

# Climatography of the United States

No. 20

1971-2000

Station: MEDICINE BOW, WY

COOP ID: 486120

Climate Division: WY10

NWS Call Sign:

Elevation: 6,570 Feet Lat: 41° 54N

Lon: 106° 12W

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	31.8	11.6	21.7	58	1981	23	29.2	1971	-46	1963	19	10.6	1979	1343	0	.0	.0	.5	15.3	30.3	5.4
Feb	35.8	13.6	24.7	61+	1981	24	30.7	2000	-38	2001	9	13.0	1989	1129	0	.0	.0	1.7	10.3	27.6	4.5
Mar	45.0	20.5	32.8	72	1956	31	39.3	1986	-22+	1964	7	27.1	1976	999	0	.0	.0	10.1	3.7	30.0	.8
Apr	55.5	26.1	40.8	80	1981	26	48.4	1981	-10	1966	20	34.3	1973	727	0	.0	.0	20.8	.9	24.1	.2
May	65.8	34.3	50.1	87+	1969	27	54.6	1994	13	1954	3	45.5	1983	464	0	.0	.0	28.6	.0	12.4	.0
Jun	77.0	42.7	59.9	96	1954	23	65.9	1988	23	1951	3	54.5	1998	184	29	.0	.8	29.9	.0	1.6	.0
Jul	83.5	47.5	65.5	97+	1989	8	68.5	1998	30	1973	21	61.8	1993	42	57	.0	2.8	31.0	.0	.1	.0
Aug	82.0	45.7	63.9	96	1979	5	67.4	2000	27+	1992	27	60.1	1974	83	47	.0	1.0	31.0	.0	.3	.0
Sep	72.3	36.3	54.3	92	1978	5	60.2	1998	13	1976	29	50.4	1985	325	4	.0	.2	29.0	.1	9.5	.0
Oct	59.5	27.8	43.7	81	1976	1	48.2	1988	-13	1972	31	38.2	1984	663	0	.0	.0	25.1	.6	24.1	.1
Nov	41.4	18.1	29.8	71	1977	5	38.2	1999	-27	1952	28	18.3	2000	1059	0	.0	.0	8.2	7.5	28.1	2.3
Dec	32.8	12.1	22.5	57+	1995	1	31.8	1980	-44	1964	17	13.7	1983	1320	0	.0	.0	1.4	13.5	30.4	5.1
Ann	56.9	28.0	42.5	97+	Jul 1989	8	68.5	Jul 1998	-46	Jan 1963	19	10.6	Jan 1979	8338	137	.0	4.8	217.3	51.9	218.5	18.4

+ 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](http://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: 1881-2001

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

061-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: MEDICINE BOW, WY**

**COOP ID: 486120**

**Climate Division: WY10**

**NWS Call Sign:**

**Elevation: 6,570 Feet Lat: 41° 54N**

**Lon: 106° 12W**

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	.46	.31	.85	1976	1	1.40	1975	.00	1989	6.7	1.5	.1	.0	.04	.09	.16	.23	.30	.37	.46	.56	.70	.93	1.15
Feb	.53	.40	.75	1980	15	1.80	1980	.05+	1991	5.2	1.7	.2	.0	.06	.10	.18	.25	.33	.41	.52	.64	.81	1.09	1.36
Mar	.65	.50	2.02	1973	14	2.18	1973	.10	1991	6.1	2.2	.2	@	.11	.17	.26	.35	.45	.55	.66	.80	.98	1.28	1.57
Apr	1.13	1.04	.85	1968	3	2.56	1973	.19	1987	7.8	4.0	.5	@	.31	.42	.58	.72	.86	1.01	1.17	1.36	1.61	1.99	2.36
May	1.68	1.26	2.19	2000	17	4.80	1995	.49	1990	8.7	4.6	.8	.2	.41	.57	.81	1.03	1.25	1.47	1.73	2.03	2.42	3.05	3.64
Jun	1.16	1.06	1.90	1989	9	3.47	1989	.00+	1990	7.1	3.6	.7	.1	.00	.09	.28	.47	.66	.88	1.13	1.44	1.88	2.59	3.30
Jul	1.13	.84	2.27	1958	24	4.47	1973	.00	1979	7.1	3.4	.5	.2	.05	.16	.33	.49	.67	.87	1.10	1.39	1.78	2.44	3.08
Aug	.94	.87	1.75	1986	5	3.27	1979	.00	1981	6.1	2.6	.4	@	.13	.25	.41	.54	.67	.81	.97	1.15	1.40	1.78	2.15
Sep	1.13	.86	1.40	1973	10	4.23	1973	.00	1977	5.9	2.9	.6	.1	.06	.16	.34	.50	.68	.87	1.10	1.39	1.77	2.41	3.04
Oct	.97	.91	1.45	1979	29	2.57	1998	.00	1988	5.7	2.7	.4	.1	.03	.11	.25	.39	.54	.72	.93	1.19	1.55	2.16	2.75
Nov	.56	.51	.84	1960	4	1.61	1973	.00	1974	6.8	2.1	@	.0	.11	.19	.28	.36	.43	.51	.59	.68	.80	1.00	1.17
Dec	.57	.39	1.25	1975	31	3.22	1975	.01	1986	4.8	1.2	.1	@	.04	.07	.15	.22	.31	.41	.54	.69	.91	1.28	1.64
Ann	10.91	10.21	2.27	Jul 1958	24	4.80	May 1995	.00+	Jun 1990	78.0	32.5	4.5	.7	6.67	7.44	8.45	9.24	9.95	10.64	11.37	12.19	13.19	14.66	15.96

+ 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: 1881-2001

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

Complete documentation available from:

[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

# 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](http://www.ncdc.noaa.gov)

Station: MEDICINE BOW, WY

COOP ID: 486120

Climate Division: WY10

NWS Call Sign:

Elevation: 6,570 Feet

Lat: 41° 54N

Lon: 106° 12W

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	5.5	5.6	2	1	6.5	1980	25	11.7	1972	14	1980	29	10	1973	4.6	2.7	.7	.2	.0	8.7	3.2	2.1	.2
Feb	6.2	5.4	2	1	7.0	1989	2	17.3	1980	15	1980	23	11	1980	3.9	2.1	.5	.3	.0	10.3	5.8	3.4	1.0
Mar	4.7	3.6	1	#	8.5	1990	6	18.8	1990	10	1990	7	4	1980	3.1	1.6	.4	.1	.0	4.7	2.0	.9	.1
Apr	5.6	3.6	#	#	14.0	1973	19	23.2	1973	4	1981	3	3	1973	2.8	1.7	.7	.1	.1	1.6	.5	.0	.0
May	1.1	.0	#	0	3.5	1995	23	5.5	1995	2+	2000	17	#+	2000	.6	.5	.1	.0	.0	.1	.0	.0	.0
Jun	.1	.0	#	0	1.5	1976	14	1.5	1976	#	2000	28	#	2000	.1	@	.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	1.7	.0	#	0	8.0	1974	12	18.0	1974	12	2000	23	1	2000	.5	.5	.2	.1	.0	.2	.1	.1	@
Oct	3.3	2.5	#	#	8.5	1975	23	10.0+	1996	10	1980	18	1	1996	1.4	.9	.4	.2	.0	1.2	.7	.4	@
Nov	5.1	4.2	1	1	6.0	1979	25	11.4	1990	11	1972	13	5	1972	4.0	1.8	.7	.2	.0	5.2	2.2	.9	.0
Dec	5.7	4.3	1	1	8.0	1972	29	14.1	1972	13	1987	28	3+	2000	3.6	1.9	.5	.1	.0	8.7	3.3	1.1	.5
Ann	39.0	29.2	N/A	N/A	14.0	Apr 1973	19	23.2	Apr 1973	15	Feb 1980	23	11	Feb 1980	24.6	13.7	4.2	1.3	.1	40.7	17.8	8.9	1.8

+ 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](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

# Climatography of the United States

## No. 20 1971-2000

**Station: MEDICINE BOW, WY**

**COOP ID: 486120**

**Climate Division: WY10**

**NWS Call Sign:**

**Elevation: 6,570 Feet**

**Lat: 41° 54N**

**Lon: 106° 12W**

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	7/11	7/04	6/29	6/25	6/21	6/18	6/13	6/09	6/02
32	6/27	6/19	6/14	6/10	6/05	6/01	5/28	5/22	5/15
28	6/06	5/30	5/25	5/21	5/17	5/14	5/09	5/05	4/28
24	5/16	5/11	5/08	5/06	5/03	5/01	4/28	4/25	4/21
20	5/08	5/03	4/30	4/27	4/24	4/21	4/18	4/15	4/10
16	4/26	4/21	4/18	4/15	4/13	4/10	4/07	4/04	3/30
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	8/11	8/17	8/21	8/25	8/28	9/01	9/04	9/09	9/15
32	8/26	8/31	9/03	9/06	9/09	9/12	9/15	9/19	9/24
28	9/02	9/07	9/11	9/14	9/17	9/20	9/23	9/26	10/01
24	9/12	9/17	9/20	9/23	9/26	9/28	10/01	10/05	10/09
20	9/17	9/24	9/29	10/03	10/07	10/11	10/15	10/20	10/26
16	9/30	10/07	10/12	10/17	10/21	10/25	10/29	11/03	11/10
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	93	84	78	72	67	62	57	50	42
32	122	113	106	100	95	90	84	77	68
28	147	138	132	127	122	117	111	105	96
24	166	159	154	149	145	140	136	130	123
20	186	179	174	169	165	161	157	152	145
16	216	207	201	195	190	185	180	174	165

\* 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:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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

**Station: MEDICINE BOW, WY**

**COOP ID: 486120**

**Climate Division: WY10**

**NWS Call Sign:**

**Elevation: 6,570 Feet    Lat: 41° 54N**

**Lon: 106° 12W**

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	1343	1129	999	727	464	184	42	83	325	663	1059	1320	8338
60	1188	989	844	577	314	91	5	23	193	508	909	1165	6806
57	1095	905	751	488	231	52	1	8	127	415	819	1072	5964
55	1033	849	689	431	181	33	0	4	90	354	759	1010	5433
50	878	709	535	295	82	8	0	0	29	211	611	855	4213
32	352	249	101	21	0	0	0	0	0	6	178	328	1235

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	33	44	126	284	559	835	1038	988	668	365	109	31	5080
55	0	0	0	4	27	178	325	278	69	1	0	0	882
57	0	0	0	1	15	137	264	221	45	0	0	0	683
60	0	0	0	0	5	86	175	143	21	0	0	0	430
65	0	0	0	0	0	29	57	47	4	0	0	0	137
70	0	0	0	0	0	6	6	7	0	0	0	0	19

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	24	114	315	598	796	731	438	159	20	1	0	0	24	138	453	1051	1847	2578	3016	3175	3195	3196
45	0	0	0	46	181	450	641	576	299	71	0	0	0	0	0	46	227	677	1318	1894	2193	2264	2264	2264
50	0	0	0	12	82	307	486	421	172	19	0	0	0	0	0	12	94	401	887	1308	1480	1499	1499	1499
55	0	0	0	0	23	174	331	267	75	2	0	0	0	0	0	0	23	197	528	795	870	872	872	872
60	0	0	0	0	1	73	179	129	18	0	0	0	0	0	0	0	1	74	253	382	400	400	400	400
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	35	117	245	414	524	502	339	170	26	0	0	1	36	153	398	812	1336	1838	2177	2347	2373	2373

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)