

Climatology of the United States

No. 20

1971-2000

Station: GRATON, CA

COOP ID: 043578

Climate Division: CA 1

NWS Call Sign:

Elevation: 200 Feet Lat: 38°26N Lon: 122°52W

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	57.0	35.7	46.4	84	1962	8	50.1	1986	20+	1991	1	42.8	1982	579	0	.0	.0	28.2	.0	13.1	.0
Feb	61.7	38.1	49.9	82	1985	24	53.3	1995	17	1989	7	45.3	1989	422	0	.0	.0	27.4	.1	7.4	.0
Mar	64.9	40.1	52.5	90	1988	27	56.9	1978	25	1953	2	48.5	1999	389	0	.0	@	30.7	.0	3.5	.0
Apr	70.2	41.4	55.8	98	1981	29	58.5	1985	27	1976	1	50.2	1975	278	1	.0	.3	29.9	.0	1.1	.0
May	75.8	44.5	60.2	103	1950	29	63.7	1997	31+	1974	18	56.2	1998	166	15	.1	2.1	31.0	.0	.1	.0
Jun	81.2	47.6	64.4	108+	1981	20	71.2	1981	33	1976	3	61.5	1991	70	52	1.3	5.2	30.0	.0	.0	.0
Jul	83.6	49.3	66.5	113	1972	14	69.5	1988	39	1975	2	63.5	2000	25	70	1.3	6.8	31.0	.0	.0	.0
Aug	83.8	49.0	66.4	107+	1988	26	68.6	1983	36	1973	22	63.4	1973	26	69	.8	7.2	31.0	.0	.0	.0
Sep	82.4	47.7	65.1	112	1971	15	69.9	1984	33+	1972	23	60.8	1986	65	65	1.0	6.5	30.0	.0	.0	.0
Oct	77.0	43.1	60.1	106	1980	2	63.3	1987	22	1971	29	55.8	1971	169	16	.4	2.7	31.0	.0	.8	.0
Nov	65.5	38.0	51.8	90	1967	1	56.9	1995	22+	1978	12	46.7	1994	398	0	.0	.0	29.8	.0	6.9	.0
Dec	57.5	34.3	45.9	78	1967	26	50.0	1996	14+	1990	23	41.3	1972	592	0	.0	.0	27.8	.0	14.8	.0
Ann	71.7	42.4	57.1	113	Jul 1972	14	71.2	Jun 1981	14+	Dec 1990	23	41.3	Dec 1972	3179	288	4.9	30.8	357.8	.1	47.7	.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/normal/usnormals.html

Issue Date: February 2004

(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

083-A

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: GRATON, CA

COOP ID: 043578

Climate Division: CA 1

NWS Call Sign:

Elevation: 200 Feet Lat: 38°26N

Lon: 122°52W

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	8.65	8.77	5.72	1982	4	23.58	1995	.42	1976	12.8	9.4	5.4	3.0	.87	1.50	2.68	3.89	5.19	6.66	8.39	10.55	13.51	18.42	23.23
Feb	7.64	6.29	6.21	1950	4	24.84	1998	.28	1971	12.0	8.5	5.0	2.7	.62	1.13	2.14	3.19	4.36	5.70	7.29	9.30	12.07	16.73	21.31
Mar	6.15	5.01	6.49	1995	9	20.38	1983	.01	1988	12.1	8.3	4.4	1.7	.38	.74	1.50	2.33	3.28	4.38	5.72	7.43	9.83	13.90	17.94
Apr	2.25	2.39	4.00	1953	27	5.62	1983	.11	1973	7.1	4.5	1.6	.4	.22	.38	.68	1.00	1.34	1.72	2.18	2.75	3.53	4.83	6.10
May	1.03	.37	2.33	1996	16	6.01	1990	.00+	1992	3.6	2.0	.6	.3	.00	.00	.03	.11	.25	.44	.72	1.11	1.73	2.87	4.08
Jun	.25	.06	2.12	1967	2	1.77	1992	.00+	1996	1.3	.6	.1	@	.00	.00	.00	.00	.00	.05	.13	.25	.44	.76	1.10
Jul	.08	.00	1.23	1974	8	1.93	1974	.00+	2000	.3	.1	.1	@	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.48
Aug	.11	.00	1.71	1954	28	1.44	1997	.00+	2000	.8	.2	@	@	.00	.00	.00	.00	.00	.00	.00	.00	.08	.34	.64
Sep	.52	.24	4.18	1959	18	2.29+	1989	.00+	1995	2.2	1.2	.3	.1	.00	.00	.00	.03	.11	.22	.37	.58	.90	1.48	2.07
Oct	2.01	1.62	4.25	1957	9	5.26	1979	.00+	1995	5.2	3.0	1.3	.8	.00	.23	.59	.92	1.24	1.60	2.02	2.51	3.18	4.29	5.35
Nov	5.85	4.64	5.54	1977	22	16.34	1973	.26	1986	10.4	7.2	4.0	2.0	.38	.74	1.47	2.27	3.17	4.21	5.48	7.09	9.33	13.13	16.89
Dec	6.29	5.50	6.70	1981	19	15.66	1983	.00	1989	11.2	7.6	4.0	2.0	.37	.98	1.96	2.88	3.86	4.95	6.21	7.76	9.88	13.35	16.72
Ann	40.83	37.84	6.70	Dec 1981	19	24.84	Feb 1998	.00+	Aug 2000	79.0	52.6	26.8	13.0	19.06	22.62	27.53	31.50	35.19	38.88	42.83	47.35	53.01	61.57	69.27

+ 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

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Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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1971-2000

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Station: GRATON, CA

COOP ID: 043578

Climate Division: CA 1

NWS Call Sign:

Elevation: 200 Feet

Lat: 38°26N

Lon: 122°52W

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	#	.0	0	0	#	1972	27	#	1972	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Mar	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Apr	#	.0	0	0	#	1982	7	#	1982	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	#	.0	0	0	#	1972	12	#	1972	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	#	.0	N/A	N/A	#+	Apr 1982	7	#+	Apr 1982	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.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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Climate Division: CA 1

NWS Call Sign:

Elevation: 200 Feet

Lat: 38° 26N

Lon: 122° 52W

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	6/06	5/28	5/22	5/17	5/12	5/07	5/02	4/25	4/17
32	4/29	4/19	4/11	4/05	3/30	3/23	3/17	3/09	2/27
28	3/11	2/28	2/19	2/12	2/05	1/29	1/22	1/13	1/02
24	1/31	1/19	1/10	1/01	12/23	12/11	0/00	0/00	0/00
20	1/12	12/17	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
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	9/25	10/03	10/08	10/13	10/18	10/22	10/27	11/01	11/09
32	10/20	10/26	10/30	11/02	11/06	11/09	11/13	11/17	11/23
28	10/31	11/11	11/19	11/26	12/02	12/09	12/16	12/24	1/04
24	11/22	12/07	12/18	12/29	1/11	1/28	0/00	0/00	0/00
20	1/02	1/30	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	197	183	174	166	158	150	142	132	119
32	254	242	234	227	220	214	207	199	187
28	354	330	316	306	297	288	278	267	252
24	>365	>365	>365	>365	>365	>365	359	335	317
20	>365	>365	>365	>365	>365	>365	>365	>365	>365
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

* 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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NWS Call Sign:

Elevation: 200 Feet Lat: 38°26N Lon: 122°52W

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	579	422	389	278	166	70	25	26	65	169	398	592	3179
60	424	284	242	143	65	15	1	1	13	67	254	437	1946
57	331	205	163	82	27	4	0	0	4	30	177	347	1370
55	272	157	119	51	13	1	0	0	1	15	133	289	1051
50	138	65	42	9	1	0	0	0	0	1	53	159	468
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	445	502	634	713	873	972	1068	1066	990	870	592	431	9156
55	4	14	40	74	173	283	355	353	301	172	35	7	1811
57	0	7	22	44	125	226	293	291	244	125	20	3	1400
60	0	1	8	16	69	147	201	199	164	68	6	0	879
65	0	0	0	1	15	52	70	69	65	16	0	0	288
70	0	0	0	0	1	8	8	8	13	1	0	0	39

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	207	297	384	471	621	728	822	824	755	627	364	200	207	504	888	1359	1980	2708	3530	4354	5109	5736	6100	6300
45	81	159	234	322	466	578	667	669	605	472	216	80	81	240	474	796	1262	1840	2507	3176	3781	4253	4469	4549
50	22	56	105	179	311	428	512	514	455	319	100	19	22	78	183	362	673	1101	1613	2127	2582	2901	3001	3020
55	0	10	30	70	165	280	357	359	305	173	28	0	0	10	40	110	275	555	912	1271	1576	1749	1777	1777
60	0	0	0	20	65	145	203	206	159	70	3	0	0	0	0	20	85	230	433	639	798	868	871	871
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	123	183	242	313	406	462	514	516	473	416	247	132	123	306	548	861	1267	1729	2243	2759	3232	3648	3895	4027

(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