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: LANCASTER 2 NE FILT PLT, PA **COOP ID: 364763**

Climate Division: PA 3 **NWS Call Sign:** **Elevation: 270 Feet** **Lat: 40˚03N** **Lon: 76˚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	37.5	20.7	29.1	68+	1995	14	37.7	1998	-16+	1984	22	18.7	1977	1113	0	.0	.0	4.0	8.5	27.9	.8
Feb	40.5	22.3	31.4	76+	1985	24	40.1	1998	-9	1979	18	20.8	1979	940	0	.0	.0	6.2	5.6	24.0	.4
Mar	50.4	30.8	40.6	88	1998	31	46.0	2000	-2	1984	10	34.6	1984	756	0	.0	.0	17.2	.7	19.3	.1
Apr	61.6	40.0	50.8	92+	1985	22	55.3	1994	16	1982	7	45.5	1975	426	0	.0	.3	27.2	.0	3.4	.0
May	72.0	50.1	61.1	94	1996	21	67.3	1991	28	1978	1	57.5	1973	159	36	.0	.6	30.9	.0	.1	.0
Jun	80.1	59.2	69.7	96	1988	22	72.8	1994	36	1986	3	66.2	1972	15	156	.0	2.8	30.0	.0	.0	.0
Jul	84.7	64.1	74.4	102	1988	16	78.4	1999	46	1986	1	70.9	2000	0	291	.1	7.0	31.0	.0	.0	.0
Aug	83.1	62.7	72.9	101+	1983	20	77.0	1980	37	1986	30	69.4	1992	4	248	.1	3.7	31.0	.0	.0	.0
Sep	75.8	54.8	65.3	99	1980	2	69.9	1980	34+	1983	25	61.8	1975	62	71	.0	1.1	30.0	.0	.0	.0
Oct	64.7	42.6	53.7	89	1986	1	59.4	1971	23	1988	31	49.1	1976	359	7	.0	.0	30.3	.0	3.4	.0
Nov	52.9	33.6	43.3	82	1982	2	48.3	1994	12	1986	15	37.0	1976	653	0	.0	.0	19.0	.2	12.7	.0
Dec	42.3	25.8	34.1	76	1998	8	40.3	1998	-3+	1980	26	20.6	1989	961	0	.0	.0	5.7	4.0	24.0	.1
Ann	62.1	42.2	52.2	102	Jul 1988	16	78.4	Jul 1999	-16+	Jan 1984	22	18.7	Jan 1977	5448	809	.2	15.5	262.5	19.0	114.8	1.4

\+ 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	3.41	2.95	1.80	1994	17	8.65	1978	.41	1981
Feb	2.50	2.49	1.81	1982	3	4.62	1971	.52	1980
Mar	3.49	3.44	3.24	2000	21	6.93	1993	1.39	1981
Apr	3.28	2.91	1.75+	1983	15	8.51	1983	.70	1985
May	4.30	4.35	2.80	1989	5	9.47	1989	1.26	1977
Jun	3.99	3.81	2.74	1995	26	9.57	1972	.83	1988
Jul	4.35	3.34	4.54	1984	7	10.59	1988	1.22	1999
Aug	3.38	3.05	4.60	1978	28	12.09	1978	.51	1995
Sep	4.45	3.73	6.11	1999	16	12.73	1999	1.30	1986
Oct	3.69	3.31	3.20	1998	8	8.90	1976	.99	2000
Nov	3.38	3.40	3.30	1950	25	7.05	1972	.57	1976
Dec	3.25	2.83	2.60	1983	12	8.87	1983	.59	1998
Ann	43.47	43.96	6.11	Sep 1999	16	12.73	Sep 1999	.41	Jan 1981

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.1	4.9	1.8	.5
Feb	7.1	4.7	1.0	.2
Mar	8.1	5.4	2.0	.5
Apr	8.8	5.5	1.7	.5
May	13.5	8.6	3.0	.7
Jun	11.2	7.3	2.5	.9
Jul	11.0	7.0	2.8	1.0
Aug	7.8	5.0	1.7	.7
Sep	10.2	6.1	2.8	1.1
Oct	6.4	4.7	1.7	.9
Nov	7.8	4.9	2.0	.7
Dec	10.3	5.9	2.2	.9
Ann	110.3	70.0	25.2	8.6

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	.83	1.15	1.65	2.09	2.53	2.99	3.51	4.12	4.93	6.20	7.39
Feb	.82	1.06	1.41	1.70	1.99	2.29	2.61	2.99	3.47	4.22	4.92
Mar	1.44	1.76	2.21	2.58	2.93	3.28	3.66	4.10	4.65	5.50	6.28
Apr	1.03	1.34	1.80	2.20	2.58	2.98	3.42	3.93	4.59	5.62	6.57
May	1.69	2.09	2.66	3.12	3.56	4.01	4.50	5.06	5.77	6.87	7.86
Jun	1.17	1.54	2.11	2.61	3.09	3.59	4.14	4.79	5.63	6.95	8.17
Jul	1.12	1.53	2.17	2.72	3.27	3.85	4.49	5.26	6.25	7.82	9.29
Aug	.91	1.23	1.71	2.14	2.57	3.01	3.50	4.08	4.84	6.03	7.14
Sep	.95	1.36	2.02	2.61	3.20	3.84	4.55	5.41	6.54	8.34	10.04
Oct	1.14	1.49	2.02	2.46	2.90	3.35	3.84	4.42	5.17	6.33	7.41
Nov	1.01	1.33	1.81	2.22	2.63	3.05	3.51	4.05	4.76	5.86	6.88
Dec	.71	1.01	1.49	1.92	2.35	2.81	3.32	3.94	4.75	6.05	7.27
Ann	31.66	33.97	36.91	39.14	41.11	43.01	44.97	47.14	49.75	53.54	56.81

\+ 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	3.9	4.0	1	#	11.0	2000	25	11.0+	2000	26	1996	9	5	1996	2.5	1.6	.6	.2	.1	3.0	.4	.1	.0
Feb	7.4	1.5	2	#	17.0	1983	12	28.6	1983	24	1983	12	9	1994	1.6	1.4	.6	.4	.1	2.6	.8	.3	.0
Mar	1.3	.0	#	#	13.0	1993	13	13.0	1993	13	1993	13	4	1994	.9	.6	.2	.1	.1	.8	.3	.1	.1
Apr	.2	.0	#	0	3.5	1982	6	3.5	1982	2	1982	9	#	1982	.1	.1	.1	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.2	.0	#	0	2.2	1989	23	3.2	1989	3	1987	11	#+	1996	.2	.1	.0	.0	.0	.1	.0	.0	.0
Dec	1.5	.4	#	0	6.0	1990	27	8.0	1990	8	1990	28	2	1995	1.0	.7	.1	.1	.0	1.7	.4	.2	.0
Ann	14.5	5.9	N/A	N/A	17.0	Feb 1983	12	28.6	Feb 1983	26	Jan 1996	9	9	Feb 1994	6.3	4.5	1.6	.8	.3	8.2	1.9	.7	.1

+ Also occurred on an earlier date(s) #Denotes trace amounts

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	5/17	5/10	5/05	5/01	4/27	4/22	4/18	4/13	4/06
32	5/01	4/25	4/21	4/17	4/14	4/11	4/07	4/03	3/28
28	4/17	4/11	4/06	4/03	3/30	3/27	3/23	3/19	3/13
24	4/04	3/29	3/24	3/19	3/15	3/11	3/07	3/02	2/23
20	3/25	3/19	3/14	3/10	3/06	3/02	2/26	2/22	2/15
16	3/22	3/12	3/05	2/27	2/22	2/16	2/10	2/03	1/25

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	9/24	9/28	10/01	10/04	10/06	10/09	10/11	10/14	10/18
32	10/06	10/11	10/15	10/18	10/21	10/23	10/26	10/30	11/04
28	10/12	10/19	10/23	10/27	10/31	11/04	11/08	11/12	11/19
24	10/30	11/05	11/10	11/14	11/18	11/22	11/26	12/01	12/08
20	11/15	11/22	11/26	11/30	12/04	12/08	12/12	12/17	12/23
16	11/30	12/06	12/11	12/15	12/18	12/22	12/26	12/31	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	189	180	173	167	162	157	151	144	135
32	211	203	198	193	189	184	179	174	166
28	242	233	226	220	214	209	203	196	186
24	273	264	258	252	247	242	237	230	222
20	298	289	283	277	272	267	262	255	246
16	335	322	314	306	299	292	284	275	263

***** 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	1113	940	756	426	159	15	0	4	62	359	653	961	5448
60	958	800	601	281	70	2	0	0	17	227	503	806	4265
57	865	716	508	201	36	0	0	0	6	161	415	713	3621
55	803	660	447	155	21	0	0	0	3	124	357	651	3221
50	650	525	305	65	4	0	0	0	0	56	226	509	2340
32	200	138	24	0	0	0	0	0	0	0	9	121	492

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	110	122	291	565	900	1131	1314	1268	999	671	346	183	7900
55	0	0	1	29	209	441	601	555	312	82	4	0	2234
57	0	0	0	16	162	381	539	493	255	57	2	0	1905
60	0	0	0	5	102	292	446	400	176	30	0	0	1451
65	0	0	0	0	36	156	291	248	71	7	0	0	809
70	0	0	0	0	7	56	151	119	17	0	0	0	350

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	19	37	131	360	678	909	1082	1032	782	448	172	36	19	56	187	547	1225	2134	3216	4248	5030	5478	5650	5686
45	4	9	60	224	523	759	927	877	632	300	86	10	4	13	73	297	820	1579	2506	3383	4015	4315	4401	4411
50	0	1	27	118	374	609	772	722	482	176	35	6	0	1	28	146	520	1129	1901	2623	3105	3281	3316	3322
55	0	0	9	52	230	459	617	567	337	88	12	0	0	0	9	61	291	750	1367	1934	2271	2359	2371	2371
60	0	0	4	16	110	310	462	413	200	35	1	0	0	0	4	20	130	440	902	1315	1515	1550	1551	1551
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	12	27	87	210	404	601	740	704	491	265	96	17	12	39	126	336	740	1341	2081	2785	3276	3541	3637	3654

(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