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: BRIDGER 2 N, MT **COOP ID: 241102**

Climate Division: MT 5 **NWS Call Sign:** **Elevation: 3,630 Feet** **Lat: 45˚20N** **Lon: 108˚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	8.9	21.4	73	1919	23	32.8	1981	-34	1930	17	4.3	1979	1352	0	.0	.0	2.9	11.8	29.3	7.5
Feb	41.0	13.9	27.5	85	1947	2	39.1	1999	-35	1936	15	10.7	1989	1052	0	.0	.0	7.9	7.2	25.5	3.7
Mar	50.9	22.0	36.5	79+	1918	25	44.9	1986	-26+	1932	10	27.3	1996	886	0	.0	.0	17.4	2.2	25.6	.8
Apr	59.0	29.3	44.2	88+	1962	19	51.0	1987	-3+	1936	6	35.4	1975	625	0	.0	.0	24.5	.5	15.9	.0
May	69.5	39.6	54.6	98+	1936	29	59.2	1994	4	1948	10	49.6	1996	334	8	.0	.6	29.6	.0	3.9	.0
Jun	79.6	47.7	63.7	106	1919	27	73.7	1988	27+	1916	9	56.3	1998	119	79	.1	4.7	29.9	.0	.1	.0
Jul	87.1	52.5	69.8	110	1933	25	74.9	2000	35+	1937	16	61.5	1993	36	184	1.2	11.9	31.0	.0	.0	.0
Aug	86.5	50.9	68.7	106+	2000	3	73.8	1971	18	1941	27	63.9	1993	51	165	.6	10.7	31.0	.0	.1	.0
Sep	75.0	40.0	57.5	101+	1950	4	66.6	1998	9	1926	24	52.0	1984	259	34	@	2.7	29.3	.0	2.7	.0
Oct	62.3	30.6	46.5	90+	1992	1	51.1	1988	-13	1919	24	41.5	1984	575	0	.0	@	27.0	.4	13.6	@
Nov	45.1	19.2	32.2	84	1914	2	41.8	1999	-26	1959	13	16.0	1985	985	0	.0	.0	11.9	4.4	25.1	1.7
Dec	36.4	11.7	24.1	72	1980	27	32.9	1997	-37	1983	24	7.6	1983	1270	0	.0	.0	3.8	9.5	28.8	4.8
Ann	60.5	30.5	45.6	110	Jul 1933	25	74.9	Jul 2000	-37	Dec 1983	24	4.3	Jan 1979	7544	470	1.9	30.6	246.2	36.0	170.6	18.5

\+ 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: 1900-2001

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

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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	.77	.64	.79	1975	26	2.42	1972	.18	1988
Feb	.57	.55	9.00	1910	2	1.60	1971	.00	1992
Mar	1.04	.88	1.82	1980	31	3.16	1980	.10	1999
Apr	1.69	1.47	2.75	1925	6	3.98	1991	.29	1977
May	2.43	2.24	3.08	1988	7	6.08	1978	.66	1973
Jun	1.63	1.36	2.94	2001	13	4.54	1992	.28	1977
Jul	.85	.59	1.55	1987	11	3.16	1987	.12	1977
Aug	.73	.65	1.62	1927	22	1.94	1972	.04	1988
Sep	1.23	1.00	2.82	1978	18	4.74	1978	.00	1979
Oct	1.29	1.20	2.31	1974	31	3.53	1971	.03	1987
Nov	.68	.67	1.02	1919	8	2.17	1975	.00	2000
Dec	.57	.51	.75	1933	25	1.47	1989	.03+	1999
Ann	13.48	13.15	9.00	Feb 1910	2	6.08	May 1978	.00+	Nov 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.7	2.4	.2	.0
Feb	4.8	2.0	.1	.0
Mar	7.6	2.9	.3	.1
Apr	8.2	4.3	.8	.2
May	9.5	4.9	1.5	.4
Jun	8.9	4.3	.8	.1
Jul	6.5	2.7	.4	.1
Aug	6.1	2.3	.4	@
Sep	6.3	3.3	.6	.2
Oct	5.8	3.1	.8	.1
Nov	5.1	2.3	.2	.0
Dec	5.1	2.0	.0	.0
Ann	79.6	36.5	6.1	1.2

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	.17	.24	.35	.45	.56	.67	.79	.94	1.13	1.45	1.74
Feb	.04	.10	.19	.27	.36	.45	.56	.70	.88	1.18	1.46
Mar	.19	.28	.43	.57	.72	.87	1.05	1.26	1.55	2.01	2.44
Apr	.28	.43	.68	.91	1.15	1.41	1.70	2.06	2.54	3.32	4.07
May	.58	.81	1.17	1.48	1.80	2.13	2.50	2.94	3.52	4.44	5.31
Jun	.26	.40	.63	.86	1.09	1.34	1.64	1.99	2.47	3.24	3.98
Jul	.09	.15	.27	.38	.51	.66	.83	1.04	1.33	1.82	2.29
Aug	.08	.14	.24	.34	.45	.57	.71	.89	1.13	1.52	1.90
Sep	.05	.16	.34	.52	.71	.93	1.19	1.51	1.95	2.68	3.40
Oct	.16	.26	.44	.62	.82	1.03	1.28	1.58	2.00	2.68	3.34
Nov	.07	.15	.26	.36	.46	.57	.69	.84	1.04	1.35	1.65
Dec	.09	.14	.22	.30	.38	.47	.57	.70	.86	1.14	1.40
Ann	8.23	9.18	10.44	11.42	12.30	13.16	14.07	15.08	16.32	18.16	19.77

\+ 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: 1900-2001
(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	9.2	8.3	3	3
Feb	6.4	4.5	2	1
Mar	9.5	7.2	1	#
Apr	6.8	3.4	1	#
May	1.4	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	1.0	.0	#	0
Oct	4.7	2.0	#	0
Nov	5.5	4.1	1	#
Dec	6.9	7.0	2	1
Ann	51.4	36.5	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	8.5	1972	2	28.7	1972	16	1972	4	12	1979
Feb	5.5	1978	11	16.7	1971	16	1978	19	13	1978
Mar	17.0	1980	31	33.5	1980	18	1980	31	6	1978
Apr	24.5	1984	26	37.0	1984	30	1984	27	3	1984
May	6.0	1988	1	9.5	1983	7	1984	1	1	1984
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	5.0	1983	19	7.6	1985	4	1984	23	#+	1985
Oct	9.8	1971	1	24.9	1971	8	1991	29	1	1991
Nov	6.0	1975	18	17.3	1978	14	1975	29	6	1978
Dec	5.0	1978	5	16.5	1989	15	1978	9	10	1978
Ann	24.5	Apr 1984	26	37.0	Apr 1984	30	Apr 1984	27	13	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.8	2.9	1.0	.3	.0
Feb	4.0	2.5	.6	.1	.0
Mar	4.3	2.7	1.1	.5	.1
Apr	2.2	1.6	1.0	.6	.1
May	.4	.4	.3	.1	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.3	.3	.2	@	.0
Oct	1.2	1.0	.5	.3	.0
Nov	3.0	2.1	.7	.1	.0
Dec	4.3	2.3	.5	.1	.0
Ann	24.5	15.8	5.9	2.1	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	21.7	15.2	9.0	2.6
Feb	15.3	9.6	6.3	2.2
Mar	6.4	3.1	1.5	.5
Apr	2.6	1.9	1.3	.5
May	.3	.2	.1	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.2	.1	.0	.0
Oct	1.2	.8	.3	.0
Nov	7.1	4.2	3.2	.3
Dec	15.1	9.9	5.3	1.6
Ann	69.9	45.0	27.0	7.7

+ 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	6/22	6/16	6/12	6/08	6/04	6/01	5/28	5/23	5/17
32	6/03	5/28	5/23	5/20	5/16	5/13	5/09	5/05	4/29
28	5/18	5/12	5/08	5/04	5/01	4/27	4/23	4/19	4/13
24	5/04	4/30	4/26	4/23	4/20	4/18	4/15	4/11	4/06
20	4/25	4/19	4/14	4/11	4/07	4/04	3/31	3/27	3/21
16	4/19	4/12	4/08	4/04	3/31	3/28	3/24	3/19	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	9/02	9/06	9/08	9/11	9/13	9/15	9/17	9/19	9/23
32	9/07	9/11	9/14	9/17	9/19	9/21	9/24	9/27	10/01
28	9/16	9/21	9/25	9/28	10/01	10/04	10/08	10/11	10/17
24	9/28	10/04	10/08	10/11	10/15	10/18	10/21	10/26	10/31
20	10/08	10/14	10/18	10/22	10/26	10/29	11/02	11/07	11/13
16	10/17	10/23	10/28	11/01	11/04	11/08	11/12	11/16	11/23

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	118	112	107	103	100	96	92	88	81
32	144	138	133	129	125	121	117	112	106
28	177	169	163	158	153	148	143	137	129
24	201	193	187	181	177	172	167	161	152
20	227	218	211	206	201	195	190	183	174
16	246	236	229	223	217	211	205	198	188

***** 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	1352	1052	886	625	334	119	36	51	259	575	985	1270	7544
60	1197	912	731	477	205	51	10	17	154	421	835	1115	6125
57	1104	828	638	392	142	26	3	7	104	330	745	1022	5341
55	1043	779	576	337	107	16	1	4	77	271	691	960	4862
50	899	648	429	214	44	3	0	0	29	145	551	816	3778
32	418	260	65	8	0	0	0	0	0	3	169	346	1269

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	89	132	202	373	698	950	1171	1137	765	451	174	99	6241
55	1	8	0	12	91	275	459	427	152	6	6	0	1437
57	0	0	0	7	64	226	399	369	119	3	0	0	1187
60	0	0	0	2	34	161	313	286	79	1	0	0	876
65	0	0	0	0	8	79	184	165	34	0	0	0	470
70	0	0	0	0	1	28	92	79	11	0	0	0	211

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	8	30	81	224	475	718	937	900	581	293	60	16	8	38	119	343	818	1536	2473	3373	3954	4247	4307	4323
45	0	5	31	124	327	569	782	745	437	175	22	1	0	5	36	160	487	1056	1838	2583	3020	3195	3217	3218
50	0	0	6	57	198	421	627	592	302	86	4	0	0	0	6	63	261	682	1309	1901	2203	2289	2293	2293
55	0	0	0	19	99	277	472	438	187	34	0	0	0	0	0	19	118	395	867	1305	1492	1526	1526	1526
60	0	0	0	4	40	161	322	286	92	9	0	0	0	0	0	4	44	205	527	813	905	914	914	914
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	30	81	179	314	453	586	568	392	222	52	10	0	30	111	290	604	1057	1643	2211	2603	2825	2877	2887

(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