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: SUGARLOAF RES (LEADVILL), CO **COOP ID: 058064**

Climate Division: CO 1 **NWS Call Sign:** **Elevation: 9,738 Feet** **Lat: 39˚15N** **Lon: 106˚22W**

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	28.4	3.5	16.0	55	1987	13	21.7	1999	-55	1962	10	8.3	1979	1521	0	.0	.0	.3	19.0	31.0	12.3
Feb	32.0	4.1	18.1	55	1950	28	25.3	1995	-49	1962	28	11.8	1985	1315	0	.0	.0	.5	12.5	28.3	10.6
Mar	36.9	9.7	23.3	59	1987	7	29.9	1999	-44	1965	3	17.2	1977	1292	0	.0	.0	2.2	7.8	31.0	5.7
Apr	43.0	17.3	30.2	66	1992	30	35.9	1981	-22	1959	12	24.4	1983	1046	0	.0	.0	7.9	4.1	29.9	1.4
May	53.6	27.2	40.4	79	1953	15	44.5	1996	-3	1962	1	35.7	1983	764	0	.0	.0	21.6	.3	27.2	.0
Jun	65.5	34.2	49.9	83	1954	23	54.5	1994	17	1973	19	46.0	1975	454	0	.0	.0	28.8	.0	11.6	.0
Jul	70.7	39.0	54.9	85+	2001	7	57.4	1998	25	1962	15	52.4	1995	315	0	.0	.0	30.9	.0	2.2	.0
Aug	68.5	38.4	53.5	83	2000	10	56.0	1983	23+	1964	28	50.7	1974	359	0	.0	.0	31.0	.0	4.2	.0
Sep	61.2	31.6	46.4	80	1978	7	51.4	1998	4	1971	20	42.9	1985	558	0	.0	.0	27.6	.1	16.7	.0
Oct	49.9	23.4	36.7	71	1980	1	40.3	2000	-9	1975	25	30.1	1984	879	0	.0	.0	19.1	1.8	29.1	.1
Nov	35.9	13.6	24.8	63	1975	6	32.1	1999	-32	1951	15	17.8	1979	1207	0	.0	.0	4.4	10.6	30.0	3.2
Dec	29.5	6.6	18.1	56+	1999	1	27.8	1980	-45	1964	30	11.8	1978	1456	0	.0	.0	.5	16.3	31.0	9.3
Ann	47.9	20.7	34.4	85+	Jul 2001	7	57.4	Jul 1998	-55	Jan 1962	10	8.3	Jan 1979	11166	0	.0	.0	174.8	72.5	272.2	42.6

\+ 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	1.37	1.08	1.39	1974	2	3.41	1996	.22	1981
Feb	1.22	1.01	1.16	1993	22	3.52	1996	.29	1985
Mar	1.42	1.44	1.00	1975	24	3.02	1975	.55	1977
Apr	1.39	1.38	1.32	1957	2	2.66	1997	.44	1987
May	1.41	1.23	1.20	1949	7	4.29	1995	.17	1998
Jun	1.10	1.06	1.68	1984	7	2.55	1979	.00	1980
Jul	1.86	1.69	1.17	2001	10	3.61	1989	.25	1994
Aug	1.96	1.72	1.10	2000	18	4.32	1984	.54	1985
Sep	1.34	1.34	1.43	1959	29	2.59	1993	.41	1978
Oct	1.10	.94	.96	1963	20	2.98	1993	.32	1976
Nov	1.33	1.20	1.42	1986	3	2.37	1983	.38	1980
Dec	1.17	.86	1.50	1951	30	3.98	1996	.09	1998
Ann	16.67	16.42	1.68	Jun 1984	7	4.32	Aug 1984	.00	Jun 1980

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.8	4.5	.4	.1
Feb	8.6	3.7	.4	@
Mar	10.5	4.5	.2	@
Apr	9.5	4.8	.1	.0
May	10.0	4.6	.6	.0
Jun	8.9	3.8	.3	.1
Jul	11.4	5.1	.5	@
Aug	12.7	5.3	.6	.1
Sep	9.7	4.3	.3	.0
Oct	6.5	3.7	.4	.0
Nov	8.4	3.8	.4	.1
Dec	8.0	3.2	.3	.0
Ann	114.0	51.3	4.5	.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	.20	.32	.51	.70	.90	1.11	1.36	1.67	2.08	2.74	3.38
Feb	.25	.37	.54	.71	.87	1.05	1.25	1.49	1.80	2.31	2.78
Mar	.58	.71	.89	1.04	1.18	1.33	1.49	1.67	1.89	2.24	2.56
Apr	.53	.66	.84	.99	1.14	1.29	1.45	1.64	1.88	2.25	2.58
May	.28	.41	.62	.81	1.00	1.20	1.43	1.71	2.08	2.67	3.23
Jun	.22	.37	.56	.71	.85	.99	1.15	1.34	1.58	1.96	2.31
Jul	.45	.63	.90	1.14	1.38	1.63	1.92	2.25	2.69	3.39	4.05
Aug	.63	.81	1.09	1.32	1.55	1.78	2.04	2.34	2.73	3.33	3.89
Sep	.55	.68	.85	.99	1.12	1.26	1.40	1.57	1.78	2.11	2.40
Oct	.34	.44	.60	.73	.86	.99	1.14	1.31	1.54	1.89	2.21
Nov	.51	.63	.81	.96	1.10	1.24	1.39	1.57	1.80	2.15	2.46
Dec	.14	.23	.39	.56	.73	.92	1.15	1.42	1.80	2.42	3.02
Ann	12.26	13.12	14.22	15.05	15.78	16.48	17.21	18.01	18.98	20.37	21.58

\+ 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	20.0	11.3	20	21	18.0	1974	2	46.5	1975	44	1997	17	34	1997	8.0	5.8	1.9	.9	.3	-9.9	-9.9	-9.9	-9.9
Feb	15.9	13.4	26	26	22.0	1993	22	42.0	1986	64	1996	25	48	1996	7.6	5.1	1.8	.7	.1	-9.9	-9.9	-9.9	-9.9
Mar	22.9	23.0	28	28	15.0	1975	24	47.5	1975	66	1995	7	45	1975	9.6	6.7	2.2	.8	.1	-9.9	-9.9	-9.9	-9.9
Apr	17.6	18.3	17	18	8.0	1973	9	34.6	1997	50	1975	1	40	1975	7.9	6.0	1.8	.6	.0	-9.9	-9.9	-9.9	-9.9
May	9.2	6.0	2	1	10.6	1995	17	42.0	1995	27	1975	1	15	1995	3.2	2.5	.9	.5	.1	2.8	2.0	1.5	.6
Jun	1.5	.0	#	0	11.0	1984	7	14.0	1979	11	1984	7	1	1984	.4	.4	.1	.1	@	.3	.2	.1	@
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	#	1972	24	#	1972	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	1.2	.0	#	0	8.0	1971	18	10.0	1971	6	1996	27	#+	1996	.7	.6	.2	.1	.0	.5	@	@	.0
Oct	7.1	7.0	#	#	9.0	1990	22	18.0	1984	6	1981	16	4	1998	2.9	2.2	.9	.3	.0	2.6	.9	.1	.0
Nov	18.8	17.8	3	3	17.0	1986	3	31.0	1983	24	1979	27	12	1992	7.3	5.3	2.1	.9	.3	12.9	8.3	5.2	1.0
Dec	13.3	10.1	11	12	13.0	1981	28	33.5	1981	40	1983	28	27	1983	6.2	4.5	1.6	.7	@	-9.9	-9.9	-9.9	-9.9
Ann	127.5	106.9	N/A	N/A	22.0	Feb 1993	22	47.5	Mar 1975	66	Mar 1995	7	48	Feb 1996	53.8	39.1	13.5	5.6	.9	-9.9	-9.9	-9.9	-9.9

+ 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	8/04	7/30	7/27	7/25	7/22	7/20	7/17	7/14	7/10
32	7/27	7/20	7/15	7/11	7/07	7/02	6/28	6/23	6/16
28	7/02	6/26	6/22	6/18	6/15	6/12	6/08	6/04	5/29
24	6/15	6/09	6/04	5/31	5/27	5/24	5/20	5/15	5/08
20	6/01	5/26	5/22	5/18	5/15	5/12	5/08	5/04	4/28
16	5/16	5/12	5/08	5/05	5/03	4/30	4/27	4/24	4/20

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	7/30	8/01	8/04	8/06	8/08	8/10	8/12	8/14	8/18
32	8/07	8/13	8/17	8/20	8/24	8/27	8/31	9/04	9/10
28	8/19	8/25	8/30	9/03	9/07	9/10	9/14	9/19	9/26
24	9/05	9/10	9/14	9/17	9/20	9/23	9/26	9/30	10/05
20	9/18	9/23	9/27	9/30	10/03	10/06	10/10	10/13	10/19
16	9/23	9/29	10/03	10/06	10/10	10/13	10/17	10/21	10/26

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	34	28	23	19	16	12	8	3	0
32	80	69	61	54	47	41	34	26	15
28	111	102	95	89	83	77	72	65	55
24	140	132	126	120	115	110	105	99	90
20	166	157	151	146	141	135	130	124	115
16	184	175	169	164	159	154	149	143	134

***** 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	1521	1315	1292	1046	764	454	315	359	558	879	1207	1456	11166
60	1366	1175	1137	896	609	305	163	205	408	724	1057	1301	9346
57	1273	1091	1044	806	516	221	83	120	318	631	967	1208	8278
55	1211	1035	982	746	454	171	47	75	261	569	907	1146	7604
50	1056	895	827	596	303	73	4	13	133	415	757	991	6063
32	498	391	284	134	11	0	0	0	0	36	249	436	2039

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	15	79	270	536	708	664	432	179	32	3	2918
55	0	0	0	0	0	17	42	27	3	0	0	0	89
57	0	0	0	0	0	8	17	10	1	0	0	0	36
60	0	0	0	0	0	2	3	1	0	0	0	0	6
65	0	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	0	8	93	307	472	429	224	44	0	0	0	0	0	8	101	408	880	1309	1533	1577	1577	1577
45	0	0	0	0	27	175	318	274	105	5	0	0	0	0	0	0	27	202	520	794	899	904	904	904
50	0	0	0	0	1	69	165	129	32	0	0	0	0	0	0	0	1	70	235	364	396	396	396	396
55	0	0	0	0	0	11	48	31	2	0	0	0	0	0	0	0	0	11	59	90	92	92	92	92
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	0	19	100	246	333	302	195	76	7	0	0	0	0	19	119	365	698	1000	1195	1271	1278	1278

(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