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: CLIMAX, CO **COOP ID: 051660**

Climate Division: CO 2 **NWS Call Sign:** **Elevation: 11,320 Feet** **Lat: 39˚23N** **Lon: 106˚12W**

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	24.7	.6	12.7	50	1997	20	20.6	1981	-33+	1963	13	6.1	1979	1623	0	.0	.0	@	24.1	31.0	14.7
Feb	28.3	2.1	15.2	65	1979	17	20.6+	1995	-28+	1989	7	9.8	1971	1394	0	.0	.0	.1	18.2	28.3	11.1
Mar	33.0	6.8	19.9	57	1997	21	25.7	1986	-24	1965	3	14.0	1988	1383	0	.0	.0	.7	13.7	31.0	7.0
Apr	38.5	12.8	25.7	59+	1992	29	32.6	1981	-20	1973	8	17.7	1973	1181	0	.0	.0	3.1	7.3	30.0	3.0
May	47.2	23.3	35.3	68	2000	30	39.3	2000	0	1953	11	30.9	1973	922	0	.0	.0	14.3	1.1	28.8	.0
Jun	58.4	33.0	45.7	78	1981	23	50.1	1990	10	1976	19	41.1	1995	580	0	.0	.0	26.0	.1	13.9	.0
Jul	64.7	38.7	51.7	85	1981	7	55.8	1980	12	1995	4	48.4	1992	412	0	.0	.0	30.8	.0	2.2	.0
Aug	62.4	37.7	50.1	84	1981	29	52.7	1983	18	1978	15	48.0	1972	464	0	.0	.0	30.6	.0	2.9	.0
Sep	56.2	30.7	43.5	82	1981	18	47.6+	1998	6	1971	18	38.6	1971	646	0	.0	.0	25.0	.1	17.1	.0
Oct	45.6	21.1	33.4	73	1980	8	37.5	1992	-9	1993	30	27.0	1984	982	0	.0	.0	12.1	3.3	29.9	.7
Nov	32.4	8.3	20.4	60+	1999	16	26.6	1999	-27	1976	28	14.1	2000	1340	0	.0	.0	1.4	15.5	30.0	6.6
Dec	26.0	2.4	14.2	52	1975	7	24.4	1980	-33	1990	23	9.5	1978	1575	0	.0	.0	.1	22.4	31.0	12.6
Ann	43.1	18.1	30.7	85	Jul 1981	7	55.8	Jul 1980	-33+	Dec 1990	23	6.1	Jan 1979	12502	0	.0	.0	144.2	105.8	276.1	55.7

\+ 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	2.04	1.79	.97	1980	15	5.20	1996	.35	1984
Feb	1.75	1.47	1.11	1996	21	4.27	1986	.66	1982
Mar	2.35	2.35	1.01	1993	28	3.64+	1991	1.08	1997
Apr	2.38	2.39	1.47	1999	30	3.79	1997	.56	1987
May	2.10	2.02	2.00	1973	27	5.28	1973	.49	1974
Jun	1.13	.85	1.81	1984	7	2.70	1984	.00+	1994
Jul	2.24	1.86	1.27	1961	31	5.51	1998	.11	1994
Aug	2.09	1.97	1.43	1992	24	4.99	1984	.47	1993
Sep	1.49	1.58	1.33	1961	3	3.22	1985	.20	1989
Oct	1.42	1.53	.96	1969	3	3.15	1984	.48	1973
Nov	1.96	1.84	1.40	1987	15	3.82	1979	.53	1980
Dec	1.84	1.36	1.32	1973	30	5.30	1973	.34	1986
Ann	22.79	22.30	2.00	May 1973	27	5.51	Jul 1998	.00+	Jun 1994

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	15.5	7.2	.5	.0
Feb	12.9	6.0	.4	@
Mar	15.3	8.4	.6	@
Apr	13.4	8.5	.6	.1
May	10.0	6.3	1.1	.2
Jun	7.0	3.8	.4	.1
Jul	12.1	6.8	.7	.1
Aug	14.1	6.8	.4	@
Sep	10.5	5.0	.4	.0
Oct	8.5	4.6	.4	.0
Nov	12.8	6.9	.8	@
Dec	13.1	6.2	.4	.1
Ann	145.2	76.5	6.7	.6

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	.46	.64	.94	1.21	1.48	1.76	2.09	2.47	2.97	3.78	4.53
Feb	.57	.73	.98	1.19	1.39	1.60	1.83	2.09	2.44	2.97	3.46
Mar	1.24	1.44	1.69	1.90	2.08	2.27	2.47	2.69	2.96	3.38	3.75
Apr	1.14	1.35	1.63	1.86	2.06	2.27	2.50	2.75	3.07	3.55	3.99
May	.61	.81	1.11	1.37	1.62	1.89	2.18	2.53	2.97	3.68	4.33
Jun	.00	.27	.51	.68	.85	1.02	1.20	1.41	1.69	2.14	2.55
Jul	.43	.63	.96	1.26	1.57	1.90	2.28	2.73	3.33	4.30	5.21
Aug	.59	.79	1.09	1.35	1.60	1.87	2.17	2.51	2.97	3.67	4.34
Sep	.39	.53	.75	.94	1.12	1.32	1.54	1.79	2.13	2.66	3.15
Oct	.60	.72	.91	1.05	1.19	1.34	1.49	1.66	1.88	2.22	2.53
Nov	.78	.96	1.22	1.43	1.63	1.83	2.05	2.31	2.63	3.12	3.57
Dec	.30	.46	.73	.98	1.25	1.53	1.85	2.25	2.78	3.63	4.45
Ann	16.04	17.34	19.01	20.28	21.41	22.51	23.64	24.89	26.41	28.61	30.52

+ 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	39.5	36.3	32	33	14.0	1996	4	80.0	1996	67	1997	27	54	1997	15.3	11.1	5.1	2.1	.3	-9.9	-9.9	-9.9	-9.9
Feb	27.9	22.8	40	41	16.0	1995	12	58.1	1980	75	1996	22	58+	1997	12.6	8.8	4.3	1.9	.4	-9.9	-9.9	-9.9	-9.9
Mar	41.9	43.4	48	49	14.0	1993	28	72.0	1991	71	1978	15	64	1978	15.1	11.6	5.7	2.6	.2	-9.9	-9.9	-9.9	-9.9
Apr	34.1	35.2	47	50	16.0	2000	23	46.4	1974	73	1980	11	64	1980	12.9	10.4	5.3	2.6	.3	-9.9	-9.9	-9.9	-9.9
May	21.1	19.3	27	26	13.0	1975	29	50.6	1983	81	1984	7	50	1984	8.5	6.0	2.8	1.3	.2	-9.9	-9.9	-9.9	-9.9
Jun	4.4	2.3	1	#	18.0	1984	7	23.9	1984	35	1983	1	10	1983	2.2	1.3	.6	.1	@	2.0	1.5	1.1	.5
Jul	.1	.0	#	0	2.7	1993	5	2.7	1993	3	1993	5	#+	1995	.1	.1	.0	.0	.0	@	.0	.0	.0
Aug	.1	.0	#	0	1.0	1976	10	1.0+	1992	1+	1992	25	#+	1992	.1	.1	.0	.0	.0	.1	.0	.0	.0
Sep	3.8	2.4	#	#	7.8	1985	23	24.3	1985	10	1985	30	1	1996	2.4	1.4	.4	.1	.0	1.1	.4	.2	.1
Oct	17.1	17.1	1	1	13.0	1991	28	35.9	1984	13+	1991	28	4	1985	7.4	5.2	2.4	1.2	@	8.3	4.8	2.9	.3
Nov	32.4	28.7	9	11	15.0	1979	20	71.0	1979	35	1979	27	17	1991	12.2	9.6	4.4	1.9	.4	24.5	20.1	15.5	10.1
Dec	35.5	25.6	21	22	20.5	1995	31	103.0	1983	58	1983	28	39	1983	12.9	9.5	4.1	1.8	.4	-9.9	-9.9	-9.9	-9.9
Ann	257.9	233.1	N/A	N/A	20.5	Dec 1995	31	103.0	Dec 1983	81	May 1984	7	64+	Apr 1980	101.7	75.1	35.1	15.6	2.2	-9.9	-9.9	-9.9	-9.9

+ 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	8/03	7/30	7/28	7/25	7/23	7/21	7/19	7/17	7/13
32	7/28	7/21	7/16	7/11	7/07	7/03	6/29	6/24	6/17
28	7/15	7/07	7/02	6/27	6/23	6/19	6/14	6/09	6/02
24	7/05	6/28	6/23	6/19	6/15	6/11	6/07	6/02	5/26
20	6/25	6/17	6/12	6/07	6/03	5/29	5/25	5/19	5/12
16	6/11	6/04	5/30	5/25	5/21	5/17	5/12	5/07	4/30

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	7/28	7/31	8/03	8/05	8/07	8/09	8/11	8/14	8/18
32	8/06	8/11	8/15	8/18	8/22	8/25	8/28	9/01	9/07
28	8/20	8/25	8/29	9/02	9/05	9/08	9/11	9/15	9/21
24	9/02	9/07	9/11	9/15	9/18	9/21	9/24	9/28	10/03
20	9/13	9/18	9/22	9/25	9/28	10/01	10/04	10/08	10/13
16	9/17	9/23	9/27	10/01	10/04	10/07	10/11	10/15	10/21

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	33	26	22	18	14	10	6	2	0
32	73	64	56	50	45	39	33	26	16
28	102	92	85	79	73	67	61	54	44
24	122	112	105	99	94	88	82	76	66
20	144	134	128	122	117	111	106	99	90
16	165	155	147	141	135	130	123	116	106

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1623	1394	1383	1181	922	580	412	464	646	982	1340	1575	12502
60	1468	1254	1243	1031	767	430	257	309	496	827	1190	1420	10692
57	1375	1170	1150	941	674	343	170	216	406	734	1100	1327	9606
55	1313	1114	1088	881	612	287	117	159	348	672	1040	1265	8896
50	1158	974	933	731	458	164	32	49	212	517	890	1110	7228
32	600	470	381	225	44	1	0	0	3	76	364	553	2717

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	6	34	145	412	611	559	347	117	14	0	2245
55	0	0	0	0	0	7	16	5	2	0	0	0	30
57	0	0	0	0	0	3	6	0	0	0	0	0	9
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	0	0	0	0	27	203	372	326	153	23	0	0	0	0	0	0	27	230	602	928	1081	1104	1104	1104
45	0	0	0	0	3	94	218	178	62	2	0	0	0	0	0	0	3	97	315	493	555	557	557	557
50	0	0	0	0	0	27	85	54	12	0	0	0	0	0	0	0	0	27	112	166	178	178	178	178
55	0	0	0	0	0	2	14	4	0	0	0	0	0	0	0	0	0	2	16	20	20	20	20	20
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	0	0	29	146	239	209	122	34	0	0	0	0	0	0	29	175	414	623	745	779	779	779

(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