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: SANTA ROSA, NM **COOP ID: 298107**

Climate Division: NM 7 **NWS Call Sign:** **Elevation: 4,600 Feet** **Lat: 34˚56N** **Lon: 104˚41W**

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	53.6	21.4	37.5	81	1974	16	43.4	1999	-25	1963	13	31.0	1979	852	0	.0	.0	22.7	1.5	25.3	.2
Feb	59.0	24.6	41.8	86	1972	28	47.8	2000	-18	1951	1	38.2	1989	651	0	.0	.0	23.6	.9	19.7	.1
Mar	66.1	29.7	47.9	89	1989	11	52.6	1974	2+	1948	5	43.9	1987	530	0	.0	.0	29.4	.1	14.5	.0
Apr	73.5	36.2	54.9	94+	1965	22	59.6	2000	13+	1973	8	47.6	1973	314	10	.0	.3	29.2	.0	4.7	.0
May	81.6	44.9	63.3	100	2000	24	70.3	1996	21	2000	19	59.1	1983	119	64	@	4.6	31.0	.0	.3	.0
Jun	89.9	53.8	71.9	109	1990	24	77.5	1990	38	1998	2	68.2	1979	10	216	2.5	18.0	30.0	.0	.0	.0
Jul	91.6	58.0	74.8	106	1995	27	78.6	1980	49	1999	11	71.4	1975	0	304	2.1	22.9	31.0	.0	.0	.0
Aug	89.5	56.4	73.0	104	1994	17	76.8	1995	46	1976	29	69.6	1971	2	248	.5	18.4	31.0	.0	.0	.0
Sep	84.1	49.2	66.7	100+	1956	14	71.2	1983	29	1999	29	62.3	1974	45	94	.1	6.8	30.0	.0	.1	.0
Oct	74.9	37.8	56.4	95	1979	11	59.7	1992	15+	1991	31	51.0	1976	273	4	.0	.6	30.5	.0	3.0	.0
Nov	62.1	27.9	45.0	85	1981	16	50.5	1995	3	1976	29	37.7	1972	601	0	.0	.0	26.1	.2	16.5	.0
Dec	53.6	21.5	37.6	79	1980	17	44.8	1980	-17	1990	23	31.0	1983	851	0	.0	.0	21.6	1.3	24.1	.3
Ann	73.3	38.5	55.9	109	Jun 1990	24	78.6	Jul 1980	-25	Jan 1963	13	31.0+	Dec 1983	4248	940	5.2	71.6	336.1	4.0	108.2	.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/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

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.42	.34	.65	1990	19	1.15	1999	.00	2000
Feb	.44	.30	1.24	1986	5	2.59	1986	.00+	2000
Mar	.67	.51	1.63	1958	6	2.19	2000	.00+	1996
Apr	.90	.55	3.63	1999	30	4.20	1997	.00+	1996
May	1.42	1.40	2.03	1978	2	3.50	1987	.00+	1998
Jun	1.84	1.54	2.53	1978	28	5.51	1978	.02+	1998
Jul	2.39	2.48	3.50	1976	24	5.18	1976	.00	1987
Aug	2.89	2.67	3.00	1966	22	7.67	1989	.77	1983
Sep	1.90	1.67	2.28	1977	2	4.18	1982	.12	2000
Oct	1.23	.76	2.33	1960	17	4.26	1974	.00+	1987
Nov	.86	.55	1.31	1984	24	3.80	1978	.00+	1999
Dec	.73	.59	1.50	1997	10	4.13	1997	.00+	1993
Ann	15.69	15.18	3.63	Apr 1999	30	7.67	Aug 1989	.00+	Feb 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.0	1.6	.1	.0
Feb	3.0	1.1	.2	@
Mar	3.4	1.9	.4	@
Apr	3.3	1.9	.3	.3
May	5.1	3.4	.7	.3
Jun	5.8	3.6	1.3	.4
Jul	7.0	4.5	1.6	.5
Aug	8.5	5.8	1.9	.7
Sep	6.0	4.0	1.2	.4
Oct	4.0	2.7	.8	.2
Nov	3.0	2.0	.6	.2
Dec	3.3	2.2	.4	.1
Ann	55.4	34.7	9.5	3.1

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	.04	.09	.15	.22	.30	.39	.52	.69	.98	1.27
Feb	.00	.00	.05	.11	.18	.27	.38	.52	.73	1.08	1.45
Mar	.00	.05	.16	.27	.38	.50	.65	.83	1.08	1.49	1.89
Apr	.00	.00	.08	.22	.38	.57	.80	1.10	1.53	2.25	2.97
May	.00	.00	.44	.69	.93	1.18	1.47	1.81	2.24	2.96	3.64
Jun	.10	.20	.41	.66	.94	1.28	1.69	2.21	2.96	4.23	5.50
Jul	.67	1.01	1.39	1.69	1.97	2.25	2.55	2.89	3.34	4.01	4.63
Aug	.76	1.03	1.45	1.82	2.18	2.56	2.98	3.48	4.14	5.16	6.12
Sep	.41	.58	.86	1.11	1.36	1.63	1.94	2.30	2.79	3.55	4.28
Oct	.00	.06	.22	.40	.60	.84	1.13	1.50	2.02	2.90	3.78
Nov	.00	.00	.19	.34	.49	.66	.85	1.09	1.40	1.93	2.45
Dec	.00	.00	.08	.19	.33	.48	.66	.90	1.23	1.79	2.35
Ann	10.33	11.34	12.64	13.64	14.54	15.41	16.32	17.33	18.57	20.37	21.95

\+ 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)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	2.7	1.5	#	#
Feb	2.9	2.0	#	#
Mar	1.1	.0	#	0
Apr	1.0	.0	#	0
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	.6	.0	#	0
Nov	2.0	.0	#	0
Dec	4.5	2.1	#	#
Ann	14.9	5.6	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	7.5	1987	17	15.5	1987	10	1987	18	2	1987
Feb	9.3	1986	5	23.8	1986	17	1986	9	4	1986
Mar	6.1	1999	18	6.5	1980	6	1999	18	#+	1999
Apr	8.0	1973	2	11.0	1973	8+	1988	1	1	1973
May	4.0	1978	2	4.0	1978	4	1978	2	#	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	10.0	1979	30	10.0	1979	8	1979	30	#+	1991
Nov	10.0	1982	27	10.0	1982	9	2000	7	#+	2000
Dec	8.6	1997	23	23.7	1997	11	1997	23	1+	2000
Ann	10.0+	Nov 1982	27	23.8	Feb 1986	17	Feb 1986	9	4	Feb 1986

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.4	1.2	.4	.1	.0
Feb	1.3	.7	.3	.1	.0
Mar	.6	.4	.1	@	.0
Apr	.3	.2	.2	.1	.0
May	@	@	@	.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	@	@
Nov	.6	.5	.2	.1	@
Dec	1.9	1.6	.6	.3	.0
Ann	6.2	4.7	1.9	.7	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	2.0	.9	.3	@
Feb	1.3	.6	.4	.2
Mar	.3	.1	@	.0
Apr	.3	.2	.1	.0
May	@	@	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.1	.1	@	.0
Nov	.6	.3	.1	.0
Dec	2.8	1.4	.7	.1
Ann	7.4	3.6	1.6	.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	5/16	5/12	5/09	5/06	5/04	5/01	4/29	4/25	4/21
32	5/07	5/01	4/26	4/22	4/19	4/15	4/12	4/07	4/01
28	4/23	4/17	4/13	4/10	4/06	4/03	3/30	3/26	3/20
24	4/19	4/11	4/05	3/31	3/26	3/21	3/16	3/10	3/02
20	3/31	3/24	3/18	3/14	3/10	3/06	3/01	2/24	2/17
16	3/22	3/11	3/04	2/25	2/19	2/12	2/05	1/28	1/15

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	9/26	10/01	10/04	10/07	10/09	10/12	10/15	10/18	10/23
32	10/07	10/13	10/16	10/19	10/22	10/25	10/28	11/01	11/06
28	10/16	10/21	10/25	10/28	10/31	11/03	11/07	11/10	11/15
24	10/26	10/31	11/04	11/07	11/10	11/13	11/17	11/20	11/26
20	11/06	11/12	11/16	11/19	11/22	11/25	11/29	12/03	12/08
16	11/14	11/20	11/24	11/28	12/01	12/04	12/08	12/13	12/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	180	173	167	162	158	154	149	143	136
32	210	202	196	191	186	181	176	170	162
28	232	223	217	212	207	203	197	191	183
24	256	247	240	234	228	223	217	210	200
20	284	274	268	262	257	251	246	239	230
16	320	305	297	290	284	279	273	266	257

***** 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	852	651	530	314	119	10	0	2	45	273	601	851	4248
60	697	511	377	190	49	1	0	0	8	144	453	696	3126
57	604	427	287	131	24	0	0	0	2	86	369	603	2533
55	542	371	232	98	14	0	0	0	0	58	315	541	2171
50	393	242	115	37	3	0	0	0	0	17	195	394	1396
32	33	8	0	0	0	0	0	0	0	0	8	38	87

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	204	281	493	685	968	1195	1327	1269	1039	754	396	210	8821
55	0	0	12	93	269	505	614	556	350	99	13	0	2511
57	0	0	5	66	217	445	552	494	291	65	7	0	2142
60	0	0	1	35	149	356	459	401	208	30	2	0	1641
65	0	0	0	10	64	216	304	248	94	4	0	0	940
70	0	0	0	1	19	102	156	113	28	0	0	0	419

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	99	173	330	524	803	1036	1163	1107	882	589	258	112	99	272	602	1126	1929	2965	4128	5235	6117	6706	6964	7076
45	39	86	195	378	648	886	1008	952	732	441	147	49	39	125	320	698	1346	2232	3240	4192	4924	5365	5512	5561
50	8	33	95	246	494	736	853	797	582	294	64	12	8	41	136	382	876	1612	2465	3262	3844	4138	4202	4214
55	0	4	32	134	341	586	698	642	432	167	21	1	0	4	36	170	511	1097	1795	2437	2869	3036	3057	3058
60	0	0	3	49	197	437	543	487	291	70	1	0	0	0	3	52	249	686	1229	1716	2007	2077	2078	2078
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	114	171	270	371	521	649	750	718	567	406	209	115	114	285	555	926	1447	2096	2846	3564	4131	4537	4746	4861

(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

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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