

Climatography of the United States

No. 20

1971-2000

Station: BONNY DAM 2 NE, CO

COOP ID: 050834

Climate Division: CO 3

NWS Call Sign:

Elevation: 3,717 Feet Lat: 39° 39N

Lon: 102° 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	40.0	13.7	26.9	79	1982	27	34.9	1986	-30	1984	18	14.5	1979	1183	0	.0	.0	9.2	8.1	30.7	4.2
Feb	46.1	18.5	32.3	80+	1972	29	39.9	1999	-25+	1982	6	20.3	1989	916	0	.0	.0	12.4	5.4	27.3	2.2
Mar	54.1	24.6	39.4	88	1963	29	44.9	1986	-24	1960	3	33.6	1980	794	0	.0	.0	19.5	2.7	25.6	.5
Apr	63.6	33.0	48.3	95	1989	23	54.7	1981	7+	1997	13	41.4	1983	503	2	.0	.1	25.3	.5	13.4	.0
May	72.6	43.6	58.1	101	2000	30	63.3	1994	23	1967	1	51.9	1995	240	25	@	.8	30.1	.0	2.0	.0
Jun	83.7	53.5	68.6	107	1954	25	74.0	1994	31+	1973	2	63.0	1982	47	155	.9	8.7	29.9	.0	@	.0
Jul	89.2	59.2	74.2	109	1954	12	78.0	1999	43+	1971	30	70.6+	1972	1	286	2.7	17.9	31.0	.0	.0	.0
Aug	86.9	57.5	72.2	108	1969	9	78.2	2000	40	1964	28	67.4	1974	15	238	1.2	16.1	31.0	.0	.0	.0
Sep	77.9	47.9	62.9	103	1971	8	70.1	1998	14	1985	30	57.6	1974	136	74	.2	6.3	29.4	.0	1.3	.0
Oct	66.2	35.1	50.7	93+	1997	3	53.5	1979	6	1997	26	45.4	1976	445	1	.0	.4	27.9	.2	10.7	.0
Nov	50.3	23.9	37.1	85	1980	7	46.1	1999	-7	1952	28	28.9	1985	838	0	.0	.0	17.0	2.7	25.6	.3
Dec	41.7	16.2	29.0	80	1980	18	36.1	1980	-24	1983	22	13.5	1983	1119	0	.0	.0	10.4	6.5	30.5	2.7
Ann	64.4	35.6	50.0	109	Jul 1954	12	78.2	Aug 2000	-30	Jan 1984	18	13.5	Dec 1983	6237	781	5.0	50.3	273.1	26.1	167.1	9.9

+ 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: 1949-2001

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

008-A

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

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COOP ID: 050834

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NWS Call Sign:

Elevation: 3,717 Feet Lat: 39°39N

Lon: 102°07W

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	.46	.44	.96	1994	27	1.33	1992	.00+	1999	3.4	1.4	.2	@	.00	.08	.18	.25	.32	.40	.48	.58	.71	.92	1.12
Feb	.45	.32	1.10	1960	4	1.75	1984	.00	1972	3.4	1.4	.1	@	.01	.04	.11	.17	.24	.33	.43	.55	.73	1.02	1.32
Mar	1.22	.78	1.72	2000	8	4.38	1981	.00	1997	5.3	3.0	.5	.1	.02	.10	.25	.42	.61	.84	1.12	1.48	1.98	2.83	3.68
Apr	1.83	1.80	1.41	1966	12	4.52	1984	.36	1992	6.8	3.9	1.1	.2	.44	.61	.88	1.12	1.35	1.60	1.88	2.21	2.65	3.34	3.99
May	3.48	3.53	4.20	1975	29	6.46	1975	.40	1992	9.7	6.2	2.1	.8	.92	1.25	1.75	2.19	2.63	3.09	3.60	4.20	4.99	6.23	7.38
Jun	2.70	2.38	2.65	1974	9	6.45	1989	.35	1981	7.7	5.2	1.9	.5	.59	.83	1.23	1.59	1.95	2.33	2.76	3.27	3.95	5.04	6.06
Jul	2.81	2.61	3.40	1998	26	6.90	1998	.42	1978	8.3	5.2	1.7	.7	.79	1.05	1.46	1.81	2.15	2.52	2.91	3.39	4.00	4.96	5.86
Aug	2.17	1.83	3.10	1977	25	5.89	1977	.38	1971	7.3	4.4	1.4	.5	.50	.71	1.02	1.31	1.59	1.89	2.23	2.64	3.17	4.01	4.80
Sep	1.39	1.04	3.97	1996	18	5.62	1996	.02	1974	5.1	2.5	.7	.2	.05	.12	.27	.45	.66	.92	1.24	1.65	2.25	3.28	4.32
Oct	1.00	.82	1.64	1993	18	3.10	1984	.00+	1988	4.1	2.3	.8	.1	.00	.06	.20	.35	.52	.71	.94	1.22	1.63	2.31	2.98
Nov	.75	.56	1.47	1974	3	2.53	1991	.03	1996	3.8	1.8	.3	@	.06	.12	.21	.32	.43	.56	.72	.91	1.18	1.64	2.08
Dec	.36	.28	.88	1991	12	1.51	1982	.00+	1995	3.2	1.2	.1	.0	.00	.00	.05	.10	.16	.24	.33	.44	.60	.88	1.16
Ann	18.62	18.42	4.20	May 1975	29	6.90	Jul 1998	.00+	Jan 1999	68.1	38.5	10.9	3.1	13.77	14.73	15.94	16.86	17.67	18.45	19.25	20.13	21.20	22.74	24.07

+ 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: 1949-2001

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NWS Call Sign:

Elevation: 3,717 Feet

Lat: 39°39N

Lon: 102°07W

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	5.0	4.7	1	1	9.0	1994	27	11.5	1984	11	1984	21	5	1984	2.3	1.5	.4	.1	.0	-9.9	-9.9	-9.9	-9.9
Feb	4.1	3.2	1	#	5.0	1993	11	10.5	1993	10	1984	20	5	1979	2.0	1.4	.3	.1	.0	2.8	1.3	.4	.0
Mar	2.2	1.3	#	#	10.0	1981	7	10.0	1981	14	1981	8	3	1987	1.7	1.3	.3	.2	.1	1.1	.6	.4	.2
Apr	2.0	.0	#	0	7.0	1984	29	19.5	1984	16	1980	3	3	1980	.7	.7	.3	.2	.0	.2	.0	.0	.0
May	.1	.0	#	0	1.5	1988	3	1.5	1988	2	1979	10	#+	1990	@	@	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.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	.3	.0	#	0	7.0	1995	21	7.0	1995	2+	1995	22	#+	1995	.1	.1	@	@	.0	.0	.0	.0	.0
Oct	1.4	.0	#	0	9.5	1997	26	12.0	1997	12	1997	26	2	1997	.4	.4	.2	.1	.0	.3	.3	.2	.1
Nov	2.9	1.8	1	#	12.0	1983	28	13.3	1983	12	1983	29	6	1991	1.3	.8	.2	.1	.1	1.4	.4	.2	.2
Dec	2.6	2.6	1	#	8.0	1982	25	10.8	1997	12	1982	31	5	1983	1.6	1.2	.2	.1	.0	6.1	3.9	1.8	.4
Ann	20.6	13.6	N/A	N/A	12.0	Nov 1983	28	19.5	Apr 1984	16	Apr 1980	3	6	Nov 1991	10.1	7.4	1.9	.9	.2	-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	5/31	5/26	5/22	5/18	5/15	5/12	5/09	5/05	4/29
32	5/21	5/16	5/13	5/10	5/07	5/04	5/02	4/28	4/24
28	5/07	5/03	4/30	4/27	4/25	4/22	4/20	4/17	4/12
24	4/25	4/21	4/18	4/15	4/13	4/10	4/08	4/05	3/31
20	4/17	4/12	4/08	4/04	4/01	3/29	3/26	3/22	3/16
16	4/10	4/04	3/30	3/25	3/21	3/17	3/13	3/08	3/01
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	9/14	9/18	9/21	9/23	9/25	9/27	9/30	10/03	10/07
32	9/17	9/23	9/27	9/30	10/03	10/06	10/10	10/13	10/19
28	9/30	10/05	10/08	10/11	10/14	10/16	10/19	10/23	10/27
24	10/06	10/12	10/16	10/20	10/23	10/27	10/30	11/04	11/09
20	10/20	10/25	10/28	10/31	11/02	11/05	11/08	11/11	11/16
16	10/25	10/31	11/04	11/08	11/12	11/15	11/19	11/24	11/30
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	150	144	140	136	132	129	125	120	114
32	169	162	157	152	148	144	139	134	127
28	190	183	179	175	171	168	164	160	153
24	212	205	200	196	192	189	185	180	173
20	237	229	224	219	214	210	205	199	192
16	263	253	246	240	235	229	223	216	206

* 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	1183	916	794	503	240	47	1	15	136	445	838	1119	6237
60	1028	776	639	361	132	14	0	3	62	296	688	964	4963
57	935	692	546	282	84	6	0	1	34	213	598	871	4262
55	873	639	484	233	60	3	0	0	21	165	538	809	3825
50	720	509	338	133	20	0	0	0	4	71	399	659	2853
32	249	148	25	1	0	0	0	0	0	0	65	211	699

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	88	156	254	490	809	1098	1308	1246	928	578	217	115	7287
55	0	4	0	32	155	411	595	533	258	30	0	0	2018
57	0	0	0	20	118	354	533	472	211	17	0	0	1725
60	0	0	0	10	73	272	440	381	150	6	0	0	1332
65	0	0	0	2	25	155	286	238	74	1	0	0	781
70	0	0	0	0	6	71	145	122	28	0	0	0	372

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	130	299	582	878	1091	1033	728	388	98	29	18	70	200	499	1081	1959	3050	4083	4811	5199	5297	5326
45	0	18	63	184	430	728	936	878	581	259	44	6	0	18	81	265	695	1423	2359	3237	3818	4077	4121	4127
50	0	2	22	100	290	579	781	723	441	150	13	0	0	2	24	124	414	993	1774	2497	2938	3088	3101	3101
55	0	0	3	43	168	430	626	569	309	67	0	0	0	0	3	46	214	644	1270	1839	2148	2215	2215	2215
60	0	0	0	14	84	289	473	417	190	22	0	0	0	0	0	14	98	387	860	1277	1467	1489	1489	1489
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	34	73	133	229	367	552	692	659	459	294	108	45	34	107	240	469	836	1388	2080	2739	3198	3492	3600	3645

(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/normal/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