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: CHERRY CREEK DAM, CO **COOP ID: 051547**

Climate Division: CO 4 **NWS Call Sign:** **Elevation: 5,647 Feet** **Lat: 39˚38N** **Lon: 104˚50W**

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	45.0	15.9	30.5	76	1997	3	39.9	1986	-32	1963	12	19.5	1979	1070	0	.0	.0	12.7	5.2	30.3	3.9
Feb	49.0	19.9	34.5	75+	1986	26	41.1	2000	-24	1982	5	23.7	1989	856	0	.0	.0	14.5	3.7	26.7	1.8
Mar	55.0	25.0	40.0	83+	1997	21	46.1	1986	-14	1960	3	35.8	1996	776	0	.0	.0	20.7	1.5	26.2	.4
Apr	61.8	31.3	46.6	89	1989	23	53.2	1981	-7	1975	2	40.8	1983	553	0	.0	.0	24.7	.5	17.1	@
May	71.4	40.4	55.9	97	1996	17	60.8	1994	17	1978	7	50.4	1995	295	14	.0	.8	29.4	.0	3.9	.0
Jun	83.2	49.2	66.2	105	1994	27	71.8	1994	30+	1965	8	59.5	1983	75	112	.5	8.8	30.0	.0	.2	.0
Jul	89.5	54.9	72.2	108	1989	8	75.0	1980	41+	1972	5	69.6	1992	3	227	2.0	17.7	31.0	.0	.0	.0
Aug	87.1	53.5	70.3	104	1980	7	73.6	2000	36	1956	31	66.5	1979	13	178	.7	12.3	31.0	.0	.0	.0
Sep	78.8	45.2	62.0	100	1995	2	67.0	1998	15	1985	29	56.4	1985	148	58	@	4.9	29.2	@	1.9	.0
Oct	67.5	34.2	50.9	96	1977	18	54.3	1975	-2	1969	13	46.8	1984	439	0	.0	.3	28.0	.3	12.6	@
Nov	52.9	24.1	38.5	81+	1990	15	46.8	1999	-14	1952	28	30.8	1972	795	0	.0	.0	18.0	2.4	25.4	.6
Dec	45.9	17.4	31.7	73+	1998	2	41.2	1980	-27	1990	22	18.3	1983	1035	0	.0	.0	13.7	4.5	29.3	2.8
Ann	65.6	34.3	49.9	108	Jul 1989	8	75.0	Jul 1980	-32	Jan 1963	12	18.3	Dec 1983	6058	589	3.2	44.8	282.9	18.1	173.6	9.5

\+ 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: 1951-2001

(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	.49	.43	.80	1990	20	1.31	1992	.00+	1988
Feb	.47	.42	.75	1962	17	1.01+	1985	.00	1987
Mar	1.50	1.13	1.55+	2000	31	5.11	1992	.31	1999
Apr	2.08	2.18	2.00+	1999	23	7.53	1999	.00	1987
May	2.85	2.55	4.00	1973	6	8.74	1973	.00	1984
Jun	2.00	1.98	3.25	1965	16	6.32	1995	.00	1980
Jul	2.46	2.31	3.05	1982	28	6.34	1997	.32	1996
Aug	2.05	2.07	3.28	1963	17	5.77	1979	.19	1978
Sep	1.44	1.04	1.80	1973	29	4.31	1976	.00	1992
Oct	1.03	.86	1.82	1969	4	5.10	1984	.06	1988
Nov	1.18	.91	1.38	1975	9	3.25	1972	.19	1984
Dec	.65	.47	1.83	1973	24	3.84	1973	.00+	1991
Ann	18.20	17.87	4.00	May 1973	6	8.74	May 1973	.00+	Sep 1992

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.1	1.8	.1	.0
Feb	3.8	1.9	.1	.0
Mar	6.7	3.9	.8	.2
Apr	7.4	4.7	1.3	.3
May	9.6	5.9	1.8	.6
Jun	7.5	4.4	1.3	.3
Jul	8.2	4.6	1.3	.5
Aug	8.6	4.4	1.4	.4
Sep	6.4	3.4	.8	.2
Oct	4.5	2.6	.6	.1
Nov	5.6	3.1	.7	.1
Dec	4.0	1.7	.2	.1
Ann	76.4	42.4	10.4	2.8

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	.09	.18	.26	.34	.41	.50	.61	.74	.97	1.18
Feb	.05	.10	.18	.25	.32	.39	.48	.58	.71	.93	1.14
Mar	.23	.35	.57	.78	.99	1.23	1.50	1.83	2.27	3.00	3.69
Apr	.25	.51	.86	1.15	1.45	1.77	2.13	2.56	3.13	4.04	4.91
May	.30	.64	1.12	1.53	1.95	2.40	2.90	3.52	4.33	5.64	6.88
Jun	.33	.60	.94	1.21	1.48	1.76	2.08	2.45	2.93	3.70	4.41
Jul	.49	.71	1.07	1.41	1.74	2.10	2.51	3.00	3.65	4.69	5.68
Aug	.29	.46	.75	1.04	1.33	1.66	2.04	2.50	3.13	4.15	5.13
Sep	.07	.20	.42	.63	.86	1.11	1.40	1.77	2.27	3.10	3.91
Oct	.07	.14	.27	.41	.57	.75	.97	1.24	1.63	2.28	2.93
Nov	.17	.27	.44	.60	.77	.96	1.18	1.44	1.80	2.38	2.93
Dec	.00	.00	.11	.22	.33	.46	.62	.81	1.07	1.52	1.96
Ann	11.30	12.56	14.22	15.50	16.66	17.79	18.97	20.29	21.91	24.29	26.38

+ 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: 1951-2001
(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	7.7	7.0	2	1	10.5	1992	8	18.0	1992	11+	1992	8	8	1988	2.7	2.2	.8	.2	@	11.1	6.6	3.9	.1
Feb	5.5	4.1	1	1	6.5	1971	20	13.0	1993	8	1971	20	3	1974	2.7	1.9	.6	.2	.0	6.2	3.1	1.1	.0
Mar	9.6	10.5	1	1	15.0	2000	31	19.5	1973	10	1971	6	2	1990	3.4	2.9	1.1	.6	@	3.3	1.5	.7	.0
Apr	8.8	10.2	1	#	10.0	1972	26	21.8	1975	13	1986	4	2	1986	2.3	2.0	1.0	.5	.1	2.3	1.4	.8	.2
May	.6	.0	#	0	10.0	1978	6	10.0	1978	5	1983	18	1	1983	.2	.2	.1	.1	@	.2	.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	1.3	.0	#	0	14.0	1971	17	21.0	1971	14	1971	17	1	1985	.2	.2	.1	.1	@	.3	.2	.2	.1
Oct	2.1	.1	#	0	15.0	1997	25	15.0	1997	15	1997	25	1	1997	.6	.5	.2	.1	.1	.6	.4	.2	.1
Nov	8.4	6.8	1	1	13.0	1991	17	23.5	1975	20	1983	29	10	1979	2.9	2.5	1.1	.4	.1	5.7	3.2	1.6	.1
Dec	5.3	5.1	2	1	16.0	1973	24	16.0	1973	17	1987	28	7	1979	2.6	2.0	.7	.4	.1	10.4	6.7	3.5	.3
Ann	49.3	43.8	N/A	N/A	16.0	Dec 1973	24	23.5	Nov 1975	20	Nov 1983	29	10	Nov 1979	17.6	14.4	5.7	2.6	.4	40.1	23.2	12.0	.9

+ 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	6/11	6/06	6/02	5/29	5/26	5/23	5/20	5/16	5/10
32	6/02	5/28	5/23	5/20	5/17	5/13	5/10	5/06	4/30
28	5/15	5/11	5/08	5/06	5/04	5/02	4/30	4/27	4/23
24	5/03	4/29	4/25	4/23	4/20	4/17	4/15	4/11	4/07
20	4/27	4/22	4/18	4/14	4/11	4/08	4/05	4/01	3/26
16	4/17	4/11	4/07	4/03	3/31	3/28	3/24	3/20	3/14

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	9/14	9/17	9/19	9/22	9/24	9/26	9/29	10/03
32	9/15	9/19	9/22	9/24	9/27	9/29	10/02	10/05	10/09
28	9/20	9/25	9/29	10/02	10/05	10/09	10/12	10/16	10/21
24	10/01	10/07	10/11	10/15	10/18	10/21	10/25	10/29	11/04
20	10/09	10/15	10/19	10/22	10/26	10/29	11/01	11/06	11/11
16	10/22	10/27	10/31	11/03	11/07	11/10	11/13	11/17	11/22

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	139	132	126	122	118	113	109	104	96
32	156	148	142	137	132	128	123	117	109
28	175	168	162	158	154	150	145	140	132
24	202	194	189	185	180	176	172	166	159
20	218	210	205	201	197	193	188	183	176
16	242	234	229	224	220	215	211	205	198

***** 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	1070	856	776	553	295	75	3	13	148	439	795	1035	6058
60	915	716	621	408	173	27	0	2	68	288	645	880	4743
57	822	632	528	324	116	12	0	1	37	204	555	787	4018
55	760	576	466	272	85	7	0	0	22	154	500	725	3567
50	612	441	318	161	32	1	0	0	5	60	362	577	2569
32	172	76	14	3	0	0	0	0	0	0	53	153	471

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	124	144	261	440	742	1026	1247	1188	900	584	247	142	7045
55	0	0	0	19	113	343	534	475	232	25	5	0	1746
57	0	0	0	12	82	288	472	413	187	13	0	0	1467
60	0	0	0	5	47	213	379	322	128	4	0	0	1098
65	0	0	0	0	14	112	227	178	58	0	0	0	589
70	0	0	0	0	2	44	94	67	19	0	0	0	226

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	29	54	120	246	500	793	1010	945	665	362	107	40	29	83	203	449	949	1742	2752	3697	4362	4724	4831	4871
45	1	18	56	139	355	643	855	790	518	238	54	14	1	19	75	214	569	1212	2067	2857	3375	3613	3667	3681
50	0	1	17	69	228	496	700	635	379	128	17	0	0	1	18	87	315	811	1511	2146	2525	2653	2670	2670
55	0	0	2	26	118	353	546	481	252	55	0	0	0	0	2	28	146	499	1045	1526	1778	1833	1833	1833
60	0	0	0	3	47	221	392	328	140	11	0	0	0	0	0	3	50	271	663	991	1131	1142	1142	1142
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	48	78	131	200	344	495	621	591	434	291	117	62	48	126	257	457	801	1296	1917	2508	2942	3233	3350	3412

(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