

# Climatology of the United States

No. 20

1971-2000

Station: EMBLEM, WY

COOP ID: 483031

Climate Division: WY 4

NWS Call Sign:

Elevation: 4,448 Feet Lat: 44° 30N

Lon: 108° 23W

## 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	29.7	6.7	18.2	61	1974	16	30.3	1981	-34+	1979	1	-2.4	1979	1452	0	.0	.0	1.0	15.9	30.9	8.8
Feb	37.6	13.3	25.5	69	1982	21	34.6	1999	-34	1996	2	10.8	1989	1108	0	.0	.0	4.4	7.7	27.8	4.5
Mar	49.2	23.0	36.1	78	1986	28	44.0	1986	-15	1965	25	29.1	1996	896	0	.0	.0	15.3	2.5	27.4	.8
Apr	59.7	31.4	45.6	89	1989	21	52.4	1987	5	1975	9	36.4	1975	585	0	.0	.0	24.4	.3	16.4	.0
May	69.2	41.1	55.2	95	1969	27	60.3	1987	20	1967	1	50.4	1996	316	10	.0	.2	29.7	.0	3.1	.0
Jun	79.5	48.8	64.2	101+	1989	19	71.0	1988	32	1979	8	58.0	1998	106	80	.1	4.7	30.0	.0	@	.0
Jul	86.7	54.0	70.4	105	1989	8	75.3	1989	36	1972	4	62.7	1993	30	196	.4	11.6	31.0	.0	.0	.0
Aug	85.4	52.6	69.0	103	1983	7	74.4	1983	34	1976	27	64.5	1993	39	164	.2	9.7	31.0	.0	.0	.0
Sep	73.6	43.7	58.7	97+	1979	8	65.0	1998	16	1984	25	52.4	1985	227	36	.0	1.3	28.9	.0	3.0	.0
Oct	60.2	33.5	46.9	86	1963	4	51.4	1988	-7	1991	30	42.8	1995	564	0	.0	.0	25.7	.5	15.0	.1
Nov	42.5	20.2	31.4	72	1999	4	42.3	1999	-20	1975	30	15.2	1985	1011	0	.0	.0	8.8	5.5	27.4	1.9
Dec	32.0	9.3	20.7	64	1981	6	30.9	1980	-37	1978	31	5.9	1978	1374	0	.0	.0	1.5	14.0	30.8	6.1
Ann	58.8	31.5	45.2	105	Jul 1989	8	75.3	Jul 1989	-37	Dec 1978	31	-2.4	Jan 1979	7708	486	.7	27.5	231.7	46.4	181.8	22.2

+ 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](http://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: 1949-2001

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

038-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: EMBLEM, WY

COOP ID: 483031

Climate Division: WY 4

NWS Call Sign:

Elevation: 4,448 Feet Lat: 44°30N

Lon: 108°23W

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	.25	.23	.70	1965	28	.68	1975	.00+	1994	2.6	1.1	.0	.0	.00	.00	.09	.13	.17	.21	.26	.32	.38	.49	.60
Feb	.20	.14	.37	1996	8	.87	1978	.00+	1999	2.1	.9	.0	.0	.00	.02	.06	.09	.12	.16	.20	.24	.31	.42	.52
Mar	.46	.53	.66	1995	12	1.12	1995	.00+	1979	4.0	1.6	.1	.0	.00	.07	.16	.24	.31	.39	.47	.58	.71	.94	1.15
Apr	.76	.62	1.47	1978	28	2.30	1991	.16	1981	4.9	2.3	.2	@	.16	.23	.34	.44	.55	.65	.78	.92	1.11	1.42	1.71
May	1.42	1.33	2.10	1987	27	3.29	1981	.02	1976	7.1	3.7	.6	.2	.12	.21	.40	.60	.81	1.06	1.35	1.72	2.23	3.08	3.92
Jun	1.17	1.00	1.27	1969	26	3.39	1992	.04	1978	6.8	3.4	.5	@	.20	.30	.47	.63	.80	.97	1.18	1.42	1.75	2.28	2.79
Jul	.82	.70	1.60	1993	3	3.03	1993	.00	1988	4.5	2.2	.3	.1	.03	.09	.21	.33	.46	.61	.78	1.00	1.31	1.82	2.32
Aug	.53	.39	1.05	1971	30	1.72	1972	.00	1975	4.5	1.6	.2	@	.06	.12	.21	.29	.36	.44	.54	.65	.80	1.03	1.26
Sep	.86	.83	1.24	1980	16	2.44	1991	.00+	1993	4.6	2.3	.4	.1	.00	.05	.18	.31	.45	.62	.81	1.06	1.40	1.97	2.54
Oct	.69	.59	2.24	1949	20	2.78	1971	.05	1996	3.8	2.1	.3	@	.05	.09	.18	.28	.38	.50	.65	.83	1.09	1.52	1.95
Nov	.30	.26	.73	1986	7	.84	1986	.02	1993	2.6	1.3	@	.0	.04	.06	.11	.15	.19	.24	.30	.37	.46	.61	.76
Dec	.26	.15	.60	2000	5	1.05	1981	.00+	1995	2.3	1.0	@	.0	.00	.00	.04	.09	.13	.19	.25	.33	.44	.61	.78
Ann	7.72	7.53	2.24	Oct 1949	20	3.39	Jun 1992	.00+	Feb 1999	49.8	23.5	2.6	.4	5.32	5.77	6.36	6.80	7.20	7.59	7.99	8.43	8.96	9.74	10.42

+ 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: 1949-2001

(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

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
[www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)

**Station: EMBLEM, WY**

**COOP ID: 483031**

**Climate Division: WY 4**

**NWS Call Sign:**

**Elevation: 4,448 Feet**

**Lat: 44° 30N**

**Lon: 108° 23W**

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	3.3	2.9	#	0	6.0	1975	25	9.0	1972	6	1975	25	#+	1999	1.4	1.3	.6	.1	.0	-9.9	-9.9	-9.9	-9.9
Feb	2.1	1.0	#	0	5.0	1978	19	12.5	1978	#+	1999	22	#+	1999	.9	.7	.3	@	.0	.0	.0	.0	.0
Mar	2.1	.4	#	0	8.0	1994	23	9.5	1977	8	1994	23	1	1994	.7	.6	.2	@	.0	.2	.2	.2	.0
Apr	2.1	.0	#	0	8.5	1991	18	17.5	1991	2	1997	1	#+	1997	.4	.4	.2	.1	.0	.0	.0	.0	.0
May	.3	.0	#	0	4.0	1983	11	8.0	1983	#	1996	4	#	1996	.1	.1	.1	.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	.2	.0	0	0	3.0	1983	19	3.0	1983	0	0	0	0	0	.1	.1	@	.0	.0	.0	.0	.0	.0
Oct	1.8	.0	#	0	6.5	1993	8	9.0	1975	5	1993	8	#+	1995	.7	.6	.4	.1	.0	.4	.2	.1	.0
Nov	2.3	1.8	#	0	5.0	1983	8	8.0	1985	3	1990	3	#+	1998	.8	.8	.2	@	.0	-9.9	-9.9	-9.9	-9.9
Dec	3.3	2.0	#	0	5.0	1977	30	12.0+	1989	4+	1996	24	1	1996	1.3	1.2	.4	.1	.0	-9.9	-9.9	-9.9	-9.9
Ann	17.5	8.1	N/A	N/A	8.5	Apr 1991	18	17.5	Apr 1991	8	Mar 1994	23	1+	Dec 1996	6.4	5.8	2.4	.4	.0	-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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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	6/15	6/09	6/05	6/01	5/29	5/25	5/22	5/17	5/11
32	5/25	5/20	5/17	5/14	5/11	5/08	5/05	5/01	4/26
28	5/12	5/08	5/04	5/02	4/29	4/26	4/24	4/20	4/16
24	5/04	4/29	4/25	4/22	4/19	4/16	4/13	4/09	4/04
20	4/20	4/16	4/12	4/09	4/07	4/04	4/01	3/29	3/24
16	4/19	4/12	4/06	4/01	3/28	3/23	3/18	3/12	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	9/03	9/07	9/10	9/12	9/14	9/17	9/19	9/22	9/26
32	9/10	9/13	9/16	9/18	9/20	9/23	9/25	9/27	10/01
28	9/19	9/24	9/27	9/30	10/03	10/06	10/09	10/12	10/17
24	9/26	10/01	10/05	10/08	10/12	10/15	10/18	10/22	10/27
20	10/05	10/10	10/14	10/17	10/20	10/23	10/27	10/31	11/05
16	10/18	10/23	10/27	10/30	11/02	11/05	11/08	11/12	11/17
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	128	121	116	112	108	104	99	94	87
32	152	145	140	136	132	128	124	119	112
28	177	170	165	160	156	152	148	142	135
24	197	189	184	179	175	171	166	161	153
20	219	211	205	200	196	191	187	181	173
16	250	239	231	225	219	212	206	198	187

\* 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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**Elevation: 4,448 Feet    Lat: 44° 30N    Lon: 108° 23W**

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	1452	1108	896	585	316	106	30	39	227	564	1011	1374	7708
60	1297	968	741	439	190	42	8	10	127	409	861	1219	6311
57	1204	884	648	356	129	20	2	4	82	319	771	1126	5545
55	1142	828	586	303	96	11	0	2	58	262	717	1064	5069
50	988	697	439	188	38	1	0	0	19	141	577	912	4000
32	482	283	71	6	0	0	0	0	0	3	189	421	1455

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	53	100	199	411	718	964	1188	1148	799	463	169	69	6281
55	0	0	0	18	101	285	475	436	166	8	6	0	1495
57	0	0	0	11	72	234	415	376	130	4	0	0	1242
60	0	0	0	5	39	166	328	290	86	1	0	0	915
65	0	0	0	0	10	80	196	164	36	0	0	0	486
70	0	0	0	0	1	28	100	74	11	0	0	0	214

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	6	68	218	486	739	949	902	557	241	34	1	0	6	74	292	778	1517	2466	3368	3925	4166	4200	4201
45	0	0	20	119	342	589	794	747	414	134	9	0	0	0	20	139	481	1070	1864	2611	3025	3159	3168	3168
50	0	0	2	57	210	440	639	592	278	59	0	0	0	0	2	59	269	709	1348	1940	2218	2277	2277	2277
55	0	0	0	18	112	299	486	437	166	18	0	0	0	0	0	18	130	429	915	1352	1518	1536	1536	1536
60	0	0	0	3	46	175	334	287	81	2	0	0	0	0	0	3	49	224	558	845	926	928	928	928
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	10	68	171	315	458	601	574	368	186	31	1	0	10	78	249	564	1022	1623	2197	2565	2751	2782	2783

(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> |
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## 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)