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: YUMA, CO **COOP ID: 059295**

Climate Division: CO 3 **NWS Call Sign:** **Elevation: 4,140 Feet** **Lat: 40˚07N** **Lon: 102˚43W**

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	.0	.0	.0	77	1982	26	.0	0	-24	1984	18	.0	0	0	0	.0	.0	7.5	7.7	30.3	3.8
Feb	.0	.0	.0	79+	1962	12	.0	0	-27	1951	1	.0	0	0	0	.0	.0	12.4	4.6	27.1	2.1
Mar	.0	.0	.0	87	1963	29	.0	0	-22	1960	3	.0	0	0	0	.0	.0	20.4	1.9	24.8	.5
Apr	.0	.0	.0	92	1992	30	.0	0	4	1989	10	.0	0	0	0	.0	.1	25.6	.4	13.8	.0
May	.0	.0	.0	100	2000	30	.0	0	11	1961	15	.0	0	0	0	@	1.1	30.3	.0	1.3	.0
Jun	.0	.0	.0	107	1954	23	.0	0	29	1951	2	.0	0	0	0	.6	9.6	29.9	.0	.0	.0
Jul	.0	.0	.0	109	1998	21	.0	0	39	1952	8	.0	0	0	0	2.2	17.3	31.0	.0	.0	.0
Aug	.0	.0	.0	106	1995	8	.0	0	35	1964	24	.0	0	0	0	.6	14.8	31.0	.0	.0	.0
Sep	.0	.0	.0	102	1959	6	.0	0	14	1985	30	.0	0	0	0	.2	5.1	29.5	@	1.0	.0
Oct	.0	.0	.0	94	1963	2	.0	0	3	1991	29	.0	0	0	0	.0	.2	28.6	.2	10.0	.0
Nov	.0	.0	.0	83	1964	9	.0	0	-13	1955	16	.0	0	0	0	.0	.0	16.5	3.2	25.1	.4
Dec	.0	.0	.0	75	1980	27	.0	0	-33	1989	22	.0	0	0	0	.0	.0	9.3	6.2	30.1	2.5
Ann	.0	.0	.0	109	Jul 1998	21	-99.9	0	-33	Dec 1989	22	99.9	0	0	0	3.6	48.2	272.0	24.2	163.5	9.3

+ 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: 1948-2001

(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	.36	.35	.95	1971	2	1.08	1971	.00+	1995
Feb	.32	.21	.90	1987	28	1.31	1987	.00+	1994
Mar	.96	.88	1.42	1983	5	3.19	1981	.00+	1997
Apr	1.60	1.24	1.25	1994	10	3.53	1995	.21	1992
May	3.11	2.92	2.90	1951	15	6.60	1995	.47	1994
Jun	2.53	2.32	3.11	1962	8	7.02	1982	.03	1994
Jul	2.77	2.46	3.70	2000	20	5.95	1991	.57	1989
Aug	1.89	1.73	2.28	1972	24	5.33	1992	.47	1994
Sep	1.20	1.15	3.20	1996	18	3.72	1996	.00+	1983
Oct	.92	.64	1.40	1992	7	2.96	1994	.00	1983
Nov	.56	.54	.84	1963	17	2.42	1972	.00+	1997
Dec	.30	.25	.54	1960	27	1.08	1991	.00+	1996
Ann	16.52	16.29	3.70	Jul 2000	20	7.02	Jun 1982	.00+	Nov 1997

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.3	1.2	.1	.0
Feb	3.3	1.2	.1	.0
Mar	5.1	2.6	.5	.1
Apr	7.0	3.9	.9	.2
May	9.7	6.6	2.0	.7
Jun	8.0	5.1	1.5	.4
Jul	8.4	5.8	1.7	.6
Aug	7.7	4.4	1.0	.3
Sep	5.0	2.7	.6	.2
Oct	4.2	2.2	.6	.2
Nov	3.5	1.9	.3	.0
Dec	2.8	1.3	.0	.0
Ann	67.0	38.9	9.3	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	.00	.04	.11	.17	.23	.29	.37	.45	.57	.77	.96
Feb	.00	.01	.05	.09	.15	.21	.29	.39	.53	.78	1.03
Mar	.00	.06	.20	.35	.51	.69	.91	1.18	1.56	2.20	2.82
Apr	.30	.45	.68	.90	1.12	1.35	1.62	1.95	2.38	3.07	3.73
May	.93	1.22	1.66	2.05	2.42	2.80	3.23	3.73	4.37	5.38	6.32
Jun	.37	.58	.94	1.30	1.66	2.06	2.53	3.10	3.86	5.11	6.30
Jul	.83	1.10	1.49	1.83	2.16	2.50	2.88	3.32	3.89	4.78	5.61
Aug	.53	.71	.98	1.22	1.45	1.69	1.96	2.28	2.69	3.34	3.94
Sep	.00	.24	.49	.68	.86	1.05	1.26	1.50	1.82	2.34	2.82
Oct	.02	.08	.20	.32	.47	.64	.85	1.11	1.49	2.12	2.75
Nov	.00	.06	.17	.25	.35	.44	.56	.69	.88	1.19	1.48
Dec	.00	.00	.03	.09	.15	.21	.29	.38	.51	.72	.94
Ann	11.42	12.40	13.65	14.61	15.46	16.29	17.14	18.09	19.24	20.91	22.37

\+ 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

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Climate Division: CO 3 **NWS Call Sign:** **Elevation: 4,140 Feet** **Lat: 40°07N** **Lon: 102°43W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	7.3	6.1	2	#
Feb	3.2	1.3	#	#
Mar	4.4	3.5	#	#
Apr	3.5	.0	#	0
May	.4	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.2	.0	#	0
Oct	2.1	.0	#	0
Nov	5.1	3.0	1	#
Dec	3.6	3.0	1	#
Ann	29.8	16.9	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	12.0	1990	19	16.0+	1992	14	1990	21	8	1992
Feb	5.0	1984	18	15.5	1984	6	1971	21	2	1971
Mar	11.0	1988	31	18.0	1971	12	1981	7	2	1981
Apr	12.0	1984	2	21.5	1984	30	1980	2	5	1980
May	6.0	1979	10	6.0	1979	#	1979	10	#	1979
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	5.0	1985	29	5.0	1985	5	1995	21	#+	2000
Oct	8.0	1972	31	11.0	1972	6+	1991	30	#+	1995
Nov	8.0	1972	1	22.0	1972	21	1983	28	6	1972
Dec	6.0	1985	9	11.3	1985	14	1985	30	14	1985
Ann	12.0+	Jan 1990	19	22.0	Nov 1972	30	Apr 1980	2	14	Dec 1985

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.8	1.5	.7	.4	.1
Feb	1.5	1.0	.4	.1	.0
Mar	1.8	1.5	.7	.3	.1
Apr	.7	.6	.3	.2	.1
May	.1	.1	.1	@	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	@	@	@	@	.0
Oct	.6	.6	.2	.2	.0
Nov	2.0	1.5	.8	.2	.0
Dec	1.6	1.1	.4	.1	.0
Ann	10.1	7.9	3.6	1.5	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	5.7	4.3	3.7	1.2
Feb	2.4	1.1	.2	.0
Mar	1.8	.9	.4	.0
Apr	.4	.3	.3	.1
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.4	.1	.1	.0
Nov	4.2	2.4	1.2	.5
Dec	2.7	1.2	.3	.0
Ann	17.6	10.3	6.2	1.8

+ Also occurred on an earlier date(s) #Denotes trace amounts

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

Complete documentation available from:
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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	5/31	5/26	5/22	5/19	5/16	5/13	5/10	5/06	5/01
32	5/16	5/13	5/10	5/08	5/06	5/03	5/01	4/29	4/25
28	5/03	4/29	4/26	4/24	4/22	4/20	4/17	4/15	4/11
24	4/26	4/21	4/17	4/14	4/11	4/08	4/04	4/01	3/26
20	4/21	4/15	4/10	4/05	4/02	3/29	3/24	3/20	3/13
16	4/10	4/03	3/29	3/25	3/21	3/17	3/12	3/07	2/28

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	9/11	9/15	9/18	9/20	9/23	9/25	9/27	9/30	10/04
32	9/16	9/22	9/26	9/29	10/02	10/05	10/08	10/12	10/18
28	9/30	10/05	10/08	10/11	10/14	10/16	10/19	10/22	10/27
24	10/07	10/12	10/16	10/19	10/22	10/25	10/29	11/02	11/07
20	10/15	10/21	10/25	10/28	10/31	11/03	11/06	11/10	11/15
16	10/23	10/29	11/02	11/06	11/09	11/13	11/16	11/20	11/26

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	150	143	138	133	129	125	120	115	108
32	169	162	157	153	149	145	140	135	128
28	190	185	181	177	174	171	167	164	158
24	215	208	203	198	194	190	185	180	172
20	240	230	223	217	212	206	200	193	183
16	259	250	243	238	233	227	222	215	206

***** 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	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0
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	18	48	137	299	594	879	1071	1023	726	397	89	27	18	66	203	502	1096	1975	3046	4069	4795	5192	5281	5308
45	0	14	67	184	441	729	916	868	577	262	40	5	0	14	81	265	706	1435	2351	3219	3796	4058	4098	4103
50	0	1	26	101	299	579	761	713	436	148	12	0	0	1	27	128	427	1006	1767	2480	2916	3064	3076	3076
55	0	0	4	42	177	431	606	558	301	67	0	0	0	0	4	46	223	654	1260	1818	2119	2186	2186	2186
60	0	0	0	12	87	289	451	403	183	18	0	0	0	0	0	12	99	388	839	1242	1425	1443	1443	1443
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	27	65	138	233	374	552	679	656	466	298	96	39	27	92	230	463	837	1389	2068	2724	3190	3488	3584	3623

(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