Climate Division: MT 1

Daily

Max

29.5

34.5

42.9

53.7

63.9

72.0

80.1

79.9

45.9

50.3

49.6

59.0

65.2

64.8

96

102

101

1988

1960

1961

26

19

4

64.7

71.9

69.1

1988

1985

1971

Month

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

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

COOP ID: 244328

Lon: 114°01W

.0

.0

.0

Station: HUNGRY HORSE DAM, MT

NWS Call Sign:

Temperature (°F) Degree Days (1) Mean Number of Days (3) Mean (1) **Extremes** Base Temp 65 Max Max Max Max Min Min Highest Lowest Daily Highest Lowest Month(1) Month(1) Cooling >= >= >= <= <= <= Mean Year Day Year Year Day Year Heating Min Daily(2) Daily(2) Mean Mean 100 90 50 32 32 0 16.0 22.8 55 1984 5 32.1 1994 -40+1950 31 3.3 1979 1310 0 .0 .0 .4 16.0 29.1 4.9 18.6 62 1995 25 34.1 1991 -34+ 1950 2 13.0 1989 1076 0 .0 .0 .9 9.0 26.0 3.3 26.6 24.3 33.6 67 1986 31 40.7 1992 -26 1960 3 27.9 1996 974 0 .0 .0 5.9 3.0 26.6 .8 1975 31.7 42.7 86 1987 29 48.1 1987 4 1951 19 34.8 669 0 .0 .0 18.8 .4 16.6 0. 39.6 51.8 95 1986 31 57.3 1987 12 1954 1 45.9 1996 413 3 .0 .2 28.4 .0 2.8 .0

53.6

56.7

58.8

1981

1993

1975

212

109

111

31

114

103

.0

.1

.0

1.2

5.2

4.9

29.6

31.0

31.0

.0

.0

.0

.1

.0

.1

Sep	66.5	40.8	53.7	97	1998	2	61.6	1998	20+	1985	29	47.0	1985	355	14	.0	.3	28.3	.0	2.6	.0
Oct	52.2	32.8	42.5	77+	1979	9	46.5	1988	5	1991	29	38.9	1972	697	0	.0	.0	18.6	.5	15.9	.0
Nov	37.3	25.3	31.3	64	1983	2	37.9	1999	-20	1959	16	16.8	1985	1011	0	.0	.0	2.6	7.5	24.4	.6
Dec	30.7	18.5	24.6	59	1975	4	31.9	1979	-28+	1968	31	12.6	1983	1253	0	.0	.0	.5	16.2	28.8	2.6
					Jul			Jul		Jan			Jan								
Ann	53.6	32.8	43.2	102	1960	19	71.9	1985	-40+	1950	31	3.3	1979	8190	265	.1	11.8	196.0	52.6	173.0	12.2
Ann	53.6	32.8	43.2	102	1960	19	71.9	1985	-40+	1950	31	3.3	1979	8190	265	.1	11.8	196.0	52.6	173.0	

6

24

26

34+

31

1951

1952

1992

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

Issue Date: February 2004 080-A Elevation: 3,160 Feet Lat: 48°21N

⁺ Also occurred on an earlier date(s)

[@] Denotes mean number of days greater than 0 but less than .05

⁽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: HUNGRY HORSE DAM, MT COOP ID: 244328

Climate Division: MT 1 NWS Call Sign: Elevation: 3,160 Feet Lat: 48°21N Lon: 114°01W

										Pı	recipi	tation	(incl	nes)										
	Mea	ans/	P	recipi	itatio	on Total						ays (3)	Proba	ability th		nonthly/	annual j indic	precipita ated am	ount	ies (1)		less tha	n the
	Medi	ans(1)				Extremes	•			ս	aily Pre	приацо	n		Th	ese value	s were det	ermined	from the i	incomplet	te gamma	distributi	on	ļ
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	3.36	3.09	2.60	1950	7	7.50	1974	.21	1985	14.4	8.1	1.4	.4	1.02	1.34	1.81	2.22	2.62	3.03	3.49	4.02	4.71	5.79	6.79
Feb	2.56	2.24	1.99	1997	27	4.91	1996	.75	1998	11.0	6.7	.8	.3	.86	1.10	1.46	1.76	2.05	2.35	2.67	3.06	3.55	4.31	5.01
Mar	2.46	2.31	1.33	1997	2	6.35	1997	.73	1985	12.7	7.3	1.0	.1	.82	1.06	1.40	1.68	1.96	2.25	2.56	2.93	3.40	4.13	4.80
Apr	2.38	2.44	1.61	1996	24	4.87	1996	.88	1999	11.2	6.4	1.2	.2	1.06	1.27	1.56	1.80	2.03	2.26	2.50	2.78	3.13	3.66	4.14
May	3.15	2.89	1.69	1964	2	6.17	1981	.97	1983	12.3	7.7	1.5	.2	1.41	1.69	2.08	2.40	2.69	2.99	3.31	3.67	4.13	4.83	5.46
Jun	3.51	3.57	2.42	1966	4	6.83	1981	.68	1977	12.9	7.7	2.1	.3	1.42	1.74	2.20	2.57	2.93	3.29	3.68	4.13	4.70	5.57	6.36
Jul	2.23	1.82	2.29	1983	14	6.06	1993	.16	1973	8.9	5.0	1.3	.2	.37	.57	.89	1.20	1.51	1.85	2.24	2.72	3.35	4.38	5.36
Aug	1.91	1.59	1.97	1954	26	4.74	1976	.05	1986	7.8	4.7	1.1	.1	.19	.33	.59	.86	1.14	1.47	1.85	2.33	2.98	4.07	5.13
Sep	2.66	2.34	1.79	1985	6	6.91	1985	.00	1990	8.3	5.5	1.4	.1	.46	.82	1.27	1.63	1.99	2.36	2.78	3.26	3.90	4.90	5.83
Oct	2.83	2.67	2.41	1955	10	7.34	1995	.41	1987	9.6	5.5	1.8	.3	.45	.69	1.10	1.49	1.89	2.33	2.84	3.45	4.28	5.62	6.90
Nov	3.97	3.61	3.74	1989	13	10.84	1973	.60	1979	12.2	8.0	2.3	.7	1.00	1.38	1.96	2.47	2.97	3.51	4.10	4.80	5.72	7.18	8.54
Dec	3.80	3.63	1.95	1964	22	9.33	1996	.93	1985	14.6	9.3	2.0	.2	1.37	1.73	2.25	2.68	3.09	3.52	3.98	4.51	5.19	6.25	7.22
Ann	34.82	33.99	3.74	Nov 1989	13	10.84	Nov 1973	.00	Sep 1990	135.9	81.9	17.9	3.1	25.30	27.16	29.53	31.33	32.92	34.45	36.04	37.78	39.90	42.95	45.59

⁺ Also occurred on an earlier date(s)

Complete documentation available from:

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

[#] 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

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

COOP ID: 244328

Station: HUNGRY HORSE DAM, MT

Climate Division: MT 1 NWS Call Sign: Elevation: 3,160 Feet Lat: 48°21N Lon: 114°01W

										Snov	w (incl	hes)											
						Sno	ow To	tals									Mea	n Nu	mber	of Day	ys (1)		
	Mean	s/Medi	ans (1)	ı					Extre	mes (2)							ow Fa					Depth esholo	
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	18.4	20.0	12	10	10.0	1975	4	29.0+	1978	36	1979	24	29	1979	7.7	6.5	2.8	1.1	.1	-9.9	-9.9	-9.9	-9.9
Feb	12.4	11.8	11	11	13.0	1990	16	26.5	1990	35	1975	12	27	1975	4.9	4.4	1.8	.8	.1	-9.9	-9.9	-9.9	-9.9
Mar	8.2	6.5	7	5	10.0	1987	27	20.0	1975	30+	1985	5	24	1985	3.1	2.6	.9	.4	.1	7.2	6.2	6.0	5.6
Apr	1.7	1.0	1	#	7.0	1973	6	7.0+	1982	22	1975	6	12	1975	.7	.7	.1	.1	.0	.9	.4	.4	.2
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	2.3	.0	#	0	14.0	1972	27	24.0	1972	14	1972	27	2	1972	.4	.4	.3	.2	.1	.6	.4	.3	.2
Nov	7.7	7.0	2	2	15.0	1973	5	15.0+	1973	21	1993	22	6	1973	3.1	3.0	1.0	.5	.1	5.1	3.7	2.5	.8
Dec	8.8	-99.9	6	4	16.0	1990	31	44.1	1977	29	1992	31	16	1978	7.3	6.0	2.7	1.1	.2	-9.9	-9.9	-9.9	-9.9
Ann	59.5	-9.9	N/A	N/A	16.0	Dec 1990	31	44.1	Dec 1977	36	Jan 1979	24	29	Jan 1979	27.2	23.6	9.6	4.2	.7	-9.9	-9.9	-9.9	-9.9

⁺ Also occurred on an earlier date(s) #Denotes trace amounts

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

[@] 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

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

COOP ID: 244328

Lon: 114°01W

Lat: 48°21N

2000

Elevation: 3,160 Feet

Station: HUNGRY HORSE DAM, MT

Climate Division: MT 1 NWS Call Sign:

				Freez	e Data				
			Spri	ng Freeze D	ates (Month/	Day)			
Temp (F)		P	robability of	later date i	n spring (thr	u Jul 31) tha	an indicated(*)	
Temp (r)	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	6/21	6/14	6/09	6/05	6/01	5/28	5/24	5/19	5/12
32	5/31	5/26	5/22	5/19	5/16	5/13	5/10	5/06	5/01
28	5/09	5/04	4/30	4/26	4/23	4/20	4/17	4/13	4/07
24	4/23	4/18	4/13	4/10	4/07	4/04	3/31	3/27	3/21
20	4/17	4/10	4/05	4/01	3/28	3/23	3/19	3/14	3/07
16	4/08	3/31	3/25	3/20	3/15	3/11	3/06	2/28	2/19
•			Fal	ll Freeze Da	tes (Month/D	ay)	•	•	•
To (E)		Pro	bability of ea	arlier date i	n fall (beginn	ing Aug 1) t	han indicate	d(*)	
Temp (F)	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	8/29	9/02	9/05	9/08	9/11	9/13	9/16	9/20	9/24
32	9/08	9/14	9/18	9/21	9/24	9/27	9/30	10/04	10/09
28	9/19	9/25	9/30	10/03	10/07	10/10	10/14	10/18	10/24
24	10/06	10/13	10/17	10/21	10/25	10/29	11/02	11/06	11/13
20	10/16	10/24	10/30	11/04	11/08	11/13	11/18	11/24	12/01
16	10/25	11/02	11/07	11/12	11/16	11/21	11/26	12/01	12/09
•				Freeze F	ree Period	•	•	•	•
Temp (F)			Probability	of longer th	an indicated	freeze free p	eriod (Days)		
remp (r)	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	126	117	111	106	101	96	91	85	76
32	154	146	140	135	130	126	121	115	107
28	192	183	177	171	166	161	155	149	140
24	227	218	211	206	200	195	190	183	174
20	258	247	239	232	225	219	212	204	193
16	275	265	257	251	245	240	233	226	216

^{*} 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.

Complete documentation available from:

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: HUNGRY HORSE DAM, MT COOP ID: 244328

Climate Division: MT 1 NWS Call Sign: Elevation: 3,160 Feet Lat: 48°21N Lon: 114°01W

				Deg	ree Days to	o Selected	Base Tem	peratures	(°F)				
Base						Heatin	g Degree l	Days (1)					
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1310	1076	974	669	413	212	109	111	355	697	1011	1253	8190
60	1155	936	819	519	271	115	45	47	231	542	861	1098	6639
57	1062	852	726	431	196	71	23	25	168	449	771	1005	5779
55	1000	796	664	374	153	48	15	16	131	388	711	943	5239
50	847	656	510	241	70	14	3	3	61	239	565	788	3997
32	362	230	93	9	0	0	0	0	0	4	149	290	1137

Base						Coolin	g Degree I	Days (1)					
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	75	78	142	330	613	809	1028	1015	650	330	129	60	5259
55	0	0	0	5	52	166	330	318	91	1	0	0	963
57	0	0	0	2	33	129	276	265	68	0	0	0	773
60	0	0	0	0	15	83	205	194	41	0	0	0	538
65	0	0	0	0	3	31	114	103	14	0	0	0	265
70	0	0	0	0	0	8	48	41	4	0	0	0	101

										Gro	wing l	Degre	e Uni	ts (2)										
Base					Growin	g Degree	Units (N	Ionthly)								Growi	ng Degre	ee Units (Accumu	lated Mo	onthly)			
	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Do												Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	0 0 15 133 378 579 788 776 423 128 14												0	0	15	148	526	1105	1893	2669	3092	3220	3234	3234
45												0	0	0	1	59	296	726	1359	1980	2263	2313	2313	2313
50	0 0 18 130 285 478 466 161 13 0											0	0	0	0	18	148	433	911	1377	1538	1551	1551	1551
55	0	0	0	1	60	167	329	321	78	1	0	0	0	0	0	1	61	228	557	878	956	957	957	957
60	0	0	0	0	21	78	194	184	25	0	0	0	0	0	0	0	21	99	293	477	502	502	502	502
Base	Growing Degree Units for Corn (Monthly)													Gr	owing D	egree Un	its for C	orn (Acc	umulate	d Month	ly)			
50/86	0/86 0 0 14 98 231 344 485 486 261 79 3 0												0	0	14	112	343	687	1172	1658	1919	1998	2001	2001

(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.

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

- c. Snow Tables
 - 1. Snow Climatology
 - 2. Cooperative Summary of the Day
- d. Freeze Data Table

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

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