

# Climatography of the United States No. 20

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
www.ncdc.noaa.gov

Station: FORT COLLINS, CO

1971-2000

COOP ID: 053005

Climate Division: CO 4

NWS Call Sign: FCL

Elevation: 5,004 Feet Lat: 40° 35N

Lon: 105° 05W

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	42.0	15.3	28.7	73	1996	13	36.2	1986	-38	1930	17	16.6	1979	1127	0	.0	.0	9.6	6.6	29.9	3.2
Feb	46.5	19.8	33.2	76	1986	25	39.7	1999	-41	1951	1	21.6	1989	891	0	.0	.0	13.1	4.1	26.0	1.4
Mar	53.7	26.6	40.2	81	1921	18	46.5	1986	-31	1943	6	35.0	1980	771	0	.0	.0	20.3	1.6	24.2	.1
Apr	61.3	34.0	47.7	89	1992	30	53.8	1981	-10	1945	4	40.6	1983	521	0	.0	.0	25.5	.3	11.5	@
May	70.2	43.3	56.8	97	2000	29	61.5	2000	12	1917	6	50.9	1995	271	14	.0	.2	30.2	.0	1.3	.0
Jun	80.5	51.6	66.1	102	1954	23	70.9	1977	29	1947	13	61.4	1982	67	99	@	4.2	29.9	.0	.0	.0
Jul	85.5	56.9	71.2	102+	1954	12	74.5	2000	36	1903	4	67.9	1992	3	195	.1	9.2	31.0	.0	.0	.0
Aug	83.4	55.2	69.3	100	1902	1	73.3	1983	32	1910	25	65.8	1992	20	153	.0	4.6	31.0	.0	.0	.0
Sep	75.4	46.2	60.8	97	1990	13	66.5	1998	18	1985	30	56.0	1971	163	36	.0	1.1	29.5	@	1.2	.0
Oct	64.2	35.3	49.8	88+	1991	16	53.2	1988	-8	1905	31	44.7	1984	473	0	.0	.0	27.9	.2	9.6	.0
Nov	50.0	24.1	37.1	79	1934	6	44.2	1999	-21	1916	13	28.8	1985	838	0	.0	.0	15.9	2.2	25.1	.4
Dec	42.9	16.7	29.8	76	1939	11	38.5	1980	-35	1919	9	18.3	1983	1093	0	.0	.0	9.9	5.5	29.9	2.5
Ann	63.0	35.4	49.2	102+	Jul 1954	12	74.5	Jul 2000	-41	Feb 1951	1	16.6	Jan 1979	6238	497	.1	19.3	273.8	20.5	158.7	7.6

+ 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](http://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: 1900-2001

(3) Derived from 1971-2000 serially complete daily data

036-A

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**Station: FORT COLLINS, CO**

**COOP ID: 053005**

**Climate Division: CO 4**

**NWS Call Sign: FCL**

**Elevation: 5,004 Feet Lat: 40°35N**

**Lon: 105°05W**

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	.42	.36	.86	1962	8	1.14	1980	.01	1983	4.3	1.7	@	.0	.05	.08	.14	.20	.26	.33	.41	.51	.64	.86	1.07
Feb	.38	.34	1.02	1918	27	1.28	1987	.00	1992	4.2	1.1	.1	.0	.00	.02	.06	.11	.17	.24	.33	.45	.62	.91	1.20
Mar	1.42	1.05	3.48	1990	6	5.63	1990	.13	1977	6.4	3.4	.7	.2	.12	.21	.40	.59	.81	1.06	1.35	1.72	2.24	3.10	3.94
Apr	2.09	1.65	2.41	1999	30	8.29	1999	.38	1982	8.7	4.3	1.4	.4	.47	.66	.97	1.25	1.52	1.81	2.14	2.54	3.05	3.87	4.65
May	2.60	2.12	3.21	1961	13	7.47	1995	.01	1974	11.1	5.4	1.5	.6	.30	.50	.87	1.23	1.62	2.05	2.55	3.18	4.03	5.44	6.80
Jun	1.99	1.80	3.54	1949	4	5.78	1992	.08	1980	9.0	3.8	1.4	.3	.23	.39	.67	.95	1.24	1.57	1.96	2.43	3.08	4.15	5.19
Jul	1.87	1.35	4.63	1997	29	6.71	1997	.52	1971	9.3	3.6	.8	.3	.36	.53	.80	1.06	1.31	1.59	1.90	2.27	2.77	3.57	4.32
Aug	1.40	1.18	3.06	1951	3	5.11	1997	.12	1974	9.4	3.2	.7	.2	.15	.26	.45	.65	.86	1.09	1.37	1.71	2.17	2.93	3.68
Sep	1.38	1.15	4.34	1902	21	3.55	1971	.02	1992	7.2	3.3	.8	.2	.12	.22	.40	.59	.80	1.04	1.33	1.69	2.18	3.00	3.81
Oct	.98	.74	2.19	1942	16	2.90	1998	.13	1988	5.3	2.5	.6	.1	.13	.21	.35	.48	.63	.79	.97	1.20	1.51	2.01	2.50
Nov	.82	.59	1.26	1979	20	2.29	1973	.02+	1984	5.2	2.5	.4	@	.04	.09	.18	.29	.42	.57	.75	.99	1.32	1.88	2.44
Dec	.49	.38	1.71	1913	2	1.52	1979	.01	1991	4.6	1.4	.1	@	.03	.05	.11	.18	.25	.34	.45	.59	.79	1.12	1.45
Ann	15.84	14.91	4.63	Jul 1997	29	8.29	Apr 1999	.00	Feb 1992	84.7	36.2	8.5	2.3	10.21	11.26	12.62	13.67	14.61	15.53	16.49	17.56	18.87	20.78	22.46

+ 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: 1900-2001

(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:

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**Station: FORT COLLINS, CO**

**COOP ID: 053005**

**Climate Division: CO 4**

**NWS Call Sign: FCL**

**Elevation: 5,004 Feet**

**Lat: 40°35N**

**Lon: 105°05W**

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	8.5	8.4	2	1	14.5	1971	2	19.3	1980	11	1980	28	6	1980	4.4	2.2	.9	.2	.1	13.1	7.8	3.2	.2
Feb	6.3	5.1	1	1	8.2	1988	10	16.1	1990	12	1980	8	6	1989	4.1	1.7	.6	.4	.0	5.2	2.5	1.0	.0
Mar	12.1	9.8	1	#	16.7	1988	31	39.6	1988	13	1990	7	3	1990	5.3	3.1	1.2	.5	.1	4.9	2.2	.9	.1
Apr	6.9	5.6	#	#	11.5	1983	4	24.1	1983	11	1975	1	1	1984	3.3	1.9	.8	.4	@	1.7	.8	.5	.1
May	1.5	.0	#	0	15.9	1978	6	27.8	1978	4	1979	10	#+	1983	.5	.3	.1	.1	.1	.1	.1	.0	.0
Jun	#	.0	#	0	#	1998	5	#	1998	#	1992	24	#	1992	.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	1.4	.0	#	0	13.0	1971	17	15.0	1971	10	1971	17	1	1971	.5	.3	.2	.1	@	.3	.2	.1	@
Oct	3.7	2.6	#	#	12.1	1997	25	17.5	1997	14	1997	25	1	1997	1.4	.9	.4	.2	@	.9	.5	.2	.1
Nov	9.9	6.9	1	#	21.1	1979	20	29.1	1979	18	1979	20	4	1985	4.5	2.7	1.2	.6	.1	5.8	3.6	1.9	.1
Dec	8.3	7.0	1	1	14.0	1985	9	20.7	1979	16	1985	11	7	1985	4.6	2.2	.8	.3	.1	10.4	6.3	2.5	.6
Ann	58.6	45.4	N/A	N/A	21.1	Nov 1979	20	39.6	Mar 1988	18	Nov 1979	20	7	Dec 1985	28.6	15.3	6.2	2.8	.5	42.4	24.0	10.3	1.2

+ 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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**Elevation: 5,004 Feet**

**Lat: 40° 35N**

**Lon: 105° 05W**

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	5/27	5/22	5/19	5/16	5/13	5/10	5/07	5/04	4/29
32	5/15	5/11	5/08	5/06	5/04	5/02	4/30	4/27	4/23
28	5/02	4/27	4/24	4/21	4/18	4/16	4/13	4/10	4/05
24	4/20	4/15	4/12	4/09	4/07	4/04	4/01	3/29	3/25
20	4/16	4/10	4/06	4/02	3/30	3/26	3/23	3/18	3/12
16	4/11	4/04	3/30	3/25	3/21	3/17	3/13	3/08	3/01
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	9/15	9/18	9/20	9/22	9/24	9/26	9/28	10/01	10/04
32	9/18	9/23	9/26	9/29	10/02	10/05	10/08	10/12	10/17
28	9/24	9/30	10/04	10/07	10/10	10/13	10/17	10/21	10/26
24	10/04	10/10	10/14	10/18	10/21	10/25	10/28	11/01	11/07
20	10/19	10/24	10/28	10/31	11/03	11/06	11/10	11/14	11/19
16	10/29	11/03	11/06	11/09	11/11	11/14	11/17	11/20	11/24
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	150	144	140	137	134	131	127	123	118
32	171	164	159	155	151	147	142	137	130
28	195	188	183	178	174	170	166	161	154
24	220	212	206	201	197	192	187	181	173
20	244	235	229	223	218	213	207	200	191
16	261	252	245	239	234	229	223	217	208

\* 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: 5,004 Feet    Lat: 40°35N**

**Lon: 105°05W**

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	1127	891	771	521	271	67	3	20	163	473	838	1093	6238
60	972	751	616	378	153	21	0	3	73	319	688	938	4912
57	879	667	523	297	99	8	0	1	38	232	598	845	4187
55	817	611	462	247	71	4	0	0	22	179	538	783	3734
50	664	477	316	143	24	0	0	0	4	75	399	629	2731
32	206	105	17	2	0	0	0	0	0	0	61	182	573

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	102	138	269	471	766	1022	1215	1156	864	551	213	112	6879
55	0	0	1	26	124	336	502	443	196	16	0	0	1644
57	0	0	0	16	90	280	440	381	152	7	0	0	1366
60	0	0	0	7	51	202	347	291	97	2	0	0	997
65	0	0	0	0	14	99	195	153	36	0	0	0	497
70	0	0	0	0	2	34	72	54	9	0	0	0	171

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	18	40	117	271	535	795	984	921	642	332	81	19	18	58	175	446	981	1776	2760	3681	4323	4655	4736	4755
45	1	11	49	154	384	645	829	766	496	201	31	2	1	12	61	215	599	1244	2073	2839	3335	3536	3567	3569
50	0	0	15	73	241	495	674	611	353	99	7	0	0	0	15	88	329	824	1498	2109	2462	2561	2568	2568
55	0	0	0	25	126	348	519	456	220	34	0	0	0	0	0	25	151	499	1018	1474	1694	1728	1728	1728
60	0	0	0	0	48	213	366	302	110	5	0	0	0	0	0	0	48	261	627	929	1039	1044	1044	1044
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	31	54	113	199	326	502	637	596	405	236	82	36	31	85	198	397	723	1225	1862	2458	2863	3099	3181	3217

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)