

Climatology of the United States

No. 20

1971-2000

Station: CHICO UNIVERSITY FARM, CA

COOP ID: 041715

Climate Division: CA 2

NWS Call Sign:

Elevation: 185 Feet Lat: 39° 41N

Lon: 121° 49W

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	53.7	35.2	44.5	77	1920	14	49.0	1995	12	1937	8	40.0	1972	637	0	.0	.0	24.4	.0	12.5	.0
Feb	60.0	38.6	49.3	82	1920	18	53.8	1991	16	1989	7	45.0	1990	439	0	.0	.0	26.9	.1	6.0	.0
Mar	64.9	41.5	53.2	93+	1914	18	56.9+	1986	23	1971	1	48.7	1991	368	2	.0	.0	30.5	.0	3.0	.0
Apr	71.9	44.9	58.4	98	1926	25	63.7	1990	27	1922	17	51.2	1975	223	24	.0	.5	29.9	.0	.4	.0
May	80.1	51.3	65.7	108	1910	30	72.4	1992	30	1984	16	58.8	1977	93	114	.4	6.1	31.0	.0	@	.0
Jun	87.8	57.0	72.4	115	1961	15	76.5	1981	38	1986	8	67.8	1980	8	229	3.4	14.1	30.0	.0	.0	.0
Jul	93.0	60.7	76.9	117	1972	15	80.9	1988	40	1981	12	72.7	1987	0	367	5.9	23.2	31.0	.0	.0	.0
Aug	92.2	58.6	75.4	116	1914	1	78.7	1996	38	1978	24	70.4	1976	0	323	5.9	21.5	31.0	.0	.0	.0
Sep	88.4	54.6	71.5	114	1988	4	74.5	1979	35+	1986	28	65.9	1986	12	207	2.7	16.1	30.0	.0	.0	.0
Oct	78.7	47.3	63.0	107	2001	3	68.2	1978	23	1971	29	58.2	1984	130	67	.4	4.4	31.0	.0	.3	.0
Nov	63.0	40.2	51.6	91	1936	18	57.7	1995	20+	1916	13	45.9	1994	403	1	.0	.0	29.3	.0	4.3	.0
Dec	54.4	34.8	44.6	76	1998	17	48.9	1995	11+	1932	12	38.9	1972	632	0	.0	.0	25.4	@	13.0	.0
Ann	74.0	47.1	60.5	117	Jul 1972	15	80.9	Jul 1988	11+	Dec 1932	12	38.9	Dec 1972	2945	1334	18.7	85.9	350.4	.1	39.5	.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: 1906-2001

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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	Median	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	5.17	4.90	5.73	1916	3	16.97	1995	.36	1991	11.8	7.6	3.7	1.6	.63	1.03	1.76	2.49	3.25	4.10	5.09	6.32	7.99	10.73	13.38	
Feb	4.50	3.43	4.35	1998	3	14.96	1998	.08	1971	9.8	6.7	3.1	1.2	.28	.55	1.11	1.72	2.41	3.22	4.20	5.44	7.19	10.14	13.08	
Mar	4.32	3.60	3.61	1995	9	11.67	1995	.29	1988	10.4	7.6	3.1	1.0	.52	.86	1.47	2.08	2.71	3.43	4.25	5.28	6.67	8.96	11.18	
Apr	1.59	1.38	3.52	1926	5	4.70	1983	.01+	1977	5.8	3.4	1.0	.2	.07	.15	.32	.53	.78	1.07	1.43	1.90	2.57	3.72	4.88	
May	.91	.45	1.87	1917	25	4.08	1998	.00+	1992	4.3	2.2	.4	.1	.00	.00	.02	.11	.25	.44	.70	1.04	1.56	2.47	3.42	
Jun	.47	.27	1.38	1993	6	2.17	1993	.00+	1994	2.2	1.1	.2	.1	.00	.00	.00	.05	.15	.26	.40	.57	.82	1.25	1.68	
Jul	.05	.00	.94	1974	8	1.02	1974	.00+	2000	.3	.1	@	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	.32	
Aug	.16	.00	.92	1965	11	1.48	1976	.00+	2000	.9	.3	.1	.0	.00	.00	.00	.00	.00	.00	.00	.01	.08	.22	.88	
Sep	.59	.28	2.20	1957	27	3.63	1989	.00+	1999	2.1	1.1	.3	.1	.00	.00	.00	.01	.08	.20	.38	.63	1.01	1.70	2.43	
Oct	1.34	1.12	4.46	1962	12	3.20	1989	.00+	1995	3.6	2.4	1.0	.4	.00	.00	.28	.51	.74	1.00	1.31	1.68	2.18	3.03	3.85	
Nov	3.50	2.37	3.82	1920	18	10.34	1973	.00	1995	8.4	6.0	2.6	.8	.13	.40	.90	1.41	1.96	2.60	3.35	4.29	5.59	7.76	9.90	
Dec	3.63	3.10	3.40	1933	29	9.79	1983	.09	1989	9.3	5.7	2.4	.9	.46	.75	1.26	1.76	2.30	2.89	3.58	4.43	5.58	7.47	9.30	
Ann	26.23	24.56	5.73	Jan 1916	3	16.97	Jan 1995	.00+	Aug 2000	68.9	44.2	17.9	6.4	12.15	14.45	17.62	20.18	22.55	24.94	27.50	30.41	34.08	39.61	44.60	

+ 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: 1906-2001

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NWS Call Sign:

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Lon: 121°49W

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	.1	.0	0	0	2.0	1972	27	2.0	1972	0	0	0	0	0	.1	@	.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	.0
Mar	.0	.0	#	0	.3	1976	2	.3	1976	#	1976	2	#	1976	@	.0	.0	.0	.0	.0	.0	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	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	.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	.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	.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	.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	.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	.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	.0
Dec	.1	.0	#	0	1.3	1972	12	2.3	1972	1	1972	12	#	1972	.1	.1	.0	.0	.0	.0	@	.0	.0	.0
Ann	.2	.0	N/A	N/A	2.0	Jan 1972	27	2.3	Dec 1972	1	Dec 1972	12	#+	Mar 1976	.2	.1	.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

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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	5/06	4/28	4/22	4/17	4/13	4/08	4/03	3/28	3/20
32	4/24	4/12	4/04	3/27	3/21	3/14	3/06	2/26	2/14
28	3/13	3/01	2/19	2/12	2/04	1/28	1/20	1/11	12/29
24	2/07	1/25	1/16	1/07	12/29	12/18	11/29	0/00	0/00
20	1/09	12/19	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	10/13	10/20	10/24	10/28	11/01	11/05	11/09	11/13	11/20
32	10/29	11/04	11/08	11/11	11/14	11/18	11/21	11/25	12/01
28	11/07	11/18	11/26	12/03	12/09	12/15	12/22	12/30	1/10
24	11/29	12/10	12/19	12/27	1/04	1/15	0/00	0/00	0/00
20	12/20	1/07	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	238	225	216	209	202	194	187	178	165
32	280	266	255	246	238	230	221	211	196
28	365	339	326	315	305	295	285	274	258
24	>365	>365	>365	>365	>365	>365	358	328	301
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

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Degree Days to Selected Base Temperatures (°F)

Base	Heating Degree Days (1)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Below 65	637	439	368	223	93	8	0	0	12	130	403	632	2945
60	482	300	227	121	37	1	0	0	1	56	262	477	1964
57	389	221	154	75	18	0	0	0	0	29	187	385	1458
55	331	172	115	51	11	0	0	0	0	17	143	326	1166
50	193	76	42	15	2	0	0	0	0	3	61	189	581
32	1	0	0	0	0	0	0	0	0	0	0	1	2

Cooling Degree Days (1)

Base	Cooling Degree Days (1)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Above 32	387	485	657	791	1044	1212	1390	1346	1185	960	588	391	10436
55	4	13	59	152	342	522	677	633	495	264	41	4	3206
57	0	6	37	116	287	462	615	571	435	214	25	1	2769
60	0	1	16	72	212	372	522	478	346	148	10	0	2177
65	0	0	2	24	114	229	367	323	207	67	1	0	1334
70	0	0	0	6	47	111	219	179	97	22	0	0	681

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	175	294	422	565	811	991	1158	1115	962	730	365	181	175	469	891	1456	2267	3258	4416	5531	6493	7223	7588	7769
45	70	157	272	415	656	841	1003	960	812	575	222	70	70	227	499	914	1570	2411	3414	4374	5186	5761	5983	6053
50	19	62	143	269	501	691	848	805	662	422	108	17	19	81	224	493	994	1685	2533	3338	4000	4422	4530	4547
55	0	14	54	147	352	541	693	650	512	276	34	0	0	14	68	215	567	1108	1801	2451	2963	3239	3273	3273
60	0	0	4	61	216	393	538	495	365	149	5	0	0	0	4	65	281	674	1212	1707	2072	2221	2226	2226
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	95	164	247	345	501	619	719	690	591	457	216	106	95	259	506	851	1352	1971	2690	3380	3971	4428	4644	4750

(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 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/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