

# Climatography of the United States

No. 20

1971-2000

Station: BUSBY, MT

COOP ID: 241297

Climate Division: MT 5

NWS Call Sign:

Elevation: 3,430 Feet Lat: 45° 32N

Lon: 106° 58W

## 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	32.0	5.6	18.8	69	1992	31	31.6	1981	-45	1997	12	1.6	1979	1433	0	.0	.0	1.7	12.8	30.8	10.8
Feb	38.1	11.2	24.7	70	1992	29	35.7	1991	-47	1996	2	8.8	1989	1129	0	.0	.0	5.5	8.4	27.7	6.6
Mar	47.7	20.6	34.2	79	1978	30	42.6	1986	-33	1978	3	26.1	1989	957	0	.0	.0	14.7	3.1	28.4	1.9
Apr	59.4	29.7	44.6	87+	1987	28	50.9	1987	4+	1997	12	36.9	1975	614	0	.0	.0	23.6	.7	19.0	.0
May	69.2	38.4	53.8	95+	1988	29	58.6	1987	12	1954	3	49.1	1983	353	5	.0	.3	29.9	.0	6.9	.0
Jun	79.2	46.9	63.1	104	1988	20	74.0	1988	27	1969	14	57.3	1998	134	75	.2	3.6	30.0	.0	.4	.0
Jul	87.9	51.0	69.5	108+	1960	19	74.1	1998	32	1963	1	61.3	1993	44	182	1.4	13.4	31.0	.0	.0	.0
Aug	87.6	49.6	68.6	107	1949	6	75.4	1983	29+	1993	31	62.9	1974	58	170	.5	12.8	31.0	.0	.2	.0
Sep	75.5	39.6	57.6	105	1950	4	65.7	1998	12	1984	25	53.0	1985	253	30	.1	3.1	29.0	.0	5.5	.0
Oct	61.8	29.4	45.6	92	1953	1	49.2	1988	-21	1991	30	40.5	1984	600	0	.0	@	25.8	.5	20.6	.1
Nov	44.5	17.6	31.1	82+	1999	12	41.9	1999	-38	1959	16	15.3	1985	1019	0	.0	.0	10.7	5.4	28.1	3.0
Dec	34.0	7.5	20.8	68	1995	1	31.9	1999	-52	1989	22	1.5	1983	1372	0	.0	.0	2.6	11.5	30.5	7.7
Ann	59.7	28.9	44.4	108+	Jul 1960	19	75.4	Aug 1983	-52	Dec 1989	22	1.5	Dec 1983	7966	462	2.2	33.2	235.5	42.4	198.1	30.1

+ 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](http://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: 1944-2001

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

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# 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: BUSBY, MT

COOP ID: 241297

Climate Division: MT 5

NWS Call Sign:

Elevation: 3,430 Feet Lat: 45° 32N

Lon: 106° 58W

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	.72	.56	.70	1969	8	2.38	1971	.18	1992	7.9	2.5	.1	.0	.17	.24	.34	.44	.53	.63	.74	.88	1.05	1.33	1.59
Feb	.54	.39	.71	1999	26	1.80	2000	.03	1992	6.0	1.6	.2	.0	.07	.11	.19	.26	.34	.43	.53	.66	.83	1.12	1.39
Mar	.83	.83	.74	1995	12	2.31	1995	.17	1979	7.6	3.1	.1	.0	.26	.34	.46	.56	.66	.76	.87	.99	1.16	1.42	1.66
Apr	1.42	1.19	2.29	1955	4	3.22	1973	.12	1980	8.4	4.3	.5	.1	.18	.30	.50	.70	.90	1.13	1.40	1.73	2.18	2.91	3.62
May	2.25	1.86	2.56	1970	8	8.21	1978	.53	1985	9.4	5.7	1.2	.1	.67	.89	1.21	1.48	1.75	2.03	2.34	2.70	3.16	3.89	4.57
Jun	2.45	2.52	3.75	1988	12	4.75	1988	.76	1971	9.0	5.9	1.4	.4	1.08	1.30	1.60	1.85	2.08	2.32	2.57	2.86	3.22	3.78	4.28
Jul	1.17	.80	1.84	1962	14	4.51	1993	.17	1980	6.1	3.4	.6	.1	.10	.17	.33	.49	.67	.88	1.12	1.43	1.86	2.57	3.27
Aug	.85	.70	1.98+	1964	28	2.14	1987	.20	1975	5.1	2.6	.2	.1	.18	.26	.38	.50	.61	.73	.87	1.03	1.25	1.59	1.92
Sep	1.39	1.17	1.73	1966	13	4.11	1978	.10	1989	6.1	3.5	.8	.1	.18	.29	.49	.68	.88	1.11	1.37	1.70	2.14	2.86	3.56
Oct	1.37	1.22	1.72	1974	31	4.52	1971	.15	1987	6.7	3.8	.6	.2	.25	.37	.57	.75	.94	1.15	1.38	1.67	2.05	2.65	3.23
Nov	.87	.80	.74+	1975	24	1.89	1975	.28	1972	6.7	3.0	.2	.0	.32	.40	.52	.61	.71	.80	.91	1.03	1.19	1.42	1.64
Dec	.67	.59	.58	1977	2	2.29	1989	.08	1986	7.6	2.2	.1	.0	.11	.17	.27	.36	.45	.56	.67	.82	1.01	1.32	1.62
Ann	14.53	14.86	3.75	Jun 1988	12	8.21	May 1978	.03	Feb 1992	86.6	41.6	6.0	1.1	10.44	11.24	12.26	13.03	13.71	14.37	15.05	15.81	16.72	18.04	19.18

+ 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: 1944-2001

(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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### 1971-2000

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Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
[www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)

Station: BUSBY, MT

COOP ID: 241297

Climate Division: MT 5

NWS Call Sign:

Elevation: 3,430 Feet

Lat: 45° 32N

Lon: 106° 58W

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	10.3	8.8	7	6	11.0	1994	17	36.0	1971	19+	1985	31	17	1985	6.6	4.4	1.0	.2	.1	25.5	20.9	16.7	9.0
Feb	7.6	5.6	7	6	13.0	2000	25	24.5	2000	27	1971	3	20	1979	4.8	3.1	.7	.3	@	19.0	16.3	13.8	9.6
Mar	7.4	4.8	3	2	10.0	1977	29	18.7	1982	24	1985	4	13	1978	4.7	3.3	.9	.3	@	11.8	8.2	6.0	2.8
Apr	5.0	1.0	#	#	8.0	1975	8	25.0	1975	14	1975	8	2	1991	2.1	1.8	.8	.3	.0	1.8	.9	.3	@
May	1.7	.0	#	0	12.0	1983	12	17.0	1983	7	1983	12	#+	1995	.5	.4	.1	.1	.1	.2	.1	@	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	1	1988	12	#+	1991	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	#	0	.0	0	0	.0	0	#	1995	21	#	1995	.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	1.0	.0	#	0	6.0	1983	19	9.0	1984	2+	2000	22	#+	2000	.3	.3	.2	.1	.0	.2	.0	.0	.0
Oct	2.9	1.2	#	#	8.0	1993	8	13.0	1991	6	1996	26	1	1996	1.4	1.0	.5	.1	.0	1.2	.6	.1	.0
Nov	8.9	8.8	2	1	9.0	1991	21	21.3	1991	14	1975	28	6	1978	4.6	3.5	1.0	.4	.0	9.1	5.8	3.8	.4
Dec	10.4	8.4	5	2	12.0	1984	23	33.3	1989	20	1996	29	13	1978	6.4	4.3	.9	.3	@	22.1	15.2	11.1	4.8
Ann	55.2	38.6	N/A	N/A	13.0	Feb 2000	25	36.0	Jan 1971	27	Feb 1971	3	20	Feb 1979	31.4	22.1	6.1	2.1	.2	90.9	68.0	51.8	26.6

+ 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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# Climatography of the United States

## No. 20 1971-2000

**Station: BUSBY, MT**

**COOP ID: 241297**

**Climate Division: MT 5**

**NWS Call Sign:**

**Elevation: 3,430 Feet**

**Lat: 45° 32N**

**Lon: 106° 58W**

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	7/09	7/01	6/25	6/20	6/16	6/11	6/06	5/31	5/23
32	6/08	6/03	5/30	5/27	5/24	5/21	5/18	5/15	5/10
28	5/26	5/21	5/17	5/14	5/11	5/08	5/04	5/01	4/25
24	5/19	5/13	5/09	5/05	5/02	4/29	4/25	4/21	4/15
20	4/29	4/24	4/21	4/18	4/15	4/12	4/09	4/05	3/31
16	4/21	4/15	4/11	4/08	4/04	4/01	3/29	3/24	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	8/14	8/20	8/24	8/28	9/01	9/04	9/08	9/12	9/18
32	8/28	9/02	9/06	9/09	9/12	9/15	9/19	9/22	9/27
28	9/08	9/12	9/16	9/18	9/21	9/23	9/26	9/29	10/03
24	9/16	9/21	9/25	9/29	10/02	10/05	10/09	10/13	10/18
20	9/24	9/30	10/05	10/09	10/12	10/16	10/20	10/25	10/31
16	10/06	10/12	10/16	10/20	10/23	10/27	10/31	11/04	11/10
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	107	96	89	82	76	70	63	56	45
32	130	123	118	114	110	106	102	97	91
28	153	146	141	136	132	128	123	118	111
24	177	169	163	157	152	147	142	136	127
20	204	196	190	185	180	175	170	164	156
16	226	217	211	206	201	196	191	185	177

\* 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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of the United States  
No. 20  
1971-2000**

**Station: BUSBY, MT**

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**Climate Division: MT 5**

**NWS Call Sign:**

**Elevation: 3,430 Feet    Lat: 45° 32N    Lon: 106° 58W**

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	1433	1129	957	614	353	134	44	58	253	600	1019	1372	7966
60	1278	989	802	465	218	62	13	20	147	446	869	1217	6526
57	1185	912	709	380	150	33	5	9	97	354	780	1124	5738
55	1124	861	648	325	112	21	2	5	70	295	727	1062	5252
50	975	729	502	203	45	5	0	0	24	167	587	914	4151
32	487	332	115	7	0	0	0	0	0	5	199	432	1577

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	77	127	181	384	675	931	1160	1134	767	428	170	84	6118
55	1	11	1	11	74	262	449	426	147	5	8	0	1395
57	0	7	0	6	50	214	391	368	114	2	1	0	1153
60	0	0	0	2	25	153	306	286	74	0	0	0	846
65	0	0	0	0	5	75	182	170	30	0	0	0	462
70	0	0	0	0	0	28	94	86	10	0	0	0	218

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	8	48	193	433	690	914	885	539	228	35	1	0	8	56	249	682	1372	2286	3171	3710	3938	3973	3974
45	0	0	12	98	290	540	759	730	392	119	11	0	0	0	12	110	400	940	1699	2429	2821	2940	2951	2951
50	0	0	1	44	168	393	604	576	259	49	0	0	0	0	1	45	213	606	1210	1786	2045	2094	2094	2094
55	0	0	0	13	75	252	450	421	148	12	0	0	0	0	0	13	88	340	790	1211	1359	1371	1371	1371
60	0	0	0	0	23	138	301	270	67	0	0	0	0	0	0	0	23	161	462	732	799	799	799	799
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	1	16	64	173	303	441	570	561	383	209	50	3	1	17	81	254	557	998	1568	2129	2512	2721	2771	2774

(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](http://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](http://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.

- 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/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)