

Climatography of the United States No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: BITTER CREEK 4 NE, WY

1971-2000

COOP ID: 480761

Climate Division: WY 3

NWS Call Sign:

Elevation: 6,720 Feet Lat: 41° 35N

Lon: 108° 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	31.4	7.5	19.5	57	1981	23	26.2	2000	-46	1972	4	3.6	1979	1411	0	.0	.0	.3	14.5	30.8	7.7
Feb	35.5	11.2	23.4	70	1971	17	31.2	1991	-42	1985	1	13.9	1993	1166	0	.0	.0	1.7	9.6	28.0	5.7
Mar	44.9	20.0	32.5	70	1986	28	38.8	1986	-22+	1969	11	26.8	1977	1010	0	.0	.0	9.9	2.5	29.8	1.0
Apr	54.6	25.3	40.0	83	1969	20	46.1	1992	-10	1980	3	33.4+	1975	751	0	.0	.0	20.7	.7	25.2	.2
May	65.0	33.2	49.1	85+	1984	30	54.3	2000	-4	1967	14	43.3	1975	493	0	.0	.0	28.9	.0	14.8	.0
Jun	76.3	40.6	58.5	97	1988	24	65.5	1988	18	1973	19	51.5	1975	222	26	.0	.8	29.9	.0	3.2	.0
Jul	83.3	46.6	65.0	103	1969	18	68.7	1988	27+	1997	2	58.9	1993	72	70	.0	3.6	31.0	.0	.3	.0
Aug	82.4	44.8	63.6	97+	1979	6	67.9	2000	17	1974	16	58.3	1974	97	54	.0	1.9	31.0	.0	1.4	.0
Sep	72.4	36.0	54.2	90+	1998	5	60.0	1998	-2	1965	18	49.6	1974	330	5	.0	.1	29.2	@	10.3	.0
Oct	59.4	26.6	43.0	78+	2001	2	48.0	1988	-9	1972	31	36.3	1984	683	0	.0	.0	25.5	.3	24.6	.1
Nov	41.8	16.7	29.3	68+	1999	15	38.4	1999	-29	1983	30	19.2	2000	1074	0	.0	.0	8.1	6.0	28.8	2.7
Dec	32.6	8.7	20.7	57+	1995	1	31.4	1980	-41	1964	17	12.5	1983	1376	0	.0	.0	1.2	14.0	30.7	7.5
Ann	56.6	26.4	41.6	103	Jul 1969	18	68.7	Jul 1988	-46	Jan 1972	4	3.6	Jan 1979	8685	155	.0	6.4	217.4	47.6	227.9	24.9

+ 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: 1962-2001

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

009-A

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Climate Division: WY 3

NWS Call Sign:

Elevation: 6,720 Feet Lat: 41°35N

Lon: 108°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	.29	.17	1.50	1970	1	1.40	1980	.00+	1999	1.7	1.0	@	.0	.00	.00	.00	.05	.12	.19	.27	.37	.51	.74	.97
Feb	.43	.22	3.00	1999	10	3.00	1999	.00+	1997	4.5	1.2	.1	.1	.00	.00	.03	.10	.17	.26	.37	.52	.73	1.10	1.46
Mar	.30	.30	.50	1991	29	1.02	1992	.00+	1999	2.5	1.1	.1	.0	.00	.00	.04	.11	.17	.23	.31	.39	.51	.70	.89
Apr	.46	.43	1.50	1978	30	1.52	1991	.00+	1996	3.2	1.6	.1	@	.00	.00	.10	.18	.26	.35	.45	.58	.75	1.04	1.33
May	1.22	.80	1.82	1971	30	5.81	1981	.05+	1994	7.1	3.4	.6	.1	.05	.11	.24	.40	.59	.81	1.09	1.46	1.98	2.88	3.78
Jun	.60	.52	1.31	1970	11	1.86	1998	.00+	1985	3.9	1.6	.3	.1	.00	.00	.00	.17	.30	.43	.59	.78	1.03	1.46	1.87
Jul	.73	.42	1.45	1982	28	3.62	1973	.00+	2000	5.0	2.0	.3	.1	.00	.00	.06	.21	.35	.51	.70	.93	1.25	1.76	2.29
Aug	.57	.36	2.00	1997	5	4.07	1997	.00+	1985	2.7	1.4	.2	.1	.00	.03	.10	.18	.28	.39	.52	.70	.94	1.35	1.75
Sep	.74	.66	1.00	1973	25	2.45	1973	.00	1979	4.4	1.9	.3	@	.03	.09	.20	.31	.42	.56	.71	.91	1.18	1.63	2.07
Oct	.68	.58	1.43	1998	28	1.96	1994	.00+	1999	3.8	2.1	.3	@	.00	.06	.17	.27	.39	.51	.66	.84	1.09	1.50	1.91
Nov	.41	.36	1.00	1964	16	1.10	1993	.00+	2000	3.7	1.7	.2	.0	.00	.00	.08	.15	.23	.31	.41	.52	.68	.93	1.17
Dec	.22	.18	1.00+	1982	24	1.20	1972	.00+	1999	1.7	.5	.1	.1	.00	.00	.04	.08	.11	.16	.21	.27	.36	.51	.66
Ann	6.65	6.86	3.00	Feb 1999	10	5.81	May 1981	.00+	Nov 2000	44.2	19.5	2.6	.6	3.93	4.42	5.07	5.58	6.04	6.49	6.97	7.50	8.16	9.14	10.00

+ 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: 1962-2001

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1971-2000

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Station: BITTER CREEK 4 NE, WY

COOP ID: 480761

Climate Division: WY 3

NWS Call Sign:

Elevation: 6,720 Feet

Lat: 41°35N

Lon: 108°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	4.2	2.6	1	#	6.0	1995	16	10.3	1995	11	1993	13	4	1993	1.7	1.5	.6	.1	.0	-9.9	-9.9	-9.9	-9.9
Feb	1.6	2.0	1	0	6.0	1989	3	6.0	1989	15	1989	5	12	1989	1.2	1.1	.2	.1	.0	-9.9	-9.9	-9.9	-9.9
Mar	1.2	.3	#	0	4.0	1990	6	5.5	1990	4	1990	6	#+	1997	.4	.4	.2	.0	.0	.3	.2	.0	.0
Apr	1.8	1.0	#	0	4.9	1991	11	7.9	1991	4	1991	11	#+	1999	.5	.5	.2	.0	.0	.2	.2	.0	.0
May	#	.0	0	0	#	1995	7	#+	1995	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	#	.0	0	0	#	1991	10	#+	1991	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	.9	1973	2	.9	1973	1	1973	2	#+	1999	@	.0	.0	.0	.0	.1	.0	.0	.0
Oct	1.1	.0	#	0	6.0	1995	22	9.0	1980	6	1995	22	#+	1995	.3	.2	.1	.1	.0	.1	.1	.1	.0
Nov	3.1	1.2	#	0	10.0	1991	29	12.0	1992	10	1991	30	1	1993	1.4	1.0	.3	.2	.1	1.4	.7	.3	.1
Dec	3.5	2.0	#	#	10.0	1972	29	12.0	1972	10	1991	4	3	1991	1.0	.7	.2	.1	.1	.8	.1	.0	.0
Ann	16.5	9.1	N/A	N/A	10.0+	Nov 1991	29	12.0+	Nov 1992	15	Feb 1989	5	12	Feb 1989	6.5	5.4	1.8	.6	.2	-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

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COOP ID: 480761

Climate Division: WY 3

NWS Call Sign:

Elevation: 6,720 Feet

Lat: 41° 35N

Lon: 108° 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	7/22	7/15	7/10	7/06	7/02	6/29	6/25	6/20	6/13
32	7/10	7/03	6/28	6/24	6/20	6/16	6/12	6/07	5/31
28	6/23	6/15	6/10	6/05	6/01	5/27	5/23	5/17	5/10
24	6/06	5/30	5/25	5/21	5/17	5/13	5/09	5/04	4/27
20	5/30	5/22	5/16	5/10	5/05	4/30	4/25	4/19	4/10
16	5/09	5/02	4/27	4/23	4/19	4/15	4/11	4/06	3/31
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	8/03	8/09	8/14	8/18	8/22	8/26	8/30	9/04	9/11
32	8/10	8/17	8/22	8/26	8/31	9/04	9/08	9/13	9/20
28	8/27	9/02	9/06	9/10	9/13	9/16	9/20	9/24	9/30
24	9/03	9/09	9/13	9/17	9/20	9/23	9/27	10/01	10/07
20	9/11	9/18	9/22	9/26	9/30	10/04	10/08	10/12	10/19
16	9/24	10/01	10/06	10/10	10/13	10/17	10/21	10/26	11/01
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	80	69	62	56	50	44	38	31	21
32	105	93	85	78	71	64	57	49	37
28	130	121	114	109	103	98	93	86	77
24	155	145	138	131	126	120	114	106	96
20	182	170	162	154	147	140	133	124	112
16	205	195	188	182	177	171	165	158	148

* 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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COOP ID: 480761

Climate Division: WY 3

NWS Call Sign:

Elevation: 6,720 Feet Lat: 41°35N Lon: 108°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	1411	1166	1010	751	493	222	72	97	330	683	1074	1376	8685
60	1256	1026	855	601	343	121	18	31	200	528	924	1221	7124
57	1163	942	762	514	260	76	6	12	135	435	834	1128	6267
55	1101	886	700	457	210	52	2	6	98	374	774	1066	5726
50	946	746	546	322	108	16	0	0	35	231	625	911	4486
32	425	282	105	33	1	0	0	0	0	8	187	381	1422

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	37	40	118	271	532	794	1020	980	665	348	103	28	4936
55	0	0	0	6	27	156	310	272	73	1	0	0	845
57	0	0	0	3	16	120	251	217	50	0	0	0	657
60	0	0	0	0	5	75	170	142	24	0	0	0	416
65	0	0	0	0	0	26	70	54	5	0	0	0	155
70	0	0	0	0	0	6	15	11	0	0	0	0	32

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	0	20	105	310	569	787	745	436	158	14	0	0	0	20	125	435	1004	1791	2536	2972	3130	3144	3144
45	0	0	0	42	181	420	632	590	296	70	0	0	0	0	0	42	223	643	1275	1865	2161	2231	2231	2231
50	0	0	0	11	84	278	477	435	176	19	0	0	0	0	0	11	95	373	850	1285	1461	1480	1480	1480
55	0	0	0	0	26	158	323	282	82	0	0	0	0	0	0	0	26	184	507	789	871	871	871	871
60	0	0	0	0	2	65	175	143	26	0	0	0	0	0	0	0	2	67	242	385	411	411	411	411
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	30	116	253	407	533	514	349	177	29	0	0	0	30	146	399	806	1339	1853	2202	2379	2408	2408

(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