

Climatography of the United States

No. 20

1971-2000

Station: CULBERTSON, MT

COOP ID: 242122

Climate Division: MT 6

NWS Call Sign:

Elevation: 1,920 Feet Lat: 48°09N

Lon: 104°31W

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	22.1	-1.1	10.5	54+	1973	24	23.7	1981	-50	1954	20	-6.8	1982	1692	0	.0	.0	.3	21.2	30.9	15.8
Feb	31.4	7.8	19.6	69	1932	27	32.1	1998	-57	1936	16	3.4	1979	1271	0	.0	.0	2.7	13.4	28.0	9.0
Mar	44.5	18.7	31.6	80+	1978	30	42.4	1986	-34	1948	10	20.8	1996	1036	0	.0	.0	11.6	6.5	29.1	3.2
Apr	60.5	29.7	45.1	94	1980	20	53.8	1987	-12	1986	15	36.1	1975	598	1	.0	.1	23.6	.7	19.9	.1
May	72.6	41.5	57.1	103+	1980	22	63.9	1988	8	1909	8	49.8	1974	276	28	.1	1.1	30.0	.0	5.9	.0
Jun	81.2	49.9	65.6	109	1988	20	78.5	1988	26+	1969	20	60.4	1998	99	115	.5	4.4	30.0	.0	.4	.0
Jul	87.0	54.0	70.5	113	1937	5	75.6	1989	31	1902	13	62.5	1992	38	209	1.2	10.2	31.0	.0	.0	.0
Aug	86.5	52.5	69.5	109	1949	7	76.1	1983	25	1908	22	62.3	1974	67	205	1.3	11.6	31.0	.0	.2	.0
Sep	73.7	41.6	57.7	105	1908	7	65.9	1998	11	1926	25	51.7	1984	256	35	.2	2.4	29.2	.0	5.0	.0
Oct	60.6	30.6	45.6	96	1953	1	50.3	1974	-8	1991	30	42.1	1984	602	0	.0	.1	25.4	.5	18.6	.1
Nov	39.1	15.8	27.5	80+	1999	8	38.9	1999	-31	1996	24	13.5	1985	1127	0	.0	.0	6.7	9.0	28.3	4.0
Dec	26.4	3.6	15.0	66	1939	5	26.9	1999	-48	1983	23	-4.6	1983	1549	0	.0	.0	1.0	18.6	30.9	12.1
Ann	57.1	28.7	42.9	113	Jul 1937	5	78.5	Jun 1988	-57	Feb 1936	16	-6.8	Jan 1982	8611	593	3.3	29.9	222.5	69.9	197.2	44.3

+ 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/normal/usnormals.html

Issue Date: February 2004

(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

040-A

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: CULBERTSON, MT

COOP ID: 242122

Climate Division: MT 6

NWS Call Sign:

Elevation: 1,920 Feet Lat: 48°09N

Lon: 104°31W

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	.24	.50	1938	11	1.03	1982	.04	1973	4.5	1.2	.0	.0	.05	.07	.12	.16	.21	.25	.31	.38	.48	.63	.78
Feb	.23	.18	.80	1911	1	1.11	1972	.00+	1995	3.3	.9	.0	.0	.00	.00	.03	.07	.11	.15	.21	.28	.38	.55	.72
Mar	.49	.33	1.18	1904	24	1.72	1975	.00	1994	4.9	1.7	.1	.0	.02	.06	.13	.20	.28	.37	.47	.60	.77	1.06	1.35
Apr	.91	.58	1.98	1992	18	3.26	1976	.13+	1984	6.0	2.5	.4	.1	.07	.13	.24	.37	.51	.67	.86	1.11	1.44	2.01	2.58
May	2.09	1.73	2.30	1965	25	6.19	1978	.10	1980	10.0	5.6	1.2	.3	.38	.56	.87	1.15	1.44	1.76	2.11	2.54	3.12	4.04	4.92
Jun	2.82	2.47	4.88	1976	12	8.87	1976	.63	1985	10.1	5.9	1.7	.5	.60	.86	1.27	1.65	2.03	2.43	2.88	3.43	4.14	5.29	6.37
Jul	2.30	1.99	2.80	1946	17	6.66	1993	.05	1984	8.0	4.8	1.2	.6	.26	.44	.76	1.08	1.42	1.81	2.25	2.81	3.56	4.80	6.01
Aug	1.25	1.00	2.48	1963	23	3.15	1980	.01	1996	6.4	3.3	.6	.2	.09	.18	.34	.51	.70	.92	1.19	1.52	1.99	2.77	3.54
Sep	1.53	1.19	1.90	1923	25	4.43	1978	.13	1997	6.3	3.5	.9	.4	.19	.31	.52	.74	.96	1.22	1.51	1.87	2.37	3.18	3.97
Oct	.82	.42	2.17	1962	15	3.81	1998	.13	1983	5.0	2.1	.5	.1	.05	.09	.19	.31	.43	.58	.76	1.00	1.32	1.88	2.43
Nov	.46	.34	1.21	2000	1	2.70	2000	.00	1999	4.4	1.3	.1	@	.03	.07	.14	.21	.28	.36	.45	.57	.72	.98	1.22
Dec	.37	.38	.46	1968	12	.82	1982	.00+	1997	5.2	1.2	.0	.0	.00	.06	.14	.19	.25	.31	.38	.46	.56	.73	.89
Ann	13.58	13.25	4.88	Jun 1976	12	8.87	Jun 1976	.00+	Nov 1999	74.1	34.0	6.7	2.2	7.46	8.53	9.96	11.09	12.12	13.14	14.22	15.43	16.94	19.18	21.17

+ 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

Complete documentation available from:

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

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1971-2000

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Station: CULBERTSON, MT

COOP ID: 242122

Climate Division: MT 6

NWS Call Sign:

Elevation: 1,920 Feet

Lat: 48°09N

Lon: 104°31W

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	1.0	-99.9	5	4	5.0	1989	6	5.0	1989	17	1971	31	12	1979	2.1	1.9	.3	.1	.0	-9.9	-9.9	-9.9	-9.9
Feb	3.0	2.0	4	3	3.5	1998	25	11.0	1998	22	1979	28	17	1979	1.7	1.6	.3	.0	.0	-9.9	-9.9	-9.9	-9.9
Mar	1.5	1.0	3	1	5.0	1983	6	5.0	1983	27	1979	4	11	1979	1.6	1.4	.3	.1	.0	4.6	1.2	.2	.0
Apr	.6	.0	#	0	4.0	1973	21	4.0	1973	8	1986	15	2	1979	.3	.3	.1	.0	.0	.3	@	.0	.0
May	#	.0	0	0	#	1984	25	#	1984	10	1983	12	1	1983	.0	.0	.0	.0	.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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.1	.0	0	0	3.0	1984	24	3.0	1984	0	0	0	0	0	@	@	@	.0	.0	.0	.0	.0	.0
Oct	.6	.0	#	0	3.0	1976	26	4.0	1976	3	1985	9	#+	1999	.4	.4	.1	.0	.0	.4	.1	.0	.0
Nov	2.3	2.0	1	#	6.0	1996	23	8.5	1975	12	1996	30	7	2000	2.3	1.9	.4	.1	.0	7.6	4.2	2.9	.5
Dec	4.8	5.0	3	2	6.0	1988	26	8.6	1975	14	1996	31	12	1996	2.4	2.1	.4	.1	.0	16.1	11.2	3.3	.2
Ann	13.9	-9.9	N/A	N/A	6.0+	Nov 1996	23	11.0	Feb 1998	27	Mar 1979	4	17	Feb 1979	10.8	9.6	1.9	.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:

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No. 20 1971-2000

Station: CULBERTSON, MT

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Climate Division: MT 6

NWS Call Sign:

Elevation: 1,920 Feet

Lat: 48° 09N

Lon: 104° 31W

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	6/26	6/19	6/15	6/11	6/07	6/03	5/30	5/25	5/19
32	6/07	6/02	5/29	5/26	5/23	5/20	5/16	5/13	5/07
28	5/27	5/22	5/18	5/15	5/12	5/09	5/06	5/02	4/27
24	5/17	5/13	5/09	5/07	5/04	5/01	4/29	4/25	4/21
20	5/11	5/04	4/30	4/26	4/22	4/18	4/14	4/10	4/03
16	4/24	4/19	4/16	4/13	4/10	4/07	4/04	3/31	3/26
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	8/14	8/20	8/24	8/28	8/31	9/04	9/07	9/11	9/17
32	8/28	9/02	9/05	9/08	9/10	9/13	9/16	9/19	9/24
28	9/11	9/15	9/18	9/21	9/23	9/26	9/29	10/02	10/06
24	9/13	9/19	9/23	9/26	9/29	10/02	10/06	10/10	10/15
20	9/19	9/25	9/29	10/03	10/06	10/10	10/13	10/18	10/24
16	10/04	10/09	10/13	10/17	10/20	10/23	10/26	10/30	11/05
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	100	94	89	85	80	76	70	62
32	127	121	117	113	110	106	103	98	92
28	154	147	142	138	134	130	125	120	114
24	167	160	155	151	147	143	139	134	128
20	196	186	178	172	167	161	155	148	138
16	215	207	202	197	193	188	183	178	170

* 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:
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Station: CULBERTSON, MT

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NWS Call Sign:

Elevation: 1,920 Feet Lat: 48°09N Lon: 104°31W

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	1692	1271	1036	598	276	99	38	67	256	602	1127	1549	8611
60	1537	1131	881	455	166	41	12	27	150	447	977	1394	7218
57	1444	1050	788	374	115	21	6	15	99	356	887	1301	6456
55	1382	1000	730	323	86	13	1	9	72	296	827	1239	5978
50	1231	869	587	211	36	2	0	2	25	167	687	1085	4902
32	722	447	186	15	0	0	0	0	0	6	256	581	2213

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	53	100	173	408	776	1006	1194	1161	769	427	119	54	6240
55	0	9	4	26	149	329	482	457	151	5	0	0	1612
57	0	4	0	17	115	277	425	401	118	2	0	0	1359
60	0	0	0	8	74	207	338	320	78	0	0	0	1025
65	0	0	0	1	28	115	209	205	35	0	0	0	593
70	0	0	0	0	8	50	116	118	12	0	0	0	304

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	36	194	505	744	927	897	521	221	18	0	0	2	38	232	737	1481	2408	3305	3826	4047	4065	4065
45	0	0	7	105	362	594	772	742	377	121	6	0	0	0	7	112	474	1068	1840	2582	2959	3080	3086	3086
50	0	0	0	49	229	445	617	588	252	51	0	0	0	0	0	49	278	723	1340	1928	2180	2231	2231	2231
55	0	0	0	16	127	296	463	435	145	16	0	0	0	0	0	16	143	439	902	1337	1482	1498	1498	1498
60	0	0	0	5	54	170	310	289	70	3	0	0	0	0	0	5	59	229	539	828	898	901	901	901
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	7	47	179	345	474	588	567	355	190	27	0	0	7	54	233	578	1052	1640	2207	2562	2752	2779	2779

(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