

Climatography of the United States

No. 20

1971-2000

Station: GLENROCK 5 ESE, WY

COOP ID: 483950

Climate Division: WY 8

NWS Call Sign:

Elevation: 4,948 Feet Lat: 42° 50N

Lon: 105° 47W

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	37.0	15.7	26.4	66	1953	9	33.8	1990	-34+	1972	14	12.9	1979	1198	0	.0	.0	4.3	9.5	27.6	5.1
Feb	41.5	19.8	30.7	69	1954	8	37.5	1992	-28	1962	28	17.1	1989	961	0	.0	.0	7.5	6.0	23.7	3.1
Mar	49.6	25.6	37.6	80+	1986	28	46.8	1986	-28	1956	12	32.9	1980	849	0	.0	.0	16.7	2.7	24.5	.5
Apr	58.6	32.1	45.4	86+	1989	23	52.8	1987	-2	1968	4	38.0	1973	589	0	.0	.0	22.9	.7	15.3	.0
May	68.8	41.0	54.9	97	1969	27	62.1	1994	17+	1954	3	50.6	1991	322	9	.0	.3	29.6	.0	3.5	.0
Jun	80.8	49.7	65.3	105	1970	27	75.3	1988	26	1951	3	59.4	1998	106	113	.3	6.4	30.0	.0	@	.0
Jul	88.8	55.8	72.3	107	1981	6	76.2	1975	34	1972	4	65.9	1993	12	238	1.4	15.5	31.0	.0	.0	.0
Aug	86.8	54.3	70.6	107+	1979	5	75.5	1982	32	1959	26	66.4	1993	23	195	.3	11.8	31.0	.0	.0	.0
Sep	76.1	43.8	60.0	98+	1998	4	66.4	1998	17+	1985	30	54.7	1985	193	41	.0	2.4	29.1	.1	3.4	.0
Oct	62.5	33.6	48.1	89	1953	1	52.3	1977	-9	1991	31	41.4	1991	526	0	.0	.0	26.4	.5	13.4	.2
Nov	45.8	23.9	34.9	80	1949	6	45.9	1999	-20	1985	23	19.7	1985	905	0	.0	.0	12.2	4.8	23.1	1.2
Dec	38.0	17.7	27.9	67	1973	1	37.4	1980	-40	1990	22	13.3	1983	1151	0	.0	.0	5.7	9.0	27.1	3.6
Ann	61.2	34.4	47.8	107+	Jul 1981	6	76.2	Jul 1975	-40	Dec 1990	22	12.9	Jan 1979	6835	596	2.0	36.4	246.4	33.3	161.6	13.7

+ 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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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: 483950

Climate Division: WY 8

NWS Call Sign:

Elevation: 4,948 Feet Lat: 42° 50N

Lon: 105° 47W

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	.35	.29	.70+	1964	11	1.10	1972	.00	1983	3.7	1.2	.1	.0	.02	.05	.11	.16	.21	.27	.34	.43	.55	.74	.93
Feb	.44	.39	1.10	1997	3	1.33	1997	.00	1979	3.7	1.6	.1	@	.02	.05	.11	.17	.24	.32	.42	.54	.70	.98	1.25
Mar	.76	.57	1.36	1992	8	3.02	1975	.13	1982	5.0	2.4	.3	.1	.13	.20	.31	.41	.52	.63	.77	.93	1.14	1.49	1.82
Apr	1.79	1.54	2.00	1971	19	5.67	1973	.07	1988	7.2	4.3	1.2	.3	.17	.30	.54	.79	1.06	1.37	1.73	2.18	2.81	3.84	4.86
May	2.40	1.90	3.92	1971	5	7.70	1971	.27	1994	8.4	5.0	1.4	.5	.41	.62	.98	1.30	1.64	2.01	2.42	2.93	3.61	4.70	5.74
Jun	1.34	1.12	2.45	1970	12	4.26	1982	.00+	1984	5.5	3.0	.7	.2	.00	.11	.33	.53	.76	1.01	1.30	1.66	2.16	2.99	3.80
Jul	1.11	.82	2.02	1973	19	4.24	1977	.08	2000	4.7	2.8	.5	.2	.10	.18	.33	.49	.66	.85	1.07	1.36	1.75	2.40	3.04
Aug	.72	.66	.98	1957	27	2.09	1997	.02	1996	4.2	2.4	.3	.0	.06	.10	.20	.30	.41	.53	.69	.88	1.14	1.59	2.03
Sep	1.13	.78	2.18	1963	20	5.43	1973	.06	1983	4.7	2.8	.6	.2	.08	.15	.29	.44	.62	.82	1.06	1.37	1.80	2.52	3.24
Oct	1.06	1.00	2.24	1962	6	3.43	1998	.00	1987	4.7	2.9	.6	.1	.09	.21	.38	.54	.70	.87	1.06	1.30	1.62	2.14	2.64
Nov	.70	.65	1.38	1977	19	2.54	1979	.00	1974	3.9	1.9	.3	.1	.03	.09	.19	.29	.40	.53	.67	.86	1.11	1.54	1.95
Dec	.39	.32	.55	1982	1	1.25	1982	.00+	1991	3.8	1.3	.1	.0	.00	.04	.10	.16	.23	.30	.38	.49	.63	.86	1.08
Ann	12.19	11.88	3.92	May 1971	5	7.70	May 1971	.00+	Dec 1991	59.5	31.6	6.2	1.7	6.81	7.76	9.02	10.02	10.92	11.82	12.76	13.83	15.14	17.10	18.84

+ 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: GLENROCK 5 ESE, WY

COOP ID: 483950

Climate Division: WY 8

NWS Call Sign:

Elevation: 4,948 Feet

Lat: 42° 50N

Lon: 105° 47W

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	4.2	3.4	1	#	8.0	1972	12	15.9	1980	8	1972	14	4	1987	2.3	1.5	.3	.1	.0	3.6	1.1	.0	.0
Feb	5.3	4.1	#	#	9.0	1995	14	15.2	1993	12	1995	14	1	1995	1.7	.9	.4	.1	.0	2.7	1.1	.2	.1
Mar	3.9	3.1	#	#	13.6	1992	8	13.6	1992	11	1990	7	3	1983	1.4	.9	.3	.2	.1	1.2	.4	.1	.1
Apr	.8	#	#	0	11.5	1973	19	11.5	1973	11	1973	21	6	1981	.3	.2	.1	.1	.0	.1	.1	.1	.0
May	.2	.0	#	0	2.5	1978	4	3.0	1978	3	1973	1	#+	1988	.1	@	.0	.0	.0	.1	@	.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	#	.0	#	0	#	1988	19	#+	1988	#+	1994	21	#+	1994	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	1.6	.0	#	0	8.0	1971	28	14.0	1971	14	1971	29	1	1971	.4	.3	.1	.1	.0	.3	.2	.2	.1
Nov	4.5	1.5	#	#	13.3	1977	19	13.6	1977	10	1983	24	2	1991	1.6	1.0	.4	.1	@	.8	.4	.1	.0
Dec	2.5	2.2	1	#	5.0	1987	20	6.6	1990	6	1987	27	4	1978	1.5	1.1	.3	@	.0	2.5	1.5	.3	.0
Ann	23.0	14.3	N/A	N/A	13.6	Mar 1992	8	15.9	Jan 1980	14	Oct 1971	29	6	Apr 1981	9.3	5.9	1.9	.7	.1	11.3	4.8	1.0	.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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Elevation: 4,948 Feet

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Lon: 105° 47W

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	6/18	6/12	6/08	6/05	6/01	5/29	5/26	5/22	5/16
32	5/26	5/21	5/17	5/14	5/11	5/08	5/05	5/02	4/27
28	5/12	5/07	5/04	5/02	4/29	4/27	4/24	4/21	4/17
24	5/02	4/27	4/24	4/21	4/19	4/16	4/13	4/10	4/06
20	4/24	4/20	4/16	4/13	4/11	4/08	4/05	4/02	3/28
16	4/22	4/13	4/07	4/01	3/27	3/22	3/16	3/10	3/01
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	9/04	9/08	9/11	9/13	9/15	9/17	9/20	9/23	9/26
32	9/09	9/13	9/15	9/18	9/20	9/22	9/25	9/27	10/01
28	9/17	9/21	9/25	9/28	10/01	10/04	10/06	10/10	10/15
24	9/23	9/29	10/03	10/07	10/10	10/14	10/17	10/21	10/27
20	10/01	10/08	10/13	10/17	10/21	10/26	10/30	11/04	11/11
16	10/20	10/25	10/28	10/31	11/03	11/05	11/08	11/12	11/16
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	126	119	114	109	105	101	97	92	85
32	151	144	139	135	131	127	123	118	111
28	178	170	164	159	154	149	144	138	129
24	196	189	183	178	174	169	165	159	151
20	222	212	205	199	193	187	181	174	164
16	253	242	234	227	220	213	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

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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	1198	961	849	589	322	106	12	23	193	526	905	1151	6835
60	1043	821	694	446	195	46	2	5	100	374	755	996	5477
57	950	737	601	364	132	24	0	1	60	290	672	903	4734
55	888	681	540	312	98	15	0	1	40	238	616	842	4271
50	734	547	392	199	39	4	0	0	11	130	479	696	3231
32	262	154	41	10	0	0	0	0	0	4	132	251	854

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	87	117	214	411	710	998	1249	1195	838	501	217	123	6660
55	0	0	1	22	95	323	536	482	188	22	12	1	1682
57	0	0	0	15	67	272	475	421	148	12	8	0	1418
60	0	0	0	7	36	204	383	331	98	3	0	0	1062
65	0	0	0	0	9	113	238	195	41	0	0	0	596
70	0	0	0	0	2	51	119	90	12	0	0	0	274

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	17	36	88	217	477	764	1010	957	605	290	79	32	17	53	141	358	835	1599	2609	3566	4171	4461	4540	4572
45	1	10	38	121	331	614	855	802	462	173	40	9	1	11	49	170	501	1115	1970	2772	3234	3407	3447	3456
50	0	0	14	56	199	467	700	647	323	82	11	0	0	0	14	70	269	736	1436	2083	2406	2488	2499	2499
55	0	0	1	17	100	323	545	492	200	28	0	0	0	0	1	18	118	441	986	1478	1678	1706	1706	1706
60	0	0	0	3	38	197	392	340	107	3	0	0	0	0	0	3	41	238	630	970	1077	1080	1080	1080
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	6	24	73	166	308	479	639	609	410	222	56	12	6	30	103	269	577	1056	1695	2304	2714	2936	2992	3004

(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