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: LAKEWOOD, CO **COOP ID: 054762**

Climate Division: CO 4 **NWS Call Sign:** **Elevation: 5,640 Feet** **Lat: 39˚45N** **Lon: 105˚07W**

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	43.6	12.7	28.2	72	1982	27	37.8	1986	-26	1963	12	17.0	1979	1142	0	.0	.0	12.0	5.8	28.6	3.2
Feb	46.7	15.9	31.3	76	1982	23	38.0	1999	-23+	1989	6	19.2	1989	944	0	.0	.0	12.7	4.0	24.9	1.5
Mar	52.5	21.9	37.2	84	1963	28	44.8	1986	-11	1965	19	32.6	1975	862	0	.0	.0	18.9	2.0	23.1	.3
Apr	58.8	29.7	44.3	86	1965	22	52.2	1981	-1	1975	2	36.8	1973	623	0	.0	.0	23.7	.4	14.1	@
May	68.4	39.2	53.8	94	2000	30	59.6	1994	12	1972	1	47.3	1983	359	11	.0	.3	29.1	.0	2.1	.0
Jun	79.6	48.9	64.3	104	1994	27	70.0	1994	27	1974	8	58.7	1982	109	86	@	4.4	29.9	.0	.1	.0
Jul	85.8	54.6	70.2	101+	1989	9	74.2	2000	37	1972	17	66.2	1973	12	174	.2	10.5	31.0	.0	.0	.0
Aug	83.9	52.7	68.3	100	1995	9	73.1	2000	41+	1964	28	65.1	1974	27	130	@	5.8	31.0	.0	.0	.0
Sep	75.5	43.0	59.3	96+	1995	4	65.1	1998	16	1985	29	54.4	1971	206	34	.0	1.7	29.2	.1	1.5	.0
Oct	64.5	32.2	48.4	89	1964	1	51.3	1992	5	1993	30	41.0	1984	516	0	.0	.0	27.4	.4	9.8	.0
Nov	51.0	21.0	36.0	88	1989	19	45.5	1999	-5+	1976	28	29.1	1985	871	0	.0	.0	16.8	3.2	23.0	.2
Dec	44.8	14.1	29.5	74	1980	18	38.3	1980	-25+	1990	22	15.6	1983	1102	0	.0	.0	12.5	5.1	28.3	2.1
Ann	62.9	32.2	47.6	104	Jun 1994	27	74.2	Jul 2000	-26	Jan 1963	12	15.6	Dec 1983	6773	435	.2	22.7	274.2	21.0	155.5	7.3

\+ 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: 1962-2001

(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	.48	.43	1.04	1974	18	1.35	1974	.00	1983
Feb	.46	.41	.62	1971	20	1.09	1984	.00	1992
Mar	1.37	1.06	2.00	1983	6	4.05	1983	.20	1997
Apr	2.08	1.67	2.33	1967	13	7.74	1999	.09	1982
May	2.59	2.35	2.70	1969	7	5.88	1973	.20	1974
Jun	2.17	1.89	2.77	1963	16	5.51	1987	.22	1990
Jul	1.87	1.63	2.60	2000	17	4.29	1975	.03	1979
Aug	1.83	1.44	2.10	1988	4	4.20	1979	.23	1974
Sep	1.45	1.26	2.21	1976	15	6.87	1976	.00	1992
Oct	1.02	.72	2.93	1984	5	5.75	1984	.00	2000
Nov	1.14	.87	1.36	1975	9	2.97	1986	.00	1984
Dec	.60	.57	.98	1987	28	1.95	1987	.00	1991
Ann	17.06	16.49	2.93	Oct 1984	5	7.74	Apr 1999	.00+	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.7	1.8	.1	@
Feb	4.1	1.6	@	.0
Mar	6.1	3.7	.7	.2
Apr	6.8	4.6	1.5	.3
May	9.3	5.8	1.8	.5
Jun	8.2	4.3	1.4	.6
Jul	8.1	4.3	1.3	.4
Aug	7.9	3.7	1.3	.3
Sep	6.8	3.6	.9	.3
Oct	4.3	2.4	.5	.1
Nov	4.6	3.0	.6	.1
Dec	3.6	2.2	.3	@
Ann	73.5	41.0	10.4	2.8

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	.04	.09	.16	.23	.31	.39	.48	.59	.74	.99	1.23
Feb	.04	.09	.16	.23	.30	.37	.46	.57	.71	.94	1.16
Mar	.24	.36	.56	.75	.94	1.15	1.38	1.67	2.06	2.68	3.27
Apr	.33	.50	.81	1.09	1.39	1.72	2.09	2.55	3.16	4.15	5.10
May	.42	.64	1.02	1.37	1.74	2.14	2.61	3.17	3.92	5.14	6.31
Jun	.48	.68	1.00	1.28	1.57	1.88	2.22	2.63	3.17	4.03	4.84
Jul	.30	.46	.73	.98	1.25	1.54	1.87	2.28	2.82	3.70	4.55
Aug	.29	.45	.71	.96	1.23	1.51	1.84	2.24	2.77	3.64	4.47
Sep	.05	.16	.36	.57	.80	1.06	1.38	1.77	2.32	3.23	4.14
Oct	.04	.12	.27	.42	.58	.76	.98	1.25	1.62	2.24	2.84
Nov	.06	.16	.34	.51	.68	.88	1.12	1.41	1.80	2.45	3.08
Dec	.04	.10	.20	.29	.38	.48	.60	.75	.94	1.26	1.57
Ann	11.20	12.30	13.72	14.82	15.80	16.76	17.75	18.86	20.21	22.19	23.92

\+ 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: 1962-2001
(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	8.6	9.5	2	1	10.0	1998	6	13.9	1996	16	1987	16	8	1988	3.2	2.6	1.0	.4	@	10.9	6.3	2.4	.1
Feb	6.7	7.0	1	1	8.0	1971	20	16.7	1971	11	1987	27	4	1989	2.6	2.1	.8	.3	.0	6.7	3.6	1.5	.1
Mar	11.9	11.2	1	1	12.5	1990	7	27.3	1998	14	1990	7	3	1983	3.7	2.9	1.3	.6	.1	5.9	3.2	1.5	.1
Apr	10.0	8.5	1	1	10.0	1984	21	27.7	1973	18	1986	4	2	1995	2.5	2.2	1.1	.6	.1	3.7	2.3	1.6	.2
May	1.3	.0	#	0	9.0	1978	6	12.0	1978	12	1978	6	1	1978	.3	.3	.2	.1	.0	.5	.3	.1	.1
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	.9	.0	#	0	11.0	1971	17	11.0+	1971	11	1971	17	1	1985	.3	.3	.2	.1	@	.4	.3	.2	@
Oct	3.3	2.4	#	#	20.0	1997	26	20.0	1997	20	1997	26	3	1984	.9	.8	.4	.2	.1	1.5	.9	.4	.2
Nov	12.1	10.0	1	1	13.0	1972	1	36.0	1972	18	1979	21	5	1979	2.8	2.3	1.4	.7	.2	8.6	5.7	3.0	1.0
Dec	8.7	7.5	2	2	13.0	1987	27	29.1	1987	25	1987	28	5	1992	2.6	2.3	1.1	.4	@	11.8	7.5	3.9	.2
Ann	63.5	56.1	N/A	N/A	20.0	Oct 1997	26	36.0	Nov 1972	25	Dec 1987	28	8	Jan 1988	18.9	15.8	7.5	3.4	.5	50.0	30.1	14.6	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	6/04	5/30	5/26	5/23	5/20	5/17	5/14	5/10	5/05
32	5/24	5/19	5/15	5/12	5/09	5/06	5/03	4/29	4/24
28	5/17	5/10	5/06	5/02	4/29	4/25	4/21	4/17	4/11
24	5/02	4/26	4/22	4/19	4/15	4/12	4/08	4/04	3/29
20	4/26	4/19	4/14	4/09	4/05	4/01	3/28	3/23	3/16
16	4/18	4/10	4/05	3/31	3/27	3/22	3/18	3/12	3/05

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	9/13	9/17	9/20	9/22	9/25	9/27	9/29	10/02	10/06
32	9/18	9/22	9/26	9/28	10/01	10/04	10/06	10/10	10/14
28	9/24	9/29	10/03	10/06	10/09	10/12	10/15	10/19	10/24
24	9/30	10/07	10/12	10/16	10/20	10/24	10/28	11/02	11/08
20	10/13	10/19	10/24	10/28	10/31	11/04	11/07	11/12	11/18
16	10/20	10/26	10/31	11/04	11/08	11/11	11/15	11/20	11/26

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	148	141	136	131	127	123	118	113	105
32	168	160	154	149	144	139	134	129	121
28	187	179	173	168	163	158	153	147	139
24	210	202	196	191	187	182	177	171	163
20	235	226	219	213	208	203	197	190	181
16	256	245	238	231	225	219	212	205	194

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1142	944	862	623	359	109	12	27	206	516	871	1102	6773
60	987	804	707	476	230	46	1	5	110	364	721	947	5398
57	894	720	614	391	166	24	0	2	68	277	631	854	4641
55	832	664	552	337	130	14	0	1	47	223	571	792	4163
50	677	524	402	216	61	3	0	0	14	112	430	638	3077
32	212	132	40	9	0	0	0	0	0	1	75	188	657

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	93	112	201	377	675	967	1185	1125	818	508	194	109	6364
55	0	0	0	15	92	292	472	413	175	18	0	0	1477
57	0	0	0	9	66	241	410	352	136	9	0	0	1223
60	0	0	0	3	37	174	318	262	88	3	0	0	885
65	0	0	0	0	11	86	174	130	34	0	0	0	435
70	0	0	0	0	2	31	67	40	9	0	0	0	149

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	39	59	124	246	494	784	995	937	655	355	116	45	39	98	222	468	962	1746	2741	3678	4333	4688	4804	4849
45	7	21	56	144	349	635	840	782	508	230	58	14	7	28	84	228	577	1212	2052	2834	3342	3572	3630	3644
50	0	1	18	71	218	488	685	627	369	127	21	0	0	1	19	90	308	796	1481	2108	2477	2604	2625	2625
55	0	0	2	28	114	345	530	473	244	55	1	0	0	0	2	30	144	489	1019	1492	1736	1791	1792	1792
60	0	0	0	4	49	218	377	322	134	14	0	0	0	0	0	4	53	271	648	970	1104	1118	1118	1118
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	42	60	109	172	311	492	643	609	418	254	99	48	42	102	211	383	694	1186	1829	2438	2856	3110	3209	3257

(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