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: CENTER 4 SSW, CO **COOP ID: 051458**

Climate Division: CO 5 **NWS Call Sign:** **Elevation: 7,673 Feet** **Lat: 37˚42N** **Lon: 106˚09W**

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	32.2	-2.1	15.1	59+	2000	16	27.4	1999	-38	1979	2	1.6	1992	1550	0	.0	.0	1.3	15.8	31.0	17.8
Feb	39.5	5.6	22.6	65	1986	25	35.2	1995	-32	1982	7	8.6	1979	1188	0	.0	.0	5.0	8.0	28.3	9.9
Mar	49.0	17.4	33.2	74	1966	31	39.3	1986	-16	1967	6	26.0	1979	985	0	.0	.0	14.3	1.1	30.7	1.0
Apr	58.0	24.4	41.2	79	1992	29	46.3	1989	-4+	1973	8	36.3	1983	715	0	.0	.0	23.7	.1	26.2	@
May	66.6	33.3	50.0	87+	2000	23	56.3	1996	12	1953	2	45.8	1978	466	0	.0	.0	30.0	.0	12.4	.0
Jun	75.9	39.7	57.8	95	1954	21	61.5	1994	25	1990	2	53.0	1982	223	6	.0	.2	30.0	.0	2.2	.0
Jul	79.1	44.5	61.8	94+	1957	3	64.1	1998	31	1982	6	59.6	1992	110	10	.0	.2	31.0	.0	@	.0
Aug	77.4	43.0	60.2	90+	1954	3	63.7	1995	28	1980	22	56.6	1976	163	15	.0	.0	31.0	.0	.3	.0
Sep	72.1	36.2	54.2	89	1954	2	59.4	1998	12	2000	10	51.5	1986	326	1	.0	.0	29.9	.0	6.7	.0
Oct	61.3	25.5	43.4	80	2000	3	47.9	1988	-4	1970	28	38.7	1976	670	0	.0	.0	27.3	.2	25.5	.1
Nov	44.9	13.4	29.2	68	1980	9	35.0	1998	-25	1976	28	17.6	1972	1076	0	.0	.0	11.5	4.6	29.8	3.3
Dec	34.2	1.4	17.8	61+	1966	6	28.3	1980	-41	1978	9	3.7	1978	1464	0	.0	.0	1.7	13.5	31.0	12.8
Ann	57.5	23.5	40.5	95	Jun 1954	21	64.1	Jul 1998	-41	Dec 1978	9	1.6	Jan 1992	8936	32	.0	.4	236.7	43.3	224.1	44.9

\+ 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

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	.16	.11	.64	1960	14	.49	1987	.00+	1981
Feb	.17	.11	.63	1990	28	.70	1990	.00+	2000
Mar	.37	.31	.81	2000	31	1.30	2000	.00+	1986
Apr	.39	.24	.86	1999	30	2.01	1990	.00+	1981
May	.62	.60	.79	1980	1	2.10	1980	.00+	1998
Jun	.67	.44	1.40	1979	9	1.98	1995	.00	1998
Jul	1.11	.88	2.18	1989	25	2.81	1989	.04	1987
Aug	1.30	1.28	1.07	1992	25	3.09	1993	.23	1978
Sep	.91	.83	1.24	1959	30	1.99	1990	.28	1987
Oct	.57	.47	.87+	1961	29	1.94	1998	.01+	1995
Nov	.46	.36	.82	1991	16	1.69	1986	.00+	1999
Dec	.25	.12	.65	1983	28	.88	1978	.00+	1999
Ann	6.98	6.73	2.18	Jul 1989	25	3.09	Aug 1993	.00+	Feb 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.5	.5	.0	.0
Feb	2.1	.5	@	.0
Mar	3.5	1.2	.1	.0
Apr	3.0	1.3	.1	.0
May	5.4	2.2	.2	.0
Jun	4.8	1.8	.3	@
Jul	9.0	3.1	.4	.1
Aug	10.0	4.2	.5	@
Sep	6.9	3.0	.3	.0
Oct	4.0	1.8	.1	.0
Nov	3.3	1.4	.2	.0
Dec	2.5	.8	@	.0
Ann	57.0	21.8	2.2	.1

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	.01	.04	.06	.09	.12	.15	.20	.25	.35	.45
Feb	.00	.00	.02	.04	.07	.11	.15	.21	.28	.41	.54
Mar	.00	.04	.11	.17	.23	.30	.38	.47	.59	.79	.99
Apr	.00	.00	.05	.11	.18	.25	.35	.47	.65	.95	1.24
May	.00	.00	.12	.22	.33	.45	.59	.77	1.01	1.43	1.83
Jun	.02	.07	.16	.25	.36	.48	.63	.81	1.07	1.51	1.94
Jul	.20	.30	.46	.61	.76	.93	1.12	1.35	1.65	2.14	2.61
Aug	.38	.51	.69	.85	1.01	1.17	1.35	1.56	1.83	2.25	2.65
Sep	.28	.37	.50	.61	.71	.83	.95	1.09	1.28	1.57	1.83
Oct	.02	.05	.11	.19	.27	.38	.51	.68	.92	1.33	1.75
Nov	.00	.01	.07	.13	.21	.30	.41	.55	.76	1.11	1.46
Dec	.00	.00	.02	.06	.11	.16	.22	.30	.42	.62	.82
Ann	4.76	5.18	5.72	6.13	6.50	6.86	7.23	7.64	8.14	8.86	9.50

\+ 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

Complete documentation available from:
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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	3.0	1.0	1	0
Feb	3.3	1.5	1	0
Mar	4.8	4.0	1	0
Apr	1.3	.5	#	0
May	.5	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	1.9	.0	#	0
Nov	3.7	3.3	#	0
Dec	4.4	3.0	1	#
Ann	22.9	13.3	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	10.0	1987	16	16.8	1987	6	1992	31	6	1992
Feb	7.0	1990	28	11.5	1987	6	1992	14	6	1992
Mar	12.0	1985	30	12.0+	1987	12	1992	6	6	1992
Apr	8.0	2000	1	8.0	2000	8	2000	1	1	2000
May	3.0	1980	1	3.0	1980	2	1993	1	#	1993
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	#	1973	26	#	1973	0	0	0	0	0
Oct	9.0	1991	31	12.0	1991	10	1991	31	#+	1997
Nov	7.0	1991	16	10.0	1986	10	1972	1	6	1972
Dec	6.0	1983	28	11.5+	1992	8	1991	20	6	1991
Ann	12.0	Mar 1985	30	16.8	Jan 1987	12	Mar 1992	6	6+	Mar 1992

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.8	.9	.3	.1	.1
Feb	1.9	1.2	.5	.3	.0
Mar	2.5	1.8	.6	.3	.1
Apr	.8	.6	.1	.1	.0
May	.3	.2	.1	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.5	.4	.2	.1	.0
Nov	1.6	1.2	.4	.1	.0
Dec	2.0	1.5	.5	.1	.0
Ann	11.4	7.8	2.7	1.1	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	-9.9	-9.9	-9.9	-9.9
Mar	3.8	2.6	2.0	.8
Apr	.3	.1	.1	.0
May	.1	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.3	.2	.1	.1
Nov	3.0	1.8	.5	.0
Dec	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	-9.9	-9.9

+ 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

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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	7/14	7/07	7/02	6/28	6/23	6/19	6/15	6/10	6/03
32	6/24	6/18	6/14	6/11	6/08	6/05	6/01	5/28	5/23
28	6/07	6/01	5/28	5/25	5/22	5/18	5/15	5/11	5/06
24	5/19	5/14	5/12	5/09	5/07	5/04	5/02	4/29	4/25
20	5/11	5/05	5/01	4/28	4/25	4/21	4/18	4/14	4/08
16	4/27	4/22	4/18	4/15	4/12	4/09	4/05	4/02	3/27

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	8/05	8/12	8/17	8/22	8/26	8/31	9/04	9/10	9/17
32	8/27	9/02	9/06	9/09	9/13	9/16	9/19	9/24	9/29
28	9/11	9/16	9/19	9/22	9/24	9/27	9/30	10/03	10/08
24	9/19	9/24	9/27	9/30	10/02	10/05	10/08	10/11	10/16
20	9/27	10/02	10/05	10/08	10/11	10/14	10/17	10/21	10/25
16	10/02	10/08	10/13	10/16	10/20	10/23	10/27	10/31	11/06

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	97	86	77	70	63	56	49	41	29
32	123	114	107	101	96	91	85	78	69
28	148	140	134	130	125	120	116	110	102
24	170	162	157	152	148	144	139	134	126
20	188	182	177	173	169	165	161	156	149
16	212	204	199	195	190	186	182	176	169

***** 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	1550	1188	985	715	466	223	110	163	326	670	1076	1464	8936
60	1395	1048	830	565	319	104	22	64	187	515	926	1309	7284
57	1302	964	737	475	238	57	4	28	119	423	836	1216	6399
55	1240	908	675	416	190	35	1	14	82	363	776	1154	5854
50	1086	776	521	274	94	7	0	1	23	225	626	999	4632
32	584	343	104	8	0	0	0	0	0	7	179	492	1717

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	57	80	143	284	557	773	923	875	666	360	93	52	4863
55	0	0	0	1	34	117	210	176	58	3	0	0	599
57	0	0	0	0	20	80	152	127	35	1	0	0	415
60	0	0	0	0	8	37	76	71	13	0	0	0	205
65	0	0	0	0	0	6	10	15	1	0	0	0	32
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	22	114	322	547	688	641	441	167	7	0	0	0	22	136	458	1005	1693	2334	2775	2942	2949	2949
45	0	0	0	45	183	398	533	486	293	70	0	0	0	0	0	45	228	626	1159	1645	1938	2008	2008	2008
50	0	0	0	9	80	250	378	332	156	18	0	0	0	0	0	9	89	339	717	1049	1205	1223	1223	1223
55	0	0	0	0	20	125	223	181	58	0	0	0	0	0	0	0	20	145	368	549	607	607	607	607
60	0	0	0	0	0	36	84	53	7	0	0	0	0	0	0	0	0	36	120	173	180	180	180	180
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	12	57	143	264	397	461	437	342	200	40	1	0	12	69	212	476	873	1334	1771	2113	2313	2353	2354

(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