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: ROY, NM **COOP ID: 297638**

Climate Division: NM 3 **NWS Call Sign:** **Elevation: 5,878 Feet** **Lat: 35˚57N** **Lon: 104˚12W**

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	46.5	19.2	32.9	75+	1950	21	38.3	1986	-25	1963	12	24.1	1979	995	0	.0	.0	14.1	4.0	29.6	1.0
Feb	51.2	23.6	37.4	78	1970	7	43.8	2000	-12	1982	6	31.4	1989	774	0	.0	.0	17.7	2.2	25.3	.6
Mar	57.5	29.3	43.4	83	1971	26	49.6	1974	-1	1965	3	40.0	1998	670	0	.0	.0	24.7	.4	22.8	.0
Apr	65.3	35.5	50.4	89	1965	22	57.7	1981	6	1983	5	42.3	1973	442	3	.0	.0	27.6	.1	12.0	.0
May	73.6	45.0	59.3	94	1996	18	67.0	1996	22	1967	2	54.3	1983	206	28	.0	.5	30.8	.0	1.7	.0
Jun	82.8	53.5	68.2	101+	1957	29	74.6	1990	29	1969	3	63.4	1989	52	146	.1	6.0	30.0	.0	.0	.0
Jul	85.6	58.5	72.1	101	1957	3	78.1	1980	43	1961	22	68.2	1991	7	225	.0	7.4	31.0	.0	.0	.0
Aug	83.5	57.4	70.5	102	1952	20	74.4	2000	42+	1986	24	67.2	1986	14	182	.0	3.2	31.0	.0	.0	.0
Sep	77.0	50.5	63.8	98	2000	5	67.5	1983	28	1970	25	60.1	1974	95	56	.0	.9	29.8	.0	.4	.0
Oct	67.6	38.5	53.1	89	1979	7	56.7	1995	7	1993	30	48.1	1984	371	1	.0	.0	29.6	.1	6.4	.0
Nov	55.4	27.8	41.6	82	1980	8	47.2	1989	-15	1976	28	33.7	1972	702	0	.0	.0	21.2	.8	21.7	.1
Dec	46.7	20.5	33.6	77	1980	17	41.9	1980	-17	1990	23	26.0	1983	973	0	.0	.0	13.4	3.2	28.9	1.1
Ann	66.1	38.3	52.2	102	Aug 1952	20	78.1	Jul 1980	-25	Jan 1963	12	24.1	Jan 1979	5301	641	.1	18.0	300.9	10.8	148.8	2.8

\+ 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	.37	.29	1.00	2001	27	1.10	1979	.00+	1998
Feb	.42	.25	1.11	1990	20	2.66	1987	.00+	2000
Mar	.77	.57	1.30	1985	19	2.30	1985	.00+	1989
Apr	.88	.62	2.20	1999	30	3.22	1999	.00+	1996
May	1.84	1.78	3.03	1955	18	4.12	1994	.00	1998
Jun	2.02	1.72	3.02	1965	15	4.70	1989	.00	1998
Jul	2.87	2.46	2.10	2000	2	5.69	1971	.92	1987
Aug	3.28	3.02	2.60	1979	26	6.14	1992	.39	2000
Sep	1.71	1.68	2.04	1991	10	4.95	1988	.00+	2000
Oct	1.15	.69	2.83	1954	6	4.05	2000	.00+	1995
Nov	.54	.35	2.10	1978	3	3.20	1978	.00+	1989
Dec	.52	.33	1.31	2000	26	2.57	1997	.00+	1994
Ann	16.37	16.63	3.03	May 1955	18	6.14	Aug 1992	.00+	Sep 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.2	1.4	.2	.0
Feb	1.8	1.3	.2	@
Mar	2.5	2.1	.5	.1
Apr	3.1	2.3	.4	.2
May	5.0	3.8	1.3	.3
Jun	5.7	4.2	1.4	.5
Jul	7.9	6.1	2.0	.7
Aug	8.2	6.3	2.2	.8
Sep	4.9	3.8	1.2	.3
Oct	2.9	2.3	.8	.3
Nov	2.1	1.4	.2	.1
Dec	2.3	1.6	.3	.1
Ann	48.6	36.6	10.7	3.4

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	.05	.12	.17	.23	.30	.37	.46	.58	.77	.96
Feb	.00	.00	.00	.08	.16	.26	.37	.52	.73	1.08	1.43
Mar	.00	.00	.14	.26	.40	.55	.73	.95	1.26	1.78	2.29
Apr	.00	.00	.06	.21	.38	.57	.80	1.09	1.50	2.17	2.86
May	.25	.49	.80	1.06	1.32	1.60	1.90	2.27	2.75	3.51	4.23
Jun	.20	.44	.78	1.07	1.37	1.69	2.05	2.49	3.08	4.02	4.92
Jul	1.07	1.34	1.72	2.04	2.35	2.66	3.00	3.39	3.89	4.66	5.36
Aug	.78	1.09	1.57	2.00	2.42	2.87	3.38	3.98	4.77	6.01	7.19
Sep	.00	.33	.68	.95	1.21	1.48	1.79	2.14	2.61	3.36	4.07
Oct	.00	.00	.09	.26	.46	.71	1.01	1.40	1.96	2.91	3.87
Nov	.00	.00	.04	.15	.25	.37	.51	.68	.91	1.30	1.70
Dec	.00	.00	.06	.14	.23	.34	.47	.64	.87	1.27	1.66
Ann	11.86	12.73	13.86	14.71	15.46	16.19	16.93	17.76	18.76	20.21	21.46

\+ 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	4.8	4.0	1	0
Feb	2.8	.0	#	0
Mar	.8	.0	#	0
Apr	.6	.0	#	0
May	#	.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
Nov	2.0	.0	#	0
Dec	3.6	1.0	#	0
Ann	14.6	5.0	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	15.0	1990	19	15.0	1990	15	1990	19	3	1984
Feb	18.0	1987	19	18.0	1987	23	1987	19	4	1983
Mar	7.0	1999	18	7.0	1999	12	1973	30	1	1983
Apr	10.0	1997	25	10.0	1997	10	1997	25	1	1997
May	#	1984	7	#+	1984	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	.1	1997	25	.1+	1997	7	1984	15	#+	1997
Nov	8.0	1986	23	11.0	1972	8+	1986	23	2	1972
Dec	8.0	1997	22	12.0+	1992	10	1997	26	3	1997
Ann	18.0	Feb 1987	19	18.0	Feb 1987	23	Feb 1987	19	4	Feb 1983

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.0	.9	.4	.2	.1
Feb	.8	.8	.6	.2	.1
Mar	.3	.2	.1	.1	.0
Apr	.1	.1	.1	.1	.1
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
Nov	.6	.5	.3	.1	.0
Dec	1.2	1.2	.5	.3	.0
Ann	4.0	3.7	2.0	1.0	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	2.4	1.7	.5	.0
Feb	.3	.3	.1	.1
Mar	.1	.1	.1	.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	.8	.6	.3	.0
Dec	.6	.4	.0	.0
Ann	4.2	3.1	1.0	.1

+ 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	5/27	5/23	5/20	5/17	5/15	5/13	5/10	5/07	5/03
32	5/16	5/12	5/09	5/07	5/05	5/02	4/30	4/27	4/23
28	5/08	5/02	4/28	4/25	4/22	4/18	4/15	4/11	4/05
24	4/27	4/21	4/17	4/13	4/10	4/06	4/03	3/29	3/24
20	4/20	4/14	4/09	4/04	3/31	3/27	3/23	3/18	3/11
16	4/14	4/03	3/26	3/20	3/14	3/07	3/01	2/21	2/10

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	10/01	10/03	10/05	10/08	10/11	10/15
32	9/28	10/03	10/06	10/08	10/11	10/14	10/16	10/19	10/24
28	10/09	10/13	10/16	10/19	10/21	10/24	10/26	10/30	11/03
24	10/19	10/24	10/27	10/30	11/01	11/04	11/07	11/10	11/15
20	10/23	10/29	11/02	11/05	11/08	11/12	11/15	11/19	11/25
16	11/01	11/08	11/12	11/16	11/20	11/23	11/27	12/02	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	160	153	148	144	140	136	132	128	121
32	177	171	166	162	159	155	151	146	140
28	200	194	189	186	182	179	175	170	164
24	228	220	214	209	205	200	195	189	181
20	248	239	232	227	221	216	210	204	194
16	291	277	267	259	251	242	234	224	210

***** 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	995	774	670	442	206	52	7	14	95	371	702	973	5301
60	840	634	515	304	104	15	0	1	30	229	553	818	4043
57	747	550	423	229	62	6	0	0	11	157	467	725	3377
55	685	494	363	185	41	3	0	0	5	117	411	663	2967
50	531	359	224	98	11	0	0	0	0	48	280	511	2062
32	98	36	3	0	0	0	0	0	0	0	24	91	252

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	125	186	357	551	846	1084	1240	1191	951	653	312	141	7637
55	0	0	3	47	174	397	527	478	266	57	8	0	1957
57	0	0	1	30	133	340	465	416	212	35	5	0	1637
60	0	0	0	15	82	260	372	324	141	14	0	0	1208
65	0	0	0	3	28	146	225	182	56	1	0	0	641
70	0	0	0	0	6	67	104	76	13	0	0	0	266

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	24	64	145	307	588	839	983	936	702	407	134	40	24	88	233	540	1128	1967	2950	3886	4588	4995	5129	5169
45	4	19	67	191	433	689	828	781	553	271	61	5	4	23	90	281	714	1403	2231	3012	3565	3836	3897	3902
50	0	2	21	90	286	539	673	626	408	146	17	0	0	2	23	113	399	938	1611	2237	2645	2791	2808	2808
55	0	0	2	29	157	391	518	471	267	58	1	0	0	0	2	31	188	579	1097	1568	1835	1893	1894	1894
60	0	0	0	3	63	246	363	316	143	12	0	0	0	0	0	3	66	312	675	991	1134	1146	1146	1146
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	52	84	150	242	377	535	646	611	440	286	123	49	52	136	286	528	905	1440	2086	2697	3137	3423	3546	3595

(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