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: SAN FRANCISCO DOWNTOWN, CA **COOP ID: 047772**

Climate Division: CA 4 **NWS Call Sign: 7772** **Elevation: 175 Feet** **Lat: 37˚46N** **Lon: 122˚26W**

Temperature (˚F)

Month	Mean (1) Daily Max	Mean (1) Daily Min	Mean (1) Mean	Extremes Highest Daily(2)	Year	Day	Highest Month(1) Mean	Year	Lowest Daily(2)	Year	Day	Lowest Month(1) Mean	Year	Degree Days (1) Base Temp 65 Heating	Cooling	Mean Number of Days (3) Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	58.1	46.4	52.3	79	1962	8	56.3	1986	32+	1962	21	49.3	1972	396	0	.0	.0	29.3	.0	.0	.0
Feb	61.4	48.5	55.0	81	1986	26	58.5	1986	31	1989	6	49.6	1989	283	2	.0	.0	27.8	.0	@	.0
Mar	62.5	49.2	55.9	83+	1996	17	59.9	1978	39+	1966	1	51.2	1999	271	3	.0	.0	30.9	.0	.0	.0
Apr	64.5	50.1	57.3	94	1989	8	61.7	1992	40+	1999	9	53.0	1975	233	7	.0	.3	30.0	.0	@	.0
May	65.4	51.4	58.4	101	2001	30	62.6	1997	44+	1999	15	53.7	1999	214	9	.0	.4	31.0	.0	.0	.0
Jun	67.7	53.2	60.5	103	2000	14	64.7	1993	47+	1999	7	56.4	1999	150	14	@	.7	30.0	.0	.0	.0
Jul	68.2	54.4	61.3	103	1988	17	65.2	1984	47+	1953	10	58.3	2000	133	19	@	.3	31.0	.0	.0	.0
Aug	69.2	55.6	62.4	98	1993	1	67.1	1983	48+	1969	14	58.9	1973	107	26	.0	.2	31.0	.0	.0	.0
Sep	71.3	56.1	63.7	101	1971	14	70.4	1984	48+	1955	27	60.5	1975	95	56	.1	1.3	30.0	.0	.0	.0
Oct	70.4	54.6	62.5	102	1987	5	65.9	1992	45+	1949	23	59.0	1971	100	22	.1	.8	31.0	.0	.0	.0
Nov	64.1	50.8	57.5	86	1966	1	61.3	1976	40	1994	19	51.3	1994	232	5	.0	.0	30.0	.0	.0	.0
Dec	58.6	46.7	52.7	76	1958	12	56.3	1979	28	1990	22	48.2	1972	383	0	.0	.0	29.7	.0	.2	.0
Ann	65.1	51.4	58.3	103+	Jun 2000	14	70.4	Sep 1984	28	Dec 1990	22	48.2	Dec 1972	2597	163	.2	4.0	361.7	.0	.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/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	4.72	4.52	3.22	1956	14	12.08	1998	.31	1976
Feb	4.15	3.80	2.93	1998	2	14.89	1998	.24	1995
Mar	3.40	2.59	2.50	1992	5	9.04	1983	.07	1988
Apr	1.25	1.00	2.04	1958	2	4.21	1978	.02	1973
May	.54	.16	1.42	1990	27	3.92	1998	.00+	1992
Jun	.13	.06	1.34	1967	2	.70	1988	.00+	1996
Jul	.04	.00	.03+	1986	23	.73	1974	.00+	1999
Aug	.09	.01	.54	1997	19	.78	1976	.00+	1996
Sep	.28	.16	2.01	1959	18	1.32	1986	.00+	1995
Oct	1.19	.92	2.29	1969	15	5.41	1972	.00+	1980
Nov	3.31	2.27	5.54	1994	5	10.49	1994	.08	1995
Dec	3.18	2.61	3.61	1995	11	8.13	1995	.00	1989
Ann	22.28	21.01	5.54	Nov 1994	5	14.89	Feb 1998	.00+	Jul 1999

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.4	8.3	3.2	1.2
Feb	10.8	7.3	2.7	.9
Mar	11.2	6.6	2.2	.5
Apr	6.2	3.1	.7	.2
May	3.3	1.5	.3	.1
Jun	1.4	.4	@	.0
Jul	.4	.1	@	.0
Aug	.9	.3	@	.0
Sep	2.1	1.0	.1	.0
Oct	4.1	2.2	.9	.2
Nov	8.7	5.5	2.1	.7
Dec	9.6	6.1	1.9	.6
Ann	70.1	42.4	14.1	4.4

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	.55	.91	1.57	2.23	2.93	3.71	4.63	5.76	7.30	9.84	12.31
Feb	.35	.63	1.17	1.75	2.38	3.11	3.97	5.06	6.56	9.07	11.54
Mar	.30	.54	.99	1.46	1.98	2.56	3.26	4.14	5.34	7.35	9.32
Apr	.08	.15	.31	.48	.67	.90	1.17	1.52	2.00	2.82	3.63
May	.00	.00	.00	.05	.12	.23	.38	.59	.92	1.53	2.17
Jun	.00	.00	.00	.00	.02	.05	.09	.15	.23	.37	.51
Jul	.00	.00	.00	.00	.00	.00	.00	.00	.02	.11	.21
Aug	.00	.00	.00	.00	.00	.00	.02	.05	.13	.28	.45
Sep	.00	.00	.00	.00	.06	.13	.22	.34	.51	.79	1.08
Oct	.00	.05	.20	.37	.57	.80	1.09	1.45	1.97	2.85	3.72
Nov	.13	.29	.66	1.09	1.60	2.21	2.97	3.96	5.37	7.80	10.25
Dec	.39	.79	1.33	1.78	2.24	2.73	3.27	3.92	4.79	6.17	7.47
Ann	10.60	12.53	15.17	17.31	19.28	21.26	23.38	25.79	28.81	33.36	37.46

+ 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)

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	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9+	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Feb	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9+	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Mar	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Apr	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
May	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Jun	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Jul	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Aug	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Sep	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Oct	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Nov	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Dec	-9.9	-9.9	-99	-99	-9.9	-99	-99	-9.9+	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	N/A	N/A	-9.9+	-99	-99	-9.9+	-99	-99	-99	-99	-99	-99	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

+ 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	1/30	12/13	0/00	0/00	0/00	0/00	0/00	0/00	0/00
32	12/22	0/00	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	1/13	3/06	0/00	0/00	0/00	0/00	0/00	0/00	0/00
32	3/04	0/00	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	>365	>365	>365
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.

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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	396	283	271	233	214	150	133	107	95	100	232	383	2597
60	242	156	153	105	99	55	45	28	29	22	111	236	1281
57	158	95	94	54	52	21	15	8	11	5	62	157	732
55	109	65	63	29	28	10	7	3	6	1	37	114	472
50	28	14	14	4	5	0	0	0	0	0	7	38	110
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	627	643	740	760	818	854	909	942	951	945	763	640	9592
55	23	64	89	98	134	173	202	232	266	233	110	41	1665
57	10	38	59	64	95	125	149	175	212	176	74	23	1200
60	1	14	24	25	49	69	85	101	139	99	34	8	648
65	0	2	3	7	9	14	19	26	56	22	5	0	163
70	0	0	0	0	0	0	1	2	12	2	0	0	17

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	378	432	492	522	572	612	659	690	715	704	526	395	378	810	1302	1824	2396	3008	3667	4357	5072	5776	6302	6697
45	226	289	337	372	417	462	504	535	565	549	376	242	226	515	852	1224	1641	2103	2607	3142	3707	4256	4632	4874
50	94	151	186	225	262	312	349	380	415	394	226	107	94	245	431	656	918	1230	1579	1959	2374	2768	2994	3101
55	22	49	68	95	120	162	194	225	265	239	94	25	22	71	139	234	354	516	710	935	1200	1439	1533	1558
60	0	8	14	29	40	64	67	90	126	104	23	0	0	8	22	51	91	155	222	312	438	542	565	565
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	135	178	210	235	269	310	347	380	410	391	240	144	135	313	523	758	1027	1337	1684	2064	2474	2865	3105	3249

(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.
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