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: LINESVILLE 1 S, PA **COOP ID: 365050**

Climate Division: PA10 **NWS Call Sign:** **Elevation: 1,030 Feet** **Lat: 41˚39N** **Lon: 80˚26W**

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	31.2	14.9	23.1	63+	1985	2	33.6	1990	-26+	1994	19	9.6	1977	1301	0	.0	.0	2.2	15.8	29.5	4.0
Feb	34.2	15.1	24.7	70	2000	27	35.1	1998	-17	1955	4	11.9	1978	1131	0	.0	.0	2.9	13.6	25.7	4.0
Mar	44.1	23.6	33.9	79+	1990	16	41.3	1973	-10	1984	12	25.6	1984	966	0	.0	.0	10.0	5.9	24.5	.9
Apr	56.1	34.5	45.3	87	1990	28	50.3	1985	10	1958	9	39.0	1975	592	0	.0	.0	20.5	.5	13.9	.0
May	67.4	45.8	56.6	89	1988	31	64.5	1991	25	1957	6	50.2	1997	289	28	.0	.0	29.9	.0	1.5	.0
Jun	76.4	55.4	65.9	97	1988	26	68.9	1991	32	1958	7	61.1	1972	60	87	.0	.6	30.0	.0	@	.0
Jul	80.4	59.5	70.0	101	1988	17	73.0	1999	39+	1953	25	66.7	2000	6	161	@	2.4	31.0	.0	.0	.0
Aug	78.5	57.7	68.1	99	1955	3	73.1	1995	39+	1953	18	64.3	1982	33	130	.0	.9	31.0	.0	.0	.0
Sep	71.3	50.5	60.9	99+	1953	2	64.5	1971	26+	1957	27	57.4	1975	142	19	.0	.4	29.9	.0	.2	.0
Oct	59.9	39.7	49.8	83+	1953	3	55.9	1971	16	1988	31	44.0	1988	474	3	.0	.0	26.5	.0	5.4	.0
Nov	47.4	31.6	39.5	76	1990	4	44.8	1975	5	1955	29	32.2	1976	765	0	.0	.0	12.4	1.6	17.0	.0
Dec	36.5	22.2	29.4	69	2001	6	37.7	1982	-17	1989	24	16.4	1989	1106	0	.0	.0	3.4	10.0	26.7	1.2
Ann	57.0	37.5	47.3	101	Jul 1988	17	73.1	Aug 1995	-26+	Jan 1994	19	9.6	Jan 1977	6865	428	@	4.3	229.7	47.4	144.4	10.1

\+ 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	2.08	1.84	1.90	1998	8	4.62	1998	.81	1981
Feb	2.00	1.87	1.90	1997	27	5.51	1990	.16	1987
Mar	2.29	2.45	1.81	1954	1	4.29	1985	.62	1986
Apr	3.15	2.93	1.50	1988	4	6.33	1996	1.01	1971
May	3.29	3.21	1.96	1949	20	7.35	1984	1.08	1991
Jun	5.05	4.99	2.42+	1957	29	10.35	1972	1.11	1988
Jul	3.73	3.14	2.80	1999	7	9.06	1992	1.05	1997
Aug	3.48	3.19	3.02	1987	22	8.94	1987	1.06	1995
Sep	4.31	4.02	3.02	1990	7	8.26	1990	1.17	1995
Oct	3.29	3.23	3.54	1954	16	5.29	1978	1.59	1974
Nov	3.19	2.93	3.75	1985	5	10.39	1985	.88	1976
Dec	2.69	2.67	1.50	1990	30	6.51	1990	.77	1989
Ann	38.55	38.35	3.75	Nov 1985	5	10.39	Nov 1985	.16	Feb 1987

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	16.7	7.0	1.1	.1
Feb	13.2	5.4	.8	.2
Mar	14.6	7.4	1.3	.2
Apr	14.6	8.4	2.1	.4
May	13.0	8.4	2.2	.5
Jun	13.2	9.1	3.1	.9
Jul	12.0	7.8	2.6	1.0
Aug	11.3	7.5	2.3	.7
Sep	12.5	8.4	2.7	.7
Oct	13.7	7.8	1.6	.3
Nov	15.8	8.7	1.9	.3
Dec	17.4	8.2	1.3	.2
Ann	168.0	94.1	23.0	5.5

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	.83	1.02	1.29	1.52	1.73	1.95	2.18	2.45	2.79	3.32	3.80
Feb	.53	.72	1.01	1.26	1.51	1.77	2.06	2.41	2.86	3.56	4.22
Mar	1.03	1.23	1.51	1.74	1.95	2.17	2.40	2.66	2.99	3.49	3.94
Apr	1.45	1.72	2.10	2.41	2.70	2.99	3.30	3.65	4.10	4.77	5.38
May	1.29	1.59	2.03	2.39	2.72	3.07	3.44	3.87	4.42	5.26	6.03
Jun	1.79	2.26	2.95	3.53	4.09	4.66	5.28	6.00	6.92	8.35	9.66
Jul	1.27	1.62	2.14	2.57	2.99	3.42	3.89	4.44	5.15	6.24	7.24
Aug	1.31	1.63	2.10	2.49	2.86	3.24	3.65	4.12	4.72	5.65	6.50
Sep	2.11	2.47	2.98	3.38	3.75	4.12	4.52	4.97	5.54	6.39	7.15
Oct	1.78	2.04	2.40	2.67	2.93	3.18	3.45	3.75	4.12	4.68	5.18
Nov	.95	1.26	1.71	2.11	2.49	2.88	3.32	3.83	4.50	5.54	6.50
Dec	1.33	1.56	1.87	2.12	2.35	2.58	2.82	3.10	3.45	3.97	4.44
Ann	30.18	31.86	33.98	35.57	36.96	38.29	39.66	41.16	42.96	45.54	47.74

+ 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

Complete documentation available from:
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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	12.5	11.3	4	2
Feb	9.1	7.6	3	2
Mar	7.3	3.0	2	1
Apr	2.1	1.0	#	#
May	.1	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.1	.0	#	0
Nov	3.3	2.0	1	#
Dec	14.2	9.6	3	2
Ann	48.7	34.5	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	3	27.0	1994	32	1985	27	14	1985
Feb	12.0	1984	29	24.5	1984	24	1984	29	13	1985
Mar	15.0	1993	14	31.0	1993	26+	1993	16	9	1984
Apr	9.0	1987	4	14.0	1987	10	1987	1	1	1987
May	1.0	1989	7	1.0	1989	1	1989	7	#	1989
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	1.0	1992	19	1.0	1992	1	1992	19	#+	1997
Nov	12.0	1996	12	12.0	1996	18	1996	12	2+	2000
Dec	11.0	1995	20	40.0	1995	21	1995	23	9	1989
Ann	18.0	Jan 1996	3	40.0	Dec 1995	32	Jan 1985	27	14	Jan 1985

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	7.4	5.2	1.8	.5	.1
Feb	4.7	3.3	.9	.4	.2
Mar	4.1	3.0	.8	.5	.1
Apr	1.2	.8	.2	.1	.0
May	.1	.1	.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	.1	.1	.0	.0	.0
Nov	2.1	1.7	.8	.3	.1
Dec	6.2	4.5	2.0	.6	.1
Ann	25.9	18.7	6.5	2.4	.6

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	15.2	7.5	4.2	1.5
Feb	12.5	5.8	2.7	.5
Mar	8.3	4.1	2.0	1.1
Apr	1.5	.2	.1	.1
May	.1	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.1	.0	.0	.0
Nov	2.4	1.2	.7	.1
Dec	10.5	5.9	2.7	1.1
Ann	50.6	24.7	12.4	4.4

+ 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	6/08	6/02	5/28	5/24	5/21	5/17	5/13	5/08	5/02
32	5/22	5/16	5/12	5/09	5/06	5/03	4/30	4/26	4/21
28	5/08	5/03	4/29	4/27	4/24	4/21	4/18	4/15	4/10
24	4/24	4/20	4/16	4/14	4/11	4/08	4/06	4/02	3/29
20	4/17	4/12	4/08	4/06	4/03	3/31	3/28	3/25	3/20
16	4/08	4/04	3/31	3/28	3/26	3/23	3/20	3/17	3/12

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	9/15	9/20	9/24	9/28	10/01	10/04	10/07	10/11	10/16
32	9/26	10/02	10/06	10/10	10/13	10/16	10/20	10/24	10/30
28	10/17	10/22	10/26	10/29	10/31	11/03	11/06	11/10	11/14
24	10/29	11/04	11/08	11/11	11/15	11/18	11/21	11/26	12/01
20	11/07	11/13	11/18	11/21	11/25	11/28	12/02	12/06	12/12
16	11/17	11/23	11/28	12/02	12/06	12/09	12/13	12/18	12/24

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	157	148	142	137	132	127	122	116	108
32	181	174	168	163	159	155	150	144	137
28	212	204	199	194	190	185	181	175	168
24	240	232	226	222	217	212	208	202	194
20	259	251	245	240	235	230	225	219	211
16	276	268	263	258	254	250	245	240	232

***** 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	1301	1131	966	592	289	60	6	33	142	474	765	1106	6865
60	1146	991	811	444	178	17	0	6	52	331	615	951	5542
57	1053	907	718	358	125	7	0	0	24	254	525	858	4829
55	991	851	656	303	95	4	0	0	13	208	466	796	4383
50	836	711	509	182	41	0	0	0	2	115	327	648	3371
32	344	272	113	4	0	0	0	0	0	2	28	209	972

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	66	65	171	402	762	1017	1177	1120	867	554	253	126	6580
55	0	0	0	11	145	331	464	407	190	47	2	0	1597
57	0	0	0	6	112	274	402	345	141	31	1	0	1312
60	0	0	0	2	72	195	309	257	79	15	0	0	929
65	0	0	0	0	28	87	161	130	19	3	0	0	428
70	0	0	0	0	8	23	52	47	2	0	0	0	132

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	8	17	71	223	522	781	949	896	661	326	111	24	8	25	96	319	841	1622	2571	3467	4128	4454	4565	4589
45	0	2	39	132	373	632	794	741	512	197	53	6	0	2	41	173	546	1178	1972	2713	3225	3422	3475	3481
50	0	0	18	72	245	483	639	586	366	108	20	4	0	0	18	90	335	818	1457	2043	2409	2517	2537	2541
55	0	0	4	34	141	343	484	431	236	46	7	0	0	0	4	38	179	522	1006	1437	1673	1719	1726	1726
60	0	0	0	13	63	208	330	282	129	9	0	0	0	0	0	13	76	284	614	896	1025	1034	1034	1034
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	2	9	45	141	309	500	631	591	405	181	61	9	2	11	56	197	506	1006	1637	2228	2633	2814	2875	2884

(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