

Climatography of the United States

No. 20

1971-2000

Station: CENTENNIAL 1 N, WY

COOP ID: 481610

Climate Division: WY10

NWS Call Sign:

Elevation: 4,160 Feet Lat: 41° 19N

Lon: 106° 08W

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	32.3	11.8	22.1	59	1954	7	30.6	1986	-45	1963	12	11.5	1979	1331	0	.0	.0	.7	16.0	30.6	5.3
Feb	35.5	14.0	24.8	60	1960	18	30.3	2000	-31	1985	1	17.7	1989	1128	0	.0	.0	1.4	9.7	27.7	3.9
Mar	41.2	18.0	29.6	65	1987	6	35.1	1986	-19	1956	12	25.8	1973	1098	0	.0	.0	5.9	5.2	30.3	1.5
Apr	49.3	24.2	36.8	73+	1989	23	43.2	1981	-8	1997	13	28.8	1983	847	0	.0	.0	15.7	1.7	25.4	.3
May	59.7	32.5	46.1	78	1988	16	50.9	1994	9	1954	2	41.2	1995	586	0	.0	.0	26.7	@	15.4	.0
Jun	69.8	40.4	55.1	91	1954	23	60.4	1988	21	1951	2	49.3	1998	303	6	.0	@	29.6	.0	3.1	.0
Jul	75.4	46.2	60.8	95	1954	12	64.2	2000	26	1967	30	57.2	1993	144	14	.0	.1	31.0	.0	.1	.0
Aug	74.2	44.6	59.4	90	1958	8	64.0	2000	26	1956	31	57.1	1993	181	7	.0	.0	31.0	.0	.2	.0
Sep	66.5	36.7	51.6	89	1959	7	56.5	1998	6	1985	30	46.6	1971	403	1	.0	.0	28.5	.1	6.1	.0
Oct	55.6	27.9	41.8	77	1957	1	46.1	1988	-6	1993	30	35.2	1984	721	0	.0	.0	23.6	.8	22.4	.2
Nov	40.0	18.0	29.0	72	1983	4	38.4	1999	-20+	1993	25	21.1	2000	1079	0	.0	.0	6.8	7.7	28.2	2.1
Dec	33.5	12.7	23.1	63	1969	3	34.6	1980	-40	1990	21	14.5	1978	1299	0	.0	.0	1.3	13.0	30.3	4.3
Ann	52.8	27.3	40.0	95	Jul 1954	12	64.2	Jul 2000	-45	Jan 1963	12	11.5	Jan 1979	9120	28	.0	.1	202.2	54.2	219.8	17.6

+ 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

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COOP ID: 481610

Climate Division: WY10

NWS Call Sign:

Elevation: 4,160 Feet Lat: 41°19N

Lon: 106°08W

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	1.03	.81	1.51	1999	19	3.08	1999	.18+	1984	8.5	3.2	.2	@	.18	.27	.42	.56	.70	.86	1.04	1.25	1.54	2.00	2.44
Feb	.75	.54	.92	1994	8	3.54	1994	.17	1982	8.1	2.5	.2	.0	.10	.16	.26	.37	.48	.60	.74	.92	1.15	1.54	1.92
Mar	.96	.87	1.85	1998	18	3.01	1998	.34	1986	9.8	3.1	.2	@	.34	.43	.56	.67	.78	.89	1.00	1.14	1.32	1.59	1.83
Apr	1.34	1.17	1.80	1999	22	3.99	1999	.36	1987	10.7	4.5	.4	.1	.43	.56	.75	.91	1.06	1.22	1.39	1.60	1.86	2.27	2.65
May	1.59	1.51	2.00	1970	22	5.83	1995	.14	1974	11.4	5.0	.6	.1	.37	.51	.75	.95	1.16	1.38	1.63	1.92	2.31	2.93	3.51
Jun	1.27	1.17	2.01	1965	10	3.02	1986	.09	1977	8.6	3.5	.5	.1	.31	.43	.62	.78	.95	1.12	1.31	1.54	1.84	2.31	2.75
Jul	1.62	1.40	1.34	1977	24	5.39	1984	.21	1979	10.6	3.9	.8	.1	.27	.41	.65	.87	1.10	1.35	1.63	1.98	2.44	3.19	3.90
Aug	1.17	1.00	1.02	1981	9	2.84	1979	.32	1975	10.0	4.0	.2	@	.34	.45	.62	.76	.91	1.05	1.22	1.41	1.66	2.05	2.41
Sep	1.21	1.15	1.89	1965	17	2.96	1997	.09	1983	7.8	3.4	.5	.1	.19	.29	.47	.63	.81	1.00	1.21	1.47	1.83	2.40	2.95
Oct	.86	.80	.93	1980	16	2.32	1998	.16	1988	4.9	2.1	.3	.0	.16	.24	.37	.49	.60	.73	.88	1.05	1.28	1.66	2.01
Nov	1.04	.80	1.01	1950	8	2.67	1985	.33	1976	8.4	3.3	.3	.0	.27	.37	.52	.65	.78	.92	1.07	1.25	1.49	1.86	2.21
Dec	.93	.69	.86	1978	1	2.95	1978	.00	1993	7.1	2.9	.1	.0	.09	.20	.35	.49	.62	.77	.95	1.15	1.43	1.87	2.30
Ann	13.77	13.30	2.01	Jun 1965	10	5.83	May 1995	.00	Dec 1993	105.9	41.4	4.3	.5	9.63	10.43	11.45	12.23	12.92	13.59	14.28	15.05	15.98	17.34	18.51

+ 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:
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Station: CENTENNIAL 1 N, WY

COOP ID: 481610

Climate Division: WY10

NWS Call Sign:

Elevation: 4,160 Feet

Lat: 41° 19N

Lon: 106° 08W

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	17.4	14.1	4	3	12.0	1979	4	61.0	1980	22	1980	29	16	1988	8.8	6.5	2.7	.9	.1	21.0	11.9	5.8	2.0
Feb	15.5	11.8	3	2	11.6	1988	10	46.4	1989	24	1988	10	16	1988	7.6	5.1	1.5	.7	.2	18.8	8.3	5.0	2.7
Mar	16.7	16.8	3	2	12.8	1988	31	33.8	1990	18	1988	18	14	1988	8.1	5.4	2.1	.8	.1	13.3	6.2	3.1	.1
Apr	13.0	11.1	1	1	15.0	1999	22	34.5	1983	20	1999	23	6	1983	6.7	4.8	1.9	1.0	.1	6.3	3.4	1.8	.6
May	7.7	5.7	#	#	11.0	1995	8	20.5	1983	6	1983	19	1	1995	3.4	2.6	1.0	.5	.1	1.5	.6	.1	.0
Jun	.6	.0	#	0	8.0	1979	8	8.5	1979	5	1979	8	#+	2000	.3	.2	.1	@	.0	@	@	@	.0
Jul	.0	.0	#	0	.0	0	0	.0	0	#	1994	11	#	1994	.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	2.4	.0	#	0	6.0	1978	19	9.5	1978	6	1985	28	1	1985	.9	.8	.5	.1	.0	.5	.3	.1	.0
Oct	8.0	7.0	#	#	13.0	1997	24	21.4	1990	22	1997	25	2	1998	2.9	2.2	1.0	.6	.1	2.5	.9	.6	.1
Nov	18.6	17.0	2	1	12.0	1983	21	45.5	1985	14	1979	20	6	1979	7.5	5.9	2.4	1.0	.1	12.6	6.2	3.2	.6
Dec	19.0	13.9	3	3	17.0	1978	1	61.6	1978	18	1987	24	7	1987	8.0	6.0	2.7	1.0	.2	21.2	12.1	5.7	1.8
Ann	118.9	97.4	N/A	N/A	17.0	Dec 1978	1	61.6	Dec 1978	24	Feb 1988	10	16+	Feb 1988	54.2	39.5	15.9	6.6	1.0	97.7	49.9	25.4	7.9

+ 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

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Lat: 41° 19N

Lon: 106° 08W

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	7/19	7/13	7/08	7/04	7/01	6/27	6/23	6/19	6/12
32	7/01	6/25	6/21	6/18	6/15	6/12	6/09	6/05	5/30
28	6/18	6/12	6/07	6/03	5/31	5/27	5/23	5/19	5/12
24	5/29	5/24	5/20	5/16	5/13	5/10	5/07	5/03	4/27
20	5/15	5/10	5/06	5/03	4/30	4/27	4/24	4/20	4/15
16	5/06	5/01	4/26	4/23	4/20	4/16	4/13	4/09	4/03
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	8/12	8/18	8/23	8/26	8/30	9/02	9/06	9/10	9/16
32	8/24	8/30	9/03	9/07	9/11	9/14	9/18	9/23	9/29
28	9/10	9/14	9/18	9/20	9/23	9/25	9/28	10/01	10/06
24	9/17	9/22	9/25	9/28	9/30	10/03	10/06	10/09	10/13
20	9/21	9/27	10/02	10/05	10/09	10/13	10/16	10/21	10/27
16	9/30	10/06	10/10	10/14	10/17	10/21	10/25	10/29	11/04
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	83	75	69	64	59	54	49	43	35
32	115	105	98	93	87	82	76	69	59
28	137	129	123	119	114	110	105	100	92
24	161	154	148	144	139	135	131	125	118
20	188	179	172	167	161	156	150	144	134
16	208	198	191	185	180	175	169	162	152

* 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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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	1331	1128	1098	847	586	303	144	181	403	721	1079	1299	9120
60	1176	988	943	697	431	176	50	69	262	566	929	1144	7431
57	1083	904	850	607	341	116	19	30	188	473	839	1051	6501
55	1021	848	788	547	284	83	9	15	145	412	779	989	5920
50	866	708	633	405	159	28	1	2	63	264	629	834	4592
32	331	220	133	54	2	0	0	0	0	8	175	307	1230

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	23	17	59	197	439	693	893	849	588	311	85	31	4185
55	0	0	0	0	8	87	188	151	43	1	0	0	478
57	0	0	0	0	3	59	136	104	26	0	0	0	328
60	0	0	0	0	1	29	74	50	11	0	0	0	165
65	0	0	0	0	0	6	14	7	1	0	0	0	28
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	7	60	232	463	663	619	388	146	17	0	0	0	7	67	299	762	1425	2044	2432	2578	2595	2595
45	0	0	0	19	123	323	508	464	251	62	1	0	0	0	0	19	142	465	973	1437	1688	1750	1751	1751
50	0	0	0	1	47	191	354	310	131	16	0	0	0	0	0	1	48	239	593	903	1034	1050	1050	1050
55	0	0	0	0	7	89	201	161	43	0	0	0	0	0	0	0	7	96	297	458	501	501	501	501
60	0	0	0	0	0	23	73	46	9	0	0	0	0	0	0	0	0	23	96	142	151	151	151	151
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	13	63	189	313	418	394	277	135	18	0	0	0	13	76	265	578	996	1390	1667	1802	1820	1820

(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