

Climatography of the United States

No. 20

1971-2000

Station: REDSTONE, MT

COOP ID: 246927

Climate Division: MT 6

NWS Call Sign:

Elevation: 2,110 Feet Lat: 48°49N

Lon: 104°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	21.5	-2.3	9.6	62	1981	23	24.7	1986	-53	1954	20	-8.4	1982	1719	0	.0	.0	.4	21.0	30.7	17.0
Feb	29.4	6.2	17.8	68	1992	27	29.5	1991	-48	1962	28	.8	1979	1321	0	.0	.0	2.3	14.2	27.7	10.4
Mar	41.3	16.8	29.1	79	1978	30	39.2	1986	-35	1962	1	19.2	1996	1115	0	.0	.0	9.9	7.8	29.6	3.8
Apr	57.7	27.5	42.6	92	1980	20	50.6	1987	-27	1975	2	32.5	1975	673	0	.0	@	22.2	.8	21.3	.3
May	70.4	38.8	54.6	102	1980	22	60.6	1988	5	1954	3	48.7	1996	338	16	.1	.8	29.9	.0	7.7	.0
Jun	79.2	47.7	63.5	105+	1988	7	76.3	1988	23	1998	4	58.8	1998	134	88	.3	3.6	30.0	.0	.7	.0
Jul	85.0	51.1	68.1	105+	1985	22	73.8	1989	34+	1983	17	61.1	1993	53	148	.9	8.5	31.0	.0	.0	.0
Aug	84.6	49.4	67.0	110	1983	6	74.2	1983	12	2000	7	60.0	1977	95	156	1.1	8.9	31.0	.0	.7	.0
Sep	72.0	38.5	55.3	104	1978	3	61.6	1998	9+	1974	30	49.3	1984	314	21	.2	1.9	28.7	.0	8.0	.0
Oct	58.5	28.6	43.6	96	1992	1	48.0	1979	-12+	1991	30	39.8	1984	666	0	.0	.1	23.6	.8	20.7	.2
Nov	37.6	14.0	25.8	80	1999	7	35.9	1999	-32+	1996	25	11.6	1985	1176	0	.0	.0	5.9	10.4	28.4	5.0
Dec	25.8	2.1	14.0	60	1997	14	25.9	1997	-52	1983	23	-4.4	1983	1583	0	.0	.0	1.1	18.5	30.8	13.6
Ann	55.3	26.5	40.9	110	Aug 1983	6	76.3	Jun 1988	-53	Jan 1954	20	-8.4	Jan 1982	9187	429	2.6	23.8	216.0	73.5	206.3	50.3

+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1951-2001

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

Climatology 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: REDSTONE, MT

COOP ID: 246927

Climate Division: MT 6

NWS Call Sign:

Elevation: 2,110 Feet Lat: 48° 49N

Lon: 104° 57W

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	.31	.17	.66	1977	7	1.24	1999	.00	1973	3.4	1.2	@	.0	.00	.02	.06	.10	.15	.21	.28	.38	.51	.74	.97
Feb	.22	.11	.49	1998	25	1.30	1972	.00+	1997	2.4	.8	.0	.0	.00	.00	.02	.05	.09	.14	.19	.27	.38	.56	.75
Mar	.58	.49	.77	1993	28	1.82	1975	.02	1994	4.3	2.1	.1	.0	.07	.11	.19	.27	.36	.45	.57	.70	.89	1.20	1.51
Apr	.81	.59	1.48	1992	18	2.77	1992	.00	1987	5.2	2.6	.3	@	.05	.13	.26	.38	.51	.64	.80	1.00	1.27	1.71	2.13
May	2.00	1.67	1.90	1955	3	5.26	1972	.21	1980	8.7	5.5	1.1	.2	.36	.54	.83	1.10	1.38	1.68	2.02	2.44	2.99	3.88	4.73
Jun	2.54	2.23	2.05	1953	30	6.10	1976	.36+	1985	9.3	5.7	1.8	.4	.56	.79	1.16	1.50	1.84	2.20	2.60	3.09	3.73	4.74	5.70
Jul	2.13	1.58	2.25	1962	19	8.12	1993	.17	1984	7.7	4.8	1.4	.3	.39	.58	.89	1.18	1.48	1.80	2.16	2.60	3.18	4.13	5.02
Aug	1.61	1.43	2.15	1960	25	5.73	1995	.02	1971	6.5	3.8	1.0	.2	.16	.28	.50	.72	.96	1.24	1.56	1.96	2.51	3.42	4.31
Sep	1.31	.92	3.27	1978	12	5.53	1978	.07	1990	5.4	3.0	.8	.2	.10	.18	.35	.53	.73	.96	1.24	1.59	2.08	2.90	3.72
Oct	.75	.48	1.05	1971	18	3.43	1998	.00	1991	3.7	2.2	.3	@	.01	.04	.13	.23	.34	.48	.66	.89	1.22	1.79	2.36
Nov	.36	.25	1.02	1962	5	1.28	2000	.00+	1999	3.3	1.4	.1	.0	.00	.03	.09	.15	.21	.28	.35	.45	.58	.80	1.01
Dec	.33	.26	.42+	1998	4	1.04	1978	.00+	1997	3.9	1.2	.0	.0	.00	.00	.08	.17	.23	.29	.36	.44	.54	.69	.85
Ann	12.95	13.57	3.27	Sep 1978	12	8.12	Jul 1993	.00+	Nov 1999	63.8	34.3	6.9	1.3	7.84	8.77	9.99	10.94	11.80	12.65	13.53	14.52	15.74	17.53	19.11

+ 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: 1951-2001

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

Complete documentation available from:

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

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: REDSTONE, MT

COOP ID: 246927

Climate Division: MT 6

NWS Call Sign:

Elevation: 2,110 Feet

Lat: 48° 49N

Lon: 104° 57W

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	4.5	2.6	4	3	6.0	1989	6	12.0	1989	24	1982	25	18	1979	2.5	2.4	.5	.1	.0	-9.9	-9.9	-9.9	-9.9
Feb	2.3	1.0	4	1	4.0	1999	15	8.0	1994	25	1979	28	21	1979	.9	.8	.1	.0	.0	8.2	5.7	4.9	.5
Mar	2.8	3.0	1	1	5.0	1991	26	7.0	1991	27	1979	4	6	1982	.9	.7	.2	.1	.0	4.1	1.4	.3	.0
Apr	.6	#	#	0	2.0	1999	3	4.0	1999	21	1975	9	10	1975	.3	.3	.0	.0	.0	.2	.0	.0	.0
May	.4	.0	#	0	4.0	1999	10	6.0	1999	7	1983	12	#+	1999	.1	.1	@	.0	.0	.1	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	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	.0	.0	#	0	.5	1984	23	.5	1984	1+	1987	15	#+	1987	@	.0	.0	.0	.0	@	.0	.0	.0
Oct	.4	#	#	0	6.0	1985	7	6.0	1985	6	1985	9	1	1985	.2	.2	.1	@	.0	.3	.2	.1	.0
Nov	4.2	4.0	1	1	5.0	1977	26	11.0	1996	10	1996	28	4	1996	1.4	1.1	.4	.1	.0	4.1	2.0	1.3	.3
Dec	3.1	2.0	2	2	6.0	1998	4	13.0	1998	18	1978	31	8	1978	1.6	1.5	.2	.1	.0	10.6	4.2	2.4	.0
Ann	18.3	12.6	N/A	N/A	6.0+	Dec 1998	4	13.0	Dec 1998	27	Mar 1979	4	21	Feb 1979	7.9	7.1	1.5	.4	.0	-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

Climatography of the United States

No. 20 1971-2000

Station: REDSTONE, MT

COOP ID: 246927

Climate Division: MT 6

NWS Call Sign:

Elevation: 2,110 Feet

Lat: 48° 49N

Lon: 104° 57W

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	7/16	7/07	6/30	6/25	6/20	6/15	6/10	6/03	5/25
32	6/12	6/07	6/04	6/01	5/29	5/26	5/23	5/20	5/15
28	6/01	5/27	5/23	5/19	5/16	5/13	5/09	5/05	4/30
24	5/23	5/18	5/15	5/12	5/09	5/06	5/03	4/29	4/24
20	5/12	5/07	5/04	5/01	4/28	4/25	4/22	4/18	4/13
16	4/30	4/24	4/20	4/17	4/14	4/11	4/08	4/04	3/29
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	8/09	8/15	8/19	8/22	8/26	8/29	9/01	9/06	9/11
32	8/15	8/21	8/26	8/29	9/02	9/05	9/09	9/13	9/19
28	8/29	9/04	9/07	9/10	9/13	9/16	9/19	9/23	9/28
24	9/05	9/11	9/16	9/19	9/23	9/27	9/30	10/05	10/11
20	9/09	9/16	9/21	9/25	9/29	10/03	10/08	10/13	10/20
16	9/15	9/24	9/30	10/05	10/10	10/15	10/20	10/26	11/04
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	93	84	77	71	66	60	55	48	39
32	117	110	104	99	95	91	86	80	73
28	139	132	128	123	120	116	112	107	100
24	161	153	147	141	137	132	126	120	112
20	176	169	163	158	154	149	144	139	131
16	208	198	190	184	178	172	166	158	148

* 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/normal/usnormals.html

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

Station: REDSTONE, MT

COOP ID: 246927

Climate Division: MT 6

NWS Call Sign:

Elevation: 2,110 Feet Lat: 48° 49N Lon: 104° 57W

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	1719	1321	1115	673	338	134	53	95	314	666	1176	1583	9187
60	1564	1181	960	527	215	64	15	42	196	511	1026	1428	7729
57	1471	1097	867	443	154	36	7	23	137	418	936	1335	6924
55	1409	1044	805	389	120	23	2	16	104	357	876	1273	6418
50	1257	916	659	267	56	7	0	4	43	218	731	1118	5276
32	747	481	221	27	0	0	0	0	0	10	284	605	2375

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	50	84	129	344	701	943	1118	1085	697	367	99	45	5662
55	0	3	0	16	108	276	407	387	111	2	0	0	1310
57	0	0	0	10	80	229	350	333	85	1	0	0	1088
60	0	0	0	4	48	167	265	258	53	0	0	0	795
65	0	0	0	0	16	88	148	156	21	0	0	0	429
70	0	0	0	0	4	34	67	81	7	0	0	0	193

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	22	160	456	697	867	836	464	180	14	0	0	2	24	184	640	1337	2204	3040	3504	3684	3698	3698
45	0	0	4	82	314	547	712	681	325	95	2	0	0	0	4	86	400	947	1659	2340	2665	2760	2762	2762
50	0	0	0	35	189	399	557	526	203	39	0	0	0	0	0	35	224	623	1180	1706	1909	1948	1948	1948
55	0	0	0	13	99	256	402	376	111	9	0	0	0	0	0	13	112	368	770	1146	1257	1266	1266	1266
60	0	0	0	2	45	142	254	236	48	0	0	0	0	0	0	2	47	189	443	679	727	727	727	727
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	4	33	155	321	453	557	534	330	165	23	0	0	4	37	192	513	966	1523	2057	2387	2552	2575	2575

(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.

- 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
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