

Climatography of the United States No. 20

Station: COLORADO SPRINGS MNPL AP, CO

1971-2000

COOP ID: 051778

Climate Division: CO 1

NWS Call Sign: COS

Elevation: 6,140 Feet Lat: 38°49N

Lon: 104°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	41.7	14.5	28.1	73	1997	2	37.0	1986	-26	1951	31	15.4	1979	1130	0	.0	.0	9.5	7.2	29.9	2.4
Feb	45.4	18.0	31.7	76	1963	5	38.1	1999	-27	1951	1	20.7	1989	917	0	.0	.0	12.3	5.2	26.7	1.3
Mar	51.6	23.9	37.8	81	1971	26	43.4	1986	-11	1956	12	34.0	1975	827	0	.0	.0	18.6	2.7	25.1	.1
Apr	59.2	31.4	45.3	87	1992	30	52.2	1981	-3	1959	10	39.3+	1983	576	1	.0	.0	23.7	.7	13.1	.0
May	68.4	40.7	54.6	94	2000	30	59.6	1996	21	1954	2	49.5	1995	312	5	.0	.3	29.5	.0	2.0	.0
Jun	79.2	49.5	64.4	100+	1954	24	68.7	1990	32	1951	3	59.3	1982	76	74	.0	3.7	29.9	.0	.0	.0
Jul	84.4	54.8	69.6	100	1954	13	73.5	1980	42	1952	8	66.6	1973	19	176	.0	8.4	31.0	.0	.0	.0
Aug	81.6	53.6	67.6	99	1954	3	71.9	1995	39	1992	27	65.2	1987	20	116	.0	3.2	31.0	.0	.0	.0
Sep	74.1	45.4	59.8	94+	1995	1	65.4	1998	22	1985	29	55.0	1971	172	32	.0	.7	28.9	@	1.1	.0
Oct	63.4	34.3	48.9	86+	1979	7	52.0	1988	5	1969	13	41.8	1984	483	0	.0	.0	27.2	.4	9.1	.0
Nov	49.8	22.6	36.2	78	1981	17	44.9	1999	-8+	1976	28	28.4	1972	848	0	.0	.0	15.5	3.4	24.9	.3
Dec	42.4	15.6	29.0	77	1955	23	38.4	1980	-24	1990	22	17.2	1983	1100	0	.0	.0	10.1	6.2	29.5	1.9
Ann	61.8	33.7	47.8	100+	Jul 1954	13	73.5	Jul 1980	-27	Feb 1951	1	15.4	Jan 1979	6480	404	.0	16.3	267.2	25.8	161.4	6.0

+ 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/normal/usnormals.html

Issue Date: February 2004

(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

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

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COOP ID: 051778

Climate Division: CO 1

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Elevation: 6,140 Feet Lat: 38°49N

Lon: 104°43W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.28	.25	.77	1987	15	1.17	1987	.00	1995	4.7	.7	@	.0	.01	.04	.08	.12	.17	.22	.28	.35	.45	.62	.78
Feb	.35	.24	1.49	1987	26	2.45	1987	.00	1991	4.4	.9	.1	@	.00	.02	.06	.11	.16	.23	.31	.42	.57	.83	1.09
Mar	1.06	.81	1.63	1998	18	2.42	1998	.24	1975	7.5	2.9	.5	.1	.21	.30	.46	.60	.75	.90	1.08	1.29	1.57	2.02	2.45
Apr	1.62	1.37	2.63	1999	30	7.50	1999	.13	1981	8.7	3.8	.8	.2	.21	.34	.57	.80	1.03	1.29	1.60	1.97	2.48	3.31	4.12
May	2.39	2.16	2.23	1955	18	4.99	1980	.33	1974	10.7	5.4	1.2	.5	.54	.76	1.11	1.43	1.74	2.07	2.45	2.90	3.49	4.43	5.31
Jun	2.34	1.86	2.65	1970	20	7.79	1995	.13	1990	9.9	4.5	1.5	.4	.36	.56	.89	1.22	1.55	1.92	2.34	2.86	3.55	4.67	5.75
Jul	2.85	2.73	3.63	1997	29	5.26	1998	.67	1987	12.2	6.3	1.4	.6	.91	1.18	1.58	1.93	2.26	2.60	2.97	3.41	3.98	4.86	5.67
Aug	3.48	3.13	3.98	1999	4	7.04	1999	.89	1973	13.4	6.8	1.9	.6	1.16	1.49	1.98	2.39	2.78	3.19	3.63	4.15	4.82	5.85	6.80
Sep	1.23	.93	1.38	1959	29	4.28	1976	.05	1978	7.5	3.5	.7	.2	.11	.20	.36	.53	.72	.93	1.18	1.50	1.93	2.65	3.36
Oct	.86	.55	1.54	1960	18	5.01	1984	.01	1980	5.1	2.4	.5	.1	.04	.08	.18	.29	.42	.58	.77	1.02	1.38	1.99	2.61
Nov	.52	.37	.81	1979	19	2.05	1991	.00	1995	5.0	1.5	.2	.0	.01	.04	.11	.18	.27	.36	.48	.64	.85	1.21	1.57
Dec	.42	.34	.66	1981	21	1.05	1988	.00	1995	5.0	1.2	.1	.0	.02	.06	.12	.18	.25	.32	.41	.51	.65	.89	1.12
Ann	17.40	17.26	3.98	Aug 1999	4	7.79	Jun 1995	.00+	Dec 1995	94.1	39.9	8.9	2.7	11.26	12.41	13.90	15.04	16.07	17.07	18.12	19.28	20.70	22.78	24.60

+ 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: COLORADO SPRINGS MNPL AP, CO

COOP ID: 051778

Climate Division: CO 1

NWS Call Sign: COS

Elevation: 6,140 Feet

Lat: 38°49N

Lon: 104°43W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	5.1	4.0	#	0	22.0	1987	15	28.7	1987	16	1987	16	3	1987	5.1	1.6	.4	.1	@	7.0	1.5	.5	.1
Feb	5.1	3.5	#	0	14.8	1987	26	23.2	1987	12+	1987	28	2+	1989	4.4	1.5	.3	.1	.1	4.1	1.1	.5	.1
Mar	9.5	8.5	#	1	15.0	1998	18	23.2	1984	15	1998	19	2	1987	5.9	2.6	1.0	.4	.1	4.4	1.6	.7	.2
Apr	6.3	4.6	#	0	11.1	1997	24	17.6	1999	12	1997	25	1+	1999	4.0	1.7	.8	.3	@	2.0	1.0	.3	@
May	1.4	.0	#	1	14.9	1978	5	19.4	1978	11	1978	6	1	1978	.8	.3	.1	@	@	.3	.1	.1	@
Jun	.0	.0	#	0	1.1	1975	10	1.1	1975	#	1975	10	#	1991	.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	.5	.0	#	0	8.9	1971	17	9.7	1971	2	1985	29	#	2000	.4	.1	@	@	.0	.1	.0	.0	.0
Oct	3.6	1.3	#	0	13.9	1997	25	25.9	1984	20	1997	26	1+	1997	1.8	.8	.4	.2	.1	1.0	.4	.2	.1
Nov	5.6	3.5	#	0	8.6	1991	17	26.3	1991	12	1972	1	3	1979	4.0	1.6	.6	.3	.0	4.2	1.9	1.0	.1
Dec	6.1	4.5	1	1	9.1	1979	27	17.6	1979	10	1979	28	3	1972	5.0	2.0	.5	.2	.0	8.2	3.3	1.0	@
Ann	43.2	29.9	N/A	N/A	22.0	Jan 1987	15	28.7	Jan 1987	20	Oct 1997	26	3+	Jan 1987	31.4	12.2	4.1	1.6	.3	31.3	10.9	4.3	.6

+ 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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NWS Call Sign: COS

Elevation: 6,140 Feet

Lat: 38° 49N

Lon: 104° 43W

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	5/30	5/25	5/21	5/18	5/15	5/12	5/09	5/05	4/30
32	5/15	5/11	5/08	5/06	5/04	5/02	4/30	4/27	4/24
28	5/05	5/01	4/27	4/24	4/22	4/19	4/16	4/12	4/08
24	4/29	4/24	4/21	4/18	4/16	4/13	4/10	4/07	4/02
20	4/19	4/14	4/11	4/08	4/05	4/02	3/30	3/26	3/21
16	4/12	4/05	4/01	3/28	3/24	3/20	3/16	3/11	3/05
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	9/13	9/17	9/21	9/24	9/26	9/29	10/02	10/05	10/10
32	9/20	9/24	9/27	9/30	10/03	10/05	10/08	10/11	10/15
28	9/24	9/29	10/03	10/07	10/10	10/14	10/17	10/21	10/27
24	10/08	10/13	10/16	10/20	10/23	10/26	10/29	11/01	11/07
20	10/17	10/22	10/26	10/30	11/02	11/05	11/08	11/12	11/17
16	10/26	11/01	11/05	11/08	11/11	11/14	11/17	11/21	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	155	148	142	138	134	129	125	120	112
32	170	163	158	154	151	147	143	138	131
28	192	185	180	175	171	167	162	157	150
24	209	202	197	193	189	185	181	177	170
20	231	224	218	214	210	206	202	197	190
16	257	248	242	237	231	226	221	214	205

* 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

Complete documentation available from:

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Elevation: 6,140 Feet Lat: 38°49N Lon: 104°43W

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	1130	917	827	576	312	76	19	20	172	483	848	1100	6480
60	989	791	690	445	203	31	0	4	87	347	714	962	5263
57	896	707	597	361	141	13	0	1	48	259	624	869	4516
55	834	651	535	308	106	7	0	0	29	207	565	807	4049
50	679	511	384	190	45	1	0	0	6	99	426	653	2994
32	205	115	30	6	0	0	0	0	0	1	79	195	631

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	93	132	253	436	727	1000	1198	1136	863	559	220	105	6722
55	0	0	2	21	101	318	485	424	214	42	2	0	1609
57	0	0	1	12	70	264	423	363	168	26	1	0	1328
60	0	0	0	4	35	188	331	272	108	9	0	0	947
65	0	0	0	1	5	74	176	116	32	0	0	0	404
70	0	0	0	0	1	25	69	35	5	0	0	0	135

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	23	40	101	241	494	770	958	896	634	338	91	36	23	63	164	405	899	1669	2627	3523	4157	4495	4586	4622
45	2	11	43	136	343	620	803	741	487	212	44	9	2	13	56	192	535	1155	1958	2699	3186	3398	3442	3451
50	0	0	12	62	213	472	648	586	350	113	14	0	0	0	12	74	287	759	1407	1993	2343	2456	2470	2470
55	0	0	0	20	107	328	493	431	221	45	0	0	0	0	0	20	127	455	948	1379	1600	1645	1645	1645
60	0	0	0	1	39	196	338	278	115	11	0	0	0	0	0	1	40	236	574	852	967	978	978	978
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	32	52	97	177	298	480	618	576	395	234	86	40	32	84	181	358	656	1136	1754	2330	2725	2959	3045	3085

(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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/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 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/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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