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: WILLIAMSPORT LYCOMING AP, PA **COOP ID: 369728**

Climate Division: PA 5 **NWS Call Sign: IPT** **Elevation: 520 Feet** **Lat: 41˚15N** **Lon: 76˚55W**

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	33.2	17.9	25.5	69	1967	25	34.8	1998	-20	1994	21	14.0	1977	1211	0	.0	.0	1.9	13.2	28.1	2.0
Feb	37.1	19.9	28.5	71+	1954	16	37.0	1998	-13	1971	1	18.8	1979	1014	0	.0	.0	3.7	8.5	23.9	1.2
Mar	47.8	28.2	38.0	87+	1986	30	44.3	2000	-2	1996	10	29.6	1984	824	0	.0	.0	12.9	2.0	20.4	.1
Apr	60.2	37.8	49.0	92+	1976	18	52.8	1985	15	1982	7	42.6	1975	471	6	.0	.2	25.3	@	7.6	.0
May	71.3	47.8	59.5	96+	1996	19	66.4	1991	28+	1966	5	54.5	1973	196	39	.0	1.1	30.9	.0	.6	.0
Jun	78.9	56.8	67.8	102	1952	26	71.2	1976	36	1986	3	63.6	1972	38	135	.0	2.2	30.0	.0	.0	.0
Jul	83.2	61.7	72.4	103+	1988	16	76.4	1988	43+	1963	9	69.3	2000	6	251	.3	5.3	31.0	.0	.0	.0
Aug	81.4	60.4	70.9	100	1955	5	75.3	1980	38	1965	30	66.5	1982	12	206	.0	3.1	31.0	.0	.0	.0
Sep	73.3	52.8	63.1	102	1953	3	68.0	1971	30	1963	24	59.4	1975	116	68	.0	.5	30.0	.0	@	.0
Oct	61.8	40.9	51.3	91	1951	5	58.5	1971	20+	1952	26	46.2	1972	417	4	.0	.0	29.0	.0	4.6	.0
Nov	49.0	32.7	40.8	83	1950	1	46.6	1975	8	1976	30	35.0	1995	710	0	.0	.0	14.2	.6	14.8	.0
Dec	37.8	23.7	30.7	69+	1998	6	36.1	1982	-15	1950	28	18.7	1989	1048	0	.0	.0	3.1	7.2	24.5	.7
Ann	59.6	40.1	49.8	103+	Jul 1988	16	76.4	Jul 1988	-20	Jan 1994	21	14.0	Jan 1977	6063	709	.3	12.4	243.0	31.5	124.5	4.0

+ 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	2.85	2.43	2.62	1996	19	8.25	1978	.52	1985
Feb	2.61	1.92	2.72	1971	13	8.42	1981	.77	1980
Mar	3.21	3.06	2.38	1964	10	5.96	1980	.85	1995
Apr	3.49	2.83	2.32	1980	14	7.55	1993	.70	1989
May	3.79	3.67	2.73	1954	3	7.29	1989	1.02	1977
Jun	4.45	4.31	8.66	1972	22	16.80	1972	.99	1988
Jul	4.08	3.89	3.29	2000	30	9.65	1992	1.19	1998
Aug	3.38	3.25	4.32	1988	29	7.67	1988	.93	1995
Sep	3.98	3.31	6.29	1999	7	12.60	1999	.62	1984
Oct	3.19	2.77	4.38	1955	14	9.60	1990	.59	1982
Nov	3.62	3.28	3.40	1966	28	8.09	1972	.83	1976
Dec	2.94	2.51	3.29	1983	13	7.36	1973	.68	1989
Ann	41.59	41.50	8.66	Jun 1972	22	16.80	Jun 1972	.52	Jan 1985

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.4	6.1	1.8	.5
Feb	10.3	5.4	1.5	.5
Mar	11.9	6.9	2.2	.6
Apr	12.1	7.3	2.0	.8
May	13.4	7.6	2.6	.8
Jun	12.3	8.3	2.7	1.0
Jul	11.3	7.7	3.0	.8
Aug	10.5	6.5	2.3	.7
Sep	10.9	6.8	2.4	1.0
Oct	10.2	5.7	2.0	.8
Nov	11.3	6.3	2.2	1.1
Dec	11.5	5.9	1.9	.7
Ann	137.1	80.5	26.6	9.3

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	.62	.88	1.30	1.68	2.06	2.46	2.91	3.46	4.17	5.31	6.39
Feb	.59	.83	1.22	1.56	1.91	2.27	2.68	3.17	3.82	4.84	5.81
Mar	1.20	1.50	1.93	2.29	2.63	2.98	3.36	3.80	4.36	5.22	6.01
Apr	.89	1.22	1.73	2.18	2.62	3.08	3.60	4.21	5.01	6.28	7.46
May	1.42	1.78	2.28	2.71	3.11	3.52	3.96	4.48	5.14	6.15	7.07
Jun	1.24	1.66	2.30	2.86	3.41	3.98	4.61	5.36	6.33	7.86	9.28
Jul	1.59	1.97	2.51	2.95	3.37	3.80	4.27	4.80	5.49	6.54	7.49
Aug	1.08	1.40	1.88	2.28	2.67	3.08	3.52	4.04	4.70	5.74	6.70
Sep	.92	1.29	1.87	2.39	2.91	3.46	4.08	4.82	5.79	7.33	8.79
Oct	.69	.98	1.45	1.88	2.30	2.76	3.27	3.88	4.68	5.97	7.19
Nov	1.26	1.61	2.10	2.52	2.92	3.33	3.78	4.30	4.97	6.01	6.96
Dec	.77	1.04	1.47	1.85	2.22	2.61	3.04	3.55	4.22	5.28	6.27
Ann	29.94	32.20	35.10	37.30	39.24	41.12	43.06	45.20	47.80	51.56	54.80

\+ 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	12.1	10.2	3	1	15.8	1987	22	40.1	1987	26	1996	12	11	1994	7.9	3.5	1.2	.5	.2	16.0	9.0	5.8	2.5
Feb	9.6	7.3	3	3	20.0	1972	19	34.3	1972	22	1972	20	12+	1994	6.2	2.9	.9	.4	.1	14.0	9.7	6.7	2.9
Mar	7.6	6.7	1	1	14.7	1993	13	30.1	1994	24	1994	3	10	1994	4.1	1.8	.8	.3	.1	6.2	3.8	2.4	1.3
Apr	1.2	.2	#	0	8.8	1982	6	13.8	1982	8	1982	7	1+	1983	.9	.3	.1	.1	.0	.4	.2	.2	.0
May	.0	.0	#	0	.2	1977	9	.2	1977	0	0	0	#	1995	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1997	.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	0	1.0	1977	16	1.0	1977	#+	1977	17	0	0	.1	.0	.0	.0	.0	.0	.0	.0	.0
Nov	3.0	.2	#	0	10.5	1972	30	13.8	1995	10+	1980	18	2	1980	2.0	.9	.3	.1	.1	1.7	.7	.4	.1
Dec	6.5	5.0	1	1	12.7	1995	19	21.5	1995	17	1995	20	4	1995	5.3	1.8	.7	.2	.1	7.0	2.7	1.1	.2
Ann	40.1	29.6	N/A	N/A	20.0	Feb 1972	19	40.1	Jan 1987	26	Jan 1996	12	12+	Feb 1994	26.5	11.2	4.0	1.6	.6	45.3	26.1	16.6	7.0

+ 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	5/24	5/20	5/16	5/14	5/11	5/08	5/05	5/02	4/28
32	5/13	5/09	5/05	5/02	4/30	4/27	4/24	4/21	4/16
28	4/26	4/22	4/19	4/16	4/14	4/11	4/08	4/05	4/01
24	4/11	4/07	4/04	4/02	3/31	3/28	3/26	3/23	3/19
20	4/01	3/28	3/25	3/23	3/21	3/18	3/16	3/13	3/09
16	3/27	3/22	3/18	3/14	3/11	3/08	3/05	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	9/19	9/24	9/27	10/01	10/03	10/06	10/09	10/13	10/18
32	10/03	10/07	10/10	10/13	10/15	10/18	10/20	10/23	10/28
28	10/17	10/21	10/24	10/27	10/29	11/01	11/04	11/07	11/11
24	10/27	11/02	11/06	11/10	11/13	11/17	11/20	11/25	11/30
20	11/08	11/13	11/17	11/21	11/24	11/27	12/01	12/05	12/10
16	11/26	12/02	12/07	12/10	12/14	12/17	12/21	12/25	12/31

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	165	158	153	149	145	141	137	132	125
32	186	180	175	171	168	164	160	156	149
28	215	209	205	202	198	195	191	187	181
24	247	240	235	231	227	223	219	214	207
20	269	262	256	252	248	243	239	233	226
16	298	291	286	281	277	273	268	263	255

***** 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	1211	1014	824	471	196	38	6	12	116	417	710	1048	6063
60	1069	883	681	334	112	8	0	0	35	283	575	907	4887
57	976	799	588	252	69	2	0	0	15	208	486	814	4209
55	914	743	528	202	47	1	0	0	7	164	428	752	3786
50	759	603	383	100	14	0	0	0	1	80	291	600	2831
32	277	178	50	0	0	0	0	0	0	0	20	164	689

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	52	77	246	526	868	1089	1265	1216	940	611	294	99	7283
55	0	0	8	43	189	400	552	503	263	53	8	0	2019
57	0	0	5	31	147	341	490	441	213	35	5	0	1708
60	0	0	3	18	96	257	398	349	146	17	2	0	1286
65	0	0	0	6	39	135	251	206	68	4	0	0	709
70	0	0	0	1	12	52	119	88	22	0	0	0	294

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	10	18	99	306	628	857	1026	977	707	375	122	22	10	28	127	433	1061	1918	2944	3921	4628	5003	5125	5147
45	2	5	47	185	473	707	871	822	557	237	61	5	2	7	54	239	712	1419	2290	3112	3669	3906	3967	3972
50	0	0	21	96	324	557	716	667	409	127	20	2	0	0	21	117	441	998	1714	2381	2790	2917	2937	2939
55	0	0	6	47	197	407	561	512	271	59	6	0	0	0	6	53	250	657	1218	1730	2001	2060	2066	2066
60	0	0	2	18	102	266	406	359	155	17	1	0	0	0	2	20	122	388	794	1153	1308	1325	1326	1326
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	11	66	182	378	556	694	660	439	211	64	6	0	11	77	259	637	1193	1887	2547	2986	3197	3261	3267

(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