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: KENTFIELD, CA **COOP ID: 044500**

Climate Division: CA 1 **NWS Call Sign:** **Elevation: 128 Feet** **Lat: 37˚57N** **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	56.2	40.7	48.5	79	1962	9	52.5	1995	20+	1949	11	44.2	1972	513	0	.0	.0	27.9	.0	2.1	.0
Feb	61.4	43.0	52.2	79	1996	11	55.5	1995	21	1961	1	47.8	1989	358	0	.0	.0	27.5	.1	.8	.0
Mar	65.3	44.1	54.7	87	1952	26	58.3	1986	27	1951	3	51.0+	1999	323	3	.0	.0	31.0	.0	.2	.0
Apr	70.6	45.8	58.2	96	1996	30	61.7	1992	31	1953	10	53.2	1975	215	10	.0	.3	30.0	.0	.0	.0
May	76.0	48.9	62.5	102	2001	31	67.6	1997	23	1999	23	58.1	1999	121	41	@	1.9	31.0	.0	@	.0
Jun	81.8	52.0	66.9	110	2000	14	73.3	1981	39+	1983	22	63.4	1982	41	98	1.2	5.1	30.0	.0	.0	.0
Jul	85.0	53.4	69.2	111	1972	14	72.9	1985	41	1953	9	66.2	1994	9	140	1.2	7.0	31.0	.0	.0	.0
Aug	84.4	53.6	69.0	106	1993	1	71.2	1993	40+	1962	2	65.3	1980	7	130	.6	6.6	31.0	.0	.0	.0
Sep	82.1	52.5	67.3	106	1971	14	71.0	1997	37+	1955	28	63.7	1986	28	98	.3	5.8	30.0	.0	.0	.0
Oct	75.4	49.6	62.5	101+	1996	9	66.1	1992	30	1949	20	59.0	1971	112	35	.2	1.7	31.0	.0	.0	.0
Nov	63.4	45.0	54.2	87	1955	10	59.6	1995	26	1954	30	49.7	1994	327	2	.0	.0	29.9	.0	.3	.0
Dec	56.3	40.6	48.5	77	1999	19	53.2	1996	18	1990	22	43.7	1972	513	0	.0	.0	27.8	.0	2.6	.0
Ann	71.5	47.4	59.5	111	Jul 1972	14	73.3	Jun 1981	18	Dec 1990	22	43.7	Dec 1972	2567	557	3.5	28.4	358.1	.1	6.0	.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	9.60	9.34	11.56	1967	21	23.40	1993	.33	1976
Feb	9.10	8.12	6.60	1986	17	26.95	1986	.33	1997
Mar	7.05	5.07	4.49	1953	19	22.69	1983	.06	1988
Apr	2.56	2.04	4.37	1953	27	8.87	1982	.06	1973
May	1.20	.39	3.15	1990	27	8.04	1990	.00+	1992
Jun	.24	.05	1.94	1967	2	2.44	1992	.00+	1999
Jul	.01	.00	2.45	1974	8	.26	1975	.00+	2000
Aug	.12	.00	1.23	1997	20	1.74	1976	.00+	2000
Sep	.50	.08	3.85	1959	18	2.98	1977	.00+	1995
Oct	2.33	1.32	5.81	1962	12	8.54	1972	.00	1978
Nov	7.47	5.02	7.96	1994	5	26.00	1973	.14	1986
Dec	7.29	5.53	7.73	1995	11	20.56	1996	.00	1989
Ann	47.47	42.66	11.56	Jan 1967	21	26.95	Feb 1986	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.8	9.0	5.6	3.5
Feb	10.7	8.8	5.3	3.2
Mar	10.6	8.6	4.9	2.4
Apr	5.6	4.3	1.6	.7
May	2.9	1.8	.7	.3
Jun	.9	.5	.1	.1
Jul	.3	.1	.1	@
Aug	.4	.2	.1	.1
Sep	1.6	1.0	.4	.1
Oct	3.8	2.5	1.4	.8
Nov	8.5	6.5	4.4	2.8
Dec	9.9	7.4	4.4	2.4
Ann	66.0	50.7	29.0	16.4

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	.92	1.61	2.91	4.25	5.70	7.34	9.28	11.71	15.04	20.58	26.00
Feb	.69	1.28	2.45	3.71	5.10	6.70	8.62	11.05	14.42	20.09	25.69
Mar	.51	.96	1.86	2.83	3.91	5.16	6.66	8.56	11.20	15.65	20.05
Apr	.20	.37	.71	1.06	1.45	1.90	2.43	3.11	4.04	5.60	7.15
May	.00	.00	.01	.08	.22	.45	.78	1.26	2.02	3.43	4.94
Jun	.00	.00	.00	.00	.00	.04	.11	.23	.42	.76	1.12
Jul	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.10
Aug	.00	.00	.00	.00	.00	.00	.00	.00	.00	.23	.65
Sep	.00	.00	.00	.00	.02	.10	.24	.46	.83	1.53	2.28
Oct	.02	.09	.31	.60	.96	1.41	1.98	2.74	3.85	5.79	7.78
Nov	.25	.57	1.35	2.30	3.44	4.83	6.58	8.87	12.16	17.88	23.68
Dec	.45	1.16	2.30	3.37	4.50	5.75	7.21	9.00	11.42	15.41	19.27
Ann	23.56	27.57	33.04	37.42	41.46	45.49	49.78	54.66	60.76	69.92	78.12

\+ 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

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
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
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	#	1972	28	#	1972	0	0	0	0	0
Feb	.0	0	0	.0	0	0	0	0	0	0
Mar	.0	0	0	.0	0	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	0	0	0	0	0
Dec	#	1972	13	#	1972	0	0	0	0	0
Ann	#+	Dec 1972	13	#+	Dec 1972	0	0	0	0	0

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.0	.0	.0	.0	.0
Feb	.0	.0	.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	.0
Ann	.0	.0	.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	4/22	4/09	3/30	3/22	3/14	3/07	2/26	2/17	2/03
32	3/15	3/01	2/18	2/09	2/01	1/22	1/12	12/29	0/00
28	2/23	1/26	12/30	0/00	0/00	0/00	0/00	0/00	0/00
24	1/10	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	11/07	11/14	11/19	11/23	11/27	12/01	12/05	12/10	12/16
32	11/19	12/01	12/11	12/19	12/27	1/04	1/13	1/26	0/00
28	12/20	1/05	1/21	0/00	0/00	0/00	0/00	0/00	0/00
24	1/02	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	303	287	276	266	257	248	238	227	211
32	>365	>365	>365	349	331	318	306	292	275
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)

Base — Heating Degree Days (1)

Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	513	358	323	215	121	41	9	7	28	112	327	513	2567
60	358	221	185	103	43	7	0	0	3	36	192	360	1508
57	271	147	120	57	17	2	0	0	0	13	126	273	1026
55	215	104	85	33	9	0	0	0	0	6	90	218	760
50	102	31	24	6	0	0	0	0	0	0	30	109	302
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	510	566	703	785	942	1046	1154	1146	1060	945	665	510	10032
55	11	26	75	128	238	356	441	433	370	238	65	15	2396
57	6	12	48	91	185	298	379	371	310	184	41	8	1933
60	0	3	20	48	117	214	286	278	223	113	17	1	1320
65	0	0	3	10	41	98	140	130	98	35	2	0	557
70	0	0	0	0	8	28	40	31	24	5	0	0	136

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	268	362	459	545	692	796	895	890	813	699	422	264	268	630	1089	1634	2326	3122	4017	4907	5720	6419	6841	7105
45	131	219	304	395	537	646	740	735	663	544	274	134	131	350	654	1049	1586	2232	2972	3707	4370	4914	5188	5322
50	41	95	160	248	382	496	585	580	513	389	138	41	41	136	296	544	926	1422	2007	2587	3100	3489	3627	3668
55	1	21	52	114	229	347	430	425	363	234	51	2	1	22	74	188	417	764	1194	1619	1982	2216	2267	2269
60	0	0	5	35	97	200	275	270	214	107	7	0	0	0	5	40	137	337	612	882	1096	1203	1210	1210
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	110	179	250	322	417	488	559	552	504	416	216	120	110	289	539	861	1278	1766	2325	2877	3381	3797	4013	4133

(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