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: EADS, CO **COOP ID: 052446**

Climate Division: CO 1 **NWS Call Sign:** **Elevation: 4,211 Feet** **Lat: 38˚29N** **Lon: 102˚47W**

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	41.5	12.1	26.8	78	1971	30	36.8	1986	-29	1948	28	15.6	1979	1183	0	.0	.0	10.7	7.2	30.9	3.7
Feb	47.5	16.9	32.2	80+	1986	26	39.5	1999	-19+	1996	4	21.7	1978	918	0	.0	.0	15.2	4.2	27.4	1.5
Mar	56.1	24.5	40.3	90+	1986	31	48.2	1986	-21	1948	11	34.2	1980	766	0	.0	.1	23.4	1.4	23.8	.1
Apr	64.9	32.9	48.9	99	1932	13	55.2	1986	4	1920	4	39.3	1984	488	4	.0	.6	26.8	.2	12.2	.0
May	73.9	43.5	58.7	106	1934	30	63.4+	1998	17	1967	1	52.5	1983	229	33	@	2.0	30.5	.0	1.2	.0
Jun	85.2	54.3	69.8	110+	1963	29	75.2	1988	27	1931	5	63.8	1982	42	185	2.3	12.5	30.0	.0	.0	.0
Jul	90.5	60.1	75.3	110	1947	30	79.3	1980	43	1952	8	72.2	1972	0	320	4.5	21.3	31.0	.0	.0	.0
Aug	88.2	57.6	72.9	108+	1947	10	78.0	2000	40	1931	7	68.6	1974	8	254	2.0	17.4	31.0	.0	.0	.0
Sep	80.5	47.8	64.2	107	1947	3	70.1	1998	20+	1985	29	59.6	1974	101	75	.4	7.8	29.5	.0	.9	.0
Oct	69.3	34.5	51.9	96	1963	1	55.8	1979	7	1957	26	45.8	1984	408	1	.0	.4	28.8	.2	11.3	.0
Nov	53.0	22.1	37.6	86	1931	1	46.2	1999	-12	1991	4	29.1	1985	824	0	.0	.0	18.9	2.2	26.0	.2
Dec	43.7	14.0	28.9	78	1955	24	35.9	1980	-24+	1961	13	15.2	1983	1122	0	.0	.0	12.1	5.4	30.6	2.5
Ann	66.2	35.0	50.6	110+	Jun 1963	29	79.3	Jul 1980	-29	Jan 1948	28	15.2	Dec 1983	6089	872	9.2	62.1	287.9	20.8	164.3	8.0

\+ 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: 1918-2001

(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	.30	.23	1.03	1921	23	1.02	1980	.00	1998
Feb	.34	.19	.96	1939	27	1.74	1983	.00+	1994
Mar	.97	.80	1.75	1946	16	2.46	1980	.00	1986
Apr	1.31	1.04	2.19	1999	30	5.36	1999	.00+	1992
May	2.47	2.27	3.18	1996	26	5.73	1995	.30	2000
Jun	2.07	1.62	2.55	1996	13	5.74	1986	.26	1980
Jul	2.80	2.83	2.75	1985	19	5.56	1977	.09	1987
Aug	2.24	1.65	6.15	1968	14	7.58	1997	.14	1973
Sep	1.06	.96	4.50	1969	9	3.21	1973	.00	1992
Oct	.89	.44	2.07	1942	16	4.39	1997	.00+	1988
Nov	.64	.43	2.33	1925	7	2.09	1972	.00+	1995
Dec	.34	.27	1.00	1921	2	1.55	1979	.00	1993
Ann	15.43	15.18	6.15	Aug 1968	14	7.58	Aug 1997	.00+	Jan 1998

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.2	1.1	.1	.0
Feb	2.9	1.1	.1	.0
Mar	4.9	2.4	.5	.1
Apr	5.0	2.8	1.0	.2
May	7.8	5.0	1.6	.5
Jun	6.4	4.2	1.4	.4
Jul	6.8	4.7	1.8	.8
Aug	5.9	4.3	1.4	.6
Sep	4.1	2.5	.7	.1
Oct	2.6	1.9	.6	.2
Nov	3.0	1.7	.3	.1
Dec	3.1	1.0	.1	.0
Ann	55.7	32.7	9.6	3.0

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	.02	.05	.09	.14	.19	.24	.30	.37	.47	.64	.80
Feb	.00	.00	.03	.08	.14	.21	.29	.41	.58	.86	1.16
Mar	.05	.14	.29	.43	.59	.75	.95	1.20	1.53	2.08	2.61
Apr	.00	.12	.34	.55	.77	1.01	1.29	1.63	2.10	2.87	3.63
May	.64	.87	1.23	1.55	1.86	2.18	2.55	2.98	3.54	4.43	5.26
Jun	.33	.51	.81	1.10	1.39	1.71	2.08	2.53	3.13	4.10	5.03
Jul	.57	.83	1.24	1.61	1.99	2.40	2.86	3.41	4.14	5.31	6.41
Aug	.30	.48	.80	1.11	1.44	1.80	2.22	2.74	3.44	4.58	5.69
Sep	.04	.13	.28	.44	.61	.80	1.02	1.31	1.70	2.35	2.98
Oct	.00	.00	.06	.18	.33	.52	.75	1.06	1.51	2.27	3.05
Nov	.00	.00	.13	.24	.35	.47	.62	.80	1.04	1.45	1.85
Dec	.01	.02	.07	.11	.16	.23	.31	.41	.55	.79	1.03
Ann	10.60	11.53	12.72	13.62	14.43	15.22	16.03	16.93	18.03	19.63	21.02

\+ 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: 1918-2001
(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	4.6	5.0	1	#
Feb	3.2	1.9	#	0
Mar	4.2	2.5	1	0
Apr	1.6	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.2	.0	0	0
Oct	.6	.0	#	0
Nov	4.1	1.3	1	0
Dec	4.1	1.5	1	0
Ann	22.6	12.2	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	8.0	1990	19	8.3	1981	12	1980	2	9	1980
Feb	8.0	1990	20	12.0	1990	7	1981	1	2	1975
Mar	8.5	1980	27	17.0	1984	8	1980	28	6	1980
Apr	6.0	1979	3	14.5	1984	10	1980	1	1+	1994
May	.2	1978	7	.2	1978	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	4.0	1985	28	4.0	1985	0	0	0	0	0
Oct	4.0	1972	31	4.0	1972	6	1976	26	#+	1996
Nov	18.0	1975	19	25.0	1991	11	1975	22	6	1972
Dec	7.0	1979	27	13.0	1979	12	1979	30	6	1972
Ann	18.0	Nov 1975	19	25.0	Nov 1991	12+	Jan 1980	2	9	Jan 1980

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.1	1.4	.5	.1	.0
Feb	.9	.8	.2	.1	.0
Mar	1.3	1.2	.6	.2	.0
Apr	.4	.4	.3	.1	.0
May	@	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	.1	@	.0	.0
Oct	.2	.1	.1	.0	.0
Nov	1.2	1.0	.5	.2	.1
Dec	1.3	1.0	.6	.2	.0
Ann	7.5	6.0	2.8	.9	.1

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	.0	.0	.0	.0
Apr	.1	.1	.1	.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	1.0	1.0	1.0	.3
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	5/29	5/24	5/21	5/17	5/14	5/12	5/08	5/05	4/30
32	5/13	5/10	5/07	5/05	5/03	5/01	4/29	4/27	4/23
28	5/02	4/27	4/24	4/22	4/19	4/17	4/14	4/11	4/07
24	4/26	4/20	4/16	4/13	4/10	4/06	4/03	3/30	3/24
20	4/16	4/10	4/05	4/01	3/29	3/25	3/21	3/17	3/10
16	4/14	4/05	3/30	3/25	3/20	3/16	3/10	3/04	2/24

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	9/16	9/20	9/23	9/25	9/28	9/30	10/03	10/06	10/10
32	9/23	9/27	9/30	10/03	10/06	10/08	10/11	10/14	10/18
28	9/30	10/05	10/08	10/11	10/14	10/17	10/20	10/24	10/29
24	10/09	10/15	10/19	10/22	10/26	10/29	11/01	11/05	11/11
20	10/19	10/23	10/26	10/29	11/01	11/04	11/07	11/10	11/14
16	10/28	11/02	11/06	11/09	11/12	11/15	11/19	11/23	11/28

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	154	148	143	139	136	132	128	124	117
32	173	167	162	158	155	151	147	143	136
28	194	188	184	180	177	174	170	166	161
24	224	215	209	203	198	193	188	181	173
20	241	232	226	221	217	212	207	201	193
16	269	258	250	243	236	230	223	215	203

***** 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	1183	918	766	488	229	42	0	8	101	408	824	1122	6089
60	1028	778	611	350	127	13	0	1	38	263	674	967	4850
57	935	694	519	275	82	6	0	0	17	189	587	874	4178
55	873	638	459	230	58	3	0	0	9	145	530	812	3757
50	720	507	318	136	20	0	0	0	1	67	393	659	2821
32	253	134	26	3	0	0	0	0	0	0	71	204	691

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	93	140	283	510	828	1132	1342	1269	964	617	236	105	7519
55	0	0	3	46	173	445	629	556	283	49	6	0	2190
57	0	0	1	31	134	388	567	494	231	31	2	0	1879
60	0	0	0	17	86	305	474	402	162	12	0	0	1458
65	0	0	0	4	33	185	320	254	75	1	0	0	872
70	0	0	0	0	9	93	171	128	26	0	0	0	427

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	18	52	171	349	639	928	1135	1062	773	420	108	28	18	70	241	590	1229	2157	3292	4354	5127	5547	5655	5683
45	1	18	86	226	486	778	980	907	626	284	52	3	1	19	105	331	817	1595	2575	3482	4108	4392	4444	4447
50	0	0	37	130	339	628	825	752	481	168	18	0	0	0	37	167	506	1134	1959	2711	3192	3360	3378	3378
55	0	0	9	62	209	480	670	597	342	84	0	0	0	0	9	71	280	760	1430	2027	2369	2453	2453	2453
60	0	0	1	20	105	336	515	443	219	27	0	0	0	0	1	21	126	462	977	1420	1639	1666	1666	1666
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	47	85	173	275	412	578	714	670	488	325	124	52	47	132	305	580	992	1570	2284	2954	3442	3767	3891	3943

(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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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