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: BERKELEY, CA **COOP ID: 040693**

Climate Division: CA 4 **NWS Call Sign:** **Elevation: 310 Feet** **Lat: 37˚52N** **Lon: 122˚16W**

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	56.4	43.6	50.0	77	1962	8	53.0	1986	25	1937	21	46.4	1982	466	0	.0	.0	29.2	.0	.1	.0
Feb	59.3	46.1	52.7	79+	1954	25	56.9	1991	31+	1971	19	48.7	1989	344	0	.0	.0	27.3	.0	.1	.0
Mar	60.9	47.4	54.2	86+	1952	25	57.5	1993	33+	1999	10	50.2	1999	337	0	.0	.0	30.8	.0	.0	.0
Apr	64.0	48.6	56.3	91+	1981	29	59.8	1992	28	1920	21	51.0	1975	263	1	.0	@	29.9	.0	.0	.0
May	66.6	51.3	59.0	101	2001	31	64.2	1997	36	1922	9	55.9	1971	198	11	.0	.3	31.0	.0	.0	.0
Jun	69.5	53.6	61.6	107	2000	15	66.7	1981	41	1965	5	58.2	1982	123	18	.1	.7	30.0	.0	.0	.0
Jul	70.4	55.1	62.8	97	1988	17	66.3	1995	40	1953	5	59.7	1994	85	22	.0	.3	31.0	.0	.0	.0
Aug	70.6	55.7	63.2	98	1968	29	66.6	1997	47	1940	18	60.3	1980	80	23	.0	.2	31.0	.0	.0	.0
Sep	71.7	55.9	63.8	103	1971	14	68.5	1984	42	1966	17	60.5	1986	82	46	@	1.0	30.0	.0	.0	.0
Oct	70.0	53.5	61.8	99	1980	1	64.6	1991	40+	1935	31	58.9	1971	119	18	.0	.4	31.0	.0	.0	.0
Nov	62.3	47.9	55.1	86	1921	4	59.3	1976	35+	1985	12	50.3	1994	300	3	.0	.0	29.9	.0	.0	.0
Dec	56.6	43.7	50.2	80	1942	12	53.8	1996	24	1990	22	45.8	1972	460	0	.0	.0	28.8	.0	.6	.0
Ann	64.9	50.2	57.6	107	Jun 2000	15	68.5	Sep 1984	24	Dec 1990	22	45.8	Dec 1972	2857	142	.1	2.9	359.9	.0	.8	.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: 1919-2001

(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	5.13	4.99	6.98	1982	4	12.47	1973	.22	1984
Feb	4.75	4.46	3.20	2000	13	14.49	1998	.20	1997
Mar	4.08	2.86	2.60	1986	10	11.74	1983	.09	1988
Apr	1.63	1.36	2.43	1958	2	5.34	1982	.06	1985
May	.61	.18	1.99	1957	18	4.00	1990	.00+	1992
Jun	.14	.06	1.04	1929	15	1.06	1995	.00+	1996
Jul	.07	.00	1.40	1974	8	1.50	1974	.00+	2000
Aug	.10	.00	.69	1997	19	1.33	1976	.00+	2000
Sep	.36	.11	2.52	1959	18	1.65	1977	.00+	1996
Oct	1.37	1.12	2.34	1962	11	4.22	1975	.00+	1999
Nov	3.62	2.76	3.89	1994	5	11.47	1973	.00	1995
Dec	3.54	3.26	3.77	1995	11	9.44	1996	.00	1989
Ann	25.40	23.25	6.98	Jan 1982	4	14.49	Feb 1998	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.6	7.8	3.5	1.6
Feb	9.9	7.1	3.4	1.5
Mar	10.1	6.7	2.9	1.0
Apr	6.2	3.9	.8	.2
May	2.9	1.5	.2	.1
Jun	1.1	.4	.1	.0
Jul	.4	.1	@	@
Aug	.6	.3	.1	.0
Sep	1.7	.9	.2	@
Oct	3.9	2.2	.9	.4
Nov	7.9	5.6	2.3	.8
Dec	8.4	5.9	2.5	.9
Ann	63.7	42.4	16.9	6.5

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	.44	.79	1.47	2.18	2.96	3.85	4.91	6.24	8.08	11.16	14.18
Feb	.35	.65	1.26	1.91	2.64	3.48	4.49	5.77	7.55	10.54	13.50
Mar	.35	.63	1.17	1.73	2.36	3.06	3.91	4.97	6.43	8.88	11.29
Apr	.14	.25	.47	.70	.94	1.23	1.56	1.99	2.57	3.55	4.51
May	.00	.00	.00	.03	.10	.21	.37	.62	1.01	1.76	2.57
Jun	.00	.00	.00	.00	.01	.05	.10	.16	.26	.42	.58
Jul	.00	.00	.00	.00	.00	.00	.00	.00	.01	.17	.39
Aug	.00	.00	.00	.00	.00	.00	.00	.00	.00	.22	.56
Sep	.00	.00	.00	.00	.02	.11	.23	.39	.64	1.07	1.50
Oct	.00	.05	.22	.42	.64	.91	1.24	1.66	2.25	3.27	4.28
Nov	.11	.37	.86	1.38	1.96	2.62	3.42	4.42	5.82	8.17	10.50
Dec	.39	.81	1.40	1.91	2.43	2.99	3.61	4.36	5.36	6.97	8.49
Ann	12.44	14.60	17.56	19.93	22.12	24.31	26.64	29.29	32.60	37.60	42.07

\+ 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: 1919-2001
(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	.0	.0	0	0
Feb	.0	.0	#	0
Mar	#	.0	0	0
Apr	.0	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	0	0
Nov	.0	.0	#	0
Dec	.0	.0	#	0
Ann	#	.0	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	.1	1974	3	.1	1974	0	0	0	0	0
Feb	1.0	1976	5	1.0	1976	#	1976	5	#	1976
Mar	#	1976	2	#+	1976	0	0	0	0	0
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	.0	0	0	.0	0	0	0	0	0	0
Nov	.0	0	0	.0	0	#	1972	15	#	1972
Dec	.1	1972	12	.1	1972	#+	1972	12	#+	1972
Ann	1.0	Feb 1976	5	1.0	Feb 1976	#+	Feb 1976	5	#+	Feb 1976

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	@	.0	.0	.0	.0
Feb	@	@	.0	.0	.0
Mar	.0	.0	.0	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.0	.0	.0	.0	.0
Dec	@	.0	.0	.0	.0
Ann	@	@	.0	.0	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.0	.0	.0	.0
Feb	.0	.0	.0	.0
Mar	.0	.0	.0	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.0	.0	.0	.0
Dec	.0	.0	.0	.0
Ann	.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	2/27	2/11	1/30	1/19	1/08	12/25	11/30	0/00	0/00
32	1/18	12/30	0/00	0/00	0/00	0/00	0/00	0/00	0/00
28	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
24	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
20	0/00	0/00	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	12/04	12/16	12/24	1/01	1/10	1/21	0/00	0/00	0/00
32	12/25	1/11	0/00	0/00	0/00	0/00	0/00	0/00	0/00
28	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
24	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
20	0/00	0/00	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	>365	>365	>365	>365	>365	>365	346	324	303
32	>365	>365	>365	>365	>365	>365	>365	>365	>365
28	>365	>365	>365	>365	>365	>365	>365	>365	>365
24	>365	>365	>365	>365	>365	>365	>365	>365	>365
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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	466	344	337	263	198	123	85	80	82	119	300	460	2857
60	311	210	194	130	88	39	12	12	19	33	169	308	1525
57	221	138	123	73	43	13	1	2	6	10	107	222	959
55	164	99	87	44	23	6	0	0	2	3	75	170	673
50	57	30	23	7	3	0	0	0	0	0	22	72	214
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	557	580	687	728	836	885	953	967	954	922	693	563	9325
55	8	34	61	82	146	201	240	254	266	213	78	20	1603
57	3	18	35	51	104	148	179	193	210	157	50	10	1158
60	0	6	13	18	56	84	96	110	133	87	21	3	627
65	0	0	0	1	11	18	22	23	46	18	3	0	142
70	0	0	0	0	0	0	0	1	7	1	0	0	9

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	326	378	443	500	588	655	710	724	719	665	464	335	326	704	1147	1647	2235	2890	3600	4324	5043	5708	6172	6507
45	174	235	290	350	433	505	555	569	569	510	314	185	174	409	699	1049	1482	1987	2542	3111	3680	4190	4504	4689
50	59	103	143	202	278	355	400	414	419	355	170	66	59	162	305	507	785	1140	1540	1954	2373	2728	2898	2964
55	5	26	40	83	131	205	245	259	269	201	62	8	5	31	71	154	285	490	735	994	1263	1464	1526	1534
60	0	0	2	25	40	76	94	106	126	81	13	0	0	0	2	27	67	143	237	343	469	550	563	563
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	114	153	190	236	288	354	399	414	416	360	201	123	114	267	457	693	981	1335	1734	2148	2564	2924	3125	3248

(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