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: TULAROSA, NM **COOP ID: 299165**

Climate Division: NM 8 **NWS Call Sign:** **Elevation: 4,430 Feet** **Lat: 33˚04N** **Lon: 106˚02W**

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	56.0	28.4	42.2	87	1970	25	46.4	1999	1+	1971	5	38.0	1992	707	0	.0	.0	25.8	.1	23.7	.0
Feb	61.4	32.3	46.9	81	1986	26	52.3	1996	5+	1951	1	43.0	1973	509	0	.0	.0	25.9	.3	14.9	.0
Mar	68.4	37.2	52.8	90	1971	27	57.7	1974	14+	1965	4	47.9	1987	380	3	.0	@	30.6	.0	9.1	.0
Apr	76.0	43.4	59.7	95	1989	21	65.2	2000	21	1988	1	53.1	1983	191	32	.0	.6	29.9	@	2.6	.0
May	83.9	52.1	68.0	103	1951	27	73.9	2000	27	1988	2	64.3	1987	52	145	.1	6.0	31.0	.0	@	.0
Jun	93.0	60.1	76.6	110+	1981	22	81.1	1994	40	1965	16	72.7	1979	1	347	4.1	22.2	30.0	.0	.0	.0
Jul	92.9	63.7	78.3	108	1951	9	81.8	1980	49	1987	7	75.0	1976	0	413	2.8	23.7	31.0	.0	.0	.0
Aug	90.5	62.3	76.4	104	1966	1	80.3	1995	50+	1965	20	73.0	1990	0	353	.4	20.0	31.0	.0	.0	.0
Sep	85.3	56.6	71.0	100+	1948	5	76.3	1998	39	1988	30	67.7	1987	15	193	@	8.1	30.0	.0	.0	.0
Oct	75.8	46.1	61.0	93+	1956	1	64.3	1988	21	1991	31	56.1	1976	152	26	.0	.5	30.9	.0	1.0	.0
Nov	63.4	34.9	49.2	84	1988	4	54.8	1999	0	1976	29	41.3	1976	478	2	.0	.0	28.3	.1	11.3	@
Dec	55.8	28.5	42.2	77	1955	26	46.5	1980	4	1987	16	38.5	1987	709	0	.0	.0	24.9	.2	22.8	.0
Ann	75.2	45.5	60.4	110+	Jun 1981	22	81.8	Jul 1980	0	Nov 1976	29	38.0	Jan 1992	3194	1514	7.4	81.1	349.3	.7	85.4	@

+ 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	.54	.41	.89	1960	10	1.64	1993	.00	2000
Feb	.49	.46	.78	1988	4	1.33	1973	.00+	1999
Mar	.40	.21	1.44	1958	6	1.73	1973	.00+	1996
Apr	.28	.17	1.20	1953	23	1.28	1992	.00+	1998
May	.61	.36	1.30	1960	31	2.40	1992	.00+	2000
Jun	.81	.56	1.99	1986	22	4.25	2000	.00+	1989
Jul	1.86	1.72	1.77	1950	11	4.84	1971	.59	1987
Aug	2.02	1.95	2.25	1955	10	3.83	1988	.73	1975
Sep	1.43	1.38	2.36	2001	13	3.53	1975	.07	1993
Oct	1.23	.65	2.29	1972	20	4.88	1985	.00+	1995
Nov	.73	.48	1.25	1986	2	2.76	1986	.00+	1999
Dec	.91	.61	1.25	1992	5	4.17	1991	.00+	1996
Ann	11.31	11.44	2.36	Sep 2001	13	4.88	Oct 1985	.00+	May 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.4	1.9	.2	.0
Feb	3.4	1.6	.1	.0
Mar	2.9	1.2	.1	.0
Apr	1.8	.9	.1	.0
May	3.1	1.7	.4	@
Jun	3.3	1.8	.4	.2
Jul	8.2	4.5	1.1	.2
Aug	8.7	4.9	1.2	.2
Sep	6.3	4.0	.9	.1
Oct	4.2	2.3	.8	.2
Nov	3.0	1.6	.4	.1
Dec	3.8	2.6	.4	.1
Ann	52.1	29.0	6.1	1.1

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	.10	.18	.26	.37	.49	.65	.88	1.27	1.66
Feb	.00	.00	.10	.18	.27	.36	.48	.62	.81	1.13	1.44
Mar	.00	.00	.02	.09	.17	.25	.36	.49	.68	.99	1.31
Apr	.00	.00	.00	.02	.06	.13	.21	.32	.49	.79	1.09
May	.00	.00	.03	.13	.24	.37	.54	.74	1.04	1.53	2.04
Jun	.00	.03	.12	.23	.36	.52	.72	.97	1.33	1.96	2.59
Jul	.52	.69	.96	1.19	1.42	1.66	1.93	2.24	2.65	3.29	3.89
Aug	.70	.89	1.17	1.41	1.63	1.86	2.11	2.41	2.78	3.36	3.90
Sep	.19	.30	.51	.71	.92	1.15	1.42	1.75	2.19	2.93	3.64
Oct	.00	.00	.12	.31	.52	.78	1.10	1.51	2.08	3.05	4.02
Nov	.00	.03	.13	.23	.35	.50	.67	.89	1.20	1.72	2.25
Dec	.00	.00	.14	.31	.48	.66	.88	1.15	1.52	2.12	2.71
Ann	6.59	7.44	8.55	9.43	10.22	11.00	11.82	12.74	13.87	15.56	17.04

\+ 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	.5	.0	#	0
Feb	.5	.0	#	0
Mar	#	.0	#	0
Apr	.0	.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	0
Nov	.6	.0	0	0
Dec	.5	.0	0	0
Ann	2.1	.0	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	3.0	1971	4	3.0+	1975	3	1973	2	#+	1976
Feb	3.2	1973	22	5.0	1989	4	1989	7	#+	1989
Mar	#	1987	29	#+	1987	#	1987	29	#	1987
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
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	.0	0	0	.0	0	0	0	0	0	0
Nov	4.5	1976	28	9.5	1976	6	1976	28	1	1976
Dec	4.0	1974	26	4.0+	1978	0	0	0	0	0
Ann	4.5	Nov 1976	28	9.5	Nov 1976	6	Nov 1976	28	1	Nov 1976

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.2	.2	.1	.0	.0
Feb	.2	.2	.1	.0	.0
Mar	.0	.0	.0	.0	.0
Apr	.0	.0	.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	.0	.0	.0	.0	.0
Nov	.2	.2	.1	.0	.0
Dec	.2	.1	.1	.0	.0
Ann	.8	.7	.4	.0	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.1	@	.0	.0
Feb	.2	@	.0	.0
Mar	.0	.0	.0	.0
Apr	.0	.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	.0
Nov	.0	.0	.0	.0
Dec	.0	.0	.0	.0
Ann	.3	@	.0	.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	5/10	5/04	4/30	4/27	4/23	4/20	4/17	4/13	4/07
32	4/24	4/19	4/16	4/13	4/10	4/07	4/04	4/01	3/27
28	4/19	4/12	4/06	4/01	3/28	3/23	3/19	3/13	3/05
24	4/02	3/24	3/17	3/11	3/05	2/28	2/22	2/15	2/06
20	3/18	3/07	2/28	2/21	2/15	2/08	2/01	1/25	1/14
16	2/28	2/16	2/07	1/30	1/22	1/14	1/05	12/23	0/00

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	10/11	10/16	10/19	10/21	10/23	10/26	10/28	10/31	11/05
32	10/16	10/22	10/26	10/30	11/02	11/05	11/09	11/13	11/19
28	10/27	11/01	11/05	11/07	11/10	11/13	11/16	11/19	11/24
24	11/05	11/11	11/16	11/19	11/23	11/27	11/30	12/05	12/11
20	11/17	11/24	11/28	12/03	12/06	12/10	12/15	12/20	12/28
16	11/28	12/05	12/11	12/15	12/20	12/24	12/30	1/07	0/00

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	203	196	191	186	182	178	174	169	162
32	225	218	213	209	205	202	198	193	186
28	253	244	237	232	227	221	216	209	200
24	300	287	277	269	262	254	246	237	224
20	332	314	305	298	291	285	278	270	260
16	>365	>365	>365	347	333	322	311	300	284

***** 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	707	509	380	191	52	1	0	0	15	152	478	709	3194
60	552	369	239	98	15	0	0	0	1	62	337	554	2227
57	459	288	166	57	6	0	0	0	0	31	259	461	1727
55	397	237	126	37	3	0	0	0	0	18	213	399	1430
50	249	124	50	10	0	0	0	0	0	4	118	252	807
32	1	0	0	0	0	0	0	0	0	0	1	2	4

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	317	415	645	831	1116	1336	1436	1376	1168	896	515	316	10367
55	0	8	58	177	406	646	723	663	478	202	37	1	3399
57	0	3	37	138	347	586	661	601	418	153	23	0	2967
60	0	0	16	88	263	496	568	508	329	90	11	0	2369
65	0	0	3	32	145	347	413	353	193	26	2	0	1514
70	0	0	0	8	62	205	260	206	89	3	0	0	833

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	121	228	403	596	879	1103	1197	1138	935	661	300	132	121	349	752	1348	2227	3330	4527	5665	6600	7261	7561	7693
45	46	118	261	448	724	953	1042	983	785	507	180	46	46	164	425	873	1597	2550	3592	4575	5360	5867	6047	6093
50	7	43	136	308	569	803	887	828	635	357	84	6	7	50	186	494	1063	1866	2753	3581	4216	4573	4657	4663
55	0	11	57	178	415	653	732	673	486	216	24	0	0	11	68	246	661	1314	2046	2719	3205	3421	3445	3445
60	0	0	14	80	267	503	577	518	337	103	1	0	0	0	14	94	361	864	1441	1959	2296	2399	2400	2400
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	122	183	297	408	571	694	777	748	610	422	220	120	122	305	602	1010	1581	2275	3052	3800	4410	4832	5052	5172

(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