

Climatography of the United States

No. 20

1971-2000

Station: MANASSA, CO

COOP ID: 055322

Climate Division: CO 5

NWS Call Sign:

Elevation: 7,690 Feet Lat: 37° 10N

Lon: 105° 56W

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	35.2	2.0	18.6	64	1950	21	28.8	1999	-34+	1971	6	5.4	1992	1438	0	.0	.0	2.5	11.6	30.9	13.5
Feb	41.9	9.1	25.5	69+	1963	9	35.2	1995	-29	1963	15	15.5	1979	1107	0	.0	.0	6.5	5.4	28.0	6.5
Mar	51.1	18.8	35.0	73	1997	20	41.3	1989	-22	1962	14	29.5	1984	932	0	.0	.0	17.1	.5	29.6	.7
Apr	59.6	24.8	42.2	82	1964	28	47.6	2000	-2	1973	8	36.1	1983	685	0	.0	.0	25.7	.0	24.9	.1
May	68.1	33.7	50.9	95	1969	30	58.0	1996	9	1968	7	46.8	1983	439	1	.0	.0	30.4	.0	13.2	.0
Jun	77.4	41.5	59.5	93	1998	29	63.2	1990	21	1954	7	55.4	1983	177	11	.0	.4	30.0	.0	1.8	.0
Jul	80.5	46.7	63.6	94	1971	13	66.1	1998	30	1968	1	61.3	1986	67	24	.0	.5	31.0	.0	@	.0
Aug	78.6	45.3	62.0	94	1969	9	64.9	2000	29+	1978	16	58.7	1974	110	15	.0	@	31.0	.0	.3	.0
Sep	73.3	37.8	55.6	88+	1969	6	59.5	1998	15	1985	30	52.8	1987	285	2	.0	.0	30.0	.0	6.5	.0
Oct	63.3	26.8	45.1	82+	1979	8	49.2	1972	-7	1967	30	40.7	1984	619	0	.0	.0	28.3	.1	23.5	.1
Nov	47.5	14.7	31.1	78	1950	27	36.2	1998	-26	1957	22	21.6	1972	1018	0	.0	.0	13.6	3.0	28.6	2.4
Dec	37.1	4.1	20.6	65+	1962	2	30.7	1980	-30	1952	25	8.7	1991	1376	0	.0	.0	3.5	9.1	30.8	11.2
Ann	59.5	25.4	42.5	95	May 1969	30	66.1	Jul 1998	-34+	Jan 1971	6	5.4	Jan 1992	8253	53	.0	.9	249.6	29.7	218.1	34.5

+ 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/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

069-A

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: MANASSA, CO

COOP ID: 055322

Climate Division: CO 5

NWS Call Sign:

Elevation: 7,690 Feet Lat: 37°10N

Lon: 105°56W

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	.26	.17	.57	1987	16	.89	1987	.00+	1981	2.6	1.0	@	.0	.00	.02	.06	.10	.15	.20	.25	.33	.42	.59	.75
Feb	.26	.25	.48	1988	3	.70	1987	.00+	2000	2.6	1.0	.0	.0	.00	.03	.07	.12	.16	.20	.26	.32	.40	.54	.68
Mar	.44	.35	1.31	1992	4	2.13	1992	.00+	1997	3.5	1.4	.1	@	.00	.04	.12	.19	.26	.34	.44	.55	.70	.95	1.19
Apr	.48	.42	1.12	1999	30	1.89	1999	.00+	1992	3.8	1.7	.1	@	.00	.00	.11	.20	.28	.37	.48	.61	.78	1.06	1.34
May	.79	.76	.85	1990	1	2.18	1978	.00+	1998	5.3	2.7	.3	.0	.00	.00	.26	.42	.56	.70	.84	1.02	1.26	1.60	1.93
Jun	.48	.35	.88	1953	17	1.40	1981	.00	1980	4.2	1.7	.1	.0	.02	.06	.13	.20	.27	.36	.46	.59	.77	1.07	1.36
Jul	1.15	.98	1.15	1957	17	3.93	1977	.07	1993	8.1	4.0	.4	@	.27	.38	.55	.70	.85	1.01	1.18	1.39	1.67	2.10	2.51
Aug	1.52	1.24	1.45	1954	5	3.62	1999	.42	1978	10.3	4.4	.7	.1	.47	.61	.83	1.01	1.19	1.37	1.58	1.82	2.13	2.61	3.06
Sep	1.03	.84	1.22	1973	10	2.68	1985	.10	1974	6.7	3.1	.4	@	.18	.27	.42	.56	.70	.86	1.04	1.25	1.54	2.00	2.44
Oct	.70	.51	1.10	1965	17	2.37	1998	.00+	1995	4.7	2.4	.3	.0	.00	.10	.23	.34	.46	.58	.71	.87	1.09	1.44	1.78
Nov	.56	.45	.74	1995	10	1.55	1978	.00+	1989	3.9	1.8	.1	.0	.00	.00	.14	.23	.33	.44	.56	.71	.91	1.24	1.57
Dec	.34	.21	.50	1991	11	1.04	1991	.00+	1998	2.3	1.2	@	.0	.00	.00	.00	.08	.15	.23	.32	.43	.59	.85	1.10
Ann	8.01	8.05	1.45	Aug 1954	5	3.93	Jul 1977	.00+	Feb 2000	58.0	26.4	2.5	.1	5.14	5.68	6.37	6.90	7.38	7.85	8.34	8.88	9.55	10.52	11.38

+ 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: 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: MANASSA, CO

COOP ID: 055322

Climate Division: CO 5

NWS Call Sign:

Elevation: 7,690 Feet

Lat: 37° 10N

Lon: 105° 56W

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	3.8	2.4	2	1	8.0	1997	6	12.0	1990	10	1988	22	8	1988	1.9	1.7	.4	.1	.0	7.2	3.8	1.3	.0
Feb	2.6	2.5	1	#	6.0	1982	11	7.0+	1984	9	1988	3	6	1988	2.0	1.8	.6	.1	.0	3.8	1.0	.0	.0
Mar	4.9	4.0	#	#	15.0	1992	4	23.0	1992	13	1992	5	2	1992	1.8	1.7	.6	.3	@	.9	.3	.3	.2
Apr	2.6	2.0	#	0	6.0	1982	21	12.0	1995	2+	2000	1	#+	2000	1.3	1.2	.4	.1	.0	.4	.0	.0	.0
May	1.0	.0	#	0	8.0	1978	2	12.0	1978	5	1971	18	#+	1999	.2	.2	.1	.1	.0	.1	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	1.8	.0	#	0	9.0	1996	27	10.0	1996	9	1991	31	1	1996	.7	.7	.3	.2	.0	.5	.3	.2	.0
Nov	4.4	4.0	#	#	9.0	1985	14	15.5	1997	6	1991	2	1	1997	2.0	1.8	.7	.2	.0	2.5	1.4	.4	.0
Dec	4.6	3.4	1	#	9.0	1984	15	16.0	1991	12	1987	25	7	1991	1.9	1.8	.7	.4	.0	5.9	3.2	.6	.0
Ann	25.7	18.3	N/A	N/A	15.0	Mar 1992	4	23.0	Mar 1992	13	Mar 1992	5	8	Jan 1988	11.8	10.9	3.8	1.5	@	21.3	10.0	2.8	.2

+ 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

Complete documentation available from:

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Climate Division: CO 5

NWS Call Sign:

Elevation: 7,690 Feet

Lat: 37° 10N

Lon: 105° 56W

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	7/11	7/05	7/01	6/27	6/24	6/21	6/18	6/13	6/08
32	6/25	6/20	6/16	6/12	6/09	6/06	6/03	5/30	5/24
28	6/16	6/09	6/04	5/31	5/27	5/23	5/19	5/14	5/07
24	5/26	5/21	5/17	5/14	5/11	5/08	5/05	5/02	4/27
20	5/17	5/12	5/09	5/06	5/03	4/30	4/27	4/24	4/19
16	5/07	5/01	4/26	4/23	4/19	4/15	4/12	4/07	4/01
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	8/08	8/15	8/20	8/24	8/27	8/31	9/04	9/09	9/15
32	8/24	8/30	9/04	9/08	9/11	9/15	9/19	9/23	9/30
28	9/09	9/13	9/16	9/19	9/21	9/24	9/26	9/29	10/04
24	9/18	9/22	9/25	9/28	9/30	10/02	10/05	10/08	10/12
20	9/27	10/01	10/04	10/07	10/09	10/12	10/14	10/17	10/21
16	10/02	10/07	10/10	10/13	10/16	10/19	10/22	10/25	10/30
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	91	82	75	69	63	58	52	45	36
32	121	112	105	99	94	88	82	76	66
28	140	132	126	121	117	112	107	102	94
24	163	155	150	145	141	137	132	127	119
20	178	171	166	162	159	155	151	146	139
16	200	193	188	183	179	175	171	166	158

* 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	1438	1107	932	685	439	177	67	110	285	619	1018	1376	8253
60	1283	967	777	535	292	74	8	27	151	464	868	1221	6667
57	1190	883	684	446	214	36	1	7	89	372	778	1128	5828
55	1128	827	622	389	168	20	0	2	57	312	718	1066	5309
50	976	687	467	253	80	3	0	0	12	179	568	911	4136
32	481	258	67	9	0	0	0	0	0	3	133	397	1348

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	66	75	158	314	585	824	980	928	706	407	105	44	5192
55	0	0	0	4	40	155	267	218	73	3	0	0	760
57	0	0	0	1	24	111	206	160	45	1	0	0	548
60	0	0	0	0	10	58	120	87	18	0	0	0	293
65	0	0	0	0	1	11	24	15	2	0	0	0	53
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	1	27	133	356	595	743	691	476	197	18	0	0	1	28	161	517	1112	1855	2546	3022	3219	3237	3237
45	0	0	3	47	213	445	588	536	326	90	0	0	0	0	3	50	263	708	1296	1832	2158	2248	2248	2248
50	0	0	0	12	100	297	433	381	189	24	0	0	0	0	0	12	112	409	842	1223	1412	1436	1436	1436
55	0	0	0	0	32	157	278	227	79	2	0	0	0	0	0	0	32	189	467	694	773	775	775	775
60	0	0	0	0	1	58	129	84	15	0	0	0	0	0	0	0	1	59	188	272	287	287	287	287
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	2	16	69	162	294	424	494	460	359	226	57	1	2	18	87	249	543	967	1461	1921	2280	2506	2563	2564

(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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. 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