

Climatography of the United States

No. 20

1971-2000

Station: BILLY CREEK, WY

COOP ID: 480740

Climate Division: WY 5

NWS Call Sign:

Elevation: 4,975 Feet Lat: 44°08N

Lon: 106°43W

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	35.0	7.3	21.2	66+	1989	31	30.4	1983	-36+	1963	19	4.1	1979	1360	0	.0	.0	5.4	11.2	30.1	8.0
Feb	39.5	13.3	26.4	71	1995	25	35.9	1991	-41	1989	3	12.0	1989	1081	0	.0	.0	7.6	7.0	26.9	4.2
Mar	46.8	21.0	33.9	75+	1997	27	41.3	1986	-21	1965	25	26.8	1996	963	0	.0	.0	14.1	3.8	27.5	1.2
Apr	55.2	28.7	42.0	85	1989	22	47.8	1987	-1	1997	11	35.7	1975	691	0	.0	.0	20.5	.9	19.7	.1
May	64.3	37.4	50.9	91	1969	27	57.2	1994	14	1968	11	45.6	1983	442	3	.0	.1	27.8	@	7.2	.0
Jun	75.4	45.7	60.6	100	1988	21	71.3	1988	25	1969	14	54.8	1998	187	52	@	2.7	29.6	.0	.6	.0
Jul	83.3	50.8	67.1	104	1989	9	71.6	2000	35+	1997	2	59.9	1993	67	130	.5	8.5	31.0	.0	.0	.0
Aug	82.9	48.9	65.9	105	1979	5	71.4	2000	31+	1992	30	59.9	1974	100	127	.1	7.8	30.9	.0	.1	.0
Sep	71.7	38.6	55.2	98+	1998	5	64.7	1998	11	1984	25	48.6	1985	320	24	.0	2.0	28.3	.2	4.6	.0
Oct	59.5	28.4	44.0	87	1989	1	47.3	1988	-12	1991	30	39.1	1984	653	0	.0	.0	24.2	.9	17.6	.1
Nov	44.3	16.6	30.5	81	1999	8	45.1	1999	-26	1985	22	13.4	1985	1037	0	.0	.0	11.5	5.6	26.7	2.1
Dec	37.3	8.9	23.1	72	1999	1	30.7	1999	-39	1990	21	4.9	1983	1299	0	.0	.0	7.4	9.7	29.9	5.6
Ann	57.9	28.8	43.4	105	Aug 1979	5	71.6	Jul 2000	-41	Feb 1989	3	4.1	Jan 1979	8200	336	.6	21.1	238.3	39.3	190.9	21.3

+ 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/normal/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

008-A

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: BILLY CREEK, WY

COOP ID: 480740

Climate Division: WY 5

NWS Call Sign:

Elevation: 4,975 Feet Lat: 44°08N

Lon: 106°43W

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	.31	.27	.62	2000	27	1.02	2000	.00+	1992	4.2	.9	@	.0	.00	.03	.09	.14	.19	.24	.31	.38	.49	.66	.83
Feb	.34	.29	.50+	1971	20	1.26	1971	.00+	1992	4.7	1.1	.1	.0	.00	.02	.07	.12	.18	.25	.32	.42	.55	.78	1.00
Mar	.64	.50	1.19	1977	25	1.85	1977	.07	1997	6.9	1.9	.2	@	.11	.17	.26	.35	.44	.53	.64	.78	.95	1.24	1.51
Apr	1.51	1.16	1.87	1976	27	5.74	1984	.23	1987	8.4	3.8	.7	.2	.22	.35	.57	.77	.99	1.23	1.50	1.84	2.29	3.02	3.73
May	2.26	2.07	1.94	1970	21	6.04	1978	.57	1998	11.9	6.4	1.1	.2	.72	.93	1.25	1.52	1.79	2.06	2.36	2.71	3.16	3.86	4.51
Jun	2.07	1.63	3.50	1992	15	6.48	1992	.35	1978	10.2	5.4	.9	.2	.47	.66	.96	1.23	1.51	1.80	2.12	2.51	3.02	3.83	4.60
Jul	1.58	1.46	1.65	1997	29	4.58	1997	.20	1999	8.7	4.3	.7	.1	.34	.48	.71	.92	1.14	1.36	1.62	1.92	2.32	2.97	3.57
Aug	1.06	.98	1.77	1968	23	3.02	1980	.02	1973	6.8	3.4	.4	.1	.10	.18	.32	.47	.63	.81	1.03	1.30	1.66	2.27	2.87
Sep	1.12	.98	1.37	1963	21	3.22	1982	.18	1979	6.6	3.1	.5	.0	.19	.29	.45	.60	.76	.93	1.13	1.37	1.68	2.20	2.69
Oct	1.06	.82	1.53	1976	3	3.30	1971	.06	1985	6.1	3.1	.4	@	.11	.19	.34	.49	.64	.82	1.03	1.29	1.64	2.23	2.80
Nov	.45	.35	.65	1987	3	.97	1983	.00	1997	4.8	1.4	.1	.0	.05	.11	.18	.25	.32	.39	.46	.56	.69	.89	1.08
Dec	.32	.31	.35+	1993	3	1.07	1977	.02	1979	4.9	1.0	.0	.0	.02	.04	.09	.13	.18	.24	.31	.39	.52	.72	.92
Ann	12.72	12.50	3.50	Jun 1992	15	6.48	Jun 1992	.00+	Nov 1997	84.2	35.8	5.1	.8	8.66	9.43	10.43	11.19	11.87	12.53	13.22	13.98	14.90	16.25	17.42

+ 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

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

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

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Station: BILLY CREEK, WY

COOP ID: 480740

Climate Division: WY 5

NWS Call Sign:

Elevation: 4,975 Feet

Lat: 44°08N

Lon: 106°43W

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	5.4	5.0	2	2	7.0	1982	5	14.0+	1998	10	1982	6	7	1979	4.5	2.1	.4	.1	.0	16.4	9.1	4.4	.2
Feb	6.0	6.0	2	2	7.5	1987	24	17.5	1987	10+	1987	27	7	1978	4.5	2.1	.7	.2	.0	11.9	6.0	2.7	.1
Mar	7.2	6.5	1	1	15.0	1977	25	23.9	1977	11	1977	25	3	1978	5.9	2.9	.6	.1	@	7.4	2.6	.8	@
Apr	7.8	5.0	#	#	22.0	1998	15	35.2	1998	22	1998	16	4	1998	4.1	2.4	1.0	.3	.1	2.6	1.1	.6	.3
May	1.8	.0	#	0	10.0	1978	6	19.6	1978	4	1984	1	#+	1997	.9	.6	.2	.1	@	.3	.1	.0	.0
Jun	.0	.0	#	0	.5	1995	9	.5	1995	#+	1995	9	#+	1995	@	.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	.9	.0	#	0	7.0	1982	14	9.3	1982	3	1984	24	#+	2000	.4	.4	.1	@	.0	.3	.1	.0	.0
Oct	3.5	2.5	#	#	9.7	1993	9	18.0	1971	8	1993	9	1	1996	2.2	1.3	.4	.1	.0	1.3	.5	.1	.0
Nov	5.2	4.0	1	#	6.0	1973	1	16.1	1985	11	1985	22	6	1985	4.4	1.8	.6	.2	.0	6.2	2.3	.9	.2
Dec	4.9	3.8	2	1	6.8	1975	13	19.6	1978	12	1978	13	8	1978	4.7	2.3	.3	.1	.0	10.0	5.8	3.4	.5
Ann	42.7	32.8	N/A	N/A	22.0	Apr 1998	15	35.2	Apr 1998	22	Apr 1998	16	8	Dec 1978	31.6	15.9	4.3	1.2	.1	56.4	27.6	12.9	1.3

+ 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: 480740

Climate Division: WY 5

NWS Call Sign:

Elevation: 4,975 Feet

Lat: 44° 08N

Lon: 106° 43W

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	6/25	6/20	6/16	6/11	6/07	6/01	5/25
32	6/11	6/06	6/02	5/30	5/27	5/24	5/21	5/18	5/13
28	5/26	5/21	5/17	5/14	5/12	5/09	5/06	5/02	4/27
24	5/14	5/09	5/05	5/02	4/30	4/27	4/24	4/20	4/15
20	5/01	4/27	4/25	4/22	4/20	4/17	4/15	4/12	4/08
16	4/23	4/18	4/15	4/12	4/09	4/06	4/03	3/31	3/26
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	8/19	8/25	8/29	9/01	9/04	9/07	9/11	9/15	9/20
32	9/06	9/10	9/12	9/14	9/16	9/18	9/20	9/23	9/26
28	9/14	9/18	9/21	9/23	9/25	9/27	9/30	10/02	10/06
24	9/16	9/22	9/26	9/30	10/03	10/07	10/11	10/15	10/21
20	9/20	9/26	10/01	10/05	10/09	10/13	10/17	10/22	10/29
16	10/03	10/09	10/13	10/17	10/21	10/24	10/28	11/01	11/07
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	106	97	91	85	80	75	69	62	53
32	128	122	118	115	111	108	105	100	95
28	156	149	144	140	136	132	128	123	116
24	181	173	166	161	156	151	146	140	131
20	197	188	182	177	172	167	162	155	147
16	217	209	203	198	194	189	185	179	171

* 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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NWS Call Sign:

Elevation: 4,975 Feet Lat: 44°08N

Lon: 106°43W

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	1360	1081	963	691	442	187	67	100	320	653	1037	1299	8200
60	1205	941	808	541	298	100	21	43	205	498	887	1144	6691
57	1112	857	715	454	221	62	9	23	147	406	797	1051	5854
55	1050	801	653	397	176	42	4	15	114	345	742	989	5328
50	897	667	499	263	87	14	0	4	51	204	602	840	4128
32	409	248	84	14	0	0	0	0	0	6	205	364	1330

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	72	91	144	312	584	856	1086	1050	694	376	158	88	5511
55	0	0	0	6	47	208	376	352	118	2	6	0	1115
57	0	0	0	3	30	168	320	298	92	1	0	0	912
60	0	0	0	0	14	116	238	224	59	0	0	0	651
65	0	0	0	0	3	52	130	127	24	0	0	0	336
70	0	0	0	0	0	18	55	57	8	0	0	0	138

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	20	63	168	381	650	884	854	522	234	57	15	7	27	90	258	639	1289	2173	3027	3549	3783	3840	3855
45	0	3	23	89	248	501	729	700	387	138	26	2	0	3	26	115	363	864	1593	2293	2680	2818	2844	2846
50	0	0	3	39	143	356	575	546	261	64	8	0	0	0	3	42	185	541	1116	1662	1923	1987	1995	1995
55	0	0	0	12	68	228	421	394	159	23	0	0	0	0	0	12	80	308	729	1123	1282	1305	1305	1305
60	0	0	0	1	23	125	278	249	80	5	0	0	0	0	0	1	24	149	427	676	756	761	761	761
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	13	25	65	139	247	405	555	540	351	189	60	22	13	38	103	242	489	894	1449	1989	2340	2529	2589	2611

(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