

Climatography of the United States

No. 20

1971-2000

Station: BUTLER 2 SW, PA

COOP ID: 361139

Climate Division: PA 9

NWS Call Sign:

Elevation: 1,000 Feet Lat: 40° 51N

Lon: 79° 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	33.9	16.0	25.0	68	1985	2	34.6+	1998	-20+	1977	13	8.5	1977	1242	0	.0	.0	3.5	13.0	28.4	3.5
Feb	37.5	17.0	27.3	75	2000	27	37.0	1998	-19	1977	8	12.8	1979	1058	0	.0	.0	5.3	9.4	24.8	2.8
Mar	47.2	24.7	36.0	84	1986	31	42.5	2000	-7	1993	15	29.3	1984	901	0	.0	.0	13.1	3.3	23.4	.4
Apr	59.2	33.6	46.4	90	1985	24	51.6	1985	9	1982	9	38.7	1975	559	0	.0	@	23.3	.4	14.0	.0
May	69.8	43.7	56.8	91+	1987	30	64.8	1991	22+	1978	1	50.9	1997	282	27	.0	.1	30.6	.0	3.1	.0
Jun	78.1	53.1	65.6	97+	1988	23	69.5	1994	31	1977	8	61.1	1972	73	90	.0	1.4	30.0	.0	.1	.0
Jul	81.7	57.6	69.7	102	1988	17	73.6	1999	39	1988	1	65.9	1976	15	159	.1	4.3	31.0	.0	.0	.0
Aug	80.2	56.4	68.3	100	1988	18	73.6	1995	32	1982	29	63.9	1976	33	135	@	2.2	31.0	.0	@	.0
Sep	73.3	49.1	61.2	94+	1973	4	65.0	1998	28+	1974	24	56.2	1975	142	27	.0	.7	30.0	.0	.4	.0
Oct	61.9	37.4	49.7	87	1986	1	55.5	1984	17+	1969	24	44.1	1976	479	3	.0	.0	27.6	.0	8.0	.0
Nov	49.7	30.0	39.9	79+	1971	1	45.9	1985	0	1976	30	31.2	1976	754	0	.0	.0	15.2	1.0	18.7	@
Dec	38.7	21.9	30.3	74	1982	4	37.6	1982	-14	1989	24	16.7	1989	1075	0	.0	.0	5.4	7.6	25.6	1.1
Ann	59.3	36.7	48.0	102	Jul 1988	17	73.6+	Jul 1999	-20+	Jan 1977	13	8.5	Jan 1977	6613	441	.1	8.7	246.0	34.7	146.5	7.8

+ 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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1967-2001

(3) Derived from 1971-2000 serially complete daily data

007-A

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No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: BUTLER 2 SW, PA

COOP ID: 361139

Climate Division: PA 9

NWS Call Sign:

Elevation: 1,000 Feet Lat: 40°51N

Lon: 79°55W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	2.77	2.57	1.40	1998	8	5.09	1999	.49	1981	17.2	7.4	1.5	.3	1.05	1.30	1.67	1.98	2.28	2.57	2.90	3.27	3.75	4.49	5.16
Feb	2.49	2.48	2.04	1975	24	4.64	1975	.45	1978	13.7	6.3	1.3	.3	.88	1.11	1.45	1.74	2.01	2.29	2.60	2.96	3.42	4.12	4.77
Mar	3.34	3.54	1.98	1985	29	5.74	1985	1.42	1995	14.9	8.1	2.2	.4	1.44	1.74	2.16	2.51	2.83	3.15	3.50	3.90	4.41	5.18	5.88
Apr	3.48	3.37	1.80	1987	24	6.20	1973	1.00	1971	14.6	8.5	2.2	.5	1.49	1.81	2.25	2.61	2.94	3.28	3.65	4.07	4.60	5.41	6.14
May	4.25	3.68	3.32	1985	28	7.31	1990	1.72	1993	14.3	9.0	3.0	.7	1.87	2.25	2.78	3.21	3.62	4.02	4.46	4.96	5.58	6.54	7.40
Jun	4.23	4.18	2.38	1978	8	10.52	1972	1.04	1988	13.3	8.0	3.0	1.1	1.39	1.79	2.38	2.88	3.37	3.87	4.41	5.05	5.87	7.15	8.33
Jul	4.47	4.08	2.94	1985	9	9.71	1992	.73	1975	11.9	7.6	3.0	1.2	1.41	1.83	2.46	3.00	3.52	4.06	4.66	5.35	6.25	7.65	8.94
Aug	4.03	3.80	2.56	1974	28	8.43	1974	1.79	1981	11.2	6.9	2.9	1.0	1.75	2.11	2.62	3.03	3.41	3.80	4.22	4.70	5.31	6.23	7.06
Sep	4.00	3.87	3.35	1992	22	7.49	1987	.61	1985	11.6	7.1	2.6	1.0	1.20	1.58	2.15	2.64	3.11	3.61	4.15	4.80	5.62	6.92	8.12
Oct	2.63	2.65	2.73	1986	4	5.00	1986	.40	1982	12.5	6.3	1.6	.3	.84	1.09	1.46	1.77	2.08	2.39	2.74	3.14	3.67	4.48	5.23
Nov	3.54	3.78	2.02	1999	3	10.83	1985	.87	1976	14.9	8.0	2.2	.6	1.19	1.52	2.01	2.43	2.83	3.24	3.69	4.22	4.89	5.93	6.90
Dec	3.18	2.98	1.93	1991	3	7.30	1990	1.06	1980	16.6	7.5	1.7	.5	1.41	1.70	2.09	2.41	2.71	3.01	3.34	3.71	4.17	4.88	5.52
Ann	42.41	43.21	3.35	Sep 1992	22	10.83	Nov 1985	.40	Oct 1982	166.7	90.7	27.2	7.9	32.94	34.84	37.23	39.03	40.61	42.12	43.67	45.37	47.42	50.36	52.87

+ 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: 1967-2001

(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Station: BUTLER 2 SW, PA

COOP ID: 361139

Climate Division: PA 9

NWS Call Sign:

Elevation: 1,000 Feet

Lat: 40° 51N

Lon: 79° 55W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	12.0	10.0	3	1	8.0	1994	4	31.0+	1985	22	1985	26	10	1985	7.4	5.6	1.4	.3	.0	13.5	7.3	4.8	1.6
Feb	8.4	9.0	2	1	8.0	1984	29	20.0	1985	19	1977	6	12	1985	4.9	3.8	.8	.2	.0	11.6	6.4	4.4	1.0
Mar	4.4	3.0	1	#	13.0	1993	14	17.5	1993	15	1993	14	2	1993	3.0	1.9	.5	.2	@	4.9	2.0	.7	.1
Apr	.9	.3	#	#	5.0	1987	4	7.0	1987	5	1987	4	#+	2000	.8	.6	@	@	.0	.6	@	@	.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	.1	.0	#	0	3.0	1993	31	3.0	1993	1	1993	31	#	1993	@	@	@	.0	.0	@	.0	.0	.0
Nov	1.7	1.0	#	#	5.0	1971	25	9.0	1971	6	1971	25	1	1997	1.5	1.0	.1	@	.0	1.4	.2	@	.0
Dec	6.1	4.5	1	1	10.0	1992	11	13.0	1992	12	1992	11	4	1995	4.7	3.3	.4	.1	@	6.7	2.5	1.1	.1
Ann	33.6	27.8	N/A	N/A	13.0	Mar 1993	14	31.0+	Jan 1985	22	Jan 1985	26	12	Feb 1985	22.3	16.2	3.2	.8	@	38.7	18.4	11.0	2.8

+ 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

Complete documentation available from:

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NWS Call Sign:

Elevation: 1,000 Feet

Lat: 40° 51N

Lon: 79° 55W

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	6/13	6/07	6/02	5/29	5/26	5/22	5/18	5/14	5/07
32	5/28	5/23	5/20	5/16	5/13	5/10	5/07	5/03	4/28
28	5/10	5/05	5/01	4/28	4/26	4/23	4/20	4/17	4/12
24	4/24	4/20	4/16	4/13	4/10	4/08	4/05	4/01	3/27
20	4/15	4/11	4/08	4/05	4/02	3/31	3/28	3/25	3/21
16	4/03	3/31	3/28	3/26	3/24	3/21	3/19	3/16	3/13
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	9/11	9/15	9/18	9/21	9/23	9/25	9/28	10/01	10/05
32	9/20	9/25	9/30	10/03	10/07	10/10	10/14	10/18	10/24
28	10/11	10/15	10/19	10/21	10/24	10/26	10/29	11/01	11/06
24	10/22	10/26	10/29	11/01	11/03	11/06	11/08	11/11	11/15
20	11/02	11/08	11/12	11/15	11/19	11/22	11/26	11/30	12/06
16	11/12	11/19	11/24	11/28	12/02	12/06	12/10	12/15	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	139	132	127	123	119	116	112	107	100
32	166	159	154	149	145	141	137	132	125
28	202	194	189	185	180	176	172	167	159
24	226	219	214	210	206	202	198	193	186
20	255	246	240	235	230	225	220	213	205
16	276	268	262	257	253	248	244	238	230

* 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

Complete documentation available from:

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Climate Division: PA 9 NWS Call Sign: Elevation: 1,000 Feet Lat: 40° 51N Lon: 79° 55W

Degree Days to Selected Base Temperatures (° F)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1242	1058	901	559	282	73	15	33	142	479	754	1075	6613
60	1087	918	746	412	171	24	0	6	56	335	604	920	5279
57	994	834	653	328	118	10	0	1	28	258	515	827	4566
55	932	778	591	276	89	5	0	0	16	212	456	765	4120
50	781	646	448	161	37	1	0	0	3	118	319	621	3135
32	310	234	85	3	0	0	0	0	0	2	28	196	858

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	91	100	208	434	768	1007	1167	1125	876	549	264	144	6733
55	0	0	1	17	144	322	454	412	201	46	2	0	1599
57	0	0	0	9	111	267	392	350	153	30	1	0	1313
60	0	0	0	3	71	190	299	263	92	15	0	0	933
65	0	0	0	0	27	90	159	135	27	3	0	0	441
70	0	0	0	0	8	28	61	51	4	0	0	0	152

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	17	24	97	258	542	794	946	907	669	339	126	38	17	41	138	396	938	1732	2678	3585	4254	4593	4719	4757
45	2	8	50	154	394	644	791	752	519	208	67	11	2	10	60	214	608	1252	2043	2795	3314	3522	3589	3600
50	0	0	25	86	259	494	636	597	375	112	27	5	0	0	25	111	370	864	1500	2097	2472	2584	2611	2616
55	0	0	5	42	151	349	481	442	241	51	8	0	0	0	5	47	198	547	1028	1470	1711	1762	1770	1770
60	0	0	1	14	71	214	328	291	133	15	0	0	0	0	1	15	86	300	628	919	1052	1067	1067	1067
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	10	19	79	181	344	513	629	597	426	219	81	23	10	29	108	289	633	1146	1775	2372	2798	3017	3098	3121

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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