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: CUT BANK MUNICIPAL AP, MT **COOP ID: 242173**

Climate Division: MT 3 **NWS Call Sign: CTB** **Elevation: 3,838 Feet** **Lat: 48˚37N** **Lon: 112˚23W**

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	28.4	9.5	19.0	67	1962	31	34.5	1986	-46	1918	31	2.7	1979	1428	0	.0	.0	2.3	14.3	28.5	10.6
Feb	33.7	13.7	23.7	71	1992	27	36.7	1991	-47	1936	15	8.9	1989	1157	0	.0	.0	4.6	10.0	25.6	6.9
Mar	40.7	21.0	30.9	72+	1986	27	40.7	1986	-33	1932	10	22.2	1996	1059	0	.0	.0	9.4	6.7	27.9	2.2
Apr	52.2	29.7	41.0	87+	1910	26	48.8	1987	-25	1935	2	29.1	1975	723	0	.0	.0	18.5	1.6	20.0	.2
May	61.1	38.3	49.7	91+	1980	21	54.1	1985	9	1954	2	44.3	1996	475	0	.0	@	27.4	@	7.1	.0
Jun	68.6	45.8	57.2	101	1941	23	63.8	1988	21	1910	4	52.8	1976	249	15	.0	.6	29.7	.0	.3	.0
Jul	76.3	49.9	63.1	103	1960	19	69.4	1985	32	1999	16	55.4	1993	129	70	@	2.6	31.0	.0	@	.0
Aug	75.6	49.3	62.5	107	1961	5	72.3	1983	25	1910	25	55.6	1980	172	94	.1	3.2	30.9	.0	.2	.0
Sep	65.3	40.5	52.9	97	1967	1	59.6	1998	-4	1934	25	45.1	1985	379	16	.0	.5	27.3	.1	5.3	.0
Oct	54.0	31.7	42.9	88	1992	1	47.7	1983	-14+	1991	30	38.4	1972	687	0	.0	.0	21.9	1.6	18.0	.3
Nov	38.0	20.9	29.5	79	1962	3	37.9	1999	-33	1921	19	10.0	1985	1066	0	.0	.0	6.7	8.0	25.4	3.4
Dec	29.9	12.6	21.3	67	1939	5	33.1	1999	-46	1924	18	2.8	1983	1356	0	.0	.0	2.3	13.1	28.2	7.6
Ann	52.0	30.2	41.1	107	Aug 1961	5	72.3	Aug 1983	-47	Feb 1936	15	2.7	Jan 1979	8880	195	.1	6.9	212.0	55.4	186.5	31.2

\+ 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: 1903-2000

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

Issue Date: February 2004

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Climate Division: MT 3 **NWS Call Sign: CTB** **Elevation: 3,838 Feet** **Lat: 48˚37N** **Lon: 112˚23W**

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	.39	.31	1.72	1943	21	1.25	1972	.02	1973
Feb	.28	.21	.47	1947	2	.72+	1989	.05+	1998
Mar	.55	.56	.81+	1981	30	1.78	1987	.02	1973
Apr	.90	.87	1.12	1922	29	2.31	1978	.01+	1981
May	2.22	2.16	2.04	1981	20	6.42	1981	.34	1983
Jun	2.48	1.96	2.80	1924	7	7.95	1991	.53	1985
Jul	1.58	1.07	2.33	1913	25	8.97	1993	.04+	1984
Aug	1.71	1.41	2.35	1968	15	3.81	1977	.09	1996
Sep	1.18	.76	1.92	1911	4	4.13	1985	.10	1981
Oct	.47	.32	1.40	1923	8	2.19	1975	.00	1987
Nov	.42	.37	1.20+	1930	13	1.36	1978	.03+	1974
Dec	.33	.28	.90	1924	15	1.33	1977	.00	1991
Ann	12.51	12.14	2.80	Jun 1924	7	8.97	Jul 1993	.00+	Dec 1991

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.5	1.1	@	.0
Feb	5.1	.9	.0	.0
Mar	7.3	1.9	.1	.0
Apr	7.6	2.8	.3	@
May	10.1	5.0	1.3	.4
Jun	10.9	5.1	1.3	.4
Jul	7.8	3.8	.8	.3
Aug	8.5	4.0	.9	.3
Sep	6.7	3.1	.5	.1
Oct	5.2	1.4	.2	.0
Nov	5.6	1.3	@	.0
Dec	5.8	.9	.0	.0
Ann	87.1	31.3	5.4	1.5

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	.04	.07	.12	.17	.23	.30	.38	.48	.61	.83	1.05
Feb	.04	.07	.11	.15	.19	.23	.28	.35	.43	.57	.70
Mar	.05	.08	.15	.23	.31	.41	.52	.67	.87	1.20	1.53
Apr	.08	.14	.26	.38	.52	.67	.86	1.10	1.42	1.96	2.50
May	.55	.76	1.08	1.37	1.65	1.95	2.28	2.68	3.20	4.02	4.80
Jun	.50	.72	1.09	1.42	1.76	2.12	2.53	3.02	3.67	4.71	5.70
Jul	.04	.10	.25	.44	.68	.97	1.35	1.85	2.58	3.86	5.17
Aug	.25	.40	.64	.88	1.13	1.40	1.71	2.09	2.61	3.44	4.25
Sep	.12	.21	.37	.54	.72	.92	1.15	1.44	1.85	2.51	3.16
Oct	.02	.07	.14	.21	.28	.36	.46	.58	.74	1.02	1.28
Nov	.05	.08	.14	.20	.26	.33	.41	.52	.66	.89	1.12
Dec	.02	.05	.11	.16	.21	.26	.33	.41	.52	.70	.87
Ann	6.28	7.33	8.76	9.91	10.96	12.01	13.13	14.40	15.99	18.37	20.50

+ 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: 1903-2000
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	5.1	4.0	2	1	6.4	1971	25	19.7	1972	14	1997	1	9+	1979	6.5	1.6	.3	@	.0	15.6	7.8	5.4	1.2
Feb	3.8	3.4	2	1	3.4	1986	15	8.4+	1994	18+	1978	18	13	1978	5.2	1.5	.1	.0	.0	12.7	6.8	3.7	.9
Mar	5.8	5.7	1	1	8.1	1977	28	17.5	1987	12+	1989	18	6	1989	6.5	1.9	.4	.2	.0	10.1	4.5	2.2	.5
Apr	4.0	3.4	#	1	6.8	1978	17	10.5	1978	8	1975	10	1+	2000	3.7	1.5	.3	.1	.0	3.2	1.2	.5	.0
May	1.1	.0	#	0	4.4	1986	14	6.5	1989	4	1989	29	#	2000	.9	.4	.1	.0	.0	.4	.1	.0	.0
Jun	#	.0	#	0	#	1976	13	#	1976	0	0	0	#	1999	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	#	.0	0	0	#	1993	15	#	1993	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	.4	.0	#	0	2.8	1985	6	4.5	1985	3	1985	7	#	2000	.5	.2	.0	.0	.0	.2	@	.0	.0
Oct	2.5	1.3	#	0	5.0	1988	26	10.1	1991	8+	1991	29	1+	1991	2.4	.8	.3	@	.0	2.1	.4	.1	.0
Nov	4.8	4.5	1	1	7.3	1989	12	12.4	1978	11+	1996	27	6	1978	4.6	1.6	.4	.1	.0	8.9	3.7	2.3	.1
Dec	4.3	4.3	1	1	4.9	1996	29	12.6	1996	18+	1996	31	7	1996	5.9	1.2	.2	.0	.0	13.2	6.8	2.0	.2
Ann	31.8	26.6	N/A	N/A	8.1	Mar 1977	28	19.7	Jan 1972	18+	Dec 1996	31	13	Feb 1978	36.2	10.7	2.1	.4	.0	66.4	31.3	16.2	2.9

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

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	8/18	8/23	8/27	8/31	9/03	9/06	9/09	9/13	9/18
32	9/01	9/05	9/08	9/11	9/13	9/16	9/18	9/21	9/25
28	9/11	9/15	9/18	9/20	9/23	9/25	9/27	9/30	10/04
24	9/19	9/24	9/28	10/01	10/04	10/07	10/11	10/14	10/20
20	9/28	10/03	10/07	10/10	10/13	10/16	10/19	10/23	10/28
16	10/10	10/15	10/18	10/21	10/24	10/26	10/29	11/01	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	104	96	90	84	79	74	69	63	54
32	128	121	116	111	107	103	99	94	86
28	156	149	145	140	137	133	129	124	117
24	185	177	171	166	162	157	152	147	139
20	200	193	187	183	178	174	169	164	156
16	222	215	210	205	201	197	193	187	180

***** 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	1428	1157	1059	723	475	249	129	172	379	687	1066	1356	8880
60	1275	1021	904	575	325	136	54	95	255	532	916	1201	7289
57	1188	943	811	489	241	86	26	60	190	439	829	1108	6410
55	1133	891	749	433	191	59	15	42	153	378	775	1049	5868
50	987	760	601	303	93	17	2	17	77	236	634	908	4635
32	521	364	174	34	0	0	0	0	0	10	234	440	1777

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	117	131	138	301	549	756	965	945	626	346	157	108	5139
55	15	14	0	11	26	124	267	274	89	1	8	3	832
57	8	11	0	6	14	91	216	229	67	1	3	0	646
60	2	5	0	2	5	52	151	171	41	0	0	0	429
65	0	0	0	0	0	15	70	94	16	0	0	0	195
70	0	0	0	0	0	3	22	40	5	0	0	0	70

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	5	17	32	132	326	544	743	731	418	192	36	8	5	22	54	186	512	1056	1799	2530	2948	3140	3176	3184
45	0	0	5	65	196	397	588	576	286	102	13	0	0	0	5	70	266	663	1251	1827	2113	2215	2228	2228
50	0	0	0	23	100	256	434	422	171	48	4	0	0	0	0	23	123	379	813	1235	1406	1454	1458	1458
55	0	0	0	3	38	138	282	280	85	15	0	0	0	0	0	3	41	179	461	741	826	841	841	841
60	0	0	0	0	7	59	152	153	32	2	0	0	0	0	0	0	7	66	218	371	403	405	405	405
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	1	16	31	103	209	323	460	454	276	141	20	1	1	17	48	151	360	683	1143	1597	1873	2014	2034	2035

(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