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: ALAMOSA BERGMAN FIELD, CO **COOP ID: 050130**

Climate Division: CO 5 **NWS Call Sign: ALS** **Elevation: 7,533 Feet** **Lat: 37˚26N** **Lon: 105˚52W**

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	33.1	-3.7	14.7	62	1971	20	25.6	1999	-41	1963	13	.6	1984	1551	0	.0	.0	2.0	13.7	31.0	18.5
Feb	40.2	4.7	22.5	66	1986	25	33.3	1995	-30+	1989	7	9.4	1979	1189	0	.0	.0	6.2	5.9	28.2	9.1
Mar	49.6	15.8	32.7	73+	1989	10	37.3	1999	-20	1964	4	26.1	1984	985	0	.0	.0	16.4	.8	30.6	1.0
Apr	58.7	22.8	40.8	80	1989	20	47.0	1992	-6	1973	8	35.5	1983	719	0	.0	.0	24.7	.1	27.0	.1
May	68.3	32.4	50.4	89	2000	29	55.2	1996	11	1967	1	46.2	1983	451	0	.0	.0	30.2	.0	13.7	.0
Jun	78.4	40.4	59.4	95	1994	26	62.4	1981	24	1990	2	56.0	1983	169	7	.0	.5	30.0	.0	1.8	.0
Jul	81.7	46.4	64.1	96	1989	5	66.7	1980	30	1997	2	62.1	1995	47	27	.0	.8	31.0	.0	@	.0
Aug	78.9	45.2	62.1	90	1977	7	64.7	1995	29	1964	21	58.3	1974	91	10	.0	@	31.0	.0	.1	.0
Sep	72.5	36.5	54.5	87+	1990	13	57.9+	1998	15+	1999	29	51.5	1985	302	0	.0	.0	29.9	.0	7.2	.0
Oct	61.7	23.9	42.8	81	1979	7	45.9	1992	-9	1991	31	39.1	1976	675	0	.0	.0	27.5	.3	27.0	.1
Nov	45.7	11.1	28.4	71+	1980	10	34.1	1998	-30	1952	27	17.8	1972	1082	0	.0	.0	12.2	3.9	29.5	4.3
Dec	34.8	-.7	17.1	61	1958	8	27.4	1980	-42+	1978	8	4.9	1991	1475	0	.0	.0	2.2	11.5	31.0	15.6
Ann	58.6	22.9	40.8	96	Jul 1989	5	66.7	Jul 1980	-42+	Dec 1978	8	.6	Jan 1984	8736	44	.0	1.3	243.3	36.2	227.1	48.7

\+ 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	.25	.23	.33+	1974	1	.75	1979	.00+	1998
Feb	.21	.21	.88	1963	10	.77	1997	.00	1999
Mar	.46	.38	1.15	1992	4	1.62	1992	.03	1971
Apr	.54	.42	1.22	1952	20	1.72	1990	.00	1972
May	.70	.70	.86	1967	26	1.85	1973	.01+	1998
Jun	.59	.58	1.02	1969	16	1.26	1995	.00	1980
Jul	.94	.77	1.56	1971	18	2.59	1971	.02	1994
Aug	1.19	.98	1.31	1993	27	5.40	1993	.21	1980
Sep	.89	.81	1.77	1959	30	1.85	1982	.19	1978
Oct	.67	.52	.89	1969	11	2.16	1972	.00+	1995
Nov	.48	.44	.71	1981	7	1.23	1991	.00+	1999
Dec	.33	.19	.91	1964	3	.99	1983	.00+	1996
Ann	7.25	7.18	1.77	Sep 1959	30	5.40	Aug 1993	.00+	Nov 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.8	.9	.0	.0
Feb	3.8	.7	.0	.0
Mar	5.4	1.5	.1	@
Apr	5.1	1.6	.2	@
May	6.1	2.3	.3	.0
Jun	5.4	1.9	.1	.0
Jul	8.5	2.6	.2	@
Aug	10.1	3.6	.4	.1
Sep	6.4	2.8	.3	.0
Oct	4.8	2.1	.3	.0
Nov	4.4	1.5	.1	.0
Dec	4.0	1.1	.1	.0
Ann	67.8	22.6	2.1	.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	.00	.03	.08	.12	.16	.21	.26	.32	.40	.53	.66
Feb	.01	.03	.06	.09	.12	.16	.21	.26	.34	.46	.59
Mar	.05	.09	.15	.22	.29	.36	.45	.56	.71	.96	1.20
Apr	.02	.07	.15	.22	.31	.40	.52	.66	.85	1.17	1.49
May	.03	.06	.14	.23	.34	.47	.63	.84	1.13	1.63	2.14
Jun	.05	.11	.20	.29	.38	.48	.59	.73	.92	1.22	1.51
Jul	.10	.17	.30	.43	.57	.73	.92	1.15	1.47	2.00	2.52
Aug	.25	.36	.54	.70	.85	1.02	1.22	1.45	1.75	2.23	2.69
Sep	.21	.30	.43	.54	.66	.78	.92	1.08	1.29	1.63	1.95
Oct	.00	.07	.18	.29	.40	.52	.66	.83	1.07	1.46	1.83
Nov	.00	.04	.12	.20	.28	.37	.47	.60	.77	1.06	1.34
Dec	.00	.02	.06	.11	.17	.23	.31	.41	.54	.78	1.01
Ann	4.80	5.27	5.86	6.32	6.73	7.13	7.55	8.01	8.58	9.40	10.12

\+ 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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Climate Division: CO 5 **NWS Call Sign: ALS** **Elevation: 7,533 Feet** **Lat: 37°26N** **Lon: 105°52W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	4.6	3.3	2	1
Feb	2.7	2.5	1	1
Mar	5.9	4.1	#	1
Apr	3.7	3.2	#	0
May	2.1	.1	#	0
Jun	.0	.0	#	0
Jul	.0	.0	#	0
Aug	.0	.0	0	0
Sep	.1	.0	0	0
Oct	3.0	.5	#	0
Nov	4.7	3.7	1	0
Dec	5.1	4.9	1	1
Ann	31.9	22.3	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	6.4	1974	1	17.8	1974	10+	1992	31	10	1992
Feb	3.5	1971	3	7.0	1987	10+	1992	20	9	1992
Mar	12.0	1992	4	29.2	1973	11	1992	5	3	1992
Apr	9.0	1990	30	9.2	1990	5+	1987	13	#	2000
May	8.4	1973	6	13.5	1978	4	1978	5	#	2000
Jun	.2	1983	13	.2	1983	#	1990	9	#	1999
Jul	.0	0	0	.0	0	#+	1990	26	#	1997
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	1.2	1971	18	1.2	1971	#	1973	26	0	0
Oct	13.1	1991	30	15.1	1991	12	1991	31	1	1991
Nov	8.0	1985	14	19.8	1972	12	1972	1	4	1972
Dec	9.6	1978	6	12.1	1978	10+	1991	27	6	1991
Ann	13.1	Oct 1991	30	29.2	Mar 1973	12+	Oct 1991	31	10	Jan 1992

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.1	1.4	.4	.2	.0
Feb	3.6	1.1	.1	.0	.0
Mar	4.9	2.0	.4	.2	.1
Apr	2.7	1.0	.4	.2	.0
May	1.3	.7	.2	.1	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	.1	.0	.0	.0
Oct	1.3	.7	.3	.2	.1
Nov	3.6	1.4	.5	.1	.0
Dec	4.3	1.6	.5	.2	.0
Ann	25.9	10.0	2.8	1.2	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	16.2	8.6	6.0	.9
Feb	9.0	4.6	3.1	.4
Mar	3.6	1.2	.6	@
Apr	.9	.2	.1	.0
May	.3	@	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.8	.2	.1	@
Nov	5.4	2.6	.9	@
Dec	12.6	6.8	2.6	.2
Ann	48.8	24.2	13.4	1.5

+ 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	7/14	7/08	7/04	7/01	6/28	6/24	6/21	6/17	6/11
32	6/23	6/18	6/15	6/12	6/09	6/06	6/03	5/31	5/26
28	6/14	6/08	6/04	6/01	5/28	5/25	5/22	5/17	5/12
24	5/27	5/22	5/19	5/16	5/14	5/11	5/08	5/05	4/30
20	5/13	5/08	5/04	5/01	4/28	4/25	4/22	4/19	4/14
16	5/04	4/29	4/25	4/22	4/19	4/16	4/13	4/09	4/03

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	8/13	8/19	8/23	8/27	8/31	9/03	9/07	9/11	9/17
32	9/01	9/05	9/09	9/12	9/14	9/17	9/20	9/23	9/28
28	9/10	9/14	9/17	9/19	9/21	9/23	9/26	9/29	10/02
24	9/20	9/23	9/25	9/27	9/29	10/01	10/03	10/05	10/08
20	9/23	9/28	10/01	10/04	10/06	10/09	10/11	10/14	10/19
16	10/03	10/08	10/11	10/14	10/17	10/20	10/23	10/26	10/31

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	85	78	72	68	63	59	54	49	41
32	114	108	104	100	97	93	90	86	80
28	130	125	121	118	115	112	109	106	101
24	154	148	144	141	138	134	131	127	121
20	181	174	169	164	160	156	152	146	139
16	196	191	187	184	181	177	174	170	165

***** 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	1551	1189	985	719	451	169	47	91	302	675	1082	1475	8736
60	1406	1052	846	577	303	67	4	26	178	534	948	1333	7274
57	1313	968	753	487	220	30	0	7	111	441	858	1240	6428
55	1251	912	691	428	170	15	0	3	74	379	798	1178	5899
50	1096	772	536	288	76	2	0	0	19	231	648	1023	4691
32	584	325	87	12	0	0	0	0	0	6	193	494	1701

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	4	19	110	288	576	829	1003	944	689	356	70	5	4893
55	0	0	0	0	21	155	291	232	61	1	0	0	761
57	0	0	0	0	9	108	229	172	34	0	0	0	552
60	0	0	0	0	2	52	140	90	10	0	0	0	294
65	0	0	0	0	0	7	27	10	0	0	0	0	44
70	0	0	0	0	0	0	1	0	0	0	0	0	1

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	0	0	16	113	341	597	766	705	455	154	9	0	0	0	16	129	470	1067	1833	2538	2993	3147	3156	3156
45	0	0	0	40	200	447	611	550	309	62	0	0	0	0	0	40	240	687	1298	1848	2157	2219	2219	2219
50	0	0	0	7	92	298	456	395	171	13	0	0	0	0	0	7	99	397	853	1248	1419	1432	1432	1432
55	0	0	0	0	22	163	301	242	69	0	0	0	0	0	0	0	22	185	486	728	797	797	797	797
60	0	0	0	0	0	56	149	98	9	0	0	0	0	0	0	0	0	56	205	303	312	312	312	312
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	15	62	155	290	432	507	471	357	207	45	1	0	15	77	232	522	954	1461	1932	2289	2496	2541	2542

(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