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: NORTHDALE, CO **COOP ID: 055970**

Climate Division: CO 2 **NWS Call Sign:** **Elevation: 6,680 Feet** **Lat: 37˚49N** **Lon: 109˚01W**

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	36.0	9.7	22.9	57+	1996	14	33.1	1986	-33	1979	30	13.6	1973	1307	0	.0	.0	2.4	9.4	30.9	7.6
Feb	41.0	15.2	28.1	67+	1995	23	38.7	1995	-28+	1949	9	18.3	1974	1033	0	.0	.0	4.8	3.3	27.5	3.2
Mar	49.8	23.6	36.7	72+	1986	27	41.1	1986	-18	1962	11	31.1	1979	876	0	.0	.0	16.2	.4	28.0	.2
Apr	59.2	28.2	43.7	80	1981	30	48.8	1992	-5	1975	2	38.7	1975	640	0	.0	.0	25.5	.1	22.7	@
May	69.4	35.6	52.5	90	2000	29	57.4	2000	11	1967	2	48.7	1995	388	1	.0	@	30.6	.0	10.4	.0
Jun	81.1	42.8	62.0	97+	1994	29	66.0	1994	19+	1954	7	58.2	1995	129	37	.0	3.3	30.0	.0	1.4	.0
Jul	85.9	50.6	68.3	99	1985	6	70.8	1996	32+	1970	1	65.3	1992	14	115	.0	8.9	31.0	.0	.0	.0
Aug	83.2	50.0	66.6	97+	1981	7	70.1+	2000	31	1968	23	63.1	1975	38	88	.0	4.2	31.0	.0	.1	.0
Sep	75.3	41.8	58.6	98	1977	7	62.1	1998	18	1971	19	54.6	1985	206	12	.0	.4	30.0	.0	2.9	.0
Oct	62.9	30.9	46.9	86	1987	6	50.6	1988	-6	1956	30	42.6	1984	560	0	.0	.0	28.3	.1	19.5	.0
Nov	47.1	20.6	33.9	72	1949	4	39.1	1981	-22	1952	27	28.0	1979	934	0	.0	.0	13.8	1.9	27.9	.7
Dec	38.0	12.4	25.2	64	1977	4	35.8	1980	-28	1990	24	16.5	1990	1234	0	.0	.0	3.4	7.1	30.7	4.1
Ann	60.7	30.1	45.5	99	Jul 1985	6	70.8	Jul 1996	-33	Jan 1979	30	13.6	Jan 1973	7359	253	.0	16.8	247.0	22.3	202.0	15.8

\+ 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	.80	.66	.74	2000	26	2.28	1979	.00	1972
Feb	.79	.62	1.45+	1976	9	3.54	1976	.00+	1974
Mar	.92	.80	.80	1983	24	2.49	1978	.00+	1999
Apr	.76	.52	.92	1960	12	2.13	1994	.00+	1989
May	.99	.93	.93	1995	29	2.99	1995	.00	1974
Jun	.44	.20	1.24	1957	11	1.94	1991	.00+	1982
Jul	1.32	1.07	1.25	1986	21	3.60	1985	.00	1993
Aug	1.34	1.24	2.15	1957	30	3.23	1997	.15	1985
Sep	1.25	1.03	2.20	1970	5	3.60	1985	.00	1979
Oct	1.84	1.78	2.41	1996	3	7.97	1972	.00+	1999
Nov	1.08	.89	1.37	1977	6	3.84	1978	.00+	1989
Dec	.76	.53	1.15	1984	27	2.90	1978	.00	1976
Ann	12.29	12.41	2.41	Oct 1996	3	7.97	Oct 1972	.00+	Oct 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.4	3.3	.1	.0
Feb	4.6	2.3	.3	.1
Mar	6.0	3.6	.2	.0
Apr	5.2	2.6	.3	.0
May	4.9	3.3	.3	.0
Jun	2.3	1.3	.2	@
Jul	5.9	3.9	.7	.1
Aug	5.7	3.8	.7	.2
Sep	5.2	3.5	.7	.1
Oct	5.3	4.1	1.3	.2
Nov	4.5	2.8	.5	.2
Dec	4.3	2.3	.2	.1
Ann	59.3	36.8	5.5	1.0

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	.06	.14	.27	.38	.51	.64	.79	.98	1.24	1.66	2.06
Feb	.00	.07	.21	.34	.47	.61	.78	.98	1.26	1.72	2.17
Mar	.00	.05	.18	.32	.47	.65	.86	1.12	1.49	2.12	2.74
Apr	.00	.04	.16	.27	.40	.54	.72	.94	1.24	1.75	2.26
May	.05	.15	.30	.45	.60	.77	.97	1.22	1.56	2.12	2.67
Jun	.00	.00	.01	.05	.12	.21	.33	.50	.75	1.18	1.64
Jul	.13	.29	.51	.70	.89	1.10	1.34	1.63	2.02	2.64	3.23
Aug	.21	.32	.51	.70	.89	1.10	1.34	1.63	2.03	2.67	3.29
Sep	.14	.30	.51	.69	.87	1.06	1.28	1.54	1.88	2.43	2.95
Oct	.00	.00	.43	.74	1.06	1.41	1.82	2.32	2.98	4.09	5.16
Nov	.00	.09	.26	.43	.61	.81	1.05	1.34	1.74	2.41	3.06
Dec	.01	.05	.14	.24	.37	.51	.69	.92	1.24	1.80	2.36
Ann	7.82	8.64	9.72	10.55	11.30	12.03	12.79	13.64	14.68	16.21	17.54

\+ 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

Complete documentation available from:
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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	6.8	5.9	6	5
Feb	7.4	5.0	3	2
Mar	8.8	.1	1	#
Apr	1.9	.0	1	0
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	#	0
Oct	.9	.0	#	0
Nov	5.5	2.0	#	#
Dec	4.2	1.2	2	1
Ann	35.5	14.2	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	12.0	1979	19	15.0	1982	24	1979	31	24	1979
Feb	12.0	1994	21	29.0	1994	20	1997	28	11	1993
Mar	12.0	1998	29	57.0	1983	10	2000	7	5	1995
Apr	8.0	1983	13	10.0	1983	12	1994	10	7	1994
May	#	1971	29	#	1971	5	1995	6	#+	1995
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	#	2000	24	#	2000	#	2000	24	#	2000
Oct	6.0	1994	15	6.0+	1994	6+	1991	28	1	1972
Nov	9.0	1982	30	14.0	1973	18	1985	30	2	1985
Dec	12.0	1992	5	16.5	1971	14	1988	26	11	1992
Ann	12.0+	Mar 1998	29	57.0	Mar 1983	24	Jan 1979	31	24	Jan 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.3	2.2	1.0	.5	.2
Feb	2.5	2.3	.9	.3	.2
Mar	1.5	1.5	.8	.5	.2
Apr	.6	.5	.2	.1	.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	.2	.2	.1	@	.0
Nov	.9	.9	.3	.2	.0
Dec	2.0	1.6	.6	.3	.1
Ann	10.0	9.2	3.9	1.9	.7

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	-9.9	-9.9	-9.9	-9.9
Mar	-9.9	-9.9	-9.9	-9.9
Apr	.1	.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	.2	.1	.1	.0
Nov	1.7	.9	.6	.0
Dec	-9.9	-9.9	-9.9	-9.9
Ann	-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	7/03	6/29	6/26	6/23	6/20	6/18	6/15	6/11	6/07
32	6/20	6/15	6/11	6/08	6/05	6/02	5/30	5/26	5/20
28	6/04	5/31	5/28	5/25	5/22	5/20	5/17	5/14	5/10
24	5/28	5/21	5/16	5/11	5/07	5/03	4/29	4/24	4/17
20	5/13	5/05	4/30	4/25	4/21	4/17	4/12	4/07	3/30
16	4/27	4/20	4/15	4/11	4/06	4/02	3/29	3/24	3/17

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	8/27	9/02	9/05	9/09	9/12	9/15	9/18	9/22	9/27
32	9/10	9/14	9/16	9/19	9/21	9/24	9/26	9/29	10/03
28	9/19	9/23	9/26	9/29	10/01	10/04	10/06	10/09	10/14
24	9/27	10/03	10/06	10/09	10/12	10/15	10/19	10/22	10/27
20	10/08	10/14	10/18	10/22	10/25	10/29	11/02	11/06	11/12
16	10/23	10/28	10/31	11/03	11/06	11/09	11/12	11/16	11/21

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	105	98	92	87	83	78	74	68	60
32	127	120	116	111	108	104	100	95	88
28	149	143	139	135	131	128	124	119	113
24	184	175	168	163	157	152	146	140	131
20	215	205	198	192	187	181	176	169	159
16	241	232	225	219	213	207	201	194	185

***** 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	1307	1033	876	640	388	129	14	38	206	560	934	1234	7359
60	1152	893	721	490	244	50	1	6	96	406	784	1079	5922
57	1059	809	628	402	169	23	0	1	51	315	694	986	5137
55	997	753	566	345	126	12	0	0	31	258	634	924	4646
50	842	613	413	215	50	2	0	0	5	134	484	769	3527
32	342	196	42	5	0	0	0	0	0	1	74	258	918

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	58	87	188	356	636	898	1124	1073	797	463	130	47	5857
55	0	0	0	6	49	221	411	360	138	7	0	0	1192
57	0	0	0	3	30	172	349	299	98	3	0	0	954
60	0	0	0	0	12	109	257	210	53	1	0	0	642
65	0	0	0	0	1	37	115	88	12	0	0	0	253
70	0	0	0	0	0	7	26	19	1	0	0	0	53

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	5	46	161	398	673	891	841	576	253	29	0	0	5	51	212	610	1283	2174	3015	3591	3844	3873	3873
45	0	0	9	68	252	523	736	686	427	129	5	0	0	0	9	77	329	852	1588	2274	2701	2830	2835	2835
50	0	0	0	20	133	375	581	531	282	45	0	0	0	0	0	20	153	528	1109	1640	1922	1967	1967	1967
55	0	0	0	0	48	232	426	376	149	7	0	0	0	0	0	0	48	280	706	1082	1231	1238	1238	1238
60	0	0	0	0	6	114	271	224	55	0	0	0	0	0	0	0	6	120	391	615	670	670	670	670
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	13	59	162	313	473	575	551	403	225	50	2	0	13	72	234	547	1020	1595	2146	2549	2774	2824	2826

(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