U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: MUDDY GAP, WY **COOP ID: 486595**

Climate Division: WY10 **NWS Call Sign:** **Elevation: 6,245 Feet** **Lat: 42˚22N** **Lon: 107˚27W**

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	31.4	14.0	22.7	55+	1971	31	30.7	1981	-34	1963	12	9.6	1979	1312	0	.0	.0	.3	15.9	30.3	5.0
Feb	35.5	16.8	26.2	60	1982	22	33.6	1991	-28+	1989	4	14.5	1989	1087	0	.0	.0	1.8	10.0	26.9	3.2
Mar	45.5	23.7	34.6	73	1986	30	41.4	1986	-23	1965	18	28.6	1973	942	0	.0	.0	10.3	3.1	26.5	.6
Apr	55.5	29.6	42.6	79+	2000	28	48.9	1992	-7	1966	20	32.6	1973	675	0	.0	.0	21.4	.9	19.2	.1
May	66.0	37.9	52.0	87+	1979	24	57.0	1994	13+	1967	14	46.5	1995	409	4	.0	.0	29.0	@	7.7	.0
Jun	78.0	46.9	62.5	97	1988	24	70.3	1988	25+	1951	3	55.4	1998	148	71	.0	1.6	29.9	.0	.7	.0
Jul	85.5	53.6	69.6	100+	1975	28	73.0	1988	30	1972	4	62.9	1993	24	165	.1	7.0	31.0	.0	@	.0
Aug	83.9	52.7	68.3	98+	1983	9	73.1	1983	31	1992	26	63.8	1974	43	145	.0	3.9	31.0	.0	@	.0
Sep	73.0	43.6	58.3	92	1983	1	62.8	1990	10	1965	20	54.8	1985	221	20	.0	.2	29.2	.1	3.7	.0
Oct	60.0	33.7	46.9	82	1992	2	50.9	1988	-8	1972	31	41.0	1984	562	0	.0	.0	25.9	.5	14.5	.1
Nov	41.8	22.8	32.3	68+	1999	7	44.2	1999	-17	1993	25	20.0	2000	981	0	.0	.0	8.1	7.1	24.3	1.3
Dec	32.7	14.9	23.8	58+	1995	1	35.8	1980	-40	1990	21	14.7	1983	1277	0	.0	.0	1.2	14.5	29.3	3.7
Ann	57.4	32.5	45.0	100+	Jul 1975	28	73.1	Aug 1983	-40	Dec 1990	21	9.6	Jan 1979	7681	405	.1	12.7	219.1	52.1	183.1	14.0

\+ 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

(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

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.44	.42	.97	1987	6	1.25	1987	.00	2000
Feb	.44	.42	.88	1974	5	1.64	1974	.06	1992
Mar	.86	.64	2.05	1998	18	3.85	1998	.09	1999
Apr	1.36	1.15	1.52	1974	20	3.06	1999	.36	1989
May	2.14	1.84	2.70	1991	15	5.11	1991	.10	1973
Jun	.94	.93	1.98	1954	26	2.80	1998	.00+	1981
Jul	.94	.78	2.07	1957	19	2.65	1984	.00	1980
Aug	.62	.51	1.35	1953	15	3.69	1979	.00+	1995
Sep	1.00	.73	1.70	1982	14	4.28	1982	.02	1979
Oct	.98	.65	1.50	1995	22	3.26	1972	.00	1988
Nov	.79	.55	1.31	1983	27	3.37	1983	.06	1976
Dec	.53	.50	1.05	1949	25	1.21	1972	.02	1999
Ann	11.04	11.29	2.70	May 1991	15	5.11	May 1991	.00+	Jan 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.3	1.6	@	.0
Feb	4.0	1.4	.1	.0
Mar	5.4	2.3	.4	.1
Apr	7.3	4.1	.8	.2
May	8.2	5.0	1.1	.4
Jun	4.9	2.4	.5	.1
Jul	5.4	2.4	.5	.1
Aug	3.5	2.0	.2	.1
Sep	4.6	2.5	.6	.1
Oct	4.8	2.8	.5	.1
Nov	4.3	2.4	.3	@
Dec	4.0	1.8	.1	.0
Ann	60.7	30.7	5.1	1.2

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.06	.12	.19	.25	.32	.38	.45	.54	.65	.83	1.00
Feb	.07	.11	.18	.24	.30	.37	.45	.54	.67	.87	1.07
Mar	.07	.13	.24	.36	.49	.64	.82	1.04	1.35	1.86	2.37
Apr	.35	.48	.67	.85	1.02	1.20	1.40	1.64	1.95	2.44	2.89
May	.30	.47	.78	1.08	1.39	1.73	2.13	2.61	3.27	4.34	5.37
Jun	.00	.09	.26	.41	.56	.73	.93	1.17	1.50	2.05	2.58
Jul	.02	.08	.20	.34	.49	.66	.87	1.15	1.52	2.17	2.81
Aug	.00	.00	.11	.21	.31	.44	.58	.77	1.02	1.44	1.86
Sep	.08	.15	.28	.41	.57	.74	.95	1.21	1.58	2.19	2.79
Oct	.03	.09	.22	.36	.52	.70	.92	1.19	1.57	2.22	2.86
Nov	.10	.16	.27	.38	.50	.63	.78	.96	1.21	1.63	2.03
Dec	.05	.08	.15	.23	.31	.40	.51	.64	.83	1.15	1.46
Ann	7.29	7.99	8.90	9.60	10.23	10.83	11.47	12.17	13.03	14.28	15.38

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	6.3	5.6	1	#	10.0	1987	6	14.7	1975	7	1988	19	5	1971	2.9	2.2	.8	.2	@	4.3	2.3	.1	.0
Feb	7.8	7.0	2	1	9.3	1997	28	18.3	1989	16	1989	5	13	1989	3.2	2.5	.9	.3	.0	3.3	1.6	.5	.0
Mar	10.2	10.0	1	#	24.0	1998	18	49.0	1998	24	1998	18	4	1998	2.8	2.2	1.1	.5	.1	2.4	1.6	1.4	.5
Apr	9.3	6.0	1	#	22.0	1999	1	37.0	1999	26	1999	3	4	1999	2.7	2.3	1.5	.9	.2	2.1	1.3	.7	.3
May	1.4	.0	#	0	8.0	1975	21	12.0	1975	18	1973	1	1	1973	.3	.3	.2	.1	.0	.2	.2	@	@
Jun	.1	.0	0	0	2.0	1998	4	2.0	1998	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	.5	.0	#	0	6.0	1971	21	6.0	1971	12	2000	23	1	2000	.2	.2	.1	@	.0	.1	@	.0	.0
Oct	4.8	2.8	#	0	15.5	1980	16	20.0	1971	20	1971	30	2	1971	1.2	1.2	.6	.2	.1	.9	.5	.3	.2
Nov	10.8	8.0	1	#	12.0	1983	22	33.5	1983	22	1992	29	4	1992	2.8	2.4	1.3	.5	.2	2.4	1.2	.3	.0
Dec	6.8	5.7	2	1	10.0	1990	19	14.5	1972	14	1983	5	14	1983	2.6	2.0	.8	.3	@	3.7	1.5	.5	.0
Ann	58.0	45.1	N/A	N/A	24.0	Mar 1998	18	49.0	Mar 1998	26	Apr 1999	3	14	Dec 1983	18.7	15.3	7.3	3.0	.6	19.4	10.2	3.8	1.0

+ 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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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	6/30	6/24	6/19	6/15	6/12	6/08	6/04	5/31	5/24
32	6/20	6/13	6/08	6/04	5/31	5/27	5/22	5/17	5/10
28	5/24	5/20	5/17	5/14	5/12	5/09	5/06	5/03	4/29
24	5/12	5/07	5/04	5/01	4/28	4/25	4/22	4/18	4/14
20	5/04	4/28	4/24	4/20	4/17	4/13	4/10	4/05	3/30
16	4/27	4/21	4/17	4/14	4/10	4/07	4/03	3/30	3/24

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	8/28	9/02	9/05	9/08	9/11	9/14	9/17	9/20	9/25
32	9/08	9/12	9/15	9/17	9/19	9/22	9/24	9/27	10/01
28	9/14	9/18	9/21	9/24	9/26	9/29	10/01	10/05	10/09
24	9/20	9/26	9/30	10/04	10/07	10/11	10/14	10/18	10/24
20	10/03	10/08	10/12	10/15	10/18	10/21	10/24	10/28	11/02
16	10/08	10/15	10/19	10/23	10/27	10/31	11/03	11/08	11/14

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	107	101	95	90	85	80	73	64
32	135	127	121	116	111	106	101	95	87
28	154	148	144	140	137	134	130	126	121
24	184	177	171	166	162	157	152	147	139
20	208	200	194	188	184	179	174	168	159
16	227	217	210	204	199	193	187	180	171

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1312	1087	942	675	409	148	24	43	221	562	981	1277	7681
60	1157	947	787	527	270	73	4	11	113	407	831	1122	6249
57	1064	863	694	442	197	42	1	4	66	317	741	1029	5460
55	1002	807	632	387	155	27	0	2	43	259	681	967	4962
50	847	667	481	261	74	8	0	0	9	138	539	812	3836
32	332	213	76	20	0	0	0	0	0	3	143	303	1090

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	44	49	157	335	618	914	1164	1125	790	464	152	49	5861
55	0	0	0	13	60	251	451	413	142	7	0	0	1337
57	0	0	0	8	40	206	390	353	106	3	0	0	1106
60	0	0	0	3	20	146	300	267	63	1	0	0	800
65	0	0	0	0	4	71	165	145	20	0	0	0	405
70	0	0	0	0	0	26	70	60	4	0	0	0	160

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	4	44	157	378	674	906	864	539	244	47	3	0	4	48	205	583	1257	2163	3027	3566	3810	3857	3860
45	0	0	8	75	243	525	751	709	394	136	15	0	0	0	8	83	326	851	1602	2311	2705	2841	2856	2856
50	0	0	0	30	130	379	596	554	264	57	1	0	0	0	0	30	160	539	1135	1689	1953	2010	2011	2011
55	0	0	0	8	55	243	441	399	149	18	0	0	0	0	0	8	63	306	747	1146	1295	1313	1313	1313
60	0	0	0	0	15	130	291	247	67	1	0	0	0	0	0	0	15	145	436	683	750	751	751	751
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	1	38	125	261	439	587	562	358	181	26	0	0	1	39	164	425	864	1451	2013	2371	2552	2578	2578

(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:
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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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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.

a. Temperature/ Precipitation Tables
   1. 1971-2000 Monthly Normals
   2. Cooperative Summary of the Day
   3. National Weather Service station records
   4. 1971-2000 serially complete daily data

b. Degree Day Table
   1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
   2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   1971-2000 serially complete daily data

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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