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: FRANKLIN, PA **COOP ID: 363028**

Climate Division: PA10 **NWS Call Sign:** **Elevation: 990 Feet** **Lat: 41˚23N** **Lon: 79˚49W**

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	34.5	16.1	25.3	73	1950	26	34.1	1990	-23	1963	29	12.9	1977	1232	0	.0	.0	2.4	13.7	28.6	3.1
Feb	37.1	17.0	27.1	72+	1997	22	36.5	1998	-27	1963	27	14.2	1979	1064	0	.0	.0	3.6	10.7	24.9	2.7
Mar	47.1	24.3	35.7	81+	1938	23	43.6	1973	-22	1934	1	28.1	1984	908	0	.0	.0	11.8	3.9	24.6	.7
Apr	59.5	33.9	46.7	90	1976	19	51.3	1985	10	1964	2	42.4	1975	549	0	.0	@	22.2	.4	13.9	.0
May	70.9	43.8	57.4	94	1936	11	65.0	1991	20	1966	10	51.1	1997	268	32	.0	.2	30.3	.0	2.5	.0
Jun	79.4	53.3	66.4	101	1934	29	69.8+	1973	32+	1929	3	61.8	1972	58	99	.0	1.6	30.0	.0	.0	.0
Jul	83.5	57.8	70.7	106+	1936	10	73.5	1999	36	1971	15	67.2	2000	6	181	.0	4.0	31.0	.0	.0	.0
Aug	81.7	56.9	69.3	101+	1933	1	73.8	1980	34	1969	12	65.6	1982	23	156	.0	2.1	31.0	.0	.0	.0
Sep	74.0	50.3	62.2	100+	1932	1	66.7	1971	27	1957	27	59.4	1975	115	29	.0	.5	30.0	.0	.1	.0
Oct	62.3	39.2	50.8	88+	1927	2	58.1	1971	15	1965	29	45.9	1987	445	3	.0	.0	27.0	.0	5.9	.0
Nov	50.0	31.6	40.8	81+	1950	2	47.9	1975	1	1929	30	35.1	1996	726	0	.0	.0	13.5	1.0	16.6	.0
Dec	39.1	22.2	30.7	74	1982	4	37.6	1982	-14+	1950	27	17.7	1989	1064	0	.0	.0	4.4	8.8	25.8	1.0
Ann	59.9	37.2	48.6	106+	Jul 1936	10	73.8	Aug 1980	-27	Feb 1963	27	12.9	Jan 1977	6458	500	.0	8.4	237.2	38.5	142.9	7.5

\+ 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: 1926-2001

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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	2.60	2.56	2.12	1937	25	5.47	1999	1.09	1981
Feb	2.34	2.14	1.79	1959	10	5.53	1990	.37	1978
Mar	3.29	3.37	1.72	1985	29	6.72	1985	.88	2000
Apr	3.58	3.56	2.15	1937	26	6.17	1998	1.03	1971
May	3.87	3.67	3.00	1928	18	7.89	1984	1.11	1993
Jun	4.94	4.54	4.50	1981	9	10.47	1989	.93	1991
Jul	4.99	4.27	4.92	1996	19	11.29	1980	.97	1998
Aug	4.15	3.91	5.30	1994	14	7.92	1994	1.41	1995
Sep	4.31	4.25	3.05	1977	14	8.15	1996	.96	1995
Oct	3.04	3.05	4.00	1954	16	5.42	1978	1.15	1994
Nov	3.53	3.42	2.20	1999	3	10.99	1985	.72	1976
Dec	3.17	2.95	2.00	1968	28	7.23	1971	1.53	1976
Ann	43.81	44.54	5.30	Aug 1994	14	11.29	Jul 1980	.37	Feb 1978

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	15.8	7.4	1.3	.2
Feb	12.6	6.5	1.2	.2
Mar	13.8	8.2	2.0	.4
Apr	13.5	8.6	2.3	.6
May	12.9	8.9	2.5	.6
Jun	12.9	8.5	3.6	1.2
Jul	11.3	7.9	3.4	1.4
Aug	11.0	7.7	2.8	1.1
Sep	11.4	8.1	3.2	1.0
Oct	12.2	7.3	1.9	.4
Nov	14.3	8.1	2.2	.5
Dec	16.7	8.3	1.7	.3
Ann	158.4	95.5	28.1	7.9

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	1.12	1.36	1.68	1.95	2.20	2.46	2.73	3.04	3.44	4.04	4.58
Feb	.73	.95	1.28	1.57	1.84	2.13	2.44	2.81	3.28	4.02	4.70
Mar	1.22	1.53	1.97	2.34	2.69	3.05	3.44	3.89	4.46	5.34	6.15
Apr	1.83	2.12	2.53	2.85	3.14	3.44	3.75	4.10	4.54	5.21	5.80
May	1.32	1.68	2.22	2.67	3.10	3.55	4.04	4.60	5.33	6.46	7.50
Jun	1.39	1.86	2.57	3.19	3.79	4.43	5.12	5.95	7.02	8.70	10.27
Jul	1.58	2.05	2.75	3.35	3.93	4.53	5.19	5.96	6.96	8.51	9.94
Aug	2.05	2.40	2.88	3.27	3.62	3.98	4.35	4.78	5.31	6.12	6.84
Sep	1.84	2.23	2.78	3.23	3.64	4.07	4.52	5.05	5.71	6.72	7.63
Oct	1.35	1.62	2.00	2.31	2.59	2.88	3.19	3.54	3.99	4.66	5.27
Nov	1.16	1.50	1.99	2.41	2.81	3.23	3.68	4.22	4.90	5.97	6.95
Dec	1.33	1.62	2.02	2.36	2.67	2.99	3.33	3.72	4.21	4.97	5.66
Ann	34.19	36.12	38.56	40.38	41.99	43.53	45.10	46.83	48.90	51.88	54.42

\+ 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: 1926-2001
(3) Derived from 1971-2000 serially complete daily data

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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	14.9	12.5	4	3
Feb	11.0	9.1	3	2
Mar	9.9	10.0	1	1
Apr	1.3	.0	#	#
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	#	.0	#	0
Nov	2.9	2.0	#	#
Dec	13.3	10.2	2	1
Ann	53.3	43.8	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	11.0	1971	27	52.0	1999	39	1977	31	23	1977
Feb	8.0	1972	20	29.1	1972	40	1977	1	15	1977
Mar	16.0	1993	14	26.0	1971	16	1993	14	5	1984
Apr	6.0	1987	4	8.0	1987	6	1987	4	#+	2000
May	#	1977	9	#	1977	#	1977	9	#	1977
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	#	1997	23	#+	1997	#+	1997	23	#+	1997
Nov	5.0	1987	21	9.0	1997	5+	2000	22	1+	2000
Dec	12.5	1992	11	26.0	2000	17	1977	10	5	1995
Ann	16.0	Mar 1993	14	52.0	Jan 1999	40	Feb 1977	1	23	Jan 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	8.1	7.0	1.9	.6	.1
Feb	5.6	4.9	1.3	.3	.0
Mar	3.7	3.4	1.2	.5	.1
Apr	.7	.6	.1	.1	.0
May	.0	.0	.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	.0	.0	.0	.0	.0
Nov	2.0	1.4	.3	.1	.0
Dec	6.1	4.5	1.7	.4	.1
Ann	26.2	21.8	6.5	2.0	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	18.6	10.8	6.5	2.7
Feb	14.4	9.5	5.5	1.3
Mar	6.1	3.1	1.3	.2
Apr	.6	.2	.1	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	2.1	.6	.1	.0
Dec	10.5	5.8	3.6	1.1
Ann	52.3	30.0	17.1	5.3

+ 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	6/14	6/06	6/01	5/28	5/24	5/19	5/15	5/10	5/02
32	5/18	5/14	5/11	5/08	5/06	5/04	5/01	4/28	4/25
28	5/06	5/02	4/29	4/27	4/24	4/22	4/19	4/17	4/13
24	4/22	4/18	4/15	4/12	4/10	4/07	4/04	4/01	3/28
20	4/11	4/07	4/05	4/02	3/31	3/29	3/26	3/24	3/20
16	4/06	4/02	3/30	3/27	3/24	3/22	3/19	3/16	3/11

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	152	144	139	135	131	127	122	117	110
32	178	173	170	166	164	161	158	154	149
28	206	200	196	192	188	185	181	176	170
24	231	225	220	216	212	208	204	200	193
20	257	249	244	240	236	232	227	222	215
16	277	270	265	260	256	252	247	242	235

***** 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	1232	1064	908	549	268	58	6	23	115	445	726	1064	6458
60	1077	924	753	401	161	17	0	3	38	303	576	909	5162
57	984	840	660	315	110	7	0	0	16	227	487	816	4462
55	922	784	598	261	82	4	0	0	8	183	428	754	4024
50	767	645	455	144	33	0	0	0	1	95	291	607	3038
32	285	220	88	1	0	0	0	0	0	0	19	178	791

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	76	81	203	442	787	1031	1198	1156	904	581	283	137	6879
55	0	0	0	12	156	344	485	443	222	50	2	0	1714
57	0	0	0	6	122	288	423	381	170	33	1	0	1424
60	0	0	0	2	80	208	330	291	102	15	0	0	1028
65	0	0	0	0	32	99	181	156	29	3	0	0	500
70	0	0	0	0	10	30	67	63	3	0	0	0	173

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	9	18	80	238	545	792	950	908	662	340	117	33	9	27	107	345	890	1682	2632	3540	4202	4542	4659	4692
45	1	1	40	141	391	642	795	753	512	210	59	7	1	2	42	183	574	1216	2011	2764	3276	3486	3545	3552
50	0	0	18	75	259	492	640	598	367	107	22	2	0	0	18	93	352	844	1484	2082	2449	2556	2578	2580
55	0	0	4	35	148	345	485	443	235	45	7	0	0	0	4	39	187	532	1017	1460	1695	1740	1747	1747
60	0	0	0	11	73	212	331	292	130	12	0	0	0	0	0	11	84	296	627	919	1049	1061	1061	1061
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	3	10	61	165	346	508	624	597	411	202	66	13	3	13	74	239	585	1093	1717	2314	2725	2927	2993	3006

(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