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: ELEPHANT BUTTE DAM, NM **COOP ID: 292848**

Climate Division: NM 5 **NWS Call Sign:** **Elevation: 4,576 Feet** **Lat: 33˚09N** **Lon: 107˚11W**

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	53.4	26.7	40.1	75	1975	26	46.7	2000	-7	1962	11	34.8	1973	773	0	.0	.0	22.9	.3	23.7	.0
Feb	59.4	30.4	44.9	83	1989	26	50.5	1996	6	1951	1	39.2	1973	563	0	.0	.0	25.1	.3	13.9	.0
Mar	66.5	36.7	51.6	89+	1989	12	57.2	1972	16	1962	15	45.9	1973	418	2	.0	.0	30.3	@	5.4	.0
Apr	74.4	44.1	59.3	94+	1989	21	66.1	1989	23	1964	5	52.9	1973	210	38	.0	.6	29.8	.0	.9	.0
May	83.2	53.8	68.5	101+	1951	27	75.4	1996	34	1964	6	64.8	1979	54	163	.3	5.5	31.0	.0	.0	.0
Jun	92.7	63.1	77.9	111+	1994	26	83.1	1994	46	1971	1	73.9	1979	1	389	5.7	21.5	30.0	.0	.0	.0
Jul	93.1	66.7	79.9	109	1998	1	83.6	1980	51	1955	1	76.4	1986	0	462	4.1	24.0	31.0	.0	.0	.0
Aug	90.0	64.5	77.3	104	1993	1	80.7	1994	53	1971	25	74.2	1974	0	380	1.1	18.5	31.0	.0	.0	.0
Sep	84.7	58.3	71.5	101	1995	7	78.2	1998	41	1968	30	67.8	1975	16	210	@	9.2	30.0	.0	.0	.0
Oct	74.8	46.8	60.8	92+	1989	2	64.6	1988	22	1991	31	55.9	1976	163	33	.0	.6	30.7	.0	.6	.0
Nov	62.3	35.0	48.7	84	1973	9	53.8	1999	9+	1976	28	42.9	1976	492	1	.0	.0	27.9	.1	8.3	.0
Dec	53.0	27.3	40.2	78	1981	9	45.0	1977	5+	1960	10	36.1	1974	771	0	.0	.0	22.2	.5	22.8	.0
Ann	74.0	46.1	60.1	111+	Jun 1994	26	83.6	Jul 1980	-7	Jan 1962	11	34.8	Jan 1973	3461	1678	11.2	79.9	341.9	1.2	75.6	.0

\+ 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	.42	.92	1980	22	1.13	1978	.00+	2000
Feb	.30	.22	1.00	1948	26	1.42	1973	.00+	2000
Mar	.32	.24	1.12	2000	22	1.72	2000	.00+	1996
Apr	.15	.12	.61	1958	16	.49+	1992	.00+	1999
May	.48	.29	1.28+	1949	11	2.78	1992	.00+	2000
Jun	.72	.31	1.68	1978	29	2.39	1986	.00+	1998
Jul	1.68	1.34	2.22	1981	1	5.73	1999	.20	1980
Aug	2.29	2.25	1.96	1967	10	4.62	1990	.47	1997
Sep	1.58	1.33	2.64	1979	15	4.20	1975	.04+	1989
Oct	1.25	.90	2.28	1985	17	4.17	1972	.00	1995
Nov	.71	.48	1.68	1986	2	2.93	1978	.00+	1999
Dec	.75	.41	1.28	1962	1	4.70	1991	.00+	1995
Ann	10.65	11.01	2.64	Sep 1979	15	5.73	Jul 1999	.00+	May 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.0	1.5	.1	.0
Feb	2.3	1.0	.1	.0
Mar	2.3	.9	.1	@
Apr	1.6	.6	.0	.0
May	2.8	1.2	.3	@
Jun	3.1	1.6	.4	.1
Jul	7.6	3.9	.9	.3
Aug	9.4	5.4	1.2	.4
Sep	5.9	3.2	.8	.3
Oct	4.8	3.0	.7	.2
Nov	2.8	1.7	.4	.1
Dec	3.7	1.9	.4	@
Ann	49.3	25.9	5.4	1.4

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	.00	.00	.07	.13	.21	.29	.39	.52	.70	1.00	1.30
Feb	.00	.00	.00	.05	.12	.19	.28	.38	.53	.78	1.01
Mar	.00	.00	.03	.07	.13	.20	.28	.38	.54	.79	1.05
Apr	.00	.00	.00	.00	.05	.10	.15	.20	.27	.39	.49
May	.00	.00	.01	.07	.15	.25	.39	.56	.82	1.28	1.75
Jun	.00	.00	.03	.12	.24	.38	.58	.84	1.22	1.89	2.58
Jul	.31	.46	.70	.93	1.16	1.42	1.70	2.05	2.51	3.25	3.96
Aug	.68	.90	1.23	1.51	1.78	2.07	2.38	2.75	3.22	3.97	4.66
Sep	.13	.24	.45	.67	.91	1.18	1.51	1.92	2.50	3.45	4.39
Oct	.01	.06	.19	.35	.55	.79	1.09	1.48	2.05	3.04	4.04
Nov	.00	.01	.06	.14	.25	.39	.57	.82	1.18	1.83	2.50
Dec	.00	.01	.08	.18	.30	.45	.64	.89	1.25	1.90	2.55
Ann	6.44	7.21	8.21	8.99	9.70	10.40	11.12	11.94	12.94	14.41	15.71

\+ 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	1.3	.0	#	0	7.0	1978	20	7.0	1978	25	1978	20	1	1978	.5	.4	.2	@	.0	.4	.1	.0	.0
Feb	.2	.0	#	0	2.0	1979	5	2.0	1979	3	1980	9	#+	1985	.2	.1	.0	.0	.0	.1	.0	.0	.0
Mar	.2	.0	#	0	4.5	1975	29	4.5	1975	5	1975	29	#	1975	@	@	@	.0	.0	@	@	@	.0
Apr	.1	.0	#	0	2.0	1983	6	2.0	1983	2	1980	12	#	1980	@	@	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.3	.0	0	0	7.5	1976	27	7.5	1976	0	0	0	0	0	@	@	@	@	.0	.0	.0	.0	.0
Nov	.3	.0	#	0	6.0	1972	24	6.0	1972	2	1976	27	#+	1980	.1	.1	@	@	.0	.1	.0	.0	.0
Dec	.7	.0	#	0	5.0	1974	26	8.3	1974	5	1987	15	1	1987	.4	.3	.2	@	.0	.2	.1	.0	.0
Ann	3.1	.0	N/A	N/A	7.5	Oct 1976	27	8.3	Dec 1974	25	Jan 1978	20	1+	Dec 1987	1.2	.9	.4	@	.0	.8	.2	@	.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	4/25	4/20	4/15	4/12	4/08	4/05	4/02	3/28	3/23
32	4/14	4/08	4/03	3/30	3/27	3/23	3/19	3/15	3/08
28	3/31	3/24	3/19	3/15	3/11	3/07	3/03	2/26	2/19
24	3/14	3/06	2/28	2/23	2/18	2/13	2/08	2/02	1/25
20	2/25	2/12	2/03	1/26	1/18	1/10	1/01	12/20	11/29
16	1/26	1/17	1/09	1/02	12/25	12/11	0/00	0/00	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	10/17	10/22	10/26	10/29	11/01	11/04	11/07	11/11	11/16
32	10/26	10/31	11/03	11/06	11/09	11/12	11/15	11/18	11/23
28	11/06	11/11	11/15	11/18	11/21	11/24	11/28	12/01	12/07
24	11/17	11/23	11/27	12/01	12/04	12/08	12/11	12/16	12/22
20	12/05	12/10	12/14	12/17	12/20	12/23	12/27	1/01	0/00
16	12/11	12/21	12/28	1/05	1/14	0/00	0/00	0/00	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	227	219	214	210	206	202	197	192	185
32	251	243	237	232	227	222	217	211	202
28	283	273	266	260	254	249	243	236	226
24	318	308	301	295	289	283	277	269	259
20	>365	>365	361	345	334	325	316	306	293
16	>365	>365	>365	>365	>365	>365	365	350	335

***** 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	773	563	418	210	54	1	0	0	16	163	492	771	3461
60	618	423	274	116	17	0	0	0	2	72	349	616	2487
57	525	340	197	74	8	0	0	0	0	39	270	523	1976
55	463	287	152	51	4	0	0	0	0	23	222	462	1664
50	316	165	67	17	0	0	0	0	0	5	122	313	1005
32	14	1	0	0	0	0	0	0	0	0	1	11	27

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	264	362	607	818	1132	1378	1485	1403	1185	893	500	262	10289
55	0	4	47	179	423	688	772	690	495	203	30	0	3531
57	0	1	29	142	365	628	710	628	435	157	18	0	3113
60	0	0	13	94	282	538	617	535	347	97	8	0	2531
65	0	0	2	38	163	389	462	380	210	33	1	0	1678
70	0	0	0	12	77	247	307	229	103	6	0	0	981

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	114	217	414	620	911	1160	1259	1186	970	683	310	114	114	331	745	1365	2276	3436	4695	5881	6851	7534	7844	7958
45	39	108	268	473	756	1010	1104	1031	820	528	186	40	39	147	415	888	1644	2654	3758	4789	5609	6137	6323	6363
50	8	39	145	329	601	860	949	876	670	379	89	5	8	47	192	521	1122	1982	2931	3807	4477	4856	4945	4950
55	0	6	59	200	447	710	794	721	520	239	25	0	0	6	65	265	712	1422	2216	2937	3457	3696	3721	3721
60	0	0	17	97	297	560	639	566	373	123	4	0	0	0	17	114	411	971	1610	2176	2549	2672	2676	2676
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	101	168	278	399	589	743	827	797	639	429	211	97	101	269	547	946	1535	2278	3105	3902	4541	4970	5181	5278

(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