

Climatology of the United States

No. 20

Station: **HOLTER DAM, MT**

1971-2000

COOP ID: 244241

Climate Division: **MT 4**

NWS Call Sign:

Elevation: **3,487 Feet** Lat: **46° 59N**

Lon: **112° 01W**

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	35.8	18.8	27.3	63+	1992	31	38.6	1986	-36	1996	30	11.5	1979	1169	0	.0	.0	4.4	9.5	23.6	5.7
Feb	40.9	22.3	31.6	68	1995	24	41.3	1991	-31	1989	4	13.8	1989	935	0	.0	.0	7.1	5.5	20.1	3.1
Mar	48.3	27.7	38.0	75	1999	25	45.9	1986	-29	1951	8	29.7	1996	836	0	.0	.0	14.5	2.3	20.3	.8
Apr	57.9	34.6	46.3	86	1987	28	53.7	1987	-3	1954	2	34.0	1975	563	0	.0	.0	23.8	.6	11.0	.0
May	67.4	42.3	54.9	93	1986	31	59.7	1987	12	1954	2	49.2	1996	322	7	.0	.1	29.7	.0	1.9	.0
Jun	76.4	49.6	63.0	98+	1990	30	72.0	1988	29	1998	4	57.8	1998	135	75	.0	2.3	29.9	.0	.1	.0
Jul	84.5	53.7	69.1	103	1960	19	75.7	1985	35	1972	19	60.8	1993	42	169	.2	8.7	31.0	.0	.0	.0
Aug	84.5	53.2	68.9	101	2001	8	74.8	1971	34	1992	23	64.3	1993	49	168	.1	9.4	31.0	.0	.0	.0
Sep	72.8	45.6	59.2	95+	2000	16	65.1	1990	15	2000	23	52.3	1985	213	38	.0	1.0	29.0	@	1.6	.0
Oct	60.6	39.5	50.1	87	1997	1	53.7	1974	0	1991	30	45.1	1984	464	0	.0	.0	26.5	.4	7.0	@
Nov	45.0	30.0	37.5	77	1999	12	47.8	1999	-21	1985	28	19.4	1985	825	0	.0	.0	10.9	3.5	15.5	1.1
Dec	37.5	22.1	29.8	65	1980	17	37.7	1979	-34	1983	24	14.8	1983	1091	0	.0	.0	4.6	7.3	22.4	3.9
Ann	59.3	36.6	48.0	103	Jul 1960	19	75.7	Jul 1985	-36	Jan 1996	30	11.5	Jan 1979	6644	457	.3	21.5	242.4	29.1	123.5	14.6

+ 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

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

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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: HOLTER DAM, MT

COOP ID: 244241

Climate Division: MT 4

NWS Call Sign:

Elevation: 3,487 Feet Lat: 46°59N

Lon: 112°01W

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	.41	.40	.44	1954	14	1.05	1974	.02	1987	6.0	1.5	.0	.0	.06	.09	.15	.21	.27	.34	.41	.50	.63	.83	1.02
Feb	.27	.23	.55	1967	5	.84	1975	.01	1973	4.4	.9	.0	.0	.03	.05	.09	.13	.17	.21	.26	.33	.42	.57	.72
Mar	.51	.49	.80	1950	6	1.02	1987	.07	1999	6.7	1.7	.0	.0	.14	.19	.27	.33	.39	.46	.53	.61	.72	.89	1.05
Apr	1.24	1.07	2.02	1975	26	3.29	1975	.05	1981	8.0	3.8	.4	.1	.24	.35	.53	.70	.87	1.05	1.26	1.51	1.85	2.38	2.90
May	2.35	2.17	2.30	1953	24	5.87	1981	.56	1979	10.5	5.5	1.3	.3	.72	.95	1.28	1.56	1.84	2.13	2.44	2.81	3.29	4.04	4.73
Jun	1.89	1.24	2.16	1954	1	5.62	1998	.27	1974	9.4	5.1	1.0	.1	.33	.49	.77	1.03	1.30	1.58	1.91	2.31	2.84	3.70	4.52
Jul	1.45	1.07	1.81	1983	10	4.66	1993	.08	1984	6.8	3.5	.9	.2	.09	.18	.36	.56	.78	1.04	1.36	1.76	2.32	3.27	4.21
Aug	1.37	1.16	1.20	1974	20	3.70	1989	.18	1995	7.0	3.8	.7	.1	.22	.34	.54	.72	.92	1.13	1.38	1.68	2.08	2.72	3.34
Sep	1.22	.99	1.73	1982	27	3.26	1982	.06	1990	6.3	3.5	.4	.1	.12	.21	.38	.55	.73	.94	1.18	1.49	1.90	2.59	3.27
Oct	.78	.46	1.39	2000	12	3.16	1975	.04	1976	5.1	2.5	.3	@	.04	.08	.17	.27	.39	.53	.71	.93	1.25	1.79	2.34
Nov	.39	.34	.64	1952	15	1.29	1998	.04	1980	5.4	1.4	@	.0	.05	.08	.13	.19	.24	.31	.38	.48	.61	.82	1.03
Dec	.34	.32	.43	1967	17	1.39	1996	.09	1999	5.7	.9	.0	.0	.08	.11	.16	.21	.25	.30	.35	.41	.50	.63	.75
Ann	12.22	11.53	2.30	May 1953	24	5.87	May 1981	.01	Feb 1973	81.3	34.1	5.0	.9	7.50	8.37	9.50	10.38	11.18	11.95	12.77	13.68	14.80	16.45	17.90

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

Climatography of the United States

No. 20 1971-2000

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Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: HOLTER DAM, MT

COOP ID: 244241

Climate Division: MT 4

NWS Call Sign:

Elevation: 3,487 Feet

Lat: 46° 59N

Lon: 112° 01W

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	6.3	7.2	1	1	7.0	1993	22	13.9	1993	8	1993	22	3	1993	5.1	2.1	.4	.1	.0	10.3	4.3	.9	.0
Feb	5.1	4.2	1	1	6.0	1986	15	14.9	1986	11	1993	24	4	1993	3.8	2.0	.4	.1	.0	7.4	2.9	.6	.0
Mar	4.4	3.4	1	#	8.0	1982	19	13.5	1982	9	1982	19	2	1996	2.7	1.6	.4	.2	.0	3.4	1.0	.2	.0
Apr	1.3	.8	#	#	3.5	1997	1	9.0	1982	6	1984	26	#+	2000	1.1	.9	.1	.0	.0	.9	.1	.0	.0
May	.8	.0	0	0	11.5	1983	10	17.5	1983	9	1983	10	1	1983	.1	.1	.1	.1	@	.2	.2	.1	.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	1.0	1992	23	1.0	1992	#	1992	23	#	1992	@	@	.0	.0	.0	.0	.0	.0	.0
Sep	.3	.0	#	0	4.0	1983	19	4.0	1983	2+	1984	23	#+	1984	.1	.1	@	.0	.0	.1	.0	.0	.0
Oct	.9	.0	#	0	3.5	1992	15	5.5	1992	3	1992	15	1	1991	.6	.5	.1	.0	.0	.6	.2	.0	.0
Nov	4.3	4.0	1	#	6.0	1978	19	14.2	1978	12	1996	21	4	1996	3.1	1.6	.3	.1	.0	5.3	2.2	.7	.1
Dec	5.0	4.1	1	1	4.0	1978	5	14.0	1996	13	1996	29	4	1978	4.3	2.1	.5	.0	.0	9.7	2.8	.9	.0
Ann	28.4	23.7	N/A	N/A	11.5	May 1983	10	17.5	May 1983	13	Dec 1996	29	4+	Nov 1996	20.9	11.0	2.3	.6	@	37.9	13.7	3.4	.1

+ 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:

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

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No. 20 1971-2000

Station: HOLTER DAM, MT

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Climate Division: MT 4

NWS Call Sign:

Elevation: 3,487 Feet

Lat: 46° 59N

Lon: 112° 01W

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	6/21	6/12	6/07	6/02	5/28	5/23	5/18	5/12	5/04
32	5/27	5/21	5/17	5/13	5/10	5/06	5/02	4/28	4/22
28	5/08	5/03	4/29	4/26	4/23	4/20	4/17	4/13	4/08
24	4/24	4/19	4/15	4/11	4/08	4/05	4/01	3/28	3/22
20	4/13	4/08	4/05	4/02	3/30	3/28	3/25	3/22	3/17
16	4/11	4/05	3/31	3/27	3/23	3/20	3/16	3/11	3/05
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	9/02	9/07	9/11	9/14	9/16	9/19	9/22	9/26	9/30
32	9/14	9/19	9/22	9/25	9/28	10/01	10/04	10/07	10/12
28	9/25	9/30	10/05	10/08	10/12	10/15	10/19	10/23	10/29
24	10/04	10/10	10/15	10/19	10/23	10/27	10/31	11/04	11/11
20	10/14	10/21	10/25	10/29	11/02	11/06	11/10	11/14	11/21
16	10/17	10/25	10/31	11/05	11/10	11/14	11/19	11/25	12/03
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	138	129	122	116	111	105	100	93	83
32	167	158	152	146	141	136	130	123	114
28	195	187	181	176	171	166	161	155	147
24	225	216	209	203	197	192	186	179	169
20	242	233	227	221	216	211	205	199	190
16	263	252	244	237	230	224	217	209	198

* 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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of the United States
No. 20
1971-2000**

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Climate Division: MT 4

NWS Call Sign:

Elevation: 3,487 Feet Lat: 46° 59N Lon: 112° 01W

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	1169	935	836	563	322	135	42	49	213	464	825	1091	6644
60	1014	795	681	421	192	62	11	15	115	310	685	937	5238
57	925	719	588	339	129	33	4	6	71	225	600	848	4487
55	870	666	527	288	95	21	1	3	48	173	545	792	4029
50	725	537	384	180	36	5	0	0	14	76	416	647	3020
32	297	185	49	7	0	0	0	0	0	1	108	238	885

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	152	174	236	435	709	930	1150	1142	815	560	273	169	6745
55	11	11	2	26	91	261	439	432	173	20	20	11	1497
57	5	8	0	17	63	213	379	373	136	10	15	4	1223
60	0	0	0	8	32	152	294	289	90	2	9	1	877
65	0	0	0	0	7	75	169	168	38	0	0	0	457
70	0	0	0	0	1	27	81	81	12	0	0	0	202

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	30	44	89	230	470	695	908	901	584	340	103	37	30	74	163	393	863	1558	2466	3367	3951	4291	4394	4431
45	3	12	35	122	324	545	753	747	437	219	46	9	3	15	50	172	496	1041	1794	2541	2978	3197	3243	3252
50	0	1	8	55	192	396	598	592	302	117	16	0	0	1	9	64	256	652	1250	1842	2144	2261	2277	2277
55	0	0	0	19	90	252	447	437	178	51	2	0	0	0	0	19	109	361	808	1245	1423	1474	1476	1476
60	0	0	0	2	34	137	296	290	91	15	0	0	0	0	0	2	36	173	469	759	850	865	865	865
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	3	20	52	147	285	429	576	570	365	191	43	9	3	23	75	222	507	936	1512	2082	2447	2638	2681	2690

(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