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: SHIPROCK, NM **COOP ID: 298284**

Climate Division: NM 1 **NWS Call Sign:** **Elevation: 4,972 Feet** **Lat: 36˚48N** **Lon: 108˚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	44.4	17.0	30.7	69	2000	19	36.4	1978	-16	1963	13	20.6	1973	1064	0	.0	.0	8.7	3.4	29.9	.9
Feb	52.3	21.9	37.1	78	1958	22	44.6	1995	-9	1982	7	27.2	1974	781	0	.0	.0	17.2	.7	25.8	.3
Mar	62.5	28.2	45.4	83	1989	10	51.5	1989	2	1977	19	39.9	1977	609	0	.0	.0	28.8	@	22.5	.0
Apr	70.6	33.9	52.3	91+	1992	29	59.7	1989	8	1981	7	45.3	1985	390	7	.0	.2	29.4	.0	13.4	.0
May	80.5	42.9	61.7	102	2000	31	67.4	1996	15	1967	2	53.3	1975	164	63	@	2.7	30.8	.0	2.5	.0
Jun	90.9	51.1	71.0	107	1990	30	76.5+	1994	28	1980	1	65.2	1975	28	208	1.3	18.0	30.0	.0	.3	.0
Jul	95.0	58.0	76.5	107+	1972	15	81.4	1998	31	1987	7	71.4	1987	1	359	4.8	27.1	31.0	.0	.1	.0
Aug	92.2	57.1	74.7	106	1972	11	79.6	1994	33+	1968	26	70.1	1976	3	303	1.7	22.7	31.0	.0	.0	.0
Sep	85.3	47.9	66.6	102+	1995	1	71.7	1998	21	1978	21	62.2	1976	64	111	.1	7.0	30.0	.0	1.2	.0
Oct	72.7	35.7	54.2	92+	1979	1	59.5	1988	10+	1976	20	49.9	1976	339	4	.0	@	30.5	.0	11.6	.0
Nov	56.4	25.5	41.0	77	1950	2	45.3	1995	0+	1952	29	35.4	2000	722	0	.0	.0	22.6	.1	25.2	.1
Dec	45.4	17.6	31.5	72	1980	19	37.0	1980	-26	1961	12	24.7	1990	1039	0	.0	.0	9.9	2.0	29.9	.7
Ann	70.7	36.4	53.6	107+	Jun 1990	30	81.4	Jul 1998	-26	Dec 1961	12	20.6	Jan 1973	5204	1055	7.9	77.7	299.9	6.2	162.4	2.0

\+ 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	.64	.40	2.00	1969	24	2.75	1974	.00	1972
Feb	.51	.49	.78	1988	2	1.36	1988	.00+	1977
Mar	.54	.46	1.19	1985	19	1.88	2000	.00+	1988
Apr	.42	.21	1.19	1985	19	1.96	1985	.00+	2000
May	.60	.36	1.34	1973	5	3.10	1992	.00+	2000
Jun	.22	.07	1.60	1949	18	1.01	1996	.00+	1998
Jul	.75	.60	1.31	1971	21	2.22	1986	.00+	1976
Aug	1.13	.73	2.90	1989	18	3.34+	1989	.00	1985
Sep	.74	.62	1.27	1980	10	1.66	1994	.00	1974
Oct	.77	.72	2.77	1969	4	2.12	1972	.00+	1995
Nov	.69	.60	1.08	1961	1	3.16	1991	.00+	1992
Dec	.61	.55	.82	1978	18	2.12	1992	.00	1989
Ann	7.62	7.40	2.90	Aug 1989	18	3.34+	Aug 1989	.00+	May 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.9	2.2	.1	.0
Feb	4.4	1.8	.1	.0
Mar	4.3	1.7	.1	@
Apr	3.0	1.4	.1	@
May	4.2	1.9	.3	@
Jun	1.7	.6	.2	.0
Jul	3.6	1.7	.4	.1
Aug	4.5	2.7	.5	.1
Sep	4.1	2.0	.4	@
Oct	4.6	2.7	.4	.1
Nov	4.0	2.0	.3	.0
Dec	4.6	1.9	.3	.0
Ann	47.9	22.6	3.2	.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	.01	.04	.12	.20	.31	.43	.58	.77	1.04	1.51	1.98
Feb	.00	.05	.13	.22	.30	.40	.51	.64	.82	1.13	1.42
Mar	.00	.00	.09	.19	.29	.40	.53	.69	.90	1.24	1.58
Apr	.00	.00	.00	.05	.14	.24	.36	.52	.74	1.13	1.51
May	.00	.00	.04	.14	.25	.38	.54	.74	1.02	1.48	1.96
Jun	.00	.00	.00	.00	.03	.08	.15	.25	.39	.64	.90
Jul	.00	.03	.12	.22	.35	.49	.67	.91	1.24	1.81	2.38
Aug	.07	.17	.35	.51	.69	.89	1.11	1.39	1.77	2.40	3.01
Sep	.05	.13	.25	.35	.47	.59	.74	.91	1.15	1.54	1.91
Oct	.00	.03	.13	.24	.37	.52	.70	.94	1.27	1.83	2.39
Nov	.00	.05	.16	.26	.38	.51	.66	.85	1.11	1.55	1.98
Dec	.01	.04	.11	.19	.29	.40	.55	.73	.99	1.44	1.90
Ann	3.71	4.37	5.25	5.97	6.63	7.29	7.99	8.79	9.79	11.29	12.64

\+ 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	2.2	1.5	#	0
Feb	1.0	.0	#	0
Mar	.7	.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
Sep	.0	.0	0	0
Oct	.1	.0	0	0
Nov	.4	.0	#	0
Dec	2.0	.0	#	0
Ann	6.4	1.5	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	6.0	1973	20	8.5	1990	6	1973	20	1	1990
Feb	3.0	1987	19	4.2	1990	3	1997	25	#+	1997
Mar	4.0	1984	26	4.5	2000	3	2000	22	#+	2000
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	#	1972	29	#	1972
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	1.0	1972	31	1.0	1972	0	0	0	0	0
Nov	2.2	1988	26	3.2	1988	1	1988	26	#	1988
Dec	6.0	1972	5	7.4	1987	6	1972	5	1	1972
Ann	6.0+	Jan 1973	20	8.5	Jan 1990	6+	Jan 1973	20	1+	Jan 1990

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.2	.9	.2	.1	.0
Feb	.3	.3	.2	.0	.0
Mar	.3	.3	.1	.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	.1	.1	.0	.0	.0
Nov	.2	.2	.0	.0	.0
Dec	.9	.6	.2	.1	.0
Ann	3.0	2.4	.7	.2	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.2	.0	.0	.0
Feb	.1	.1	.0	.0
Mar	.1	.1	.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
Dec	.4	.0	.0	.0
Ann	.8	.2	.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	6/17	6/08	6/02	5/28	5/23	5/18	5/12	5/06	4/27
32	6/07	5/29	5/22	5/16	5/11	5/06	4/30	4/24	4/14
28	5/20	5/12	5/06	5/01	4/26	4/21	4/16	4/10	4/02
24	5/10	5/02	4/26	4/21	4/17	4/12	4/07	4/01	3/24
20	4/26	4/17	4/10	4/05	3/30	3/25	3/19	3/13	3/04
16	4/08	3/29	3/22	3/15	3/09	3/03	2/25	2/18	2/07

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	9/07	9/13	9/18	9/22	9/26	9/29	10/03	10/08	10/15
32	9/16	9/22	9/26	9/29	10/02	10/06	10/09	10/13	10/19
28	9/26	10/02	10/06	10/09	10/13	10/16	10/19	10/23	10/29
24	10/08	10/14	10/18	10/21	10/25	10/28	11/01	11/05	11/11
20	10/21	10/26	10/29	11/01	11/03	11/06	11/09	11/12	11/17
16	10/29	11/03	11/07	11/10	11/13	11/16	11/19	11/23	11/28

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	163	150	141	133	125	118	110	101	88
32	176	165	157	150	143	137	130	122	111
28	200	189	182	175	169	162	156	148	137
24	221	210	203	196	190	184	178	171	160
20	250	239	231	224	217	211	204	196	185
16	280	269	261	254	248	241	235	227	216

***** 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	1064	781	609	390	164	28	1	3	64	339	722	1039	5204
60	909	641	456	259	82	7	0	0	19	202	572	884	4031
57	816	557	368	191	49	2	0	0	7	134	482	791	3397
55	754	501	311	153	32	1	0	0	3	96	423	729	3003
50	603	367	186	76	9	0	0	0	0	33	280	574	2128
32	166	43	3	0	0	0	0	0	0	0	12	123	347

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	126	186	417	607	921	1170	1380	1323	1038	688	280	107	8243
55	0	0	12	70	240	481	667	610	351	71	1	0	2503
57	0	0	6	48	195	422	605	548	295	47	0	0	2166
60	0	0	2	26	136	337	512	455	217	23	0	0	1708
65	0	0	0	7	63	208	359	303	111	4	0	0	1055
70	0	0	0	1	21	109	216	166	44	0	0	0	557

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	4	50	181	367	660	921	1131	1066	796	428	97	8	4	54	235	602	1262	2183	3314	4380	5176	5604	5701	5709
45	0	13	81	232	507	771	976	911	646	281	33	0	0	13	94	326	833	1604	2580	3491	4137	4418	4451	4451
50	0	0	28	128	357	621	821	756	496	159	5	0	0	0	28	156	513	1134	1955	2711	3207	3366	3371	3371
55	0	0	4	52	218	471	666	601	347	65	0	0	0	0	4	56	274	745	1411	2012	2359	2424	2424	2424
60	0	0	0	14	104	324	511	446	209	18	0	0	0	0	0	14	118	442	953	1399	1608	1626	1626	1626
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	24	77	195	309	455	577	692	667	532	349	119	21	24	101	296	605	1060	1637	2329	2996	3528	3877	3996	4017

(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