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: COLONY, WY **COOP ID: 481905**

Climate Division: WY 6 **NWS Call Sign:** **Elevation: 3,570 Feet** **Lat: 44˚55N** **Lon: 104˚11W**

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	33.0	11.7	22.4	69	1992	31	34.0	1992	-32	1916	12	8.2	1979	1322	0	.0	.0	2.6	14.1	29.4	8.2
Feb	39.0	17.0	28.0	75	1982	21	37.7	1991	-39	1936	14	13.2	1989	1036	0	.0	.0	6.7	9.0	25.2	4.4
Mar	47.0	23.3	35.2	81	1943	29	44.0	1986	-21	1996	8	25.0	1996	925	0	.0	.0	13.3	5.1	25.9	1.3
Apr	58.4	32.8	45.6	90+	1980	21	53.3	1987	-6	1936	2	38.4	1997	582	1	.0	@	21.9	.9	15.1	.0
May	68.7	42.8	55.8	101	1934	28	62.7	1985	15	1954	3	49.5	1996	306	19	.0	.7	29.4	.0	2.9	.0
Jun	78.7	51.9	65.3	109+	1988	20	77.6	1988	29	1917	1	58.7	1993	108	118	.5	4.3	30.0	.0	@	.0
Jul	86.7	58.0	72.4	112	1981	7	77.1	1985	36	1957	4	62.7	1993	27	254	2.4	13.2	31.0	.0	.0	.0
Aug	86.2	56.9	71.6	110	1935	23	78.4	1983	37	1966	23	65.1	1993	35	238	1.4	12.7	31.0	.0	.0	.0
Sep	75.0	46.7	60.9	108	1978	6	68.0	1998	15	1926	25	54.2	1986	191	67	.3	3.6	29.1	.0	1.6	.0
Oct	60.7	36.0	48.4	92	1963	4	52.4	1974	-13	1925	28	44.9	1976	516	0	.0	.1	25.2	.4	10.2	.1
Nov	43.5	23.2	33.4	79	1999	7	44.2	1999	-19	1959	16	17.0	1985	949	0	.0	.0	10.3	6.9	23.9	1.2
Dec	34.8	14.3	24.6	70	1939	5	33.1	1979	-32	1990	22	6.7	1983	1253	0	.0	.0	3.7	12.0	29.2	5.2
Ann	59.3	34.6	47.0	112	Jul 1981	7	78.4	Aug 1983	-39	Feb 1936	14	6.7	Dec 1983	7250	697	4.6	34.6	234.2	48.4	163.4	20.4

\+ 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: 1915-2001

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

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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	.35	.27	1.70	1949	4	1.42	1996	.00	1995
Feb	.40	.35	.96	2001	16	1.12	1998	.00	1983
Mar	.82	.67	1.80	1946	16	2.64	1989	.01	1981
Apr	1.56	1.35	1.95	1922	6	3.58	1990	.02	1987
May	2.53	1.97	2.85	1982	20	7.21	1982	.61	1980
Jun	2.67	2.50	3.65	1993	29	9.68	1993	.17	1996
Jul	1.79	1.73	2.10	1994	6	4.40	1993	.23	1988
Aug	1.23	.83	2.25	1960	17	3.77	1972	.17	1978
Sep	1.17	.94	2.83	1923	28	3.49	1986	.06	1975
Oct	1.33	.93	2.20	1994	6	4.11	1998	.08	1987
Nov	.59	.43	1.50	1944	14	2.22	2000	.05	1987
Dec	.44	.37	1.10	1935	13	1.38	1993	.00+	1998
Ann	14.88	14.53	3.65	Jun 1993	29	9.68	Jun 1993	.00+	Dec 1998

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.2	1.2	.1	.0
Feb	3.7	1.6	.1	.0
Mar	5.4	2.4	.5	.1
Apr	6.7	3.7	.9	.3
May	8.1	5.5	1.6	.4
Jun	7.7	5.7	1.6	.7
Jul	6.7	4.4	1.2	.3
Aug	4.9	3.2	.7	.2
Sep	4.4	2.6	.9	.2
Oct	5.0	3.1	.9	.4
Nov	4.3	1.8	.2	.1
Dec	4.3	1.2	.1	.0
Ann	65.4	36.4	8.8	2.7

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	.01	.03	.07	.12	.17	.24	.32	.43	.57	.83	1.08
Feb	.02	.05	.11	.17	.23	.30	.39	.49	.64	.89	1.13
Mar	.06	.11	.21	.32	.45	.60	.77	1.00	1.31	1.84	2.36
Apr	.17	.29	.51	.73	.96	1.22	1.53	1.91	2.43	3.28	4.11
May	.51	.75	1.12	1.46	1.80	2.17	2.58	3.08	3.74	4.79	5.79
Jun	.38	.60	.98	1.35	1.74	2.17	2.66	3.26	4.08	5.40	6.68
Jul	.37	.53	.80	1.04	1.28	1.54	1.83	2.18	2.64	3.38	4.08
Aug	.21	.32	.50	.67	.84	1.03	1.25	1.51	1.85	2.41	2.95
Sep	.12	.21	.37	.53	.71	.91	1.14	1.43	1.82	2.48	3.12
Oct	.14	.24	.42	.61	.81	1.03	1.30	1.63	2.08	2.83	3.56
Nov	.07	.11	.19	.27	.36	.46	.57	.72	.91	1.23	1.55
Dec	.00	.01	.06	.13	.20	.28	.39	.53	.73	1.07	1.42
Ann	9.81	10.76	12.01	12.96	13.81	14.64	15.51	16.47	17.64	19.36	20.86

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	5.1	3.5	3	2
Feb	4.2	3.5	3	1
Mar	7.7	5.3	2	1
Apr	4.5	3.0	1	#
May	.4	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.1	.0	#	0
Oct	1.7	.3	#	0
Nov	6.9	5.7	1	1
Dec	6.1	5.4	3	2
Ann	36.7	26.7	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	8.0	1996	3	15.5	1996	18	1986	7	12	1986
Feb	8.0	1991	17	12.0	1979	17+	1979	24	13	1979
Mar	14.0	1977	29	28.0	1977	24	1977	30	6	1989
Apr	12.0	1984	25	30.0	1984	30	1984	27	4	1984
May	4.0	1983	12	6.0	1983	12	1984	1	1	1984
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	2.0	1984	23	2.0	1984	3	1984	24	#+	1984
Oct	9.0	1989	29	11.0	1971	9	1989	29	1	1991
Nov	8.0	1978	9	20.5	1985	17	1978	12	8	1978
Dec	10.0	1983	4	15.0	1984	18	1985	20	15	1985
Ann	14.0	Mar 1977	29	30.0	Apr 1984	30	Apr 1984	27	15	Dec 1985

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.1	2.1	.5	.1	.0
Feb	3.1	2.1	.3	.1	.0
Mar	3.5	2.5	.9	.4	@
Apr	1.5	1.2	.6	.4	.1
May	.2	.2	@	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	.1	.0	.0	.0
Oct	.8	.5	.1	.1	.0
Nov	3.0	1.9	.9	.2	.0
Dec	3.9	2.4	.6	.3	@
Ann	20.2	13.0	3.9	1.6	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	21.0	11.7	7.4	2.3
Feb	13.4	8.4	5.8	2.3
Mar	11.3	6.4	3.9	1.8
Apr	3.0	1.6	.8	.6
May	.5	.2	.1	@
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.1	@	.0	.0
Oct	.9	.3	@	.0
Nov	8.8	4.5	2.8	.3
Dec	19.5	11.8	8.1	2.9
Ann	78.5	44.9	28.9	10.2

+ 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	6/06	5/31	5/28	5/24	5/21	5/18	5/15	5/11	5/06
32	5/25	5/20	5/16	5/14	5/11	5/08	5/05	5/02	4/27
28	5/15	5/10	5/06	5/03	4/30	4/27	4/24	4/20	4/15
24	4/30	4/26	4/23	4/20	4/18	4/15	4/12	4/09	4/05
20	4/22	4/16	4/12	4/08	4/05	4/01	3/29	3/24	3/19
16	4/11	4/05	4/01	3/29	3/25	3/22	3/18	3/14	3/09

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	9/09	9/12	9/15	9/17	9/18	9/20	9/22	9/24	9/27
32	9/15	9/19	9/23	9/25	9/28	10/01	10/03	10/07	10/11
28	9/21	9/27	10/02	10/06	10/09	10/13	10/17	10/21	10/27
24	9/30	10/06	10/10	10/13	10/17	10/20	10/24	10/28	11/03
20	10/11	10/17	10/21	10/24	10/27	10/30	11/03	11/07	11/12
16	10/20	10/27	11/01	11/05	11/08	11/12	11/16	11/21	11/28

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	138	132	127	123	119	116	112	107	101
32	161	154	148	144	139	135	131	125	118
28	186	177	171	166	162	157	152	146	138
24	202	195	190	186	181	177	173	168	161
20	231	222	216	210	205	200	194	188	179
16	251	243	237	232	227	223	218	212	204

***** 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	1322	1036	925	582	306	108	27	35	191	516	949	1253	7250
60	1167	896	770	439	187	48	8	12	103	363	799	1098	5890
57	1075	821	677	357	131	26	2	4	65	274	716	1005	5153
55	1015	769	617	306	99	17	1	2	45	218	660	945	4694
50	870	638	473	195	42	4	0	0	14	105	521	801	3663
32	398	263	100	10	0	0	0	0	0	2	160	340	1273

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	98	151	199	419	736	1000	1251	1226	866	508	201	110	6765
55	2	12	2	25	122	327	538	515	221	12	11	2	1789
57	1	9	0	16	92	276	478	455	181	6	7	0	1521
60	0	0	0	8	55	208	391	370	130	2	0	0	1164
65	0	0	0	1	19	118	254	238	67	0	0	0	697
70	0	0	0	0	4	55	147	135	28	0	0	0	369

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	7	27	72	220	499	774	1021	998	641	299	68	12	7	34	106	326	825	1599	2620	3618	4259	4558	4626	4638
45	0	6	32	128	355	624	866	843	495	184	28	1	0	6	38	166	521	1145	2011	2854	3349	3533	3561	3562
50	0	0	10	65	225	475	711	688	361	96	10	0	0	0	10	75	300	775	1486	2174	2535	2631	2641	2641
55	0	0	0	27	126	331	556	535	238	45	0	0	0	0	0	27	153	484	1040	1575	1813	1858	1858	1858
60	0	0	0	8	55	202	405	381	141	13	0	0	0	0	0	8	63	265	670	1051	1192	1205	1205	1205
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	2	24	62	162	308	483	651	635	401	199	49	8	2	26	88	250	558	1041	1692	2327	2728	2927	2976	2984

(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