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: OURAY, CO **COOP ID: 056203**

Climate Division: CO 2 **NWS Call Sign:** **Elevation: 7,840 Feet** **Lat: 38˚01N** **Lon: 107˚40W**

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	31.9	15.3	23.6	60	1969	7	29.9	1986	-22	1963	13	15.1	1979	1284	0	.0	.0	1.9	10.3	30.7	2.6
Feb	35.3	18.5	26.9	61+	1986	26	34.3	1995	-21	1951	1	21.2	1985	1068	0	.0	.0	2.7	6.2	27.8	1.2
Mar	41.6	24.2	32.9	68+	1989	11	40.2	1999	-7	1965	3	26.3	1977	995	0	.0	.0	9.5	2.8	27.9	.2
Apr	50.5	30.6	40.6	75+	1989	22	47.4	1992	2	1980	1	34.8	1983	734	0	.0	.0	19.5	.9	19.5	.0
May	60.9	37.9	49.4	84+	1956	31	55.6	1996	18+	1999	6	44.6	1995	484	0	.0	.0	27.7	.0	6.9	.0
Jun	71.8	45.6	58.7	97	1950	1	63.7	1994	27+	1990	2	54.0	1975	205	15	.0	.0	29.9	.0	1.0	.0
Jul	75.9	51.2	63.6	91+	1989	10	66.5	2000	33	1968	1	60.8	1975	76	32	.0	.2	31.0	.0	.0	.0
Aug	74.0	50.4	62.2	90+	1979	5	65.0	2000	34	1978	15	59.8	1976	102	14	.0	@	31.0	.0	.0	.0
Sep	67.3	44.1	55.7	87+	1955	4	60.3	1998	16	1999	29	52.0	1985	280	2	.0	.0	29.6	.0	1.9	.0
Oct	56.2	34.2	45.2	84	1980	1	50.4	1992	8	1979	31	37.9	1984	614	0	.0	.0	25.6	.6	12.4	.0
Nov	40.6	23.5	32.1	75	1980	10	41.0	1999	-4+	1957	22	24.1	1979	988	0	.0	.0	10.3	4.9	26.6	.4
Dec	32.5	16.4	24.5	60	1955	23	32.7	1980	-17	1990	23	17.9	1990	1256	0	.0	.0	2.3	9.5	30.5	1.6
Ann	53.2	32.7	43.0	97	Jun 1950	1	66.5	Jul 2000	-22	Jan 1963	13	15.1	Jan 1979	8086	63	.0	.2	221.0	35.2	185.2	6.0

\+ 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

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	1.79	1.78	1.51	1979	13	4.54	1979	.56	1981
Feb	1.73	1.71	1.10	1968	22	3.90	1987	.33	1972
Mar	2.67	2.69	1.14	1990	7	4.91	1984	1.22	1971
Apr	2.24	2.28	1.62	1990	19	4.88	1990	.58	1981
May	2.03	2.19	2.10	1982	14	4.38	1995	.04	1974
Jun	1.26	.92	1.36	1969	24	3.57	1983	.00	1980
Jul	2.04	1.99	1.33	1967	31	4.95	1981	.39	1993
Aug	2.21	2.25	1.23	1982	24	5.28	1982	.47	1996
Sep	2.03	1.91	1.29	1970	6	4.84	1985	.10	1979
Oct	2.22	1.78	2.03	1996	3	5.24	1996	.14	1999
Nov	2.28	2.17	1.33	1978	12	5.13	1986	.21	1989
Dec	1.68	1.53	1.20	1966	7	4.21	1983	.25	1976
Ann	24.18	23.78	2.10	May 1982	14	5.28	Aug 1982	.00	Jun 1980

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.6	5.8	.7	.1
Feb	9.2	5.3	1.0	.0
Mar	11.3	7.7	1.4	.2
Apr	10.4	6.7	1.1	@
May	9.3	5.4	.9	.2
Jun	6.4	3.7	.5	.1
Jul	11.7	6.2	.8	.1
Aug	13.8	6.9	.7	@
Sep	10.6	6.1	.9	.1
Oct	7.9	5.6	1.2	.3
Nov	8.9	6.5	1.3	.1
Dec	8.9	5.6	.7	@
Ann	118.0	71.5	11.2	1.2

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	.55	.72	.97	1.19	1.40	1.62	1.86	2.15	2.51	3.09	3.62
Feb	.53	.69	.94	1.15	1.35	1.57	1.80	2.08	2.43	2.99	3.50
Mar	1.09	1.34	1.68	1.97	2.24	2.51	2.80	3.14	3.57	4.22	4.82
Apr	.79	1.00	1.30	1.56	1.81	2.06	2.34	2.66	3.07	3.71	4.30
May	.33	.50	.80	1.08	1.37	1.68	2.04	2.48	3.07	4.03	4.94
Jun	.10	.23	.44	.62	.82	1.03	1.27	1.56	1.95	2.60	3.21
Jul	.55	.74	1.04	1.29	1.55	1.81	2.11	2.46	2.91	3.62	4.29
Aug	.75	.96	1.27	1.52	1.77	2.02	2.30	2.62	3.04	3.68	4.27
Sep	.44	.62	.92	1.19	1.46	1.75	2.08	2.47	2.98	3.81	4.58
Oct	.43	.62	.95	1.25	1.55	1.88	2.25	2.70	3.29	4.25	5.15
Nov	.57	.78	1.11	1.41	1.70	2.01	2.35	2.76	3.30	4.14	4.94
Dec	.40	.56	.81	1.03	1.24	1.48	1.73	2.04	2.44	3.08	3.68
Ann	16.84	18.25	20.06	21.45	22.68	23.87	25.10	26.47	28.13	30.54	32.63

\+ 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	24.9	23.0	12	10
Feb	20.8	18.9	14	13
Mar	27.8	29.3	11	8
Apr	14.9	15.5	4	1
May	5.1	2.2	#	#
Jun	.4	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.3	.0	#	0
Oct	5.7	3.4	1	#
Nov	21.9	20.1	3	3
Dec	21.9	20.3	7	7
Ann	143.7	132.7	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	18.7	1979	13	57.6	1979	39	1974	27	32	1974
Feb	11.5	1974	20	40.5	1984	46	1974	20	36	1974
Mar	17.5	1977	11	51.6	1984	49	1984	27	42	1984
Apr	11.0	1973	7	32.0	1984	44	1975	2	23	1984
May	12.0	1982	13	16.6	1999	16+	1990	1	2	1999
Jun	4.3	1979	9	5.1	1979	4	1979	9	#+	1984
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	3.4	1996	27	7.2	1996	3	1996	27	#+	2000
Oct	11.0	1972	30	23.3	1984	13	1984	16	4	1984
Nov	13.2	1983	19	40.6	1988	18+	1983	19	8	1991
Dec	20.0	1973	24	71.5	1973	42	1973	24	20	1983
Ann	20.0	Dec 1973	24	71.5	Dec 1973	49	Mar 1984	27	42	Mar 1984

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	9.5	7.0	2.9	1.4	.2
Feb	9.0	6.0	2.3	1.2	.1
Mar	10.1	7.1	3.5	1.9	.2
Apr	6.3	4.4	1.7	.9	.1
May	2.0	1.5	.5	.2	.1
Jun	.2	.1	.1	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.2	.1	@	.0	.0
Oct	2.4	2.0	.7	.2	@
Nov	7.6	6.2	2.9	1.2	.1
Dec	8.4	6.4	2.5	1.1	.1
Ann	55.7	40.8	17.1	8.1	.9

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	29.5	27.4	24.1	14.0
Feb	27.0	24.9	22.0	16.8
Mar	27.2	23.8	21.0	13.8
Apr	11.4	8.0	5.9	3.7
May	2.2	1.1	.6	.2
Jun	.2	.1	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.2	.1	.0	.0
Oct	3.3	1.8	1.0	.1
Nov	16.3	12.0	8.9	2.5
Dec	28.2	22.9	18.1	7.9
Ann	145.5	122.1	101.6	59.0

+ 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	6/27	6/21	6/17	6/14	6/11	6/08	6/04	5/31	5/26
32	6/19	6/13	6/09	6/05	6/02	5/29	5/25	5/21	5/15
28	6/01	5/26	5/21	5/17	5/13	5/10	5/06	5/01	4/25
24	5/12	5/07	5/03	4/30	4/27	4/24	4/21	4/18	4/13
20	5/03	4/27	4/23	4/19	4/15	4/12	4/08	4/04	3/29
16	4/18	4/13	4/09	4/05	4/02	3/30	3/27	3/23	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	9/04	9/09	9/12	9/15	9/17	9/20	9/23	9/26	9/30
32	9/14	9/18	9/22	9/25	9/27	9/30	10/03	10/06	10/11
28	9/21	9/26	9/30	10/04	10/07	10/10	10/13	10/17	10/23
24	10/02	10/08	10/12	10/16	10/19	10/23	10/26	10/30	11/05
20	10/14	10/19	10/22	10/25	10/28	10/31	11/03	11/06	11/11
16	10/15	10/21	10/26	10/30	11/02	11/06	11/10	11/14	11/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	119	111	106	102	98	94	89	84	77
32	141	133	127	122	117	112	107	101	93
28	172	163	156	151	146	141	135	129	120
24	198	190	184	179	174	169	164	158	150
20	221	212	206	200	195	190	184	178	169
16	238	230	224	218	213	208	203	197	188

***** 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	1284	1068	995	734	484	205	76	102	280	614	988	1256	8086
60	1129	928	840	584	336	101	14	21	149	460	838	1101	6501
57	1036	844	747	495	254	57	3	5	89	370	748	1008	5656
55	974	788	685	438	205	36	1	1	59	313	688	946	5134
50	819	648	534	302	106	8	0	0	15	187	540	791	3950
32	280	178	112	25	0	0	0	0	0	5	113	254	967

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	20	35	140	281	540	800	979	935	712	414	115	21	4992
55	0	0	0	4	31	146	267	224	80	9	0	0	761
57	0	0	0	1	18	107	207	165	50	4	0	0	552
60	0	0	0	0	7	61	125	88	20	1	0	0	302
65	0	0	0	0	0	15	32	14	2	0	0	0	63
70	0	0	0	0	0	2	3	0	0	0	0	0	5

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	3	35	131	335	592	760	725	504	235	39	1	0	3	38	169	504	1096	1856	2581	3085	3320	3359	3360
45	0	0	8	55	203	443	605	570	356	122	11	0	0	0	8	63	266	709	1314	1884	2240	2362	2373	2373
50	0	0	0	17	99	299	450	415	219	46	0	0	0	0	0	17	116	415	865	1280	1499	1545	1545	1545
55	0	0	0	0	28	168	296	261	103	10	0	0	0	0	0	0	28	196	492	753	856	866	866	866
60	0	0	0	0	3	70	157	121	27	0	0	0	0	0	0	0	3	73	230	351	378	378	378	378
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	4	31	99	217	372	472	436	306	164	36	0	0	4	35	134	351	723	1195	1631	1937	2101	2137	2137

(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