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: CALLAHAN, CA **COOP ID: 041316**

Climate Division: CA 1 **NWS Call Sign:** **Elevation: 3,185 Feet** **Lat: 41˚19N** **Lon: 122˚48W**

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	45.1	26.0	35.6	65	1986	12	42.8	1986	-6+	1962	22	27.6	1977	912	0	.0	.0	7.7	1.5	25.0	@
Feb	51.0	28.8	39.9	72	1995	23	45.0	1995	-1	1989	6	34.4	1990	704	0	.0	.0	14.9	.4	20.3	.1
Mar	56.2	30.9	43.6	82+	1966	31	48.1	1972	4	1974	8	39.8	1977	665	0	.0	.0	23.8	.0	19.5	.0
Apr	62.9	33.6	48.3	86	1966	24	54.3	1990	18+	1967	28	40.9	1975	503	0	.0	.0	27.3	.0	14.6	.0
May	71.1	38.7	54.9	98	1954	18	61.1	1992	21+	1969	2	48.8	1977	320	7	.0	.3	30.8	.0	5.5	.0
Jun	79.2	44.0	61.6	103+	1968	25	66.6	1977	23	1999	4	58.1	1991	143	42	.0	2.5	30.0	.0	.9	.0
Jul	86.7	49.4	68.1	106	1959	16	71.6	1985	30	1993	14	62.1	1993	37	130	.1	9.6	31.0	.0	.1	.0
Aug	86.3	48.3	67.3	105	1961	3	71.2	1986	32	1960	24	63.9	1976	31	102	.2	8.8	31.0	.0	.0	.0
Sep	79.6	42.8	61.2	105	1955	2	65.1	1974	23	1970	25	55.8	1986	146	32	.0	1.9	30.0	.0	1.2	.0
Oct	68.3	36.1	52.2	91+	1963	2	58.1	1988	15	1971	29	48.3	1984	399	2	.0	.0	30.0	.0	9.4	.0
Nov	52.0	30.3	41.2	75	1980	4	47.2	1995	9+	1961	17	34.7	1994	715	0	.0	.0	16.9	.2	20.4	.0
Dec	44.6	26.2	35.4	65+	1979	17	41.4	1981	-9	1972	9	29.2	1990	918	0	.0	.0	7.0	1.3	24.9	.3
Ann	65.3	36.3	50.8	106	Jul 1959	16	71.6	Jul 1985	-9	Dec 1972	9	27.6	Jan 1977	5493	315	.3	23.1	280.4	3.4	141.8	.4

\+ 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: 1948-2001

(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	3.72	3.49	4.36	1995	9	11.88	1995	.31+	1985
Feb	2.94	2.41	1.88	1986	17	9.34	1986	.06	1988
Mar	2.44	1.87	2.23	1995	9	6.44	1995	.24	1988
Apr	1.34	1.32	1.81	1957	14	3.08	1995	.34	1999
May	1.15	.80	1.61	1993	31	4.99	1998	.05	1999
Jun	.82	.63	1.21	1998	11	3.15	1992	.00	1973
Jul	.46	.27	1.45	1952	11	2.00	1995	.00+	1989
Aug	.35	.14	1.02	1954	28	2.36	1976	.00+	1995
Sep	.64	.48	1.62	1978	5	2.47	1978	.00+	1987
Oct	1.39	1.04	2.34	1950	27	4.51	1975	.00+	1995
Nov	2.95	2.17	3.02	1954	8	7.77	1981	.26	1976
Dec	3.10	2.08	4.93	1964	22	10.05	1996	.26	1989
Ann	21.30	19.96	4.93	Dec 1964	22	11.88	Jan 1995	.00+	Oct 1995

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.7	7.1	2.5	1.0
Feb	11.2	5.8	2.1	.5
Mar	12.1	5.8	1.4	.5
Apr	8.7	3.7	.6	.1
May	7.4	3.0	.7	.1
Jun	4.3	2.5	.5	@
Jul	2.8	1.1	.3	@
Aug	2.4	1.1	.1	@
Sep	3.5	1.6	.3	.1
Oct	6.0	3.4	.7	.3
Nov	10.7	6.0	1.7	.6
Dec	11.2	6.7	2.0	.5
Ann	92.0	47.8	12.9	3.7

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	.52	.83	1.36	1.88	2.42	3.01	3.70	4.54	5.68	7.54	9.33
Feb	.41	.65	1.07	1.48	1.91	2.38	2.92	3.59	4.50	5.98	7.40
Mar	.41	.63	.98	1.32	1.66	2.04	2.46	2.98	3.68	4.80	5.87
Apr	.33	.46	.65	.83	1.00	1.18	1.38	1.63	1.94	2.44	2.91
May	.05	.10	.23	.37	.55	.76	1.03	1.37	1.86	2.71	3.56
Jun	.01	.04	.13	.23	.36	.52	.72	.98	1.36	2.01	2.67
Jul	.00	.01	.04	.10	.17	.26	.38	.54	.77	1.18	1.61
Aug	.00	.00	.00	.04	.10	.17	.27	.41	.60	.95	1.31
Sep	.00	.03	.12	.22	.32	.45	.59	.78	1.04	1.48	1.92
Oct	.00	.00	.32	.56	.80	1.06	1.37	1.75	2.25	3.09	3.91
Nov	.32	.54	.95	1.36	1.81	2.30	2.88	3.60	4.58	6.21	7.80
Dec	.27	.48	.89	1.32	1.80	2.33	2.97	3.77	4.88	6.73	8.55
Ann	12.00	13.64	15.83	17.55	19.12	20.67	22.30	24.14	26.41	29.78	32.77

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

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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	2.3	.0	1	0
Feb	.3	.0	0	0
Mar	2.3	.0	0	0
Apr	.1	.0	#	0
May	.2	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.1	.0	0	0
Nov	1.1	.0	#	0
Dec	.5	.0	#	0
Ann	6.9	.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	5.5	1977	2	11.0	1977	11	1982	2	11	1982
Feb	6.0	1990	17	6.0	1990	0	0	0	0	0
Mar	8.0	1975	22	12.0+	1985	0	0	0	0	0
Apr	1.0	1999	28	1.0	1999	1	1983	11	#	1983
May	4.0	1988	5	4.0	1988	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	3.0	1984	16	3.0	1984	0	0	0	0	0
Nov	4.0	1977	21	4.0+	1998	5	1981	27	#+	1981
Dec	10.0	1983	3	10.0	1983	10	1982	22	7	1982
Ann	10.0	Dec 1983	3	12.0+	Mar 1985	11	Jan 1982	2	11	Jan 1982

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.6	.6	.4	.1	.0
Feb	.2	.2	.1	.1	.0
Mar	.6	.6	.4	.1	.0
Apr	.1	.1	.0	.0	.0
May	.1	.1	.1	.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	.1	.1	.1	.0	.0
Nov	.4	.4	.2	.0	.0
Dec	.1	.1	.1	.1	.0
Ann	2.2	2.2	1.4	.4	.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	.1	.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	.1	.1	.0	.0
Dec	.0	.0	.0	.0
Ann	.2	.1	.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	7/09	7/03	6/29	6/26	6/23	6/20	6/17	6/13	6/07
32	6/23	6/16	6/10	6/05	6/01	5/28	5/23	5/18	5/10
28	5/28	5/22	5/17	5/13	5/10	5/06	5/03	4/28	4/22
24	4/30	4/22	4/16	4/12	4/07	4/03	3/29	3/24	3/16
20	4/04	3/23	3/15	3/07	2/28	2/21	2/14	2/05	1/24
16	3/04	2/19	2/09	2/01	1/24	1/15	1/05	12/23	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	8/22	8/29	9/04	9/08	9/12	9/17	9/21	9/26	10/04
32	9/12	9/18	9/22	9/25	9/28	10/01	10/05	10/09	10/14
28	10/03	10/09	10/13	10/17	10/20	10/23	10/27	10/31	11/05
24	10/19	10/25	10/29	11/02	11/05	11/08	11/12	11/16	11/22
20	11/05	11/11	11/16	11/20	11/24	11/28	12/02	12/06	12/13
16	11/15	11/24	12/01	12/07	12/12	12/18	12/25	1/03	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	109	99	92	86	81	75	69	62	52
32	146	136	130	124	119	113	107	101	91
28	189	180	173	167	162	157	151	145	136
24	238	229	222	216	211	206	200	194	184
20	309	295	285	276	268	260	251	241	226
16	>365	>365	359	335	322	311	301	290	275

***** 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	912	704	665	503	320	143	37	31	146	399	715	918	5493
60	757	564	510	359	189	62	8	4	61	254	565	763	4096
57	664	480	418	278	127	31	2	1	30	179	476	670	3356
55	602	424	358	229	93	18	0	0	17	136	417	608	2902
50	448	286	218	128	33	3	0	0	3	56	277	453	1905
32	53	8	1	0	0	0	0	0	0	0	11	48	121

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	163	229	359	487	709	889	1117	1093	876	626	285	153	6986
55	0	0	3	26	90	217	404	380	202	48	1	0	1371
57	0	0	1	16	61	170	343	319	156	30	0	0	1096
60	0	0	0	7	30	111	256	229	97	12	0	0	742
65	0	0	0	0	7	42	130	102	32	2	0	0	315
70	0	0	0	0	0	10	48	26	6	0	0	0	90

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	34	68	142	255	457	646	863	836	623	374	92	34	34	102	244	499	956	1602	2465	3301	3924	4298	4390	4424
45	5	17	50	138	311	496	708	681	473	230	33	3	5	22	72	210	521	1017	1725	2406	2879	3109	3142	3145
50	0	0	7	59	178	349	553	526	327	115	7	0	0	0	7	66	244	593	1146	1672	1999	2114	2121	2121
55	0	0	0	15	81	217	399	372	195	41	0	0	0	0	0	15	96	313	712	1084	1279	1320	1320	1320
60	0	0	0	0	32	107	251	226	88	9	0	0	0	0	0	0	32	139	390	616	704	713	713	713
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	16	53	115	198	324	436	551	538	432	275	59	12	16	69	184	382	706	1142	1693	2231	2663	2938	2997	3009

(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