

Climatography of the United States

No. 20

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

Station: PHILIPSBURG R S, MT

1971-2000

COOP ID: 246472

Climate Division: MT 1

NWS Call Sign:

Elevation: 5,270 Feet Lat: 46° 18N

Lon: 113° 18W

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	32.9	14.1	23.5	57	1996	13	31.9	1994	-37	1963	11	6.2	1979	1287	0	.0	.0	1.5	12.1	28.4	5.9
Feb	37.4	17.0	27.2	64+	1995	24	35.8	1991	-38	1989	4	12.3	1989	1058	0	.0	.0	3.3	6.9	26.2	3.5
Mar	44.1	22.2	33.2	72	1978	29	39.2	1986	-23	1976	2	25.8	1975	988	0	.0	.0	9.7	2.6	27.4	1.0
Apr	52.6	27.3	40.0	80	1992	30	47.4	1987	0+	1982	8	30.2	1975	751	0	.0	.0	18.5	.3	23.3	.1
May	60.8	33.7	47.3	90	1986	31	51.3	1993	8	1972	1	42.6	1975	551	0	.0	@	27.2	.0	13.7	.0
Jun	69.3	40.0	54.7	94	1961	22	61.7	1988	21	1968	14	50.5	1975	315	5	.0	.1	29.8	.0	3.4	.0
Jul	77.7	42.8	60.3	97	1960	19	65.2	1985	25	1971	7	53.2	1993	177	30	.0	2.4	31.0	.0	1.0	.0
Aug	77.9	41.8	59.9	98	1961	4	63.9	1971	21	1992	25	54.5	1980	188	28	.0	2.7	30.9	.0	1.7	.0
Sep	67.9	34.7	51.3	93+	2000	16	57.6	1998	5	1965	17	45.3	1984	416	4	.0	.3	28.6	@	12.0	.0
Oct	57.3	28.2	42.8	86	1992	2	48.4	1988	-9	1971	29	38.0	1971	690	0	.0	.0	23.8	.3	22.6	.1
Nov	40.9	20.6	30.8	73	1975	5	39.9	1999	-30	1959	16	18.2	1985	1029	0	.0	.0	6.8	5.5	25.8	2.2
Dec	33.1	14.0	23.6	62	1980	16	32.3	1979	-38	1983	21	9.9	1983	1284	0	.0	.0	1.3	13.0	29.1	4.4
Ann	54.3	28.0	41.2	98	Aug 1961	4	65.2	Jul 1985	-38+	Feb 1989	4	6.2	Jan 1979	8734	67	.0	5.5	212.4	40.7	214.6	17.2

+ 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: 1955-2001

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

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COOP ID: 246472

Climate Division: MT 1

NWS Call Sign:

Elevation: 5,270 Feet Lat: 46°18N

Lon: 113°18W

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	.58	.55	.67	1969	21	1.24	1972	.08	1981	8.3	1.9	@	.0	.14	.19	.28	.36	.43	.51	.60	.71	.85	1.07	1.27
Feb	.51	.48	.75	1972	9	1.86	1972	.03	1977	6.7	1.8	@	.0	.08	.13	.20	.27	.35	.42	.51	.62	.77	1.01	1.23
Mar	.88	.84	.87	1990	11	1.54	1995	.23	1971	9.1	3.2	.1	.0	.37	.45	.56	.66	.74	.83	.93	1.04	1.17	1.38	1.57
Apr	1.47	1.36	2.50	1975	26	3.88	1975	.00	2000	9.7	4.3	.3	.1	.30	.50	.75	.95	1.14	1.34	1.55	1.80	2.13	2.63	3.11
May	2.56	2.33	1.93	1957	20	5.78	1980	.63	1979	12.1	7.1	1.2	.2	.85	1.09	1.45	1.75	2.04	2.34	2.67	3.05	3.54	4.30	5.01
Jun	2.18	1.93	1.27	1963	21	5.09	1998	.54	1990	12.2	6.7	1.0	.2	.58	.79	1.10	1.38	1.65	1.94	2.26	2.63	3.12	3.89	4.62
Jul	1.35	1.39	2.23	1983	10	3.11	1983	.10	1985	8.1	4.4	.5	.1	.18	.29	.49	.67	.87	1.09	1.34	1.65	2.07	2.75	3.41
Aug	1.62	1.58	1.36	1971	7	3.85	1993	.22	1998	8.7	4.6	.8	.1	.32	.46	.70	.92	1.14	1.38	1.65	1.97	2.41	3.10	3.75
Sep	1.48	1.53	1.50	1973	8	3.45	1986	.02	1979	7.2	4.0	.8	.1	.14	.24	.45	.65	.88	1.13	1.43	1.81	2.32	3.19	4.03
Oct	1.08	.86	1.80	1995	18	4.21	1975	.00	1987	7.0	3.1	.5	.1	.06	.17	.34	.50	.66	.85	1.07	1.34	1.70	2.30	2.88
Nov	.72	.63	.96	1996	19	2.13	1995	.14	1976	9.0	2.4	.1	.0	.18	.24	.35	.44	.54	.63	.74	.88	1.05	1.32	1.57
Dec	.59	.47	.80	1985	3	1.69	1996	.00	2000	7.4	2.0	.1	.0	.09	.17	.27	.35	.43	.52	.61	.73	.88	1.12	1.34
Ann	15.02	14.56	2.50	Apr 1975	26	5.78	May 1980	.00+	Dec 2000	105.5	45.5	5.4	.9	9.44	10.47	11.82	12.87	13.81	14.73	15.69	16.77	18.08	20.02	21.71

+ 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: 1955-2001

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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: PHILIPSBURG R S, MT

COOP ID: 246472

Climate Division: MT 1

NWS Call Sign:

Elevation: 5,270 Feet

Lat: 46° 18N

Lon: 113° 18W

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	9.7	7.5	4	2	12.0	1977	15	21.0	1972	21	1972	13	14	1972	5.3	3.5	.6	.3	.1	17.2	8.9	5.8	.5
Feb	6.0	5.0	3	1	5.0	1972	29	13.6	1993	15	1972	6	13	1972	3.3	2.6	.6	.1	.0	10.4	5.5	3.6	.9
Mar	5.6	4.0	1	1	9.0	1995	4	18.0	1995	14	1972	1	4	1993	2.2	1.9	1.2	.1	.0	6.1	2.9	.7	.0
Apr	4.1	.0	#	0	20.0	1975	26	26.0	1975	22	1975	27	4	1975	1.2	1.2	.4	.2	.1	1.7	.4	.3	.2
May	.1	.0	#	0	1.0	1994	19	1.0	1994	12	1975	1	3	1975	.1	.1	.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	.1	.0	0	0	2.0	1992	23	2.0	1992	0	0	0	0	0	.1	.1	.0	.0	.0	.0	.0	.0	.0
Sep	#	.0	#	0	#	1971	27	#	1971	4	1988	11	#	1988	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	1.0	.0	#	0	5.0	1994	15	5.0	1994	5+	1994	15	1	1975	.7	.7	.1	.1	.0	.6	.1	@	.0
Nov	6.9	7.0	1	1	7.0	1991	27	16.5	1973	12	1973	7	4	1973	2.3	1.9	.7	.3	.0	4.6	3.1	1.4	.2
Dec	5.5	4.4	2	1	4.0	1971	26	16.0	1971	9	1978	19	8	1978	3.1	2.3	.5	.0	.0	7.2	2.8	1.4	.0
Ann	39.0	27.9	N/A	N/A	20.0	Apr 1975	26	26.0	Apr 1975	22	Apr 1975	27	14	Jan 1972	18.3	14.3	4.1	1.1	.2	47.8	23.7	13.2	1.8

+ 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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No. 20 1971-2000

Station: PHILIPSBURG R S, MT

COOP ID: 246472

Climate Division: MT 1

NWS Call Sign:

Elevation: 5,270 Feet

Lat: 46° 18N

Lon: 113° 18W

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	7/29	7/25	7/22	7/19	7/17	7/15	7/12	7/09	7/05
32	7/21	7/14	7/08	7/03	6/29	6/25	6/20	6/15	6/07
28	6/29	6/21	6/15	6/10	6/06	6/01	5/27	5/21	5/13
24	6/01	5/25	5/20	5/16	5/12	5/08	5/04	4/29	4/22
20	5/15	5/09	5/05	5/01	4/27	4/24	4/20	4/16	4/10
16	5/04	4/26	4/20	4/16	4/11	4/06	4/02	3/27	3/19
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	8/01	8/06	8/09	8/12	8/15	8/18	8/21	8/24	8/29
32	8/11	8/16	8/20	8/23	8/26	8/29	9/02	9/05	9/11
28	8/28	9/01	9/04	9/06	9/09	9/11	9/13	9/16	9/20
24	9/07	9/11	9/14	9/17	9/19	9/22	9/25	9/28	10/02
20	9/16	9/22	9/26	9/29	10/02	10/05	10/09	10/13	10/18
16	9/29	10/05	10/10	10/14	10/17	10/21	10/24	10/29	11/04
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	48	42	37	32	28	24	20	15	8
32	85	75	69	63	58	52	47	40	31
28	121	112	105	100	94	89	83	77	68
24	153	145	139	134	130	125	120	115	107
20	182	174	167	162	157	152	147	141	132
16	215	206	199	194	188	183	177	171	161

* 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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No. 20
1971-2000**

Station: PHILIPSBURG R S, MT

COOP ID: 246472

Climate Division: MT 1

NWS Call Sign:

Elevation: 5,270 Feet Lat: 46°18N Lon: 113°18W

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	1287	1058	988	751	551	315	177	188	416	690	1029	1284	8734
60	1132	918	833	601	396	185	85	92	280	535	879	1129	7065
57	1039	834	740	513	308	122	44	51	208	442	789	1036	6126
55	977	778	678	456	252	88	26	32	166	381	729	974	5537
50	822	638	523	319	133	28	6	7	82	237	584	819	4198
32	334	218	88	28	1	0	0	0	0	6	167	324	1166

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	70	84	123	267	473	680	876	863	578	339	128	63	4544
55	0	0	0	5	11	78	189	182	54	1	0	0	520
57	0	0	0	2	6	52	145	139	36	0	0	0	380
60	0	0	0	0	1	25	92	87	18	0	0	0	223
65	0	0	0	0	0	5	30	28	4	0	0	0	67
70	0	0	0	0	0	0	7	6	0	0	0	0	13

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	0	4	31	106	266	471	659	653	377	168	30	2	0	4	35	141	407	878	1537	2190	2567	2735	2765	2767
45	0	0	2	45	145	323	504	498	243	79	10	0	0	0	2	47	192	515	1019	1517	1760	1839	1849	1849
50	0	0	0	15	65	192	351	345	130	24	0	0	0	0	0	15	80	272	623	968	1098	1122	1122	1122
55	0	0	0	1	18	92	209	205	54	2	0	0	0	0	0	1	19	111	320	525	579	581	581	581
60	0	0	0	0	1	35	95	89	13	1	0	0	0	0	0	0	1	36	131	220	233	234	234	234
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	4	36	102	201	320	457	459	302	158	23	0	0	4	40	142	343	663	1120	1579	1881	2039	2062	2062

(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