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: ANTERO RESERVOIR, CO **COOP ID: 050263**

Climate Division: CO 4 **NWS Call Sign:** **Elevation: 8,920 Feet** **Lat: 39˚00N** **Lon: 105˚54W**

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	32.3	-3.1	14.6	59	1997	3	23.5	1986	-54	1962	10	3.3	1984	1564	0	.0	.0	1.1	14.2	30.9	18.2
Feb	35.6	-.8	17.4	58	1996	10	25.6	1995	-51	1989	8	6.1	1973	1335	0	.0	.0	1.8	9.8	28.3	14.2
Mar	41.5	11.0	26.3	62+	1997	21	32.5	1999	-43	1965	3	11.5	1987	1212	0	.0	.0	6.7	4.9	30.8	5.8
Apr	48.0	18.4	33.2	72	1992	30	39.1	1992	-29	1970	4	26.1	1973	954	0	.0	.0	15.1	2.0	29.4	1.4
May	58.8	27.8	43.3	80	2000	31	47.5	2000	1+	1978	7	39.1	1983	673	0	.0	.0	26.4	@	24.2	.0
Jun	70.0	34.5	52.3	85+	1998	29	56.8	1994	15	1975	11	47.8	1975	383	0	.0	.0	29.7	.0	10.5	.0
Jul	75.4	40.1	57.8	88+	1989	7	60.4	1996	23	1968	1	54.8	1973	225	0	.0	.0	31.0	.0	1.4	.0
Aug	73.1	39.1	56.1	85+	2000	10	59.4+	2000	19	1964	28	53.1	1976	277	0	.0	.0	31.0	.0	2.6	.0
Sep	66.6	31.0	48.8	83	1978	7	52.6+	1998	3+	1971	19	45.5	1985	487	0	.0	.0	29.0	.0	17.2	.0
Oct	55.9	19.3	37.6	78	1980	1	41.1	1988	-14	1975	25	30.4	1984	849	0	.0	.0	24.2	1.0	29.7	.6
Nov	41.0	7.7	24.4	68+	1999	16	31.6	1995	-33+	1979	30	9.7	1972	1219	0	.0	.0	7.7	6.6	29.7	7.6
Dec	32.6	-2.7	15.0	58	1965	4	25.8	1980	-49	1978	8	.3	1986	1553	0	.0	.0	1.3	13.8	31.0	17.7
Ann	52.6	18.5	35.6	88+	Jul 1989	7	60.4	Jul 1996	-54	Jan 1962	10	.3	Dec 1986	10731	0	.0	.0	205.0	52.3	265.7	65.5

\+ 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: 1961-2001

(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	.21	.21	.46	2000	27	.46	2000	.01	1995
Feb	.25	.19	.39	1995	13	.92	1987	.00	2000
Mar	.52	.42	.40+	2000	31	1.43	1995	.06+	1989
Apr	.73	.67	.76	2000	11	2.27	1999	.00	1981
May	1.02	.85	1.20	1994	10	2.61	1979	.04	1998
Jun	1.18	1.15	1.55	1963	16	3.00	1988	.07	1980
Jul	1.89	1.59	2.18	1984	29	4.50	1998	.16	1978
Aug	1.97	1.82	1.76	1992	25	4.37	1983	.04	1985
Sep	.93	.82	1.35	1961	3	2.87	1982	.03	1987
Oct	.64	.55	1.00+	1974	12	1.79	1974	.01	1983
Nov	.37	.29	1.07	1986	1	1.31	1986	.01	1984
Dec	.26	.24	.40	1981	22	.60	1978	.04	1995
Ann	9.97	10.26	2.18	Jul 1984	29	4.50	Jul 1998	.00+	Feb 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.4	.7	.0	.0
Feb	3.4	.9	.0	.0
Mar	5.2	1.8	.0	.0
Apr	5.9	2.6	.2	.0
May	7.2	3.1	.5	@
Jun	6.8	3.3	.6	@
Jul	10.5	5.5	.8	.2
Aug	12.3	5.2	.8	.3
Sep	6.2	2.9	.4	@
Oct	4.6	2.2	.2	@
Nov	4.2	1.1	@	@
Dec	3.7	.9	.0	.0
Ann	73.4	30.2	3.5	.5

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	.03	.04	.07	.10	.14	.17	.21	.26	.33	.44	.55
Feb	.01	.03	.07	.11	.15	.19	.25	.31	.40	.56	.71
Mar	.09	.13	.21	.28	.35	.43	.52	.63	.77	1.01	1.23
Apr	.05	.12	.24	.35	.46	.58	.73	.90	1.14	1.52	1.90
May	.12	.20	.35	.49	.64	.81	1.01	1.25	1.58	2.13	2.66
Jun	.14	.24	.40	.57	.74	.93	1.16	1.44	1.82	2.44	3.05
Jul	.26	.42	.69	.95	1.23	1.53	1.88	2.31	2.90	3.85	4.77
Aug	.47	.66	.94	1.20	1.46	1.72	2.03	2.39	2.86	3.60	4.30
Sep	.12	.20	.33	.46	.60	.75	.92	1.14	1.43	1.90	2.36
Oct	.05	.10	.18	.27	.37	.48	.61	.77	1.00	1.38	1.75
Nov	.04	.06	.11	.17	.22	.29	.36	.46	.59	.80	1.01
Dec	.06	.09	.13	.16	.20	.23	.27	.32	.38	.48	.57
Ann	6.41	7.08	7.94	8.61	9.21	9.79	10.40	11.08	11.91	13.13	14.19

\+ 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: 1961-2001
(3) Derived from 1971-2000 serially complete daily data

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Climate Division: CO 4 **NWS Call Sign:** **Elevation: 8,920 Feet** **Lat: 39°00N** **Lon: 105°54W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	4.1	3.5	3	2
Feb	4.8	3.4	3	2
Mar	7.8	6.9	2	1
Apr	7.9	4.5	1	#
May	2.2	1.0	#	#
Jun	.5	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	1.1	.0	#	0
Oct	4.1	3.5	#	#
Nov	6.0	4.8	1	1
Dec	5.6	5.1	2	2
Ann	44.1	32.7	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	6.0	1989	5	11.0	1989	14	1987	21	11	1987
Feb	8.0	1975	15	20.5	1987	25	1987	28	14	1989
Mar	11.0	1985	29	19.5	1985	24	1987	3	19	1987
Apr	12.0	1991	23	33.0	1999	19	1987	2	8	1987
May	8.0	1979	3	15.5	1979	8	1979	3	1	1979
Jun	8.0	1975	10	10.2	1975	6	1975	11	#+	1993
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	10.0	1971	17	14.5	1971	10	1971	17	1	1971
Oct	12.0	1997	25	15.0	1971	12	1997	25	4	1984
Nov	15.0	1986	1	20.5	1986	15	1986	2	7	1986
Dec	7.0	1981	22	20.2	1978	20	1972	15	13	1972
Ann	15.0	Nov 1986	1	33.0	Apr 1999	25	Feb 1987	28	19	Mar 1987

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.7	1.6	.4	.1	.0
Feb	2.8	2.0	.6	.2	.0
Mar	4.2	3.0	1.1	.2	@
Apr	3.8	2.8	1.2	.4	.1
May	1.1	.9	.3	.1	.0
Jun	.2	.1	.1	@	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.3	.3	.1	@	@
Oct	1.8	1.4	.5	.1	.1
Nov	3.2	2.5	.6	.3	@
Dec	3.2	2.2	.6	.1	.0
Ann	23.3	16.8	5.5	1.5	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	20.4	12.4	4.7	1.1
Feb	17.5	9.4	5.6	1.8
Mar	12.7	6.5	3.2	1.1
Apr	6.4	3.3	1.9	.3
May	.8	.2	.1	.0
Jun	.1	.1	.1	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.3	.1	@	@
Oct	2.7	1.3	.6	.2
Nov	11.8	6.0	3.3	.7
Dec	19.6	10.5	4.8	1.5
Ann	92.3	49.8	24.3	6.7

+ 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	8/04	7/31	7/28	7/26	7/24	7/21	7/19	7/16	7/12
32	7/23	7/17	7/13	7/10	7/07	7/03	6/30	6/26	6/20
28	7/02	6/26	6/22	6/19	6/16	6/13	6/10	6/06	6/01
24	6/16	6/10	6/06	6/03	5/30	5/27	5/24	5/20	5/14
20	6/01	5/26	5/22	5/18	5/15	5/11	5/08	5/03	4/27
16	5/20	5/15	5/12	5/09	5/07	5/04	5/01	4/28	4/23

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	7/29	8/01	8/04	8/06	8/08	8/10	8/12	8/15	8/19
32	8/05	8/11	8/15	8/19	8/22	8/26	8/30	9/03	9/09
28	8/23	8/28	9/01	9/05	9/08	9/11	9/15	9/19	9/24
24	9/09	9/13	9/15	9/18	9/20	9/22	9/24	9/27	10/01
20	9/17	9/21	9/23	9/26	9/28	9/30	10/02	10/05	10/08
16	9/24	9/28	10/01	10/03	10/06	10/08	10/10	10/13	10/17

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	32	26	22	18	15	11	8	4	0
32	74	65	58	52	46	41	35	28	18
28	104	97	92	87	83	79	74	69	62
24	130	124	119	115	112	108	104	100	94
20	155	148	143	139	135	131	127	122	116
16	171	164	159	155	151	147	143	138	131

***** 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	1564	1335	1212	954	673	383	225	277	487	849	1219	1553	10731
60	1409	1195	1057	804	518	238	89	134	338	694	1069	1398	8943
57	1316	1111	964	714	425	161	37	71	252	601	979	1305	7936
55	1254	1055	902	654	364	118	16	41	198	539	919	1243	7303
50	1099	915	747	504	222	42	1	6	87	384	769	1088	5864
32	557	433	262	94	4	0	0	0	0	28	301	555	2234

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	15	23	73	130	354	608	798	747	503	202	72	25	3550
55	0	0	0	0	1	35	101	75	11	0	0	0	223
57	0	0	0	0	0	19	60	43	5	0	0	0	127
60	0	0	0	0	0	6	19	13	1	0	0	0	39
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	0	0	0	21	152	383	561	510	289	55	1	0	0	0	0	21	173	556	1117	1627	1916	1971	1972	1972
45	0	0	0	1	60	238	406	355	153	11	0	0	0	0	0	1	61	299	705	1060	1213	1224	1224	1224
50	0	0	0	0	12	113	252	201	54	0	0	0	0	0	0	0	12	125	377	578	632	632	632	632
55	0	0	0	0	1	33	107	74	7	0	0	0	0	0	0	0	1	34	141	215	222	222	222	222
60	0	0	0	0	0	1	23	8	0	0	0	0	0	0	0	0	0	1	24	32	32	32	32	32
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	16	47	162	314	407	369	263	133	23	0	0	0	16	63	225	539	946	1315	1578	1711	1734	1734

(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