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: GRAN QUIVIRA NATL MON, NM **COOP ID: 293649**

Climate Division: NM 6 **NWS Call Sign:** **Elevation: 6,600 Feet** **Lat: 34˚16N** **Lon: 106˚06W**

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	48.2	21.6	34.9	71	1990	11	40.4	2000	-26	1971	6	30.2	1992	934	0	.0	.0	15.0	1.4	29.1	.4
Feb	53.8	25.0	39.4	75+	1986	25	44.9	1995	-14	1951	1	35.6	1973	718	0	.0	.0	20.4	.8	24.3	.1
Mar	60.8	29.3	45.1	84	1989	11	51.2	1972	-1	1948	11	40.3	1973	620	0	.0	.0	28.0	@	21.1	.0
Apr	68.7	34.9	51.8	88+	1989	20	58.4	1989	5	1973	8	44.7	1973	401	6	.0	.0	28.9	@	11.4	.0
May	77.4	43.7	60.6	96	2000	30	68.2	1996	16	1951	3	56.0	1983	182	44	.0	1.4	31.0	.0	1.5	.0
Jun	86.7	52.2	69.5	104+	1990	24	75.4	1990	35+	1951	3	65.2	1983	31	165	1.0	13.1	30.0	.0	.0	.0
Jul	88.0	55.9	72.0	102+	1995	27	75.8	1980	45+	1958	7	69.0	1975	2	218	.5	15.3	31.0	.0	.0	.0
Aug	85.3	54.8	70.1	100	1980	2	73.3	1995	40	1992	28	67.2	1974	6	163	@	8.4	31.0	.0	.0	.0
Sep	80.1	48.8	64.5	98	1983	3	69.1	1997	28	2000	25	61.0	1974	78	63	.0	2.1	29.9	.0	.3	.0
Oct	70.6	38.9	54.8	89	1980	1	58.8	1988	2	1991	31	49.8	1984	324	5	.0	.0	30.2	.0	5.6	.0
Nov	57.2	28.4	42.8	78	1980	9	49.4	1999	-9	1976	28	36.6	2000	666	0	.0	.0	23.5	.2	20.6	.1
Dec	49.2	21.9	35.6	71+	1981	8	42.3	1980	-13	1978	9	29.9	1997	913	0	.0	.0	16.0	.8	28.6	.3
Ann	68.8	38.0	53.4	104+	Jun 1990	24	75.8	Jul 1980	-26	Jan 1971	6	29.9	Dec 1997	4875	664	1.5	40.3	314.9	3.2	142.5	.9

\+ 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: 1948-2001

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

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Means/Medians(1)

Month	Mean	Median
Jan	.77	.83
Feb	.75	.74
Mar	.76	.54
Apr	.70	.57
May	1.00	.82
Jun	1.16	.99
Jul	2.77	2.75
Aug	3.50	3.09
Sep	2.22	1.98
Oct	1.61	1.02
Nov	1.00	1.04
Dec	.99	.63
Ann	17.23	17.09

Extremes

Month	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	1.20	2001	28	2.03	1978	.00	1994
Feb	1.10	1986	10	1.70	1986	.01+	1999
Mar	.85	1953	1	2.06	1973	.00	1996
Apr	1.55	1988	1	2.73	1988	.00+	1996
May	1.50	1978	20	3.25	1992	.00+	2000
Jun	1.70	1987	27	3.09	2000	.00	1975
Jul	2.70	1967	7	6.83	1991	.69	1995
Aug	2.48	1972	26	9.02	1993	1.02	1998
Sep	2.31	1997	21	6.19	1997	.24	1973
Oct	1.71	1994	15	5.27	1972	.00	1975
Nov	2.00	1986	2	3.45	1986	.00+	1999
Dec	1.47	1987	13	3.24	1978	.00	1981
Ann	2.70	Jul 1967	7	9.02	Aug 1993	.00+	May 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.1	2.6	.3	.0
Feb	4.5	2.6	.3	@
Mar	4.7	2.4	.4	.0
Apr	4.0	2.0	.4	.1
May	4.9	2.4	.7	.1
Jun	5.3	3.4	.6	.1
Jul	11.5	6.8	1.6	.4
Aug	12.5	8.1	2.4	.8
Sep	8.0	4.9	1.4	.3
Oct	5.6	3.5	1.1	.3
Nov	4.7	2.6	.6	.1
Dec	4.9	2.7	.7	.1
Ann	75.7	44.0	10.5	2.3

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	.06	.15	.28	.39	.50	.63	.78	.95	1.19	1.57	1.94
Feb	.04	.08	.16	.26	.38	.52	.68	.90	1.21	1.73	2.25
Mar	.05	.13	.25	.36	.47	.60	.75	.94	1.19	1.60	1.99
Apr	.00	.00	.12	.26	.39	.53	.69	.89	1.17	1.60	2.04
May	.00	.00	.08	.27	.46	.68	.94	1.26	1.71	2.43	3.19
Jun	.04	.13	.30	.47	.65	.86	1.11	1.43	1.86	2.58	3.30
Jul	.81	1.08	1.47	1.81	2.15	2.49	2.88	3.33	3.91	4.83	5.68
Aug	1.13	1.47	1.96	2.37	2.78	3.19	3.65	4.18	4.87	5.94	6.92
Sep	.60	.81	1.14	1.42	1.69	1.98	2.30	2.67	3.17	3.94	4.66
Oct	.02	.09	.27	.48	.74	1.04	1.43	1.93	2.64	3.87	5.12
Nov	.00	.19	.40	.55	.71	.87	1.04	1.25	1.52	1.96	2.37
Dec	.01	.06	.17	.31	.46	.65	.88	1.19	1.62	2.37	3.12
Ann	11.44	12.54	13.95	15.03	16.01	16.95	17.93	19.02	20.35	22.30	23.99

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	5.0	1.8	1	#	11.0	1987	17	19.0	1973	9+	1999	29	9	1975	1.8	1.4	.7	.5	@	1.4	.9	.4	.0
Feb	5.4	4.5	1	0	9.0	1979	16	16.5	1977	19	1986	10	19	1986	1.8	1.6	.8	.4	.0	.5	.3	.2	.0
Mar	2.5	.0	#	0	7.0	1977	29	21.0	1973	4	1971	2	2	1977	.8	.7	.4	.1	.0	.2	.1	.0	.0
Apr	.5	.0	#	0	4.0	1973	8	9.0	1973	2	1997	24	#	1997	.4	.3	.1	.0	.0	.1	.0	.0	.0
May	.0	.0	#	0	.0	0	0	.0	0	2	1978	2	#	1978	.0	.0	.0	.0	.0	.0	.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	#	1971	18	#	1971	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.8	.0	#	0	9.0	1991	31	9.7	1991	7	1991	31	#+	1999	.2	.1	.1	@	.0	.1	.1	@	.0
Nov	2.5	.0	#	0	12.0	1976	27	16.0+	1976	12	1976	28	2	1976	.6	.5	.4	.2	@	.1	.0	.0	.0
Dec	4.6	1.0	1	0	18.0	1984	14	26.0	1987	19	1987	14	4	1971	1.5	1.3	.8	.4	.1	.6	.2	.1	.0
Ann	21.3	7.3	N/A	N/A	18.0	Dec 1984	14	26.0	Dec 1987	19+	Dec 1987	14	19	Feb 1986	7.1	5.9	3.3	1.6	.1	3.0	1.6	.7	.0

+ 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	5/25	5/21	5/18	5/15	5/13	5/11	5/08	5/05	5/01
32	5/17	5/13	5/10	5/08	5/05	5/03	4/30	4/27	4/23
28	5/11	5/05	5/01	4/27	4/23	4/20	4/16	4/11	4/05
24	4/26	4/20	4/16	4/13	4/09	4/06	4/03	3/30	3/24
20	4/16	4/09	4/04	3/31	3/27	3/23	3/19	3/14	3/08
16	4/07	3/29	3/22	3/16	3/11	3/05	2/28	2/21	2/11

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	9/21	9/25	9/28	9/30	10/03	10/05	10/07	10/10	10/14
32	9/25	9/30	10/03	10/06	10/08	10/11	10/14	10/17	10/21
28	10/04	10/09	10/13	10/16	10/19	10/22	10/25	10/29	11/03
24	10/19	10/23	10/27	10/29	11/01	11/03	11/06	11/09	11/14
20	10/31	11/04	11/08	11/10	11/13	11/16	11/19	11/22	11/26
16	11/06	11/12	11/16	11/19	11/22	11/26	11/29	12/03	12/08

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	162	155	150	146	142	138	134	129	122
32	176	169	164	159	155	151	147	142	134
28	200	192	187	183	178	174	170	164	157
24	226	219	213	209	205	200	196	190	183
20	254	246	240	235	230	226	220	215	206
16	288	277	269	262	256	249	243	235	224

***** 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	934	718	620	401	182	31	2	6	78	324	666	913	4875
60	779	578	466	268	92	7	0	0	23	192	516	758	3679
57	686	494	376	198	55	2	0	0	8	128	429	665	3041
55	624	438	318	159	36	1	0	0	4	93	373	603	2649
50	469	302	189	80	10	0	0	0	0	36	243	449	1778
32	54	14	2	0	0	0	0	0	0	0	11	48	129

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	144	220	405	595	885	1124	1239	1180	975	705	335	159	7966
55	0	0	9	63	209	435	526	467	288	85	7	0	2089
57	0	0	4	43	165	376	464	405	233	57	3	0	1750
60	0	0	1	22	109	291	371	312	157	28	1	0	1292
65	0	0	0	6	44	165	218	163	63	5	0	0	664
70	0	0	0	0	13	75	87	51	14	0	0	0	240

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	31	88	205	387	667	912	1015	949	750	471	153	40	31	119	324	711	1378	2290	3305	4254	5004	5475	5628	5668
45	4	29	100	251	512	762	860	794	600	327	68	3	4	33	133	384	896	1658	2518	3312	3912	4239	4307	4310
50	0	2	37	138	358	612	705	639	453	195	16	0	0	2	39	177	535	1147	1852	2491	2944	3139	3155	3155
55	0	0	2	53	215	462	550	484	310	90	0	0	0	0	2	55	270	732	1282	1766	2076	2166	2166	2166
60	0	0	0	12	97	312	395	329	173	23	0	0	0	0	0	12	109	421	816	1145	1318	1341	1341	1341
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	47	99	193	306	452	573	642	613	479	334	138	49	47	146	339	645	1097	1670	2312	2925	3404	3738	3876	3925

(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