

Climatology of the United States

No. 20

1971-2000

Station: SONOMA, CA

COOP ID: 048351

Climate Division: CA 1

NWS Call Sign:

Elevation: 97 Feet

Lat: 38° 18N

Lon: 122° 28W

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	58.4	37.3	47.9	84	1962	8	52.5	1978	20+	1963	13	42.8	1972	532	0	.0	.0	29.2	.0	9.6	.0
Feb	63.6	39.9	51.8	84	1985	23	56.0	1980	20	1989	7	47.0	1989	370	0	.0	.0	27.8	.1	4.5	.0
Mar	67.0	41.4	54.2	89	1966	31	58.5	1978	24	1966	3	50.2	1999	335	0	.0	.0	31.0	.0	1.8	.0
Apr	72.1	43.0	57.6	100+	1981	29	61.0	1990	27	1976	2	52.0	1975	232	8	.1	.2	30.0	.0	.5	.0
May	78.2	46.4	62.3	105+	2001	31	66.9	1997	27	1952	5	57.1	1998	132	49	.2	3.4	31.0	.0	@	.0
Jun	85.5	50.3	67.9	112+	2000	14	75.1	1981	31	1952	12	63.4	1980	38	126	2.3	9.3	30.0	.0	.0	.0
Jul	89.8	51.9	70.9	116	1972	13	73.8	1984	38+	1953	10	67.3	1987	4	186	3.4	14.8	31.0	.0	.0	.0
Aug	89.4	51.8	70.6	108	1998	3	72.7	1998	36	1979	23	67.4	1985	2	175	3.6	14.4	31.0	.0	.0	.0
Sep	87.1	50.3	68.7	110+	1971	13	73.3	1984	34	1965	20	63.3	1986	25	136	2.3	11.4	30.0	.0	.0	.0
Oct	80.1	46.3	63.2	107	1980	2	66.1	1978	30+	1971	30	59.8	1971	92	36	.2	4.6	31.0	.0	.2	.0
Nov	66.5	40.7	53.6	91	1985	1	57.9+	1995	22+	1985	19	48.7	1994	344	1	.0	@	29.9	.0	3.5	.0
Dec	58.6	36.5	47.6	80	1967	26	52.7	1977	13	1990	22	43.1	1990	541	0	.0	.0	28.7	.0	10.1	.0
Ann	74.7	44.7	59.7	116	Jul 1972	13	75.1	Jun 1981	13	Dec 1990	22	42.8	Jan 1972	2647	717	12.1	58.1	360.6	.1	30.2	.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: 1952-2001

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

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: SONOMA, CA

COOP ID: 048351

Climate Division: CA 1

NWS Call Sign:

Elevation: 97 Feet

Lat: 38°18N

Lon: 122°28W

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	Med-ian	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	6.52	5.81	6.75	1982	4	20.29	1995	.36	1976	11.5	8.2	4.2	2.0	.65	1.12	2.01	2.92	3.90	5.01	6.32	7.96	10.19	13.91	17.55
Feb	6.10	5.34	3.94	1986	14	18.89	1998	.44	1971	10.5	8.0	4.2	2.0	.52	.94	1.75	2.59	3.52	4.58	5.84	7.43	9.61	13.27	16.86
Mar	4.64	3.83	2.90	1995	9	13.77	1983	.12	1988	10.5	7.3	3.4	1.2	.33	.62	1.21	1.84	2.56	3.38	4.37	5.63	7.38	10.32	13.24
Apr	1.55	1.43	2.80	1953	27	3.82	1983	.03	1973	6.4	3.8	.9	.2	.13	.23	.43	.65	.88	1.16	1.48	1.89	2.45	3.39	4.32
May	.79	.23	1.64	1990	27	3.90	1998	.00+	1992	3.3	1.6	.5	.2	.00	.00	.02	.09	.19	.34	.55	.85	1.31	2.18	3.09
Jun	.18	.04	1.82	1967	2	1.04	1995	.00+	1996	.9	.5	@	.0	.00	.00	.00	.00	.00	.04	.10	.18	.31	.56	.81
Jul	.05	.00	1.02	1974	8	1.11	1974	.00+	2000	.3	.1	@	@	**	**	**	**	**	**	**	**	**	**	**
Aug	.12	.00	.98	1997	20	1.02	1997	.00+	1999	.6	.2	.1	.0	.00	.00	.00	.00	.00	.00	.00	.00	.06	.36	.71
Sep	.33	.12	2.70	1959	18	1.77	1989	.00+	1995	1.7	.9	.2	.0	.00	.00	.00	.00	.02	.11	.22	.37	.59	.96	1.34
Oct	1.68	1.38	4.38	1962	12	4.73	1975	.00+	1995	4.3	2.6	1.2	.5	.00	.14	.42	.68	.96	1.27	1.64	2.08	2.69	3.71	4.70
Nov	4.22	3.41	5.40	1977	21	12.95	1973	.21	1986	8.6	6.2	3.2	1.3	.24	.48	.98	1.55	2.20	2.97	3.90	5.10	6.78	9.64	12.49
Dec	4.46	3.54	3.45	1995	11	13.11	1996	.01	1989	10.0	6.9	3.0	1.3	.29	.56	1.12	1.73	2.41	3.21	4.17	5.40	7.12	10.02	12.90
Ann	30.64	28.47	6.75	Jan 1982	4	20.29	Jan 1995	.00+	Jul 2000	68.6	46.3	20.9	8.7	13.99	16.69	20.43	23.45	26.27	29.10	32.13	35.60	39.95	46.55	52.50

+ 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: 1952-2001

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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: SONOMA, CA

COOP ID: 048351

Climate Division: CA 1

NWS Call Sign:

Elevation: 97 Feet

Lat: 38° 18N

Lon: 122° 28W

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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	#	.0	0	0	#	1976	5	#	1976	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	#	.0	N/A	N/A	#	Feb 1976	5	#	Feb 1976	0	0	0	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

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

Climatography of the United States

No. 20 1971-2000

Station: SONOMA, CA

COOP ID: 048351

Climate Division: CA 1

NWS Call Sign:

Elevation: 97 Feet

Lat: 38° 18N

Lon: 122° 28W

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	5/21	5/10	5/02	4/25	4/19	4/12	4/06	3/28	3/17
32	4/19	4/05	3/26	3/18	3/10	3/02	2/22	2/12	1/29
28	3/04	2/20	2/12	2/05	1/29	1/23	1/15	1/06	12/24
24	1/28	1/17	1/07	12/22	0/00	0/00	0/00	0/00	0/00
20	12/23	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	10/02	10/11	10/18	10/23	10/29	11/03	11/09	11/15	11/24
32	10/22	11/01	11/08	11/15	11/21	11/26	12/03	12/10	12/20
28	11/12	11/23	12/01	12/08	12/14	12/21	12/28	1/06	1/19
24	12/15	12/30	1/13	2/03	0/00	0/00	0/00	0/00	0/00
20	1/02	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	238	222	211	201	192	183	173	162	146
32	303	284	272	261	252	243	233	222	206
28	>365	>365	338	325	315	306	298	288	275
24	>365	>365	>365	>365	>365	>365	>365	>365	336
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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

**Climatography
of the United States
No. 20
1971-2000**

Station: SONOMA, CA

COOP ID: 048351

Climate Division: CA 1

NWS Call Sign:

Elevation: 97 Feet

Lat: 38°18N

Lon: 122°28W

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	532	370	335	232	132	38	4	2	25	92	344	541	2647
60	377	234	192	114	53	8	0	0	4	23	207	387	1599
57	289	159	120	65	24	2	0	0	0	7	139	300	1105
55	232	116	84	39	13	1	0	0	0	3	102	244	834
50	113	41	21	7	1	0	0	0	0	0	38	128	349
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	491	554	688	766	940	1077	1204	1195	1101	967	647	482	10112
55	9	26	59	115	240	388	491	482	411	256	59	13	2549
57	5	13	34	81	189	330	429	420	351	198	37	7	2094
60	0	4	12	40	125	245	336	327	265	122	15	1	1492
65	0	0	0	8	49	126	186	175	136	36	1	0	717
70	0	0	0	0	12	46	66	53	52	5	0	0	234

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	251	347	446	529	690	841	962	954	867	719	416	247	251	598	1044	1573	2263	3104	4066	5020	5887	6606	7022	7269
45	115	206	291	379	535	691	807	799	717	564	268	119	115	321	612	991	1526	2217	3024	3823	4540	5104	5372	5491
50	32	87	149	234	380	541	652	644	567	410	135	36	32	119	268	502	882	1423	2075	2719	3286	3696	3831	3867
55	1	21	52	108	229	392	497	489	417	259	49	1	1	22	74	182	411	803	1300	1789	2206	2465	2514	2515
60	0	0	7	37	110	248	342	334	268	128	9	0	0	0	7	44	154	402	744	1078	1346	1474	1483	1483
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	137	207	275	338	438	518	581	578	533	458	257	146	137	344	619	957	1395	1913	2494	3072	3605	4063	4320	4466

(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/normals/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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. 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