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: CALISTOGA, CA **COOP ID: 041312**

Climate Division: CA 1 **NWS Call Sign:** **Elevation: 370 Feet** **Lat: 38˚35N** **Lon: 122˚34W**

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	59.0	35.4	47.2	80+	1994	17	51.3	1986	19	1991	2	43.2	1972	551	0	.0	.0	25.8	@	7.0	.0
Feb	62.9	38.2	50.6	88	1996	13	54.8	1995	17	1999	2	47.0	1989	406	0	.0	.0	27.3	@	6.4	.0
Mar	66.5	40.0	53.3	88+	2001	21	58.5	1986	21	1982	17	48.4	1982	369	4	.0	.0	30.9	.0	2.6	.0
Apr	71.5	41.6	56.6	102	1989	8	62.2	1985	20+	2001	5	50.2	1975	270	15	.1	1.0	29.9	.0	.7	.0
May	78.7	46.3	62.5	104	2001	31	67.5	1987	29	1983	10	56.6	1998	129	51	.5	3.7	30.2	.0	.2	.0
Jun	86.5	50.4	68.5	106+	1981	21	72.8	1981	35+	1983	23	63.9	1982	26	130	2.1	9.5	30.0	.0	.0	.0
Jul	91.7	52.7	72.2	110	1988	17	76.1	1988	37	1983	8	68.8	1987	2	224	3.6	17.7	31.0	.0	.0	.0
Aug	91.0	52.5	71.8	109	1998	4	75.0	1998	38	1982	3	68.3	1976	1	210	3.9	16.6	31.0	.0	.0	.0
Sep	87.3	50.7	69.0	110	1988	4	72.1	1979	35	1984	30	64.5	1986	18	138	1.8	11.8	30.0	.0	.0	.0
Oct	79.5	45.9	62.7	106	1996	8	66.3	1987	32+	1991	31	59.2	1981	116	45	.4	3.7	31.0	.0	8.9	.0
Nov	66.0	39.4	52.7	91+	1997	3	58.2	1995	21+	2000	28	47.4	1994	372	2	.0	.1	29.9	.0	3.1	.0
Dec	59.2	35.2	47.2	83	1999	22	51.4	1977	12	1990	22	42.0	1990	551	0	.0	.0	28.2	.0	12.2	.0
Ann	75.0	44.0	59.5	110+	Sep 1988	4	76.1	Jul 1988	12	Dec 1990	22	42.0	Dec 1990	2811	819	12.4	64.1	355.2	.0	41.1	.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: 1948-2001

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

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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	7.74	7.52	5.83	1967	21	30.23	1995	.41	1976
Feb	7.85	6.39	8.10	1986	17	32.06	1986	.21	1997
Mar	5.98	3.74	5.63	1995	9	19.16	1991	.27	1988
Apr	2.22	2.33	2.63	1996	2	7.39	1982	.10	1973
May	.95	.45	2.20	1996	16	4.89	1990	.00+	1992
Jun	.22	.02	1.99	1967	2	1.19	1992	.00+	1999
Jul	.10	.00	1.91	1974	8	2.01	1974	.00+	2000
Aug	.11	.00	1.63	1954	28	.97	1976	.00+	2000
Sep	.46	.15	2.99	1959	18	2.29	1989	.00+	1995
Oct	1.96	1.48	5.71	1962	12	5.29	1989	.00	1978
Nov	5.13	3.90	5.14	1977	21	17.12	1973	.10	1986
Dec	5.79	5.34	5.90	1995	12	17.14	1996	.00	1989
Ann	38.51	35.67	8.10	Feb 1986	17	32.06	Feb 1986	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.2	8.8	4.6	2.6
Feb	10.9	8.8	5.0	2.9
Mar	10.5	8.2	4.5	2.1
Apr	6.6	4.6	1.5	.6
May	3.5	1.9	.6	.2
Jun	1.0	.6	.2	@
Jul	.2	.2	.1	@
Aug	.6	.3	.1	.0
Sep	1.9	1.0	.3	.1
Oct	4.9	3.3	1.5	.7
Nov	8.7	6.2	3.6	2.0
Dec	9.2	7.2	3.9	2.2
Ann	69.2	51.1	25.9	13.4

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	.63	1.15	2.17	3.24	4.42	5.77	7.38	9.42	12.23	16.94	21.58
Feb	.48	.95	1.92	2.98	4.19	5.60	7.31	9.49	12.54	17.72	22.87
Mar	.54	.96	1.76	2.59	3.50	4.53	5.75	7.29	9.40	12.93	16.39
Apr	.15	.28	.56	.86	1.20	1.60	2.08	2.69	3.54	4.97	6.40
May	.00	.00	.02	.10	.23	.42	.68	1.04	1.60	2.61	3.68
Jun	.00	.00	.00	.00	.00	.02	.09	.20	.37	.70	1.06
Jul	**	**	**	**	**	**	**	**	**	**	**
Aug	.00	.00	.00	.00	.00	.00	.00	.01	.09	.35	.67
Sep	.00	.00	.00	.00	.07	.18	.32	.52	.81	1.32	1.85
Oct	.06	.20	.46	.74	1.06	1.42	1.85	2.40	3.16	4.44	5.71
Nov	.23	.50	1.08	1.76	2.55	3.49	4.65	6.16	8.29	11.95	15.63
Dec	.33	.88	1.78	2.63	3.53	4.53	5.70	7.14	9.10	12.33	15.46
Ann	17.29	20.71	25.45	29.30	32.90	36.51	40.39	44.83	50.41	58.88	66.53

\+ 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)

Extremes (2)

Mean Number of Days (1)

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	3.0	1974	3	3.0	1974	0	0	0	0	0	@	@	@	.0	.0	.0	.0	.0	.0
Feb	#	.0	0	0	#	1990	5	#+	1990	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	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
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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.1	.0	N/A	N/A	3.0	Jan 1974	3	3.0	Jan 1974	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

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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	6/05	5/25	5/17	5/10	5/03	4/27	4/19	4/11	3/31
32	4/28	4/17	4/09	4/02	3/26	3/20	3/13	3/04	2/21
28	3/14	3/03	2/23	2/16	2/09	2/02	1/26	1/17	1/03
24	2/15	1/23	1/05	12/19	11/28	10/24	0/00	0/00	0/00
20	12/19	11/25	11/02	0/00	0/00	0/00	0/00	0/00	0/00
16	11/19	11/03	10/12	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	9/26	10/04	10/09	10/14	10/19	10/23	10/28	11/03	11/11
32	9/30	10/12	10/21	10/29	11/05	11/12	11/20	11/29	12/11
28	9/29	10/16	10/29	11/09	11/20	11/30	12/12	12/26	1/16
24	9/22	10/19	11/10	12/01	12/25	2/06	0/00	0/00	0/00
20	9/26	10/23	11/17	12/26	0/00	0/00	0/00	0/00	0/00
16	9/30	10/19	11/09	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	215	199	187	177	168	159	149	137	121
32	276	258	245	233	223	213	201	188	170
28	>365	328	308	294	281	269	257	243	223
24	>365	>365	>365	>365	>365	>365	330	295	264
20	>365	>365	>365	>365	>365	>365	>365	337	317
16	>365	>365	>365	>365	>365	>365	>365	352	330

***** 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	551	406	369	270	129	26	2	1	18	116	372	551	2811
60	396	269	229	156	53	4	0	0	2	42	235	397	1783
57	304	192	159	105	25	1	0	0	0	18	164	308	1276
55	247	146	121	76	14	0	0	0	0	9	124	251	988
50	119	61	48	25	3	0	0	0	0	1	51	130	438
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	472	518	658	736	945	1093	1245	1232	1111	952	620	472	10054
55	5	21	67	121	246	403	532	519	421	248	54	10	2647
57	1	11	42	90	195	344	470	457	361	195	34	5	2205
60	0	3	19	51	129	257	377	364	272	125	15	1	1613
65	0	0	4	15	51	130	224	210	138	45	2	0	819
70	0	0	0	3	12	45	92	78	47	8	0	0	285

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	221	304	432	524	680	843	991	981	874	574	400	223	221	525	957	1481	2161	3004	3995	4976	5850	6424	6824	7047
45	98	168	279	375	526	693	836	826	724	428	253	98	98	266	545	920	1446	2139	2975	3801	4525	4953	5206	5304
50	24	71	141	233	378	543	681	671	574	294	121	26	24	95	236	469	847	1390	2071	2742	3316	3610	3731	3757
55	1	18	41	116	233	393	526	516	424	181	40	0	1	19	60	176	409	802	1328	1844	2268	2449	2489	2489
60	0	1	6	40	115	248	371	361	278	89	8	0	0	1	7	47	162	410	781	1142	1420	1509	1517	1517
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	131	180	271	329	432	523	597	592	542	437	257	141	131	311	582	911	1343	1866	2463	3055	3597	4034	4291	4432

(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