5/11	5/07	5/04	5/01	4/29	4/26	4/23	4/20	4/16
24	4/26	4/22	4/19	4/17	4/14	4/12	4/09	4/07	4/03
20	4/12	4/08	4/05	4/02	3/31	3/29	3/26	3/23	3/19
16	4/09	4/03	3/31	3/28	3/25	3/22	3/18	3/15	3/09

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	9/14	9/19	9/22	9/25	9/28	9/30	10/03	10/07	10/12
32	9/18	9/24	9/28	10/01	10/04	10/07	10/11	10/15	10/20
28	10/07	10/11	10/14	10/16	10/19	10/21	10/24	10/27	10/31
24	10/12	10/17	10/21	10/24	10/27	10/30	11/02	11/06	11/11
20	10/28	11/02	11/06	11/09	11/12	11/15	11/18	11/22	11/27
16	11/04	11/10	11/14	11/18	11/21	11/24	11/28	12/02	12/08

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	150	143	137	132	128	123	118	113	105
32	168	161	155	151	147	142	138	133	126
28	192	185	181	176	173	169	164	160	153
24	211	205	201	198	195	192	188	184	179
20	245	238	233	229	225	221	217	212	205
16	265	256	251	246	241	236	231	225	217

***** 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	1193	1002	834	500	237	40	6	16	109	430	728	1049	6144
60	1038	862	679	352	135	9	0	1	41	291	578	894	4880
57	945	778	586	267	89	3	0	0	19	218	490	801	4196
55	883	722	528	215	64	1	0	0	10	175	432	739	3769
50	733	584	386	106	22	0	0	0	2	91	298	598	2820
32	271	179	60	0	0	0	0	0	0	0	27	185	722

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	101	102	249	491	821	1055	1216	1183	932	598	289	159	7196
55	0	0	5	16	172	366	503	470	252	60	4	0	1848
57	0	0	0	7	135	308	441	408	200	41	2	0	1542
60	0	0	0	2	89	224	348	316	132	21	0	0	1132
65	0	0	0	0	36	105	199	175	50	5	0	0	570
70	0	0	0	0	11	30	82	73	11	0	0	0	207

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	100	269	560	801	957	922	682	352	126	37	20	47	147	416	976	1777	2734	3656	4338	4690	4816	4853
45	3	8	49	164	408	651	802	767	532	218	61	14	3	11	60	224	632	1283	2085	2852	3384	3602	3663	3677
50	0	0	23	88	273	501	647	612	387	121	26	2	0	0	23	111	384	885	1532	2144	2531	2652	2678	2680
55	0	0	5	41	160	356	492	458	253	53	8	0	0	0	5	46	206	562	1054	1512	1765	1818	1826	1826
60	0	0	1	11	74	220	343	306	142	15	0	0	0	0	1	12	86	306	649	955	1097	1112	1112	1112
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	14	30	93	199	364	518	629	601	440	246	99	27	14	44	137	336	700	1218	1847	2448	2888	3134	3233	3260

(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