

Climatography of the United States

No. 20

1971-2000

Station: CRESTED BUTTE, CO

COOP ID: 051959

Climate Division: CO 2

NWS Call Sign:

Elevation: 8,860 Feet Lat: 38°55N

Lon: 106°57W

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	23.1	-6.4	8.4	59	1946	1	16.0	2000	-43	1963	13	-3.2	1984	1758	0	.0	.0	.0	23.8	30.9	21.0
Feb	27.6	-3.0	12.3	52	1961	11	19.1	1995	-47	1982	6	2.0	1974	1476	0	.0	.0	.3	14.7	28.3	16.5
Mar	35.4	7.3	21.4	57	1946	31	27.5	1999	-30+	1984	5	15.1	1987	1352	0	.0	.0	1.9	5.5	31.0	9.0
Apr	43.5	17.5	30.5	72	1943	29	37.1	1992	-17	1975	2	25.1	1984	1035	0	.0	.0	11.5	1.8	29.5	1.7
May	55.9	27.9	41.9	80	1956	31	46.2	2000	-1	1953	2	36.9	1995	716	0	.0	.0	24.7	.1	25.4	.0
Jun	68.1	33.2	50.7	86	1970	26	53.8	1977	15	1920	20	46.3	1975	431	0	.0	.0	29.7	.0	14.4	.0
Jul	73.8	38.2	56.0	95	1949	17	58.5	1998	17	1921	5	52.9	1995	279	0	.0	.0	31.0	.0	3.3	.0
Aug	72.7	37.7	55.2	91	1936	25	58.5	1983	17	1920	23	50.8	1974	304	0	.0	.0	31.0	.0	5.0	.0
Sep	65.0	30.6	47.8	87	1936	4	52.2	1998	3	1921	21	43.9	1985	516	0	.0	.0	29.1	.0	19.0	.0
Oct	54.1	21.6	37.9	78	1922	11	40.7	1992	-26	1919	28	33.5	1984	841	0	.0	.0	22.6	.8	28.7	.1
Nov	37.2	8.7	23.0	69+	1936	1	30.3	1999	-28+	1979	30	14.0	1992	1262	0	.0	.0	4.7	8.8	29.8	6.9
Dec	26.1	-4.0	11.1	60	1917	18	21.7	1980	-38+	1996	18	5.6	1988	1674	0	.0	.0	.1	21.2	31.0	20.3
Ann	48.5	17.4	33.0	95	Jul 1949	17	58.5+	Jul 1998	-47	Feb 1982	6	-3.2	Jan 1984	11644	0	.0	.0	186.6	76.7	276.3	75.5

+ 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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1909-2001

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

028-A

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No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: CRESTED BUTTE, CO

COOP ID: 051959

Climate Division: CO 2

NWS Call Sign:

Elevation: 8,860 Feet Lat: 38°55N

Lon: 106°57W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	2.58	2.22	2.10	1930	20	7.12	1980	.46	1981	11.1	7.0	1.5	.2	.33	.54	.91	1.26	1.64	2.06	2.55	3.15	3.96	5.29	6.58
Feb	2.44	1.94	1.92	1996	21	6.42	1993	.35	1977	10.0	6.8	1.3	.2	.44	.66	1.02	1.35	1.69	2.05	2.47	2.97	3.64	4.72	5.75
Mar	2.36	2.17	1.75	1953	23	4.96	1995	.70	1997	11.0	7.7	1.0	.1	.79	1.02	1.34	1.62	1.89	2.16	2.47	2.82	3.27	3.97	4.62
Apr	1.82	1.84	1.62+	1957	7	4.01	1999	.54	1981	9.9	6.1	.6	.1	.69	.86	1.11	1.31	1.50	1.70	1.91	2.15	2.47	2.95	3.38
May	1.63	1.44	1.66	1925	14	4.81	1995	.12	1998	10.0	5.1	.6	@	.28	.42	.66	.89	1.11	1.36	1.65	1.99	2.45	3.19	3.90
Jun	1.17	1.08	3.48	1943	25	2.77	1984	.00	1980	7.1	4.1	.4	@	.18	.34	.54	.70	.86	1.03	1.22	1.44	1.73	2.20	2.63
Jul	1.90	1.88	1.50	1929	23	3.53	1990	.30	1994	11.4	6.0	.7	@	.56	.75	1.02	1.25	1.48	1.72	1.98	2.28	2.68	3.30	3.88
Aug	2.00	1.65	1.69	2000	4	4.24	2000	.66	1975	13.1	6.3	.6	.1	.72	.91	1.18	1.41	1.62	1.85	2.09	2.37	2.73	3.28	3.79
Sep	1.97	1.76	2.00	1918	8	4.89	1985	.14	1979	10.4	6.0	.9	.1	.44	.62	.91	1.17	1.43	1.71	2.02	2.39	2.88	3.66	4.39
Oct	1.76	1.62	1.51	1911	5	3.66	1996	.16	1973	8.3	5.2	1.1	.1	.43	.59	.85	1.08	1.30	1.54	1.81	2.13	2.55	3.21	3.84
Nov	2.09	2.08	1.50	1937	17	4.19	1985	.44	1999	9.6	6.2	1.0	.2	.61	.80	1.10	1.36	1.61	1.88	2.17	2.51	2.95	3.64	4.29
Dec	2.15	1.35	3.64	1951	30	6.20	1978	.01	1976	9.9	6.6	1.2	.1	.16	.29	.57	.86	1.19	1.58	2.03	2.61	3.42	4.78	6.13
Ann	23.87	24.19	3.64	Dec 1951	30	7.12	Jan 1980	.00	Jun 1980	121.8	73.1	10.9	1.2	16.51	17.92	19.74	21.12	22.36	23.55	24.79	26.16	27.83	30.26	32.37

+ 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: 1909-2001

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

Complete documentation available from:
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Station: CRESTED BUTTE, CO

COOP ID: 051959

Climate Division: CO 2

NWS Call Sign:

Elevation: 8,860 Feet

Lat: 38°55N

Lon: 106°57W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	42.0	38.0	28	29	31.0	1982	1	92.5	1996	72	1979	16	52	1979	11.0	9.6	5.3	2.9	.9	30.2	28.4	27.9	26.8
Feb	40.5	33.3	36	35	23.0	1994	8	106.0	1993	80	1993	25	59	1993	10.1	9.1	5.6	3.1	.8	26.8	26.3	25.4	25.4
Mar	34.5	31.0	34	33	16.0	1985	28	83.0	1991	80	1995	6	65	1980	11.0	9.5	4.6	2.2	.4	28.5	27.5	27.0	26.7
Apr	18.6	19.5	15	9	14.3	1974	2	38.0	1995	62	1980	3	42	1980	7.8	6.4	2.6	1.0	.1	18.7	17.1	16.4	14.8
May	7.5	6.0	1	#	12.0	1999	2	28.0	1999	23	1984	2	13	1993	3.2	2.6	1.1	.4	.1	2.1	1.3	.6	.1
Jun	.8	.0	#	0	6.0	1975	10	6.0	1975	2	1983	13	#+	1998	.5	.3	.1	@	.0	.1	.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	1.3	.0	#	0	8.0	1986	26	10.0	1986	6	1986	26	1	1982	.6	.5	.1	.1	.0	.4	.1	@	.0
Oct	9.6	8.0	1	#	8.0	1984	17	40.8	1984	14	1984	28	5	1984	3.8	3.1	1.3	.5	.0	3.2	1.2	.5	.0
Nov	30.6	28.8	5	5	14.0	1985	24	78.5	1985	34	1985	30	14	1991	9.4	8.1	4.3	1.9	.6	20.3	15.6	10.7	5.7
Dec	32.3	26.4	15	15	14.7	1978	18	82.0	1996	50	1996	28	29	1983	10.0	8.6	4.8	2.6	.7	27.5	25.9	23.5	18.5
Ann	217.7	191.0	N/A	N/A	31.0	Jan 1982	1	106.0	Feb 1993	80+	Mar 1995	6	65	Mar 1980	67.4	57.8	29.8	14.7	3.6	157.8	143.4	132.0	118.0

+ 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

Complete documentation available from:

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Elevation: 8,860 Feet

Lat: 38° 55N

Lon: 106° 57W

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	8/03	8/01	7/30	7/28	7/27	7/25	7/24	7/22	7/19
32	7/31	7/25	7/21	7/18	7/15	7/11	7/08	7/04	6/28
28	7/06	7/01	6/28	6/24	6/22	6/19	6/16	6/12	6/07
24	6/22	6/15	6/09	6/04	5/31	5/27	5/22	5/17	5/09
20	5/23	5/19	5/16	5/14	5/12	5/09	5/07	5/04	4/30
16	5/11	5/07	5/03	5/01	4/28	4/25	4/22	4/19	4/15
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	7/30	7/31	8/02	8/03	8/04	8/05	8/06	8/08	8/09
32	7/31	8/04	8/08	8/12	8/15	8/18	8/21	8/25	8/30
28	8/18	8/23	8/27	8/30	9/02	9/05	9/08	9/11	9/16
24	8/28	9/03	9/08	9/11	9/15	9/18	9/22	9/26	10/02
20	9/13	9/17	9/21	9/23	9/26	9/28	10/01	10/04	10/09
16	9/23	9/29	10/02	10/06	10/09	10/12	10/15	10/19	10/24
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	18	14	12	10	8	5	3	1	0
32	57	48	41	35	30	25	19	13	4
28	94	86	81	76	71	67	62	57	49
24	136	126	118	112	106	100	93	86	75
20	156	149	144	140	137	133	129	124	117
16	187	179	173	168	163	158	153	147	139

* 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

Complete documentation available from:

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Elevation: 8,860 Feet Lat: 38°55N

Lon: 106°57W

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	1758	1476	1352	1035	716	431	279	304	516	841	1262	1674	11644
60	1603	1336	1197	885	561	282	133	156	367	686	1112	1519	9837
57	1510	1252	1104	795	468	197	67	86	280	593	1022	1426	8800
55	1448	1196	1042	735	406	146	36	52	224	531	962	1364	8142
50	1293	1056	887	585	259	52	3	8	107	376	812	1209	6647
32	735	552	348	139	8	0	0	0	0	23	305	652	2762

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	19	93	315	559	744	719	474	205	34	1	3163
55	0	0	0	0	0	15	67	58	8	0	0	0	148
57	0	0	0	0	0	6	36	31	3	0	0	0	76
60	0	0	0	0	0	1	9	8	0	0	0	0	18
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	15	135	344	515	485	257	53	0	0	0	0	0	15	150	494	1009	1494	1751	1804	1804	1804
45	0	0	0	0	47	201	360	330	126	8	0	0	0	0	0	0	47	248	608	938	1064	1072	1072	1072
50	0	0	0	0	7	84	206	181	39	0	0	0	0	0	0	0	7	91	297	478	517	517	517	517
55	0	0	0	0	0	11	70	55	6	0	0	0	0	0	0	0	0	11	81	136	142	142	142	142
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	0	35	144	295	387	368	242	115	13	0	0	0	0	35	179	474	861	1229	1471	1586	1599	1599

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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