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: VIRGINIA CITY, MT **COOP ID: 248597**

Climate Division: MT 2 **NWS Call Sign:** **Elevation: 5,773 Feet** **Lat: 45˚18N** **Lon: 111˚57W**

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	33.7	12.1	22.9	57	1981	22	30.9	1994	-40	1963	19	9.6	1979	1304	0	.0	.0	1.3	11.8	30.0	6.1
Feb	38.0	15.1	26.6	64+	1963	5	35.1	1991	-34	1989	3	13.0	1989	1076	0	.0	.0	3.3	6.6	27.3	3.6
Mar	44.0	21.0	32.5	70	1994	15	40.5	1992	-17	1960	2	26.3	1976	1007	0	.0	.0	8.9	2.8	28.7	.9
Apr	52.7	27.7	40.2	79	1987	28	47.2	1987	-5	1982	8	32.4	1975	744	0	.0	.0	18.1	.5	22.5	.1
May	61.3	35.9	48.6	91	1954	18	53.1	1992	12+	1982	5	44.1+	1975	509	0	.0	.0	26.8	.0	10.0	.0
Jun	71.0	42.8	56.9	93	1974	25	62.3	1988	24	1966	4	50.8	1998	255	12	.0	.2	29.7	.0	2.3	.0
Jul	79.2	48.5	63.9	99	1960	19	68.2	1989	27+	1981	8	54.8	1993	117	82	.0	1.7	31.0	.0	.1	.0
Aug	78.7	47.5	63.1	96+	1983	6	68.9	1971	24	1976	27	57.6	1993	125	65	.0	1.1	31.0	.0	.5	.0
Sep	68.5	39.0	53.8	93	1967	5	60.8	1990	11+	1985	30	46.8	1986	351	13	.0	.1	28.6	.1	6.7	.0
Oct	57.0	30.2	43.6	83	1974	3	49.3	1988	-10	1971	29	38.7	1984	663	0	.0	.0	23.7	.6	19.4	.1
Nov	41.1	19.6	30.4	70+	1999	12	41.1	1999	-25	1955	16	19.2	1985	1039	0	.0	.0	7.4	5.8	27.3	1.6
Dec	34.1	12.6	23.4	59+	1990	10	33.0	1980	-38	1983	24	11.0	1983	1292	0	.0	.0	1.6	11.5	29.9	4.7
Ann	54.9	29.3	42.2	99	Jul 1960	19	68.9	Aug 1971	-40	Jan 1963	19	9.6	Jan 1979	8482	172	.0	3.1	211.4	39.7	204.7	17.1

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

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

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Station: VIRGINIA CITY, MT

COOP ID: 248597

Climate Division: MT 2 **NWS Call Sign:** **Elevation: 5,773 Feet** **Lat: 45°18N** **Lon: 111°57W**

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	.74	.65	.80	1952	16	1.89	1995	.03	1991
Feb	.55	.53	.53	1962	18	1.19	1980	.03	1977
Mar	1.02	.85	1.40	1950	6	2.29	1977	.01	1978
Apr	1.44	1.27	1.26	1992	22	2.73	1995	.22+	1987
May	2.58	2.39	1.59	1980	25	6.12	1980	.55	1983
Jun	2.48	2.47	1.40	1959	25	4.62	1998	.61+	1989
Jul	1.64	1.50	1.88	1968	9	4.28	1987	.05	1999
Aug	1.45	1.47	1.14	1969	12	4.09	1993	.16	1981
Sep	1.26	1.03	1.34	1977	30	3.33	1980	.00	1979
Oct	1.08	.91	.86	1961	21	2.70	2000	.00	1987
Nov	.90	.80	1.16	1952	15	2.71	1983	.18	1999
Dec	.68	.65	1.22	1955	23	1.55	1982	.06	1976
Ann	15.82	15.67	1.88	Jul 1968	9	6.12	May 1980	.00+	Oct 1987

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.3	2.9	.2	.0
Feb	5.3	2.2	.0	.0
Mar	7.0	3.2	.3	@
Apr	8.3	4.4	.5	@
May	11.6	7.2	1.4	.2
Jun	10.0	6.4	1.5	.1
Jul	8.5	4.3	.8	.1
Aug	7.8	4.5	.7	@
Sep	5.8	3.5	.6	.1
Oct	5.5	3.3	.6	.0
Nov	6.0	3.0	.3	.0
Dec	6.2	2.6	.1	.0
Ann	88.3	47.5	7.0	.5

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	.10	.16	.27	.37	.48	.60	.73	.90	1.13	1.50	1.86
Feb	.11	.16	.24	.31	.39	.47	.56	.67	.82	1.06	1.29
Mar	.12	.20	.35	.49	.64	.81	1.00	1.24	1.57	2.10	2.62
Apr	.37	.50	.71	.90	1.08	1.27	1.48	1.74	2.07	2.59	3.08
May	.81	1.06	1.42	1.73	2.03	2.34	2.68	3.08	3.60	4.40	5.15
Jun	.96	1.19	1.52	1.79	2.05	2.31	2.60	2.93	3.35	3.99	4.58
Jul	.15	.26	.48	.71	.96	1.24	1.58	2.00	2.57	3.54	4.48
Aug	.35	.49	.70	.89	1.08	1.27	1.49	1.75	2.09	2.63	3.14
Sep	.06	.16	.35	.53	.73	.96	1.22	1.55	2.01	2.76	3.50
Oct	.12	.25	.43	.58	.74	.91	1.10	1.33	1.63	2.12	2.59
Nov	.21	.30	.43	.55	.66	.79	.93	1.10	1.31	1.66	1.99
Dec	.14	.20	.30	.40	.49	.59	.70	.83	1.00	1.29	1.55
Ann	11.18	12.08	13.22	14.10	14.87	15.62	16.40	17.25	18.29	19.80	21.11

\+ 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: 1948-2001
(3) Derived from 1971-2000 serially complete daily data

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Climate Division: MT 2 **NWS Call Sign:** **Elevation: 5,773 Feet** **Lat: 45°18N** **Lon: 111°57W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	10.8	9.1	6	5
Feb	7.7	7.0	5	4
Mar	10.4	8.5	2	1
Apr	10.8	10.0	1	#
May	4.5	2.0	#	0
Jun	.3	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.8	.0	#	0
Oct	2.9	1.3	#	0
Nov	9.4	6.5	1	1
Dec	10.2	7.5	4	4
Ann	67.8	51.9	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	10.0	1995	15	24.0	1998	24	1995	27	18	1995
Feb	10.0	1984	9	19.3	1984	16	1998	28	14	1998
Mar	12.0	1980	30	22.9	1984	21	1998	4	12	1998
Apr	14.0	1973	20	29.0	1982	14	1973	20	6	1982
May	12.0	1999	10	27.0	1999	13	1999	10	1	1999
Jun	6.0	1981	13	6.0	1981	4	1976	13	#+	1976
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	6.0	1988	11	11.9	1988	6	1977	30	#+	1977
Oct	9.0	1989	28	13.0	1989	6	1991	31	1	2000
Nov	10.0	1984	24	22.0	1983	11	1973	25	4+	2000
Dec	8.0	1982	23	25.0	1975	15	1994	7	12	1994
Ann	14.0	Apr 1973	20	29.0	Apr 1982	24	Jan 1995	27	18	Jan 1995

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.3	4.3	1.4	.4	@
Feb	3.6	3.0	.9	.2	@
Mar	5.2	4.2	1.3	.5	.0
Apr	3.2	2.8	1.6	.8	.1
May	1.5	1.4	.4	.3	.1
Jun	.1	.1	@	@	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.3	.2	.1	@	.0
Oct	1.7	1.4	.5	.2	.0
Nov	4.3	3.6	1.2	.4	@
Dec	5.1	4.0	1.5	.5	.0
Ann	30.3	25.0	8.9	3.3	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	-9.9	-9.9	-9.9	-9.9
Mar	-9.9	-9.9	-9.9	-9.9
Apr	1.6	1.0	.6	.1
May	.5	.2	.1	.1
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.1	.0	.0	.0
Oct	1.0	.2	.0	.0
Nov	-9.9	-9.9	-9.9	-9.9
Dec	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	-9.9	-9.9

+ 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

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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	7/19	7/13	7/09	7/05	7/02	6/29	6/25	6/21	6/16
32	7/06	6/29	6/25	6/21	6/18	6/14	6/10	6/06	5/30
28	6/20	6/13	6/08	6/04	5/31	5/27	5/22	5/17	5/10
24	5/22	5/16	5/11	5/08	5/04	5/01	4/27	4/23	4/17
20	5/13	5/07	5/03	4/29	4/26	4/23	4/19	4/15	4/10
16	5/02	4/26	4/21	4/17	4/13	4/09	4/05	3/31	3/25

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	8/10	8/16	8/21	8/25	8/29	9/01	9/05	9/10	9/17
32	8/20	8/26	8/31	9/04	9/08	9/11	9/15	9/20	9/27
28	9/04	9/09	9/12	9/15	9/18	9/21	9/23	9/27	10/02
24	9/12	9/18	9/22	9/26	9/30	10/03	10/07	10/12	10/18
20	9/26	10/01	10/05	10/09	10/12	10/15	10/19	10/23	10/29
16	10/06	10/12	10/16	10/19	10/23	10/26	10/30	11/03	11/09

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	81	73	67	61	57	52	46	40	32
32	111	101	94	87	82	76	69	62	52
28	134	126	119	114	109	104	99	93	84
24	173	164	158	153	148	143	137	131	123
20	192	184	178	173	168	163	158	152	144
16	221	211	204	198	192	186	180	173	163

***** 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	1304	1076	1007	744	509	255	117	125	351	663	1039	1292	8482
60	1149	936	852	594	356	139	47	52	228	508	889	1137	6887
57	1056	852	759	505	271	86	23	26	166	417	799	1044	6004
55	994	796	697	448	218	58	14	16	131	357	739	982	5450
50	839	656	543	311	111	16	2	3	62	221	593	827	4184
32	327	212	113	25	0	0	0	0	0	6	172	333	1188

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	45	60	129	271	515	747	989	963	652	367	124	64	4926
55	0	0	0	4	19	115	289	266	93	4	0	0	790
57	0	0	0	1	10	83	236	214	68	2	0	0	614
60	0	0	0	0	3	46	168	147	40	0	0	0	404
65	0	0	0	0	0	12	82	65	13	0	0	0	172
70	0	0	0	0	0	2	28	19	3	0	0	0	52

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	25	109	292	515	748	722	420	180	25	1	0	4	29	138	430	945	1693	2415	2835	3015	3040	3041
45	0	0	4	50	172	366	593	567	289	88	3	0	0	0	4	54	226	592	1185	1752	2041	2129	2132	2132
50	0	0	0	15	80	236	438	417	171	31	0	0	0	0	0	15	95	331	769	1186	1357	1388	1388	1388
55	0	0	0	0	30	125	293	268	80	7	0	0	0	0	0	0	30	155	448	716	796	803	803	803
60	0	0	0	0	2	49	158	136	26	0	0	0	0	0	0	0	2	51	209	345	371	371	371	371
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	3	27	92	199	330	481	469	295	149	21	0	0	3	30	122	321	651	1132	1601	1896	2045	2066	2066

(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