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: HERMIT 7 ESE, CO **COOP ID: 053951**

Climate Division: CO 5 **NWS Call Sign:** **Elevation: 9,010 Feet** **Lat: 37˚46N** **Lon: 107˚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	33.4	-8.5	12.5	56	1971	19	21.6	1981	-45	1979	30	4.1	1975	1630	0	.0	.0	.5	21.1	31.0	23.2
Feb	39.0	-4.5	17.3	59	1996	17	28.3	1996	-40	1985	1	8.1	1975	1338	0	.0	.0	1.3	15.4	28.2	18.0
Mar	44.3	4.1	24.2	62	1971	30	33.9	1994	-30+	1975	28	11.3	1975	1272	0	.0	.0	4.1	9.6	31.0	9.2
Apr	49.9	13.0	31.5	73	1981	30	37.7	1992	-25	1979	2	17.6	1980	1005	0	.0	.0	10.2	2.3	29.9	2.2
May	62.2	24.3	43.3	79+	2000	30	47.3	1996	2	1970	2	37.6	1999	679	0	.0	.0	27.0	@	27.7	.0
Jun	72.5	30.3	51.4	88+	1998	28	54.9	1988	13	1954	7	46.6	1999	413	0	.0	.0	30.0	.0	20.1	.0
Jul	76.4	37.3	56.9	97	1963	26	60.0	1998	20	1968	1	53.7	1973	254	0	.0	@	31.0	.0	5.6	.0
Aug	73.3	37.2	55.3	87+	1996	15	58.9	1983	19	1964	21	52.3	1974	302	0	.0	.0	31.0	.0	6.2	.0
Sep	68.3	28.6	48.5	83	1978	6	51.8	1997	9	1978	21	44.7	1973	497	0	.0	.0	29.7	.0	19.9	.0
Oct	59.6	18.7	39.2	78	1979	6	42.0	1987	-8	1975	25	33.3	1984	803	0	.0	.0	25.5	.2	29.6	.1
Nov	44.6	5.2	24.9	69	1989	11	32.9	1989	-30	1952	27	14.4	1972	1203	0	.0	.0	8.5	6.7	29.9	8.3
Dec	33.8	-6.1	13.9	60	1995	3	26.0	1989	-44	1978	8	4.7	1990	1580	0	.0	.0	.9	19.3	31.0	21.0
Ann	54.8	15.0	34.9	97	Jul 1963	26	60.0	Jul 1998	-45	Jan 1979	30	4.1	Jan 1975	10976	0	.0	@	199.7	74.6	290.1	82.0

\+ 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: 1948-2001

(3) Derived from 1971-2000 serially complete daily data

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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	.70	.38	1.55	1980	20	2.55	1975	.00+	1999
Feb	.73	.58	1.10	1987	26	2.55	1987	.00+	1991
Mar	1.20	.95	1.80	1998	31	3.81	2000	.00	1997
Apr	1.04	.89	1.30	1980	2	2.95	1990	.04	1989
May	1.02	.90	1.30	1954	11	2.70	1992	.04	1996
Jun	.82	.80	.95	1984	16	3.44	1995	.00+	1998
Jul	2.22	2.13	1.15+	1990	5	5.10	1981	.15	1993
Aug	2.49	2.53	1.70	1992	23	4.35	2000	.30	1975
Sep	1.44	1.13	1.75	1997	21	4.14	1997	.05	1993
Oct	1.47	1.08	2.75	1986	31	5.05	1972	.00+	1995
Nov	1.18	1.01	2.10	1991	15	4.65	1978	.00	1989
Dec	.79	.48	3.00	1967	14	3.05	1978	.00+	1999
Ann	15.10	14.55	3.00	Dec 1967	14	5.10	Jul 1981	.00+	Dec 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.5	1.7	.5	.2
Feb	2.9	2.2	.5	.1
Mar	3.4	2.7	.8	.2
Apr	3.7	3.0	.6	.2
May	3.9	3.2	.5	@
Jun	3.7	2.8	.3	.0
Jul	8.7	7.2	1.3	.2
Aug	9.4	7.6	1.2	.2
Sep	4.8	3.7	.9	.2
Oct	4.1	3.3	1.2	.2
Nov	3.5	2.6	.5	.2
Dec	2.8	1.9	.5	.3
Ann	53.4	41.9	8.8	2.0

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	.00	.00	.15	.27	.39	.52	.68	.88	1.14	1.57	2.00
Feb	.00	.06	.17	.29	.41	.55	.71	.90	1.18	1.63	2.07
Mar	.03	.11	.27	.43	.63	.85	1.11	1.46	1.93	2.74	3.54
Apr	.08	.15	.29	.43	.59	.77	.99	1.27	1.65	2.29	2.92
May	.11	.19	.33	.48	.63	.80	1.00	1.24	1.58	2.13	2.68
Jun	.00	.00	.21	.36	.50	.65	.83	1.04	1.32	1.78	2.23
Jul	.43	.63	.96	1.26	1.56	1.89	2.26	2.70	3.30	4.25	5.15
Aug	.97	1.20	1.53	1.80	2.06	2.33	2.61	2.94	3.36	4.00	4.59
Sep	.19	.31	.52	.72	.93	1.16	1.43	1.76	2.21	2.94	3.65
Oct	.00	.11	.35	.58	.82	1.10	1.42	1.82	2.38	3.30	4.21
Nov	.09	.22	.41	.58	.76	.96	1.19	1.46	1.84	2.44	3.03
Dec	.00	.00	.09	.22	.37	.53	.73	.98	1.33	1.91	2.50
Ann	10.30	11.21	12.39	13.29	14.10	14.88	15.69	16.58	17.68	19.27	20.65

\+ 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	9.7	5.0	3	#
Feb	8.6	7.0	2	0
Mar	12.5	9.0	7	#
Apr	8.8	7.0	#	0
May	1.1	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.2	.0	#	0
Oct	4.7	1.5	#	0
Nov	9.8	9.0	2	#
Dec	10.9	6.6	3	#
Ann	66.3	45.1	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	24.0	1975	27	42.0	1975	31	1989	1	31	1989
Feb	18.0	1987	26	40.0	1987	15	1971	18	13	1990
Mar	17.2	1989	3	39.0	1975	72	1979	21	72	1979
Apr	12.0	1975	12	30.0	1984	3+	2000	15	#+	2000
May	8.0	1971	8	11.0	1971	5	1986	8	#+	1990
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	2.0	1986	23	4.0	1986	#	1996	27	#	1996
Oct	15.0	1986	31	23.0	1986	12	1972	31	1+	1996
Nov	14.0	1978	11	28.0	1990	17	1972	20	17	1972
Dec	24.0	1988	25	38.0	1978	27	1979	27	27	1979
Ann	24.0+	Dec 1988	25	42.0	Jan 1975	72	Mar 1979	21	72	Mar 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.8	1.7	1.1	.6	.2
Feb	2.1	2.1	1.3	.8	.2
Mar	2.7	2.7	1.6	1.0	.2
Apr	1.7	1.7	1.2	.5	.2
May	.3	.2	.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	1.0	.9	.5	.3	.1
Nov	2.2	2.1	1.4	1.0	.2
Dec	2.1	2.0	1.2	.7	.3
Ann	14.0	13.5	8.5	5.0	1.4

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	.6	.2	.0	.0
May	.2	.1	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.6	.3	.1	.0
Nov	-9.9	-9.9	-9.9	-9.9
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

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	8/05	8/02	7/31	7/29	7/27	7/25	7/23	7/21	7/18
32	8/03	7/28	7/24	7/20	7/17	7/14	7/10	7/06	6/30
28	7/15	7/10	7/06	7/02	6/29	6/26	6/23	6/19	6/14
24	7/01	6/25	6/21	6/17	6/14	6/10	6/07	6/02	5/28
20	6/15	6/09	6/05	6/01	5/28	5/25	5/21	5/17	5/11
16	5/29	5/22	5/17	5/13	5/09	5/05	4/30	4/25	4/18

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	7/29	7/31	8/02	8/04	8/05	8/07	8/09	8/11	8/13
32	7/27	8/01	8/05	8/09	8/12	8/16	8/20	8/24	8/30
28	8/14	8/20	8/25	8/28	9/01	9/05	9/08	9/13	9/19
24	8/30	9/05	9/08	9/12	9/15	9/17	9/21	9/24	9/30
20	9/10	9/15	9/18	9/20	9/23	9/25	9/28	10/01	10/05
16	9/18	9/24	9/28	10/01	10/04	10/07	10/11	10/15	10/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	22	18	14	11	8	6	3	0	0
32	56	46	38	32	26	20	13	6	0
28	91	81	74	68	63	57	52	45	35
24	119	110	103	97	92	87	81	74	65
20	141	132	126	121	117	112	107	101	93
16	177	167	160	153	148	142	136	129	119

***** 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	1630	1338	1272	1005	679	413	254	302	497	803	1203	1580	10976
60	1475	1198	1117	855	524	267	114	157	348	648	1053	1425	9181
57	1382	1114	1024	765	431	187	56	88	261	555	963	1332	8158
55	1320	1058	962	705	369	140	29	54	205	493	903	1270	7508
50	1165	918	809	568	229	54	2	9	91	338	753	1115	6051
32	617	429	319	172	9	0	0	0	0	17	272	578	2413

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	10	15	70	157	354	577	770	721	493	237	59	21	3484
55	0	0	0	0	1	28	86	62	8	0	0	0	185
57	0	0	0	0	0	14	51	34	3	0	0	0	102
60	0	0	0	0	0	4	16	10	0	0	0	0	30
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	115	330	513	476	268	61	0	0	0	0	0	8	123	453	966	1442	1710	1771	1771	1771
45	0	0	0	0	30	188	359	321	134	11	0	0	0	0	0	0	30	218	577	898	1032	1043	1043	1043
50	0	0	0	0	1	72	205	172	40	0	0	0	0	0	0	0	1	73	278	450	490	490	490	490
55	0	0	0	0	0	12	72	47	5	0	0	0	0	0	0	0	0	12	84	131	136	136	136	136
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	7	33	159	318	394	362	272	154	27	0	0	0	7	40	199	517	911	1273	1545	1699	1726	1726

(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