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: CIMARRON 4 SW, NM **COOP ID: 291813**

Climate Division: NM 2 **NWS Call Sign:** **Elevation: 6,540 Feet** **Lat: 36˚28N** **Lon: 104˚57W**

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	46.5	16.2	31.4	81	1923	18	37.7	1986	-32	1963	12	25.2	1979	1044	0	.0	.0	13.0	3.0	29.7	2.2
Feb	50.6	19.3	35.0	76	1932	28	41.2	1976	-35	1905	12	28.9	1982	843	0	.0	.0	16.3	2.0	26.3	1.2
Mar	56.3	24.6	40.5	81+	1907	19	45.9	1989	-17	1948	11	36.2	1977	761	0	.0	.0	23.6	.3	26.6	.1
Apr	63.3	30.7	47.0	84+	1930	7	53.3	1981	-2	1945	4	38.1	1973	539	0	.0	.0	26.9	.2	17.9	.1
May	71.7	39.3	55.5	90+	1938	28	62.2	1996	15	1926	8	51.9+	1995	303	9	.0	.1	30.6	.0	4.4	.0
Jun	81.0	47.5	64.3	98+	1998	28	68.9	1990	25	1919	2	60.7	1995	79	57	.0	2.9	30.0	.0	.1	.0
Jul	83.6	51.7	67.7	101	1939	17	72.9	1980	40+	1912	5	65.1	1975	19	100	.0	4.1	31.0	.0	.0	.0
Aug	80.7	50.7	65.7	100	1938	1	68.7	1980	36	1910	26	61.7	1981	44	66	.0	.9	31.0	.0	.0	.0
Sep	76.6	44.0	60.3	98	1948	5	63.7+	2000	16	1970	27	56.9	1974	159	17	.0	.1	29.9	.0	1.4	.0
Oct	68.1	33.4	50.8	88	1979	11	55.7	1979	-5	1993	30	44.0	1984	443	0	.0	.0	29.7	.1	13.6	@
Nov	54.8	23.0	38.9	81	1924	3	44.8	1999	-18	1976	28	30.7	1972	784	0	.0	.0	20.8	.8	26.5	.3
Dec	47.8	17.1	32.5	75	1980	17	41.2	1980	-17+	1983	29	25.9	1983	1010	0	.0	.0	14.0	2.5	30.0	1.9
Ann	65.1	33.1	49.1	101	Jul 1939	17	72.9	Jul 1980	-35	Feb 1905	12	25.2	Jan 1979	6028	249	.0	8.1	296.8	8.9	176.5	5.8

\+ 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: 1904-2001

(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	.48	.31	1.14	1935	7	1.63	1983	.00	1998
Feb	.54	.50	2.66	1934	10	2.86	1987	.00+	2000
Mar	.96	.70	3.99	1919	21	3.40	1973	.04	1989
Apr	1.26	.80	3.89	1999	30	5.80	1999	.00+	1996
May	2.13	2.14	3.34	1955	19	5.50	1995	.00	1998
Jun	2.18	2.09	3.44	1958	6	5.20	1995	.00	1998
Jul	2.68	2.75	2.05	1965	28	4.76	1971	.43	1993
Aug	3.47	3.17	2.35	1993	4	8.29	1993	1.12	1973
Sep	2.01	1.72	3.67	1904	29	4.50	1972	.38	2000
Oct	1.05	.74	2.52	1930	11	3.47	2000	.00+	1995
Nov	.75	.67	2.20	1978	3	2.71	1978	.00	1999
Dec	.43	.39	1.22	1913	4	1.34	1974	.00+	1981
Ann	17.94	18.20	3.99	Mar 1919	21	8.29	Aug 1993	.00+	Feb 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.8	1.4	.3	.0
Feb	3.0	1.7	.2	.0
Mar	4.3	2.7	.6	.1
Apr	4.9	3.3	.6	.2
May	7.3	4.3	1.2	.4
Jun	7.6	4.8	1.3	.5
Jul	11.3	7.0	1.6	.3
Aug	12.0	7.4	2.2	.6
Sep	7.2	4.6	1.2	.4
Oct	3.9	2.4	.6	.1
Nov	3.2	1.6	.4	.1
Dec	2.9	1.4	.1	.0
Ann	70.4	42.6	10.3	2.7

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	.01	.03	.09	.16	.23	.32	.43	.58	.78	1.14	1.49
Feb	.00	.00	.05	.14	.23	.35	.48	.66	.91	1.33	1.75
Mar	.09	.16	.29	.43	.57	.73	.93	1.17	1.49	2.04	2.57
Apr	.00	.09	.29	.48	.69	.93	1.21	1.56	2.04	2.85	3.65
May	.23	.49	.85	1.16	1.47	1.80	2.18	2.63	3.23	4.20	5.12
Jun	.38	.67	1.04	1.34	1.63	1.93	2.27	2.67	3.18	3.99	4.75
Jul	.92	1.17	1.54	1.85	2.15	2.46	2.79	3.19	3.69	4.47	5.18
Aug	1.16	1.49	1.97	2.38	2.77	3.18	3.62	4.13	4.80	5.82	6.77
Sep	.46	.65	.94	1.20	1.47	1.75	2.06	2.43	2.92	3.70	4.43
Oct	.00	.00	.19	.36	.54	.75	1.00	1.31	1.73	2.45	3.16
Nov	.01	.05	.14	.25	.37	.51	.68	.91	1.22	1.77	2.31
Dec	.00	.00	.06	.14	.22	.30	.41	.53	.71	1.00	1.28
Ann	12.58	13.61	14.93	15.93	16.83	17.69	18.59	19.57	20.77	22.52	24.03

\+ 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: 1904-2001
(3) Derived from 1971-2000 serially complete daily data

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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	7.1	5.1	1	#
Feb	8.3	6.0	1	#
Mar	5.9	4.8	#	#
Apr	5.6	1.1	#	0
May	1.0	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.2	.0	0	0
Oct	2.1	.0	#	0
Nov	5.4	3.4	#	#
Dec	5.6	6.4	1	#
Ann	41.2	26.8	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	11.5	1990	19	23.0	1990	21	1990	19	2	1990
Feb	15.1	1990	20	31.6	1987	18	1990	21	4+	1994
Mar	10.0	1973	29	19.5	2000	16	1973	30	2	1973
Apr	16.5	1997	25	28.5	1997	21	1973	3	6	1973
May	14.0	1978	3	14.0	1978	4	1990	3	#	1990
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	6.0	1971	17	6.0	1971	0	0	0	0	0
Oct	8.5	1996	27	13.5	1996	7+	1999	16	#+	1999
Nov	14.0	1988	19	20.3	1991	10	1996	30	1	1988
Dec	9.5	1987	13	13.4	1987	10	1987	13	3	1997
Ann	16.5	Apr 1997	25	31.6	Feb 1987	21+	Jan 1990	19	6	Apr 1973

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.2	1.8	.8	.3	.1
Feb	2.7	2.0	1.0	.4	.1
Mar	2.3	2.0	.8	.3	@
Apr	1.5	1.3	.7	.4	.1
May	.2	.2	.1	@	@
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	@	@	@	@	.0
Oct	.6	.5	.3	.2	.0
Nov	1.4	1.2	.8	.6	.1
Dec	2.3	1.9	.8	.2	.0
Ann	13.2	10.9	5.3	2.4	.4

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	3.5	1.5	.5	.0
Feb	3.4	2.4	1.6	.7
Mar	1.9	1.0	.6	.2
Apr	1.0	.7	.4	.3
May	.1	@	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.4	.2	.2	.0
Nov	1.8	1.0	.5	@
Dec	4.0	2.2	1.0	.1
Ann	16.1	9.0	4.8	1.3

+ 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	6/05	6/02	5/30	5/27	5/25	5/22	5/19	5/14
32	5/28	5/23	5/19	5/16	5/14	5/11	5/08	5/04	4/29
28	5/15	5/11	5/07	5/05	5/02	4/29	4/27	4/23	4/19
24	5/06	5/01	4/26	4/23	4/20	4/16	4/13	4/08	4/03
20	4/28	4/22	4/18	4/15	4/12	4/09	4/05	4/01	3/27
16	4/17	4/10	4/05	4/01	3/28	3/25	3/21	3/16	3/09

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	9/16	9/19	9/21	9/23	9/25	9/27	9/29	10/02
32	9/19	9/23	9/25	9/27	9/30	10/02	10/04	10/06	10/10
28	9/26	10/01	10/04	10/06	10/09	10/11	10/14	10/17	10/21
24	10/03	10/09	10/13	10/16	10/19	10/22	10/26	10/30	11/04
20	10/13	10/18	10/22	10/25	10/28	10/31	11/03	11/07	11/12
16	10/26	10/30	11/02	11/05	11/07	11/10	11/12	11/15	11/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	136	129	125	121	118	114	110	106	99
32	158	151	146	142	138	134	130	125	118
28	177	171	166	163	159	156	152	147	141
24	203	196	191	186	182	178	173	168	161
20	218	211	206	202	199	195	191	186	180
16	246	238	232	227	223	218	214	208	200

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1044	843	761	539	303	79	19	44	159	443	784	1010	6028
60	889	703	606	396	176	22	1	6	63	292	634	855	4643
57	796	619	513	315	117	8	0	1	29	211	544	762	3915
55	734	563	452	264	85	3	0	0	15	163	486	700	3465
50	579	423	303	157	32	0	0	0	1	73	347	545	2460
32	116	57	11	3	0	0	0	0	0	0	37	92	316

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	96	138	273	454	728	967	1105	1045	848	581	243	106	6584
55	0	0	1	25	101	281	392	332	173	30	3	0	1338
57	0	0	0	16	70	225	330	271	127	16	0	0	1055
60	0	0	0	7	36	149	237	182	71	5	0	0	687
65	0	0	0	0	9	57	100	66	17	0	0	0	249
70	0	0	0	0	0	11	21	10	2	0	0	0	44

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	22	46	105	243	486	734	864	805	613	349	85	26	22	68	173	416	902	1636	2500	3305	3918	4267	4352	4378
45	3	12	39	132	333	584	709	650	463	211	33	0	3	15	54	186	519	1103	1812	2462	2925	3136	3169	3169
50	0	1	8	54	198	434	554	495	317	98	1	0	0	1	9	63	261	695	1249	1744	2061	2159	2160	2160
55	0	0	0	16	87	289	399	341	179	27	0	0	0	0	0	16	103	392	791	1132	1311	1338	1338	1338
60	0	0	0	0	27	150	246	190	69	3	0	0	0	0	0	0	27	177	423	613	682	685	685	685
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	42	71	127	220	345	475	547	508	406	292	113	49	42	113	240	460	805	1280	1827	2335	2741	3033	3146	3195

(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