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: SULA 3 ENE, MT **COOP ID: 247964**

Climate Division: MT 1 **NWS Call Sign:** **Elevation: 4,475 Feet** **Lat: 45˚51N** **Lon: 113˚56W**

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	32.3	9.7	21.0	58+	1992	31	29.7	1983	-43	1957	26	4.3	1979	1365	0	.0	.0	1.2	12.0	30.4	7.8
Feb	39.3	14.0	26.7	67+	1995	24	35.9	1991	-40	1985	4	16.0	1989	1074	0	.0	.0	4.5	4.7	27.2	4.8
Mar	47.0	21.0	34.0	73	1986	28	40.6	1992	-24	1966	4	27.3	1985	961	0	.0	.0	13.3	.9	29.3	.9
Apr	55.3	26.5	40.9	83+	1992	29	46.2	1990	3	1982	8	34.7	1975	723	0	.0	.0	21.5	.1	24.0	.0
May	63.3	32.5	47.9	90	1986	30	52.6	1993	10	1973	2	43.8	1974	530	0	.0	@	28.5	.0	15.5	.0
Jun	71.6	38.1	54.9	95	1974	19	60.0	1988	20+	1974	1	51.8	1975	306	2	.0	.7	29.9	.0	5.9	.0
Jul	80.2	40.3	60.3	98+	1960	21	64.8	1985	21	1971	7	54.5	1993	170	21	.0	4.5	31.0	.0	3.0	.0
Aug	79.8	39.2	59.5	100+	1961	5	64.0	1983	14	1992	25	55.7	1987	189	18	.0	4.3	31.0	.0	4.4	.0
Sep	70.2	31.6	50.9	92+	2000	15	57.5	1998	10+	1985	30	45.9	1972	426	2	.0	.6	29.2	.0	17.1	.0
Oct	57.9	24.7	41.3	87+	1992	1	46.6	1988	-10	1971	29	37.2	1984	734	0	.0	.0	24.6	.2	25.6	.1
Nov	40.9	18.7	29.8	72+	1999	12	39.0	1999	-30	1959	13	18.9	1985	1057	0	.0	.0	7.4	4.4	27.8	2.3
Dec	31.6	10.6	21.1	59	1990	9	29.6	1979	-45	1983	23	8.1	1983	1361	0	.0	.0	1.0	13.4	30.2	6.4
Ann	55.8	25.6	40.7	100+	Aug 1961	5	64.8	Jul 1985	-45	Dec 1983	23	4.3	Jan 1979	8896	43	.0	10.1	223.1	35.7	240.4	22.3

\+ 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: 1955-2001

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

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: SULA 3 ENE, MT **COOP ID: 247964**

Climate Division: MT 1 **NWS Call Sign:** **Elevation: 4,475 Feet** **Lat: 45°51N** **Lon: 113°56W**

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	.96	.85	.82	1997	1	1.98	1975	.09	1981
Feb	.80	.61	.71	1995	1	2.59	1986	.00	1977
Mar	.99	.97	.78	1987	18	2.01	1989	.37	1992
Apr	1.50	1.43	.83	1996	10	3.34	1998	.34	1977
May	2.25	1.89	1.58	1977	17	5.09	1980	.45	1979
Jun	2.20	2.30	1.35	1958	24	4.11	1993	.45	1974
Jul	1.39	1.37	1.28	1984	29	3.41	1995	.07	1988
Aug	1.41	1.23	1.31	1978	14	3.46	1989	.10	1998
Sep	1.22	1.17	1.35	1957	18	3.28	1986	.02	1979
Oct	1.17	.86	1.03	1975	21	4.31	1975	.00	1987
Nov	1.18	1.09	1.14	1962	20	2.82	1995	.27	1982
Dec	.97	.89	1.20	1964	22	2.87	1996	.13	1986
Ann	16.04	16.08	1.58	May 1977	17	5.09	May 1980	.00+	Oct 1987

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.6	3.5	.1	.0
Feb	7.8	2.7	.2	.0
Mar	10.0	3.5	.1	.0
Apr	11.0	5.4	.5	.0
May	13.2	6.9	.8	.1
Jun	12.5	6.7	1.0	@
Jul	8.7	4.0	.5	.1
Aug	9.2	4.2	.6	.1
Sep	7.3	4.0	.4	.0
Oct	7.7	4.0	.4	.1
Nov	10.0	3.9	.3	.0
Dec	10.2	3.5	.1	.0
Ann	117.2	52.3	5.0	.4

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	.22	.30	.44	.57	.70	.83	.98	1.16	1.39	1.77	2.12
Feb	.11	.21	.34	.45	.57	.69	.82	.98	1.19	1.52	1.84
Mar	.42	.51	.64	.74	.84	.94	1.04	1.16	1.32	1.56	1.77
Apr	.44	.59	.80	.99	1.17	1.35	1.56	1.80	2.12	2.61	3.07
May	.71	.93	1.24	1.52	1.78	2.05	2.35	2.70	3.15	3.85	4.50
Jun	.83	1.03	1.33	1.57	1.81	2.04	2.30	2.60	2.98	3.57	4.10
Jul	.14	.24	.43	.62	.83	1.07	1.35	1.70	2.18	2.97	3.75
Aug	.18	.29	.49	.68	.89	1.12	1.39	1.72	2.17	2.90	3.61
Sep	.13	.23	.40	.57	.75	.95	1.19	1.49	1.90	2.57	3.23
Oct	.17	.32	.52	.68	.84	1.02	1.21	1.44	1.74	2.22	2.67
Nov	.34	.45	.62	.77	.91	1.06	1.22	1.41	1.66	2.06	2.42
Dec	.18	.27	.41	.54	.67	.82	.98	1.18	1.44	1.86	2.26
Ann	10.47	11.51	12.86	13.90	14.84	15.75	16.69	17.75	19.03	20.92	22.56

\+ 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

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: SULA 3 ENE, MT **COOP ID: 247964**

Climate Division: MT 1 **NWS Call Sign:** **Elevation: 4,475 Feet** **Lat: 45°51N** **Lon: 113°56W**

Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	9.1	4.9	5	5	8.0	2000	11	19.8	1989	20	1979	11	16	1979	4.6	2.4	.6	.2	.0	-9.9	-9.9	-9.9	-9.9
Feb	5.0	4.8	5	3	5.6	1999	9	14.9	1979	17	1979	5	13	1979	2.8	1.7	.2	.1	.0	-9.9	-9.9	-9.9	-9.9
Mar	2.5	2.5	2	1	5.0	1987	18	6.0	1978	14	1985	7	10	1985	1.5	1.0	.2	.1	.0	4.9	2.2	1.1	.3
Apr	1.5	.8	#	#	3.5	1985	19	5.5	1985	4	1997	24	#+	2000	1.0	.7	.2	.0	.0	.8	.1	.0	.0
May	.2	.0	#	0	2.0	1984	5	2.0	1984	4	1988	30	#+	2000	.1	.1	.0	.0	.0	.0	.0	.0	.0
Jun	#	.0	#	0	#	1996	18	#+	1996	#	1996	18	#	1996	.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	.5	.0	#	0	6.0	1984	24	9.7	1984	4+	1984	24	#+	1984	.2	.2	.1	@	.0	.2	.1	.0	.0
Oct	.5	.0	#	0	3.0	1980	26	3.0	1980	3	1985	8	#+	1999	.3	.2	@	.0	.0	.5	.1	.0	.0
Nov	5.3	3.9	1	1	7.0	1981	24	11.1	1985	8	1981	25	3	1996	3.5	1.8	.4	.2	.0	8.4	3.2	1.5	.0
Dec	7.7	6.2	3	2	13.0	1996	25	17.6	1978	20	1996	29	10	1978	5.4	2.5	.6	.1	@	19.2	10.2	6.1	2.5
Ann	32.3	23.1	N/A	N/A	13.0	Dec 1996	25	19.8	Jan 1989	20+	Dec 1996	29	16	Jan 1979	19.4	10.6	2.3	.7	@	-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

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

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: SULA 3 ENE, MT **COOP ID: 247964**

Climate Division: MT 1 **NWS Call Sign:** **Elevation: 4,475 Feet** **Lat: 45˚51N** **Lon: 113˚56W**

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	8/03	7/31	7/29	7/27	7/25	7/23	7/21	7/18	7/15
32	7/31	7/25	7/20	7/16	7/13	7/09	7/06	7/01	6/25
28	7/10	7/03	6/27	6/22	6/18	6/13	6/08	6/03	5/26
24	6/15	6/08	6/02	5/28	5/24	5/19	5/14	5/09	5/01
20	5/21	5/15	5/11	5/07	5/04	4/30	4/26	4/22	4/16
16	5/10	5/02	4/26	4/20	4/16	4/11	4/05	3/30	3/22

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	7/29	7/31	8/03	8/05	8/06	8/08	8/10	8/12	8/15
32	7/31	8/05	8/09	8/12	8/15	8/18	8/22	8/25	8/31
28	8/17	8/23	8/27	8/30	9/02	9/05	9/08	9/12	9/18
24	9/02	9/07	9/10	9/12	9/15	9/17	9/20	9/23	9/27
20	9/09	9/14	9/17	9/21	9/24	9/26	9/30	10/03	10/08
16	9/15	9/22	9/27	10/01	10/05	10/09	10/13	10/18	10/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	27	22	18	15	12	9	6	2	0
32	55	48	42	37	33	28	23	17	10
28	105	95	88	81	76	70	64	56	46
24	141	132	125	119	113	108	102	95	86
20	169	160	153	147	142	137	131	125	116
16	208	196	187	179	172	165	157	148	136

***** 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: SULA 3 ENE, MT **COOP ID: 247964**

Climate Division: MT 1 **NWS Call Sign:** **Elevation: 4,475 Feet** **Lat: 45˚51N** **Lon: 113˚56W**

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	1365	1074	961	723	530	306	170	189	426	734	1057	1361	8896
60	1210	934	806	573	375	171	74	87	285	579	907	1206	7207
57	1117	850	713	483	286	105	35	46	210	486	817	1113	6261
55	1055	794	651	424	230	71	19	27	166	424	757	1051	5669
50	900	654	496	284	113	17	2	5	78	272	607	896	4324
32	396	223	72	12	0	0	0	0	0	6	168	380	1257

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	54	73	134	279	493	685	875	852	567	295	101	42	4450
55	0	0	0	1	10	66	180	166	42	0	0	0	465
57	0	0	0	0	4	41	134	123	27	0	0	0	329
60	0	0	0	0	0	16	81	71	12	0	0	0	180
65	0	0	0	0	0	2	21	18	2	0	0	0	43
70	0	0	0	0	0	0	3	2	0	0	0	0	5

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	3	29	110	282	474	655	640	367	133	19	0	0	3	32	142	424	898	1553	2193	2560	2693	2712	2712
45	0	0	1	45	159	325	500	485	228	55	2	0	0	0	1	46	205	530	1030	1515	1743	1798	1800	1800
50	0	0	0	13	68	192	345	331	118	12	0	0	0	0	0	13	81	273	618	949	1067	1079	1079	1079
55	0	0	0	0	14	84	201	188	39	2	0	0	0	0	0	0	14	98	299	487	526	528	528	528
60	0	0	0	0	0	25	82	73	9	0	0	0	0	0	0	0	0	25	107	180	189	189	189	189
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	10	50	127	239	348	479	480	338	181	26	0	0	10	60	187	426	774	1253	1733	2071	2252	2278	2278

(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.
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