

Climatography of the United States

No. 20

1971-2000

Station: BREDETTE, MT

COOP ID: 241088

Climate Division: MT 6

NWS Call Sign:

Elevation: 2,687 Feet Lat: 48° 33N

Lon: 105° 16W

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	20.9	1.7	11.3	52+	1981	23	25.0	1981	-52	1954	20	-6.4	1982	1666	0	.0	.0	.2	22.5	30.7	14.2
Feb	28.4	9.3	18.9	65	1992	27	30.4	1991	-48	1962	28	1.8	1979	1293	0	.0	.0	1.2	15.4	27.6	8.7
Mar	40.2	19.3	29.8	76	1993	23	39.5	1986	-34	1962	4	19.8	1996	1092	0	.0	.0	7.7	8.8	28.3	3.0
Apr	55.8	30.9	43.4	91+	1980	20	51.7	1987	-12	1975	1	32.8	1975	651	2	.0	@	20.6	1.3	17.3	.2
May	68.4	41.9	55.2	100+	1980	22	61.9	1988	8	1954	3	48.6	1979	326	21	.1	.6	29.1	.0	3.7	.0
Jun	77.6	50.3	64.0	107	1988	20	77.0	1988	26	1969	12	59.1	1993	127	95	.4	2.9	30.0	.0	.1	.0
Jul	83.4	54.8	69.1	105+	1985	22	74.4	1989	35	1951	11	61.2	1993	50	176	.8	7.0	31.0	.0	.0	.0
Aug	83.1	54.0	68.6	108	1983	6	76.7	1983	29+	1964	25	61.7	1977	85	195	1.0	7.8	31.0	.0	.0	.0
Sep	70.4	43.6	57.0	103+	1983	1	64.4	1998	10	1961	30	49.8	1984	280	40	.1	1.6	28.3	.0	2.7	.0
Oct	56.8	33.0	44.9	95	1992	1	49.2	1974	-6	1991	30	39.5	1972	625	0	.0	.1	22.1	1.0	13.5	.1
Nov	36.5	18.0	27.3	76	1999	12	40.1	1999	-24	1985	27	11.9	1985	1132	0	.0	.0	5.0	11.0	26.9	3.2
Dec	24.7	6.0	15.4	59	1954	22	26.5	1979	-37+	1983	23	-2.4	1983	1540	0	.0	.0	.5	20.2	30.8	10.7
Ann	53.9	30.2	42.1	108	Aug 1983	6	77.0	Jun 1988	-52	Jan 1954	20	-6.4	Jan 1982	8867	529	2.4	20.0	206.7	80.2	181.6	40.1

+ 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: 1950-2001

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

020-A

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: BREDETTE, MT

COOP ID: 241088

Climate Division: MT 6

NWS Call Sign:

Elevation: 2,687 Feet Lat: 48°33N

Lon: 105°16W

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	.28	.22	.36	1969	22	.64	1982	.04	1981	7.1	.8	.0	.0	.05	.08	.12	.15	.19	.24	.28	.34	.42	.54	.66
Feb	.22	.16	.35	1954	24	.80	1972	.03	1981	5.3	.7	.0	.0	.03	.04	.07	.10	.14	.17	.21	.27	.33	.45	.56
Mar	.49	.40	.85	1954	11	1.40	1995	.05	1994	6.7	1.6	@	.0	.08	.13	.20	.26	.33	.41	.49	.60	.74	.97	1.18
Apr	.85	.75	1.32	1976	23	2.22	1991	.00	1984	7.2	2.5	.3	.1	.04	.12	.25	.37	.50	.65	.83	1.05	1.35	1.84	2.32
May	1.87	1.61	1.77	1972	26	4.64	1972	.26	1980	10.4	5.1	1.0	.2	.44	.61	.89	1.13	1.37	1.63	1.92	2.27	2.72	3.44	4.12
Jun	2.79	2.15	2.84	1994	7	8.99	1991	.20	1985	11.3	5.9	1.8	.4	.43	.67	1.08	1.46	1.86	2.30	2.80	3.41	4.23	5.57	6.85
Jul	2.46	2.24	2.79	1993	4	10.96	1993	.10	1984	9.4	4.7	1.6	.4	.31	.51	.86	1.20	1.56	1.96	2.43	3.01	3.79	5.08	6.32
Aug	1.39	1.29	2.76	1966	20	3.41+	1995	.11	1978	8.0	3.5	.7	.1	.19	.31	.51	.70	.90	1.12	1.38	1.70	2.12	2.82	3.49
Sep	1.21	.85	1.80	1978	12	4.68	1986	.17	1974	7.5	3.1	.6	.1	.17	.27	.45	.61	.79	.98	1.21	1.48	1.85	2.45	3.03
Oct	.70	.47	1.20	1953	21	3.10	1998	.09	1983	6.4	1.8	.3	@	.06	.10	.20	.29	.40	.52	.67	.86	1.11	1.54	1.96
Nov	.38	.33	.54	1981	18	1.26	1996	.01	1982	6.3	1.3	@	.0	.04	.07	.12	.17	.23	.29	.37	.46	.59	.80	1.00
Dec	.34	.32	.25+	1978	28	.66+	1996	.00	1997	7.7	.9	.0	.0	.05	.09	.15	.20	.24	.30	.35	.42	.51	.66	.79
Ann	12.98	12.54	2.84	Jun 1994	7	10.96	Jul 1993	.00+	Dec 1997	93.3	31.9	6.3	1.3	7.41	8.40	9.72	10.75	11.69	12.62	13.60	14.70	16.05	18.07	19.85

+ 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: 1950-2001

(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: BREDETTE, MT

COOP ID: 241088

Climate Division: MT 6

NWS Call Sign:

Elevation: 2,687 Feet

Lat: 48°33N

Lon: 105°16W

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	5.3	4.1	6	5	3.5	1980	10	13.4	1982	15+	1997	29	14+	1997	8.7	2.2	.1	.0	.0	29.3	22.4	14.2	2.1
Feb	4.0	2.8	5	4	4.0	1986	18	12.5	1972	18	1979	28	16	1979	6.5	1.6	.1	.0	.0	21.2	15.6	11.6	3.3
Mar	5.0	4.6	3	2	8.0	1975	23	17.1	1975	19	1979	3	13	1997	6.0	2.0	.3	.1	.0	11.1	7.0	5.0	1.5
Apr	2.7	2.2	#	#	4.0	1979	12	11.2	1979	10	1975	10	6	1975	2.9	1.3	.2	.0	.0	2.6	1.3	.7	.2
May	.7	.0	#	0	6.0	1983	12	7.0	1983	5	1999	11	#+	2000	.6	.4	.1	.1	.0	.2	.1	.1	.0
Jun	#	.0	0	0	#	1998	2	#	1998	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	.2	.0	#	0	2.0	1984	23	3.7	1984	2	1984	23	#+	1984	.3	.1	.0	.0	.0	.1	.0	.0	.0
Oct	1.8	.8	#	#	6.0	1980	22	9.4	1980	5	1985	9	1	1985	1.6	.7	.1	.1	.0	1.2	.3	.1	.0
Nov	5.0	4.1	1	1	5.0	1981	18	17.7	1996	12	1996	27	6	1996	5.8	2.0	.4	@	.0	9.5	4.7	2.1	.3
Dec	6.1	6.1	3	3	4.0	1978	28	12.6	1978	15	1996	31	11	1996	8.9	2.7	.3	.0	.0	23.5	15.5	6.4	1.0
Ann	30.8	24.7	N/A	N/A	8.0	Mar 1975	23	17.7	Nov 1996	19	Mar 1979	3	16	Feb 1979	41.3	13.0	1.6	.3	.0	98.7	66.9	40.2	8.4

+ 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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Climate Division: MT 6

NWS Call Sign:

Elevation: 2,687 Feet

Lat: 48° 33N

Lon: 105° 16W

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	6/11	6/05	6/01	5/28	5/24	5/21	5/17	5/13	5/07
32	5/28	5/23	5/20	5/18	5/15	5/13	5/10	5/07	5/02
28	5/18	5/13	5/10	5/07	5/05	5/02	4/29	4/26	4/22
24	5/06	5/02	4/29	4/27	4/24	4/22	4/20	4/17	4/13
20	4/26	4/21	4/17	4/14	4/11	4/07	4/04	3/31	3/26
16	4/15	4/10	4/06	4/03	3/31	3/28	3/25	3/22	3/17
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	9/03	9/06	9/09	9/11	9/14	9/16	9/18	9/21	9/24
32	9/12	9/16	9/19	9/21	9/23	9/25	9/28	9/30	10/04
28	9/16	9/20	9/23	9/26	9/28	10/01	10/04	10/07	10/11
24	9/25	9/30	10/04	10/07	10/10	10/13	10/16	10/19	10/25
20	10/01	10/07	10/11	10/15	10/19	10/22	10/26	10/30	11/05
16	10/12	10/18	10/22	10/26	10/30	11/02	11/06	11/10	11/17
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	131	124	119	115	111	107	103	98	92
32	147	142	137	134	130	127	123	119	113
28	167	159	154	150	146	142	138	133	126
24	188	181	176	172	168	164	159	154	147
20	213	205	199	195	190	186	181	176	168
16	237	228	222	217	212	207	201	195	186

* 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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NWS Call Sign:

Elevation: 2,687 Feet Lat: 48°33N Lon: 105°16W

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	1666	1293	1092	651	326	127	50	85	280	625	1132	1540	8867
60	1511	1153	937	509	207	59	15	38	175	470	982	1385	7441
57	1418	1069	844	428	150	33	7	22	123	379	892	1292	6657
55	1356	1019	783	376	117	21	2	15	94	319	832	1230	6164
50	1205	889	639	261	56	6	0	4	40	188	694	1078	5060
32	698	460	212	30	0	0	0	0	0	7	267	579	2253

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	56	91	143	371	718	958	1150	1133	750	406	125	62	5963
55	0	6	1	27	122	290	438	435	154	5	0	0	1478
57	0	0	0	18	93	241	382	380	123	2	0	0	1239
60	0	0	0	10	57	178	297	303	84	1	0	0	930
65	0	0	0	2	21	95	176	195	40	0	0	0	529
70	0	0	0	0	5	39	91	113	16	0	0	0	264

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	2	29	183	479	719	906	891	520	220	25	0	0	2	31	214	693	1412	2318	3209	3729	3949	3974	3974
45	0	1	5	101	339	569	751	736	379	126	8	0	0	1	6	107	446	1015	1766	2502	2881	3007	3015	3015
50	0	0	0	51	211	420	596	581	253	60	1	0	0	0	0	51	262	682	1278	1859	2112	2172	2173	2173
55	0	0	0	18	118	281	441	428	149	21	0	0	0	0	0	18	136	417	858	1286	1435	1456	1456	1456
60	0	0	0	6	53	159	293	285	77	3	0	0	0	0	0	6	59	218	511	796	873	876	876	876
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	28	131	301	444	571	559	319	147	19	0	0	1	29	160	461	905	1476	2035	2354	2501	2520	2520

(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