

Climatology of the United States

No. 20

1971-2000

Station: CHUGWATER, WY

COOP ID: 481730

Climate Division: WY 8

NWS Call Sign:

Elevation: 5,304 Feet Lat: 41° 45N

Lon: 104° 49W

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	37.1	13.9	25.5	70	1916	7	34.5	1986	-37	1930	17	12.6	1979	1225	0	.0	.0	6.4	8.6	27.6	4.8
Feb	40.5	16.3	28.4	76	1962	11	36.2	1991	-37	1936	8	15.9	1989	1025	0	.0	.0	8.7	5.5	25.0	3.0
Mar	47.7	21.5	34.6	78+	1943	29	41.1	1986	-29	1943	2	29.7	1980	943	0	.0	.0	16.3	2.6	26.2	.9
Apr	55.8	28.5	42.2	84+	1987	18	48.5	1981	-16	1975	2	35.1	1983	685	0	.0	.0	22.3	.7	19.9	@
May	65.2	37.5	51.4	93	1969	27	57.0	1994	11	1931	20	45.9	1995	424	2	.0	.0	29.4	.0	7.0	.0
Jun	76.5	46.3	61.4	104	1954	23	66.7	1988	21	1924	8	56.4	1982	149	42	@	3.7	29.8	.0	.7	.0
Jul	83.7	51.7	67.7	110	1937	5	72.3	2000	29	1952	8	64.4	1971	28	112	.3	11.3	31.0	.0	.0	.0
Aug	82.3	50.1	66.2	101	1960	4	72.7	2000	28	1939	8	62.6	1974	60	97	.1	7.7	31.0	.0	@	.0
Sep	73.1	39.6	56.4	98+	1998	5	64.4	1998	6	1926	25	51.8	1985	279	20	.0	2.1	29.0	.1	4.8	.0
Oct	61.5	30.0	45.8	89	1922	3	49.8	1977	-16	1917	29	40.6	1984	596	0	.0	.0	26.9	.5	16.9	.2
Nov	45.3	20.4	32.9	77+	1999	1	44.9	1999	-26+	1976	27	24.8	1985	964	0	.0	.0	13.3	4.2	25.2	1.0
Dec	38.7	15.0	26.9	72	1941	3	35.5	1980	-45	1923	31	13.3	1983	1183	0	.0	.0	7.2	7.6	28.0	4.2
Ann	59.0	30.9	45.0	110	Jul 1937	5	72.7	Aug 2000	-45	Dec 1923	31	12.6	Jan 1979	7561	273	.4	24.8	251.3	29.8	181.3	14.1

+ 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: 1915-2001

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

021-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: CHUGWATER, WY

COOP ID: 481730

Climate Division: WY 8

NWS Call Sign:

Elevation: 5,304 Feet Lat: 41°45N

Lon: 104°49W

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	.59	.51	.90	1921	24	2.60	1980	.01	1989	6.9	2.3	.0	.0	.08	.12	.21	.29	.37	.47	.58	.72	.90	1.20	1.50
Feb	.56	.49	1.12+	1953	19	1.34	1971	.04	1996	6.1	2.0	.1	.0	.09	.13	.21	.29	.37	.46	.56	.68	.85	1.12	1.37
Mar	1.01	.85	2.62	1990	6	4.04	1990	.24	1995	8.2	3.1	.2	@	.21	.30	.45	.59	.72	.87	1.03	1.23	1.50	1.92	2.32
Apr	1.59	1.60	1.97	1964	4	3.47	1984	.21	1992	9.0	4.5	.9	.1	.44	.59	.82	1.02	1.22	1.42	1.64	1.91	2.25	2.80	3.30
May	2.99	2.69	3.58	1923	21	7.46	1995	.17	1984	11.1	6.9	1.6	.5	.51	.77	1.21	1.62	2.04	2.50	3.02	3.65	4.49	5.85	7.15
Jun	2.01	1.98	3.19	1970	12	5.12	1991	.22	1980	8.7	4.9	1.1	.3	.48	.67	.97	1.23	1.49	1.76	2.07	2.43	2.91	3.67	4.39
Jul	1.90	1.29	2.50	1959	18	4.44	1973	.32	1986	8.6	4.9	1.2	.3	.34	.51	.78	1.04	1.31	1.59	1.92	2.31	2.84	3.68	4.49
Aug	1.54	1.42	3.30	1963	4	4.03	1990	.12	1995	8.6	4.0	.7	.2	.26	.39	.61	.83	1.04	1.28	1.55	1.88	2.32	3.04	3.72
Sep	1.26	.83	3.00	1915	3	5.01	1973	.00	1977	6.5	3.1	.6	.1	.08	.20	.39	.58	.78	.99	1.24	1.56	1.98	2.67	3.34
Oct	.91	.68	1.59	1923	24	3.42	1998	.10	1988	5.4	2.8	.4	@	.16	.24	.37	.49	.62	.76	.91	1.10	1.36	1.77	2.16
Nov	.75	.59	1.63	2000	1	2.14	1979	.08	1971	6.0	2.3	.2	.1	.13	.20	.31	.41	.52	.63	.76	.92	1.13	1.47	1.80
Dec	.65	.60	.98+	1936	17	1.49	1987	.03	1991	6.6	2.2	.1	.0	.09	.15	.24	.33	.43	.53	.65	.80	.99	1.32	1.63
Ann	15.76	15.73	3.58	May 1923	21	7.46	May 1995	.00	Sep 1977	91.7	43.0	7.1	1.6	10.61	11.58	12.84	13.81	14.67	15.51	16.38	17.35	18.53	20.24	21.74

+ 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: 1915-2001

(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: CHUGWATER, WY

COOP ID: 481730

Climate Division: WY 8

NWS Call Sign:

Elevation: 5,304 Feet

Lat: 41°45N

Lon: 104°49W

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	9.6	8.6	3	2	8.0	1992	8	32.5	1980	22+	1988	8	14	1988	6.2	4.6	.9	.2	.0	13.3	7.5	4.5	1.9
Feb	8.5	9.0	2	1	9.2	1990	13	20.2	1993	21	1980	1	7	1980	5.0	3.3	1.0	.3	.0	11.1	6.0	2.8	.2
Mar	10.4	10.0	1	1	22.3	1990	6	28.5	1983	22	1990	6	4	1990	5.8	4.1	1.1	.4	.1	8.0	4.0	1.8	.3
Apr	9.9	9.0	#	#	8.0	1972	26	25.0	1973	11	1972	27	2	1997	4.0	3.2	1.4	.6	.0	3.7	1.9	.7	@
May	3.0	.5	#	0	30.0	1983	17	35.0	1983	16	1983	17	1	1983	.7	.7	.3	.1	.1	.3	.2	.1	.1
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	1.8	.0	#	0	7.0	1974	12	8.4	2000	5	2000	24	#+	2000	.7	.6	.2	.1	.0	.5	.1	@	.0
Oct	4.4	3.8	#	#	14.0	1997	25	19.5	1997	15	1997	26	2	1997	1.9	1.7	.5	.2	.1	2.1	.8	.4	.1
Nov	10.3	7.5	1	1	24.0	1993	13	35.5	1979	31	1979	26	11	1979	5.1	3.6	1.0	.4	.1	9.4	4.1	1.7	.8
Dec	10.7	12.0	2	1	10.0	1975	31	24.0	1987	28	1979	1	8	1992	5.8	3.9	1.1	.4	.1	13.7	7.2	3.8	.9
Ann	68.6	60.4	N/A	N/A	30.0	May 1983	17	35.5	Nov 1979	31	Nov 1979	26	14	Jan 1988	35.2	25.7	7.5	2.7	.5	62.1	31.8	15.8	4.3

+ 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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Climate Division: WY 8

NWS Call Sign:

Elevation: 5,304 Feet

Lat: 41° 45N

Lon: 104° 49W

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	7/07	6/29	6/24	6/19	6/15	6/11	6/06	6/01	5/24
32	6/15	6/09	6/05	6/01	5/28	5/25	5/21	5/17	5/11
28	5/26	5/21	5/17	5/14	5/11	5/08	5/05	5/01	4/26
24	5/13	5/08	5/04	5/01	4/28	4/25	4/22	4/18	4/13
20	5/04	4/29	4/26	4/23	4/20	4/17	4/14	4/11	4/06
16	4/23	4/18	4/14	4/11	4/08	4/05	4/01	3/29	3/23
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	8/16	8/23	8/28	9/01	9/05	9/09	9/13	9/18	9/25
32	9/05	9/09	9/12	9/15	9/18	9/20	9/23	9/26	9/30
28	9/12	9/16	9/19	9/21	9/24	9/26	9/28	10/01	10/05
24	9/18	9/24	9/28	10/01	10/05	10/08	10/12	10/16	10/21
20	9/26	10/03	10/07	10/11	10/15	10/19	10/23	10/28	11/03
16	10/07	10/13	10/17	10/21	10/24	10/27	10/30	11/04	11/09
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	116	104	95	88	81	75	67	59	47
32	135	127	121	116	111	107	102	96	88
28	155	148	143	139	135	130	126	121	114
24	185	176	170	164	159	154	148	142	133
20	202	194	188	182	177	172	167	161	152
16	226	216	210	204	198	193	187	180	170

* 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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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	1225	1025	943	685	424	149	28	60	279	596	964	1183	7561
60	1070	885	788	535	280	67	3	17	167	441	814	1028	6095
57	977	801	695	449	203	35	1	7	113	350	724	935	5290
55	915	745	633	393	159	21	0	4	83	290	664	873	4780
50	760	605	478	261	74	4	0	0	31	157	523	718	3611
32	283	187	64	15	0	0	0	0	0	2	131	244	926

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	81	87	145	320	601	883	1107	1060	731	429	157	84	5685
55	0	0	0	8	46	214	394	350	124	4	0	0	1140
57	0	0	0	4	29	168	332	292	94	2	0	0	921
60	0	0	0	0	13	109	242	209	58	0	0	0	631
65	0	0	0	0	2	42	112	97	20	0	0	0	273
70	0	0	0	0	0	10	31	28	5	0	0	0	74

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	20	31	81	184	411	692	910	864	564	274	75	25	20	51	132	316	727	1419	2329	3193	3757	4031	4106	4131
45	0	4	32	97	273	542	755	709	418	158	33	5	0	4	36	133	406	948	1703	2412	2830	2988	3021	3026
50	0	0	4	37	155	397	600	554	285	72	9	0	0	0	4	41	196	593	1193	1747	2032	2104	2113	2113
55	0	0	0	10	70	258	446	400	173	25	0	0	0	0	0	10	80	338	784	1184	1357	1382	1382	1382
60	0	0	0	0	19	139	295	252	81	2	0	0	0	0	0	0	19	158	453	705	786	788	788	788
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	13	32	81	165	293	443	570	555	397	237	73	24	13	45	126	291	584	1027	1597	2152	2549	2786	2859	2883

(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