

Climatology of the United States

No. 20

1971-2000

Station: SANTA ANA FIRE STATION, CA

COOP ID: 047888

Climate Division: CA 6

NWS Call Sign:

Elevation: 135 Feet

Lat: 33° 45N

Lon: 117° 52W

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	69.4	46.6	58.0	92	1976	16	62.8	1986	22	1950	6	54.9	1979	222	6	.0	.1	31.0	.0	@	.0
Feb	70.1	48.0	59.1	95	1995	20	63.5	1995	25	1949	14	55.5	1971	176	8	.0	.2	28.1	.0	.1	.0
Mar	70.7	49.6	60.2	98	1988	25	64.8	1997	29+	1953	3	55.6	1973	174	23	.0	.4	31.0	.0	.0	.0
Apr	73.6	52.4	63.0	104	1989	5	68.2	1992	31	1953	11	56.5	1975	110	50	.1	.7	30.0	.0	.0	.0
May	74.9	56.4	65.7	100	1979	13	71.4	1997	35	1950	4	61.7	1971	70	89	@	1.0	31.0	.0	.0	.0
Jun	78.7	59.9	69.3	109	1981	16	74.5	1981	39	1950	8	65.3	1982	20	149	.4	1.8	30.0	.0	.0	.0
Jul	82.7	63.1	72.9	110	1985	1	76.6	1984	42	1948	7	69.5	1987	1	246	.2	3.1	31.0	.0	.0	.0
Aug	84.2	64.3	74.3	103	1955	31	78.0	1983	45	1959	21	70.7	1975	1	288	.2	4.8	31.0	.0	.0	.0
Sep	83.4	62.9	73.2	110	1963	26	80.4	1984	40	1948	26	68.2	1986	8	253	.7	5.7	30.0	.0	.0	.0
Oct	79.7	58.0	68.9	106	1958	16	72.0	1983	34	1949	21	65.4	1971	22	140	.3	3.1	31.0	.0	.0	.0
Nov	74.2	50.5	62.4	101	1966	1	66.6	1976	30+	1952	24	57.8	1994	120	40	.0	.6	30.0	.0	.0	.0
Dec	69.7	46.0	57.9	95	1958	3	61.3	1977	25	1949	12	52.7	1971	229	7	.0	.1	31.0	.0	@	.0
Ann	75.9	54.8	65.4	110+	Jul 1985	1	80.4	Sep 1984	22	Jan 1950	6	52.7	Dec 1971	1153	1299	1.9	21.6	365.1	.0	.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/normal/usnormals.html

Issue Date: February 2004

(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								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	3.18	2.05	4.22	1956	26	13.48	1995	.00+	1976	7.0	5.3	2.2	.9	.00	.21	.70	1.18	1.71	2.32	3.04	3.92	5.16	7.24	9.28
Feb	3.05	2.02	3.55	1969	24	13.99	1998	.00	1984	6.0	4.6	2.5	.8	.02	.13	.43	.81	1.29	1.87	2.62	3.61	5.04	7.55	10.10
Mar	2.78	2.17	3.42	1952	7	8.32	1983	.00+	1997	6.1	4.5	2.2	.7	.00	.16	.57	.99	1.45	1.98	2.62	3.42	4.54	6.42	8.29
Apr	.67	.44	1.85	1965	1	2.74	1983	.00+	1997	2.5	1.5	.5	.1	.00	.00	.00	.05	.20	.37	.57	.83	1.19	1.81	2.42
May	.25	.01	1.14	1998	13	2.48	1998	.00+	1999	1.1	.5	.2	.1	.00	.00	.00	.00	.00	.00	.04	.16	.38	.82	1.30
Jun	.11	.00	1.26	1993	5	1.31	1993	.00+	2000	.6	.1	.1	@	.00	.00	.00	.00	.00	.00	.00	.04	.14	.36	.61
Jul	.02	.00	.13	1999	8	.20	1992	.00+	2000	.3	.1	.0	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.14
Aug	.12	.00	1.79	1977	17	2.08	1977	.00+	1999	.5	.2	.1	@	.00	.00	.00	.00	.00	.00	.00	.00	.01	.27	.67
Sep	.34	.05	1.41	1976	10	2.35	1976	.00+	1999	1.3	.6	.3	.1	.00	.00	.00	.00	.00	.01	.10	.27	.55	1.09	1.68
Oct	.36	.16	1.55	1983	1	1.78	1983	.00+	1999	1.7	.8	.2	@	.00	.00	.00	.01	.07	.16	.27	.41	.63	1.01	1.39
Nov	1.17	.80	2.35	1963	20	3.76	1982	.00+	2000	3.1	2.0	.9	.3	.00	.00	.00	.04	.23	.50	.85	1.34	2.04	3.30	4.58
Dec	1.79	1.09	3.47	1997	6	5.51	1971	.00+	2000	4.5	3.2	1.3	.5	.00	.00	.20	.45	.75	1.11	1.57	2.16	3.00	4.46	5.93
Ann	13.84	12.85	4.22	Jan 1956	26	13.99	Feb 1998	.00+	Dec 2000	34.7	23.4	10.5	3.5	4.76	6.07	7.97	9.58	11.12	12.71	14.44	16.46	19.04	23.05	26.73

+ 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

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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	0	.0	0	0	.0	0	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	#	1990	29	#	1990	.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	.0	N/A	N/A	.0	0	0	.0	0	#	Apr 1990	29	#	Apr 1990	.0	.0	.0	.0	.0	.0	.0	.0	.0

+ Also occurred on an earlier date(s) #Denotes trace amounts

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-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	2/25	2/06	1/22	1/07	12/19	0/00	0/00	0/00	0/00
32	0/00	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	12/04	12/16	12/26	1/06	1/20	0/00	0/00	0/00	0/00
32	0/00	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	328	298
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.

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
65	222	176	174	110	70	20	1	1	8	22	120	229	1153
60	100	74	79	39	18	3	0	0	0	2	44	107	466
57	51	34	38	16	7	0	0	0	0	0	19	57	222
55	27	17	21	8	2	0	0	0	0	0	9	32	116
50	4	1	4	0	0	0	0	0	0	0	1	5	15
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
32	807	756	872	930	1042	1119	1268	1310	1235	1142	910	801	12192
55	121	129	180	248	332	429	555	597	545	429	229	120	3914
57	83	90	136	195	274	369	493	535	485	367	179	83	3289
60	38	46	83	128	192	281	400	442	395	276	114	40	2435
65	6	8	23	50	89	149	246	288	253	140	40	7	1299
70	0	0	4	11	26	58	110	149	132	49	8	0	547

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	562	560	628	699	798	879	1025	1068	998	898	672	554	562	1122	1750	2449	3247	4126	5151	6219	7217	8115	8787	9341
45	407	415	473	549	643	729	870	913	848	743	522	399	407	822	1295	1844	2487	3216	4086	4999	5847	6590	7112	7511
50	253	270	319	399	488	579	715	758	698	588	372	248	253	523	842	1241	1729	2308	3023	3781	4479	5067	5439	5687
55	119	133	172	249	333	429	560	603	548	433	225	113	119	252	424	673	1006	1435	1995	2598	3146	3579	3804	3917
60	35	43	61	116	179	279	405	448	398	279	96	32	35	78	139	255	434	713	1118	1566	1964	2243	2339	2371
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	318	314	349	403	486	572	703	736	673	573	396	318	318	632	981	1384	1870	2442	3145	3881	4554	5127	5523	5841

(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/normal/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 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/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