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: MONTROSE NO 2, CO **COOP ID: 055722**

Climate Division: CO 2 **NWS Call Sign:** **Elevation: 5,785 Feet** **Lat: 38˚29N** **Lon: 107˚53W**

Temperature (˚F)

Month	Mean (1)			Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
	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	36.5	14.7	25.6	83	1903	25	33.4	1981	-25	1913	7	17.3	1979	1222	0	.0	.0	2.8	8.8	30.6	2.7
Feb	43.5	20.6	32.1	90	1907	27	40.4	1995	-27	1905	13	21.9	1974	922	0	.0	.0	8.5	2.5	26.7	.7
Mar	53.1	28.8	41.0	79	1989	11	46.8	1999	-5	1906	19	36.4	1977	745	0	.0	.0	21.0	.2	23.3	.0
Apr	61.3	35.0	48.2	89	1943	30	53.7	1992	2	1945	4	43.9	1983	506	0	.0	.0	26.1	.0	12.7	.0
May	71.0	43.0	57.0	93+	2000	30	61.1	1984	17	1909	1	52.5	1995	258	9	.0	.1	30.5	.0	2.0	.0
Jun	82.0	51.3	66.7	102	1936	19	71.4	1977	27	1919	1	62.3	1995	57	107	.0	5.5	30.0	.0	@	.0
Jul	86.9	56.7	71.8	103+	1931	25	74.2	1988	35	1968	1	68.1	1995	2	214	.0	13.2	31.0	.0	.0	.0
Aug	84.7	55.4	70.1	106	1947	1	72.1	1995	37+	1968	23	67.5	1989	7	162	.0	7.0	31.0	.0	.0	.0
Sep	76.8	47.1	62.0	95+	1948	3	66.4	1998	21	1908	27	58.0	1971	128	35	.0	1.1	30.0	.0	1.2	.0
Oct	64.6	36.1	50.4	87	1947	5	54.9	1988	9	1917	29	45.3	1984	454	1	.0	.0	28.7	.1	9.3	.0
Nov	48.2	25.2	36.7	77	1945	4	41.6	1999	-8	1952	27	31.1	2000	849	0	.0	.0	14.8	1.9	25.5	.1
Dec	37.9	16.6	27.3	68	1939	11	36.3	1980	-21	1924	25	18.6	1978	1170	0	.0	.0	3.2	6.8	30.4	1.2
Ann	62.2	35.9	49.1	106	Aug 1947	1	74.2	Jul 1988	-27	Feb 1905	13	17.3	Jan 1979	6320	528	.0	26.9	257.6	20.3	161.7	4.7

\+ 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: 1900-2001

(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	.54	.50	1.36	1960	14	1.96	1974	.11	1986
Feb	.37	.32	1.43	1905	11	.98	1987	.00	1972
Mar	.74	.65	1.00	1903	6	2.25	1995	.02	1999
Apr	.78	.64	1.32	1990	19	2.42	1990	.11	1982
May	1.00	.89	1.09	1906	24	2.48	1995	.00	1998
Jun	.59	.36	1.06	1967	21	1.79	1984	.00+	1980
Jul	.99	.79	1.49	1983	21	2.98	1983	.04	1994
Aug	1.10	.97	1.30	1993	22	3.14	1999	.14	1978
Sep	1.06	.90	1.50	1970	6	3.36	1997	.00	1979
Oct	1.07	.93	1.70	1963	20	2.60	1972	.00	1999
Nov	.88	.87	1.53	1986	1	2.75	1986	.00	1989
Dec	.59	.47	1.18	1903	23	1.98	1978	.00	1976
Ann	9.71	9.11	1.70	Oct 1963	20	3.36	Sep 1997	.00+	Oct 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.0	2.0	@	.0
Feb	4.4	1.6	.0	.0
Mar	6.8	2.5	.2	.0
Apr	6.5	2.6	.1	@
May	6.7	3.2	.3	@
Jun	4.2	1.6	.2	.0
Jul	7.4	3.1	.4	.1
Aug	7.7	3.5	.4	.1
Sep	6.6	3.4	.5	.1
Oct	5.8	3.3	.5	.0
Nov	5.9	2.9	.3	@
Dec	5.2	2.3	.2	.0
Ann	73.2	32.0	3.1	.3

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	.13	.18	.26	.33	.40	.47	.55	.65	.78	.99	1.18
Feb	.04	.08	.14	.20	.25	.31	.38	.46	.56	.73	.90
Mar	.05	.10	.19	.29	.41	.54	.70	.90	1.18	1.65	2.12
Apr	.13	.19	.31	.42	.53	.65	.79	.96	1.18	1.55	1.90
May	.04	.13	.28	.42	.58	.76	.97	1.23	1.58	2.17	2.75
Jun	.00	.03	.12	.20	.30	.42	.56	.73	.97	1.38	1.79
Jul	.12	.20	.34	.48	.62	.79	.98	1.21	1.53	2.06	2.56
Aug	.20	.30	.46	.61	.76	.93	1.11	1.34	1.64	2.12	2.58
Sep	.07	.18	.35	.50	.67	.85	1.05	1.31	1.66	2.22	2.77
Oct	.07	.18	.35	.51	.67	.85	1.06	1.32	1.66	2.22	2.76
Nov	.08	.19	.33	.46	.59	.73	.89	1.09	1.35	1.76	2.16
Dec	.07	.14	.24	.32	.41	.50	.60	.72	.89	1.14	1.39
Ann	6.18	6.84	7.69	8.35	8.94	9.52	10.12	10.79	11.61	12.82	13.88

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	5.4	5.0	1	#
Feb	2.0	.0	#	#
Mar	4.6	1.3	#	0
Apr	.1	.0	#	0
May	.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	.0	0	0
Nov	2.4	2.0	#	0
Dec	6.5	5.0	1	#
Ann	21.3	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	6.0	1973	5	9.0	1979	9	1974	22	4	1974
Feb	5.5	1990	15	6.0	1987	4	1971	21	2	1980
Mar	19.0	1985	28	25.0	1985	4	1998	18	#+	2000
Apr	1.0	1999	2	1.5	1999	4	1983	13	4	1983
May	.0	0	0	.0	0	5	1978	6	#	1978
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	.0	0	0	.0	0	0	0	0	0	0
Oct	4.5	1972	30	5.0	1972	1	1998	17	1	1998
Nov	5.0	1998	9	6.0	1998	5	1998	9	1	1998
Dec	11.0	1978	6	23.5	1978	6	1998	6	3	1975
Ann	19.0	Mar 1985	28	25.0	Mar 1985	9	Jan 1974	22	4+	Apr 1983

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.1	1.7	.5	.1	.0
Feb	1.0	.8	.4	.1	.0
Mar	1.3	1.1	.6	.1	.1
Apr	.1	.1	.0	.0	.0
May	.0	.0	.0	.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	.1	.1	.1	.0	.0
Nov	.9	.6	.2	.1	.0
Dec	2.5	1.9	.7	.2	.1
Ann	8.0	6.3	2.5	.6	.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	.2	.0	.0	.0
Apr	.1	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	@	.0	.0	.0
Nov	.8	.5	.1	.0
Dec	3.8	1.4	.1	.0
Ann	-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	6/10	6/04	5/30	5/26	5/22	5/18	5/14	5/10	5/03
32	5/22	5/18	5/15	5/12	5/10	5/08	5/05	5/02	4/28
28	5/07	5/02	4/28	4/25	4/23	4/20	4/17	4/14	4/09
24	4/22	4/17	4/13	4/10	4/07	4/04	4/01	3/28	3/23
20	4/14	4/08	4/03	3/30	3/27	3/23	3/19	3/15	3/09
16	4/06	3/28	3/21	3/16	3/10	3/05	2/27	2/21	2/12

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	9/14	9/19	9/22	9/24	9/27	9/29	10/02	10/05	10/09
32	9/21	9/26	9/29	10/03	10/06	10/09	10/12	10/16	10/21
28	10/02	10/08	10/12	10/16	10/19	10/22	10/26	10/30	11/05
24	10/18	10/23	10/26	10/28	10/31	11/03	11/05	11/08	11/13
20	10/25	10/30	11/02	11/05	11/08	11/11	11/14	11/17	11/22
16	11/06	11/11	11/14	11/17	11/20	11/22	11/25	11/28	12/03

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	147	140	135	131	127	123	119	114	107
32	167	160	156	152	148	144	140	135	129
28	202	194	188	183	179	174	169	163	155
24	226	219	214	210	206	202	198	193	186
20	244	238	233	229	226	222	218	213	207
16	286	275	267	260	253	247	240	232	221

***** 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	1222	922	745	506	258	57	2	7	128	454	849	1170	6320
60	1067	782	590	362	137	15	0	0	50	306	699	1015	5023
57	974	698	498	280	83	5	0	0	23	225	609	922	4317
55	912	642	438	230	56	2	0	0	12	177	549	860	3878
50	757	503	294	128	15	0	0	0	2	83	401	705	2888
32	271	115	16	1	0	0	0	0	0	0	42	203	648

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	73	116	293	485	774	1040	1235	1179	897	570	184	56	6902
55	0	0	2	24	117	352	522	466	220	34	0	0	1737
57	0	0	1	15	82	295	460	404	170	19	0	0	1446
60	0	0	0	6	43	215	367	311	107	7	0	0	1056
65	0	0	0	0	9	107	214	162	35	1	0	0	528
70	0	0	0	0	1	38	84	49	6	0	0	0	178

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	20	120	276	545	818	1010	955	673	350	68	4	0	20	140	416	961	1779	2789	3744	4417	4767	4835	4839
45	0	3	48	161	396	668	855	800	524	215	22	0	0	3	51	212	608	1276	2131	2931	3455	3670	3692	3692
50	0	0	14	79	253	519	700	645	380	109	1	0	0	0	14	93	346	865	1565	2210	2590	2699	2700	2700
55	0	0	1	30	141	375	545	490	241	37	0	0	0	0	1	31	172	547	1092	1582	1823	1860	1860	1860
60	0	0	0	3	59	237	390	336	121	4	0	0	0	0	0	3	62	299	689	1025	1146	1150	1150	1150
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	1	25	103	203	357	525	652	616	432	255	65	5	1	26	129	332	689	1214	1866	2482	2914	3169	3234	3239

(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