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: COLSTRIP, MT **COOP ID: 241905**

Climate Division: MT 7 **NWS Call Sign:** **Elevation: 3,218 Feet** **Lat: 45˚54N** **Lon: 106˚38W**

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	33.4	10.3	21.9	67	1953	11	35.4	1986	-40	1954	20	6.9	1979	1338	0	.0	.0	4.7	11.1	29.8	8.7
Feb	39.4	15.9	27.7	72	1982	22	38.0	1991	-36	1989	1	12.4	1989	1046	0	.0	.0	8.7	7.5	26.5	4.4
Mar	47.6	24.2	35.9	80	1978	30	43.9	1986	-27	1960	4	24.4	1996	902	0	.0	.0	15.7	3.7	26.0	1.4
Apr	57.7	33.3	45.5	90	1980	21	54.1	1987	3+	1997	11	37.7	1997	586	0	.0	@	23.1	.8	15.0	.0
May	67.6	42.9	55.3	97	1988	29	61.0	1988	7	1952	6	49.2	1996	318	16	.0	.6	29.5	@	3.2	.0
Jun	77.7	52.0	64.9	103+	1988	26	76.2	1988	28	1964	2	57.1	1998	116	111	.2	3.9	29.9	.0	.1	.0
Jul	85.4	57.2	71.3	107	1960	20	75.6	1989	34	1951	11	63.0	1993	31	227	1.0	12.0	31.0	.0	.0	.0
Aug	85.0	56.0	70.5	111	1961	6	78.3	1983	33+	1992	25	65.4	1993	44	216	.4	11.1	31.0	.0	.0	.0
Sep	72.9	45.5	59.2	102+	1960	4	67.2	1998	19	1972	26	53.5	1985	217	43	.1	2.5	28.8	.0	2.3	.0
Oct	60.4	35.4	47.9	94	1963	4	51.6	1979	-8	1991	30	44.2	1971	529	0	.0	@	25.6	.6	13.6	.1
Nov	44.1	23.0	33.6	80	1999	13	44.5	1999	-32	1959	16	16.9	1985	942	0	.0	.0	11.8	5.2	25.6	1.7
Dec	36.1	13.6	24.9	71	1957	9	34.3	1999	-38	1983	23	6.4	1983	1244	0	.0	.0	5.0	8.8	29.6	5.5
Ann	58.9	34.1	46.6	111	Aug 1961	6	78.3	Aug 1983	-40	Jan 1954	20	6.4	Dec 1983	7313	613	1.7	30.1	244.8	37.7	171.7	21.8

\+ 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: 1948-2001

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

Issue Date: February 2004

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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	.58	.41	.97	1949	15	2.35	1971	.03	1992
Feb	.43	.37	.55	1965	22	1.10	1978	.04	1992
Mar	.87	.74	.67+	1995	13	1.96	1987	.16	1978
Apr	1.34	1.12	2.82	1969	26	3.98	1973	.01	1983
May	2.59	2.07	2.38	1978	18	9.27	1978	.41	1998
Jun	2.51	2.60	1.97	1993	8	4.57	1972	.58	1979
Jul	1.35	1.21	1.78	1974	3	5.43	1993	.12	1988
Aug	1.09	.93	1.83	1964	29	2.81	1987	.05	1996
Sep	1.32	.94	2.20	1991	15	4.09	1978	.19	1979
Oct	1.35	.86	2.46	1974	31	6.24	1971	.04	1987
Nov	.65	.61	1.18	1957	1	1.40	1998	.14	1971
Dec	.48	.47	.58	1958	7	1.21	1996	.00	1979
Ann	14.56	14.67	2.82	Apr 1969	26	9.27	May 1978	.00	Dec 1979

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.7	2.2	.1	.0
Feb	5.0	1.5	.0	.0
Mar	7.6	3.0	.2	.0
Apr	7.7	3.8	.8	.1
May	11.1	6.1	1.5	.4
Jun	10.8	5.8	1.6	.3
Jul	6.6	3.6	.7	.2
Aug	5.9	2.7	.7	.1
Sep	6.0	3.2	.7	.2
Oct	6.3	3.4	.7	.2
Nov	6.2	2.4	.1	.0
Dec	5.7	1.6	.0	.0
Ann	85.6	39.3	7.1	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	.05	.09	.16	.25	.33	.44	.56	.71	.92	1.27	1.62
Feb	.07	.11	.17	.23	.29	.36	.43	.52	.65	.84	1.03
Mar	.18	.26	.39	.51	.62	.75	.89	1.06	1.28	1.64	1.98
Apr	.11	.20	.38	.56	.77	1.00	1.28	1.63	2.12	2.94	3.74
May	.57	.81	1.19	1.53	1.88	2.24	2.65	3.14	3.79	4.82	5.79
Jun	.98	1.21	1.54	1.82	2.08	2.34	2.63	2.96	3.38	4.03	4.62
Jul	.15	.26	.44	.63	.83	1.06	1.32	1.65	2.10	2.83	3.55
Aug	.13	.21	.36	.51	.67	.85	1.07	1.33	1.68	2.26	2.83
Sep	.17	.28	.47	.65	.85	1.06	1.31	1.61	2.02	2.70	3.35
Oct	.12	.21	.39	.58	.79	1.02	1.30	1.65	2.13	2.93	3.72
Nov	.17	.23	.32	.41	.49	.58	.67	.79	.94	1.18	1.40
Dec	.03	.08	.16	.23	.30	.39	.48	.60	.75	1.01	1.25
Ann	9.10	10.11	11.42	12.44	13.36	14.26	15.20	16.25	17.53	19.42	21.08

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

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	5.4	3.3	3	2
Feb	5.0	4.5	2	2
Mar	6.1	3.1	1	#
Apr	4.4	1.0	#	#
May	.7	.0	#	0
Jun	#	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.9	.0	#	0
Oct	1.3	.0	#	#
Nov	4.8	4.0	1	1
Dec	4.7	3.5	2	2
Ann	33.3	19.4	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	5.5	1989	23	19.0	1994	13+	1994	20	12	1979
Feb	12.0	2000	25	20.0	2000	16	1971	8	10	1979
Mar	10.0	1994	23	19.0	1989	12	1996	7	5	1996
Apr	16.0	1997	5	21.8	1997	16	1997	6	3	1997
May	6.0	1986	8	8.0+	1986	8	1983	12	1	1986
Jun	#	1998	2	#	1998	#	1998	2	#	1998
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	8.0	1984	23	8.0	1984	8	1984	23	#+	1999
Oct	6.0	1991	27	7.0	1980	6	1996	27	1	1996
Nov	10.0	1977	19	12.8	2000	12	1977	23	5	1985
Dec	6.0	1989	19	17.6	1996	14	1996	30	10	1978
Ann	16.0	Apr 1997	5	21.8	Apr 1997	16+	Apr 1997	6	12	Jan 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.9	3.1	.6	.1	.0
Feb	3.1	2.2	.5	.1	@
Mar	4.3	2.6	.7	.2	.1
Apr	1.8	1.3	.5	.2	.1
May	.4	.3	.1	@	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	.1	.1	.1	.0
Oct	.9	.6	.3	.1	.0
Nov	3.1	2.0	.4	.2	@
Dec	4.4	2.7	.6	.1	.0
Ann	23.0	14.9	3.8	1.1	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	11.9	5.3	2.9	.3
Feb	6.2	2.9	1.7	.3
Mar	6.6	3.2	1.8	.3
Apr	2.2	1.2	.6	.2
May	.3	.2	.2	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.1	.1	@	.0
Oct	1.3	.9	.2	.0
Nov	6.7	2.8	1.2	.0
Dec	12.2	4.8	1.9	.3
Ann	47.5	21.4	10.5	1.4

+ 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	6/12	6/07	6/03	5/31	5/27	5/24	5/21	5/17	5/12
32	5/26	5/22	5/19	5/16	5/14	5/11	5/08	5/05	5/01
28	5/16	5/10	5/07	5/03	4/30	4/27	4/24	4/20	4/15
24	5/02	4/27	4/24	4/21	4/18	4/15	4/12	4/09	4/04
20	4/24	4/18	4/14	4/10	4/07	4/04	3/31	3/27	3/22
16	4/14	4/08	4/03	3/30	3/26	3/23	3/19	3/14	3/08

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	9/03	9/07	9/09	9/12	9/14	9/16	9/18	9/21	9/25
32	9/10	9/15	9/19	9/22	9/25	9/27	9/30	10/04	10/09
28	9/16	9/22	9/26	9/30	10/03	10/07	10/10	10/15	10/21
24	9/25	10/02	10/07	10/11	10/16	10/20	10/24	10/29	11/06
20	10/11	10/17	10/21	10/25	10/28	10/31	11/04	11/08	11/14
16	10/23	10/28	11/01	11/05	11/08	11/11	11/15	11/19	11/24

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	130	123	117	113	109	105	100	95	87
32	154	147	142	137	133	129	125	120	113
28	177	170	164	160	155	151	146	141	133
24	205	197	190	185	180	175	170	164	155
20	227	219	213	208	203	198	193	188	179
16	251	242	236	231	226	221	216	209	201

***** 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	1338	1046	902	586	318	116	31	44	217	529	942	1244	7313
60	1183	906	747	442	196	53	9	15	120	375	795	1089	5930
57	1092	829	654	359	137	29	3	6	76	287	713	997	5182
55	1034	777	594	307	104	19	1	3	53	232	656	937	4717
50	890	646	450	193	44	5	0	0	16	119	520	794	3677
32	425	266	88	8	0	0	0	0	0	3	166	339	1295

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	111	144	209	412	721	985	1219	1195	816	497	213	117	6639
55	6	11	2	21	112	314	507	485	179	13	14	3	1667
57	2	7	0	13	83	264	447	426	142	5	10	1	1400
60	0	0	0	5	49	198	361	342	96	1	2	0	1054
65	0	0	0	0	16	111	227	216	43	0	0	0	613
70	0	0	0	0	3	50	127	120	15	0	0	0	315

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	7	25	78	221	482	739	962	932	578	268	60	14	7	32	110	331	813	1552	2514	3446	4024	4292	4352	4366
45	0	3	30	128	336	589	807	777	437	160	19	1	0	3	33	161	497	1086	1893	2670	3107	3267	3286	3287
50	0	0	9	59	209	444	652	622	300	78	6	0	0	0	9	68	277	721	1373	1995	2295	2373	2379	2379
55	0	0	0	23	113	301	497	467	183	25	0	0	0	0	0	23	136	437	934	1401	1584	1609	1609	1609
60	0	0	0	5	45	175	349	316	95	5	0	0	0	0	0	5	50	225	574	890	985	990	990	990
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	10	34	74	167	305	455	610	587	376	201	56	13	10	44	118	285	590	1045	1655	2242	2618	2819	2875	2888

(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