

Climatology of the United States

No. 20

1971-2000

Station: SIMPSON 6 NW, MT

COOP ID: 247620

Climate Division: MT 3

NWS Call Sign:

Elevation: 2,740 Feet Lat: 48° 59N

Lon: 110° 18W

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	24.3	1.6	13.0	63	1981	22	28.8	1986	-49	1954	20	-4.6	1982	1613	0	.0	.0	1.3	18.5	30.2	14.1
Feb	32.0	8.3	20.2	73	1992	27	33.4	1984	-46	1994	8	1.4	1979	1255	0	.0	.0	4.1	12.1	27.2	9.0
Mar	43.7	18.6	31.2	77	1999	25	41.2	1986	-36+	1960	3	21.7	1975	1048	0	.0	.0	11.7	6.1	28.9	2.9
Apr	58.4	29.1	43.8	89	1980	20	50.5	1980	-18	1975	6	30.2	1975	638	0	.0	.0	23.4	.8	19.9	.2
May	69.7	38.8	54.3	97	1988	16	60.8	1988	16	1984	1	48.9	1974	340	7	.0	.7	29.7	.0	6.2	.0
Jun	78.0	46.6	62.3	104	1984	29	71.7	1988	28+	1998	3	57.6	1975	140	59	.1	3.3	30.0	.0	.5	.0
Jul	85.1	50.5	67.8	105	1960	19	72.8	1998	32	1968	31	60.6	1993	55	142	1.0	10.1	31.0	.0	.0	.0
Aug	84.7	49.7	67.2	109	1961	5	73.2	1971	28	1950	19	61.6	1975	86	154	1.1	10.2	31.0	.0	.2	.0
Sep	72.5	38.9	55.7	101	1998	2	63.2	1998	14	1959	29	48.4	1985	310	31	.1	2.1	28.5	.0	6.2	.0
Oct	58.9	28.7	43.8	89	1980	7	48.0	1974	-20	1991	30	37.7	1984	658	0	.0	.0	24.6	.9	20.4	.3
Nov	39.2	15.4	27.3	74+	1999	7	38.0	1999	-32	1975	30	6.1	1985	1132	0	.0	.0	7.5	8.9	27.8	4.4
Dec	28.3	5.0	16.7	64	1962	15	30.0	1999	-47	1983	24	-5.5	1983	1498	0	.0	.0	2.3	15.9	30.4	11.0
Ann	56.2	27.6	41.9	109	Aug 1961	5	73.2	Aug 1971	-49	Jan 1954	20	-5.5	Dec 1983	8773	393	2.3	26.4	225.1	63.2	197.9	41.9

+ 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

Issue Date: February 2004

(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

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: SIMPSON 6 NW, MT

COOP ID: 247620

Climate Division: MT 3

NWS Call Sign:

Elevation: 2,740 Feet Lat: 48°59N

Lon: 110°18W

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	.33	.23	.51	1996	3	1.15	1996	.00+	1992	4.1	1.1	@	.0	.00	.00	.08	.14	.20	.26	.33	.41	.52	.71	.88
Feb	.24	.22	.80	1958	26	.98	1978	.00+	1995	3.0	.9	.0	.0	.00	.02	.06	.10	.14	.18	.23	.29	.38	.52	.65
Mar	.49	.41	.74	1998	17	1.22	1998	.00	1973	4.0	1.7	.1	.0	.02	.07	.14	.22	.29	.38	.48	.61	.78	1.06	1.34
Apr	.66	.48	.98	1955	19	2.18	1978	.00	1988	4.9	1.9	.2	.0	.01	.06	.14	.23	.34	.46	.61	.81	1.08	1.54	1.99
May	1.76	1.47	1.83	1974	13	4.71	1974	.25	1988	7.4	4.1	.9	.2	.33	.49	.75	.99	1.23	1.49	1.79	2.15	2.63	3.39	4.12
Jun	2.07	1.75	2.03	1975	19	5.85	1995	.06	1985	7.8	4.7	1.3	.4	.28	.45	.75	1.04	1.34	1.67	2.06	2.53	3.17	4.22	5.23
Jul	1.37	1.14	1.65	1983	10	4.15	1983	.01	1984	6.4	3.4	.9	.2	.08	.15	.32	.50	.71	.96	1.26	1.65	2.19	3.12	4.05
Aug	1.38	1.27	3.10	1984	3	3.92	1985	.03	1996	6.0	3.6	.7	.2	.16	.27	.46	.66	.86	1.09	1.35	1.68	2.13	2.86	3.57
Sep	1.09	.72	3.20	1986	25	6.35	1986	.00+	1990	4.7	2.6	.5	.1	.00	.07	.24	.41	.59	.80	1.05	1.35	1.77	2.48	3.18
Oct	.49	.37	.59+	1966	13	1.36	1975	.00+	1987	3.4	1.7	.1	.0	.00	.08	.18	.26	.34	.42	.51	.61	.75	.98	1.20
Nov	.39	.41	.62	1989	12	.78+	1998	.00+	1982	3.5	1.5	@	.0	.00	.05	.13	.19	.25	.32	.40	.49	.61	.81	1.00
Dec	.34	.29	.45	1989	14	1.46	1989	.03	1986	4.1	1.2	.0	.0	.02	.04	.08	.13	.18	.24	.31	.41	.54	.76	.98
Ann	10.61	10.21	3.20	Sep 1986	25	6.35	Sep 1986	.00+	Feb 1995	59.3	28.4	4.7	1.1	5.90	6.73	7.83	8.70	9.49	10.28	11.10	12.04	13.19	14.91	16.43

+ 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

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

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Station: SIMPSON 6 NW, MT

COOP ID: 247620

Climate Division: MT 3

NWS Call Sign:

Elevation: 2,740 Feet

Lat: 48° 59N

Lon: 110° 18W

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	5.4	3.8	4	2	7.5	1991	1	19.5	1971	16	1971	31	10	1978	3.7	2.2	.5	.1	.0	17.8	11.1	7.2	3.7
Feb	4.0	3.4	3	2	6.0	1988	9	13.5	1978	27	1978	18	22	1978	2.8	1.8	.3	@	.0	13.2	7.7	5.4	3.7
Mar	5.1	5.5	2	1	7.5	1998	17	13.8	1982	24	1978	7	18	1978	3.2	2.3	.4	.2	.0	9.6	5.7	3.3	1.1
Apr	2.8	1.1	#	#	4.0	1974	2	12.5	1975	14	1975	9	4	1975	1.6	1.1	.4	.0	.0	1.8	.8	.5	.1
May	.4	.0	#	0	6.0	1982	29	6.0	1982	#+	2000	11	#+	2000	.2	.1	@	@	.0	.0	.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	#	1992	22	#	1992	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.3	.0	#	0	3.0	1972	23	5.5	1972	1	1972	23	#+	1983	.2	.1	@	.0	.0	@	.0	.0	.0
Oct	1.5	.5	#	0	4.0	1980	26	7.5	1984	6	1991	31	1	1991	1.0	.8	.1	.0	.0	.8	.4	.2	.0
Nov	4.2	3.0	1	1	7.0	1989	12	11.0	1978	10	1996	30	5	1978	2.8	2.0	.4	.1	.0	6.5	3.8	2.1	.3
Dec	4.8	4.0	2	2	5.0	1989	14	14.0	1989	13	1996	30	8	1996	3.6	2.6	.4	@	.0	14.9	9.4	5.5	.4
Ann	28.5	21.3	N/A	N/A	7.5+	Mar 1998	17	19.5	Jan 1971	27	Feb 1978	18	22	Feb 1978	19.1	13.0	2.5	.4	.0	64.6	38.9	24.2	9.3

+ 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	7/02	6/24	6/19	6/14	6/09	6/05	5/31	5/26	5/18
32	6/14	6/08	6/03	5/31	5/27	5/24	5/20	5/16	5/10
28	5/27	5/21	5/18	5/14	5/11	5/08	5/05	5/01	4/26
24	5/11	5/06	5/02	4/29	4/26	4/23	4/20	4/17	4/12
20	4/30	4/25	4/22	4/19	4/16	4/13	4/10	4/06	4/01
16	4/23	4/18	4/14	4/10	4/07	4/04	3/31	3/27	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	8/12	8/17	8/21	8/25	8/28	8/31	9/04	9/08	9/13
32	8/28	9/01	9/04	9/07	9/10	9/12	9/15	9/18	9/22
28	9/08	9/12	9/15	9/18	9/20	9/23	9/26	9/29	10/03
24	9/11	9/17	9/20	9/24	9/27	9/30	10/03	10/07	10/12
20	9/21	9/27	9/30	10/04	10/07	10/10	10/14	10/18	10/23
16	9/29	10/06	10/10	10/14	10/18	10/22	10/26	10/30	11/06
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	97	90	84	79	73	67	60	51
32	126	118	113	109	105	101	96	91	84
28	152	145	140	135	131	127	123	118	110
24	173	166	161	157	153	149	144	139	132
20	198	190	184	178	174	169	164	158	149
16	218	209	203	198	193	188	183	177	169

* 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1613	1255	1048	638	340	140	55	86	310	658	1132	1498	8773
60	1458	1125	893	495	208	64	16	36	199	503	982	1343	7322
57	1368	1047	801	413	144	33	7	20	144	411	892	1250	6530
55	1309	994	742	360	109	20	2	12	112	351	840	1189	6040
50	1167	864	598	244	45	4	0	3	52	214	699	1048	4938
32	675	460	190	23	0	0	0	0	0	10	282	559	2199

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	85	129	165	375	690	909	1110	1091	711	375	140	84	5864
55	6	19	4	22	86	239	399	390	133	3	8	1	1310
57	3	16	1	15	59	192	341	336	105	1	0	0	1069
60	0	10	0	7	30	132	257	259	70	0	0	0	765
65	0	0	0	0	7	59	142	154	31	0	0	0	393
70	0	0	0	0	0	18	63	77	12	0	0	0	170

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	1	9	32	179	457	674	869	852	488	194	23	1	1	10	42	221	678	1352	2221	3073	3561	3755	3778	3779
45	0	0	8	91	309	524	714	697	347	99	8	0	0	0	8	99	408	932	1646	2343	2690	2789	2797	2797
50	0	0	0	38	180	374	559	542	221	43	1	0	0	0	0	38	218	592	1151	1693	1914	1957	1958	1958
55	0	0	0	10	88	234	404	391	118	12	0	0	0	0	0	10	98	332	736	1127	1245	1257	1257	1257
60	0	0	0	1	31	123	258	243	49	2	0	0	0	0	0	1	32	155	413	656	705	707	707	707
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	10	47	158	316	431	541	536	346	175	27	0	0	10	57	215	531	962	1503	2039	2385	2560	2587	2587

(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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. 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