

Climatology of the United States

No. 20

1971-2000

Station: SANTA CRUZ, CA

COOP ID: 047916

Climate Division: CA 4

NWS Call Sign:

Elevation: 130 Feet

Lat: 36° 59N

Lon: 121° 59W

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	61.0	40.2	50.6	81+	1976	19	55.4	1986	22+	1963	14	47.2	1972	446	0	.0	.0	30.5	.0	3.5	.0
Feb	62.9	42.3	52.6	85	1954	7	56.2	1995	24+	1989	7	48.5	1979	347	0	.0	.0	27.8	.0	1.6	.0
Mar	64.6	43.3	54.0	88+	1988	26	58.2	1978	28+	1971	2	50.0	1991	343	0	.0	.0	30.9	.0	.6	.0
Apr	68.8	44.4	56.6	94+	1989	7	61.1	1992	31+	1963	21	50.2	1975	258	5	.0	.1	29.9	.0	.1	.0
May	71.0	47.2	59.1	98+	1973	28	64.2	1997	33	1950	4	55.9	1974	194	11	.0	.6	31.0	.0	.0	.0
Jun	74.0	50.4	62.2	106	1976	24	66.0	1981	36+	1976	4	58.4	1999	101	18	.3	1.1	30.0	.0	.0	.0
Jul	74.8	52.6	63.7	105	1959	10	66.7	1985	40+	1973	24	60.9	1994	72	31	.1	.6	31.0	.0	.0	.0
Aug	75.5	53.0	64.3	103	1962	27	67.5	1983	38	1981	11	62.0+	1989	58	35	.0	.6	31.0	.0	.0	.0
Sep	75.6	52.1	63.9	107	1971	14	69.1	1984	36	1948	26	60.6	1986	85	50	.2	1.6	30.0	.0	.0	.0
Oct	72.5	48.3	60.4	103	1987	5	63.4	1987	30+	1971	30	57.3	1971	153	11	.2	1.0	31.0	.0	@	.0
Nov	65.3	43.4	54.4	92+	1956	9	58.9	1976	27+	1961	17	49.6	1994	320	1	.0	@	29.9	.0	.6	.0
Dec	60.8	39.6	50.2	87	1958	3	53.9	1977	19	1990	23	45.1	1971	459	0	.0	.0	30.1	.0	3.8	.0
Ann	68.9	46.4	57.7	107	Sep 1971	14	69.1	Sep 1984	19	Dec 1990	23	45.1	Dec 1971	2836	162	.8	5.6	363.1	.0	10.2	.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: 1948-2001

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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	6.49	6.46	6.91	1982	5	17.56	1995	.32	1976	10.4	8.1	4.2	2.2	.50	.92	1.77	2.66	3.65	4.80	6.16	7.89	10.28	14.30	18.27	
Feb	6.15	5.50	4.65	1950	4	18.63	1998	.29	1997	10.4	7.6	4.1	2.0	.53	.95	1.77	2.63	3.56	4.63	5.90	7.49	9.69	13.37	16.98	
Mar	4.78	4.22	3.56	1974	28	15.16	1983	.05	1988	10.7	7.6	3.6	1.3	.46	.81	1.46	2.13	2.85	3.66	4.63	5.83	7.48	10.23	12.92	
Apr	1.97	1.59	3.46	1953	27	6.05	1982	.05	1973	5.8	3.9	1.2	.5	.14	.26	.51	.78	1.08	1.44	1.86	2.39	3.14	4.40	5.64	
May	.70	.22	1.48	1957	18	4.11	1990	.00+	1992	3.0	1.5	.4	.2	.00	.00	.01	.06	.14	.27	.46	.74	1.17	1.99	2.86	
Jun	.18	.12	.98	1995	16	1.54	1995	.00+	1996	1.5	.5	.1	.0	.00	.00	.00	.00	.04	.09	.14	.22	.33	.51	.69	
Jul	.14	.00	2.51	1974	9	2.89	1974	.00+	2000	.5	.2	.1	@	.00	.00	.00	.00	.00	.00	.00	.00	.03	.34	.85	
Aug	.11	.00	.55	1968	19	1.25	1976	.00+	1998	.7	.3	.0	.0	.00	.00	.00	.00	.00	.00	.00	.03	.13	.36	.64	
Sep	.41	.13	2.71	1959	18	2.00	1983	.00+	1996	1.9	.9	.3	.1	.00	.00	.00	.00	.03	.12	.26	.44	.72	1.23	1.75	
Oct	1.44	.93	3.00	1984	17	4.84	2000	.00+	1995	3.7	2.3	.9	.4	.00	.06	.24	.45	.68	.97	1.31	1.75	2.37	3.44	4.50	
Nov	4.08	3.58	4.13	1996	17	11.06	1984	.05	1986	7.4	5.6	2.9	1.3	.15	.34	.78	1.30	1.93	2.69	3.63	4.87	6.63	9.69	12.77	
Dec	4.22	3.79	4.51	1955	6	13.74	1996	.05	1989	8.8	6.2	2.8	1.3	.41	.72	1.29	1.88	2.52	3.24	4.09	5.15	6.61	9.03	11.40	
Ann	30.67	27.58	6.91	Jan 1982	5	18.63	Feb 1998	.00+	Jul 2000	64.8	44.7	20.6	9.3	14.51	17.17	20.83	23.78	26.52	29.27	32.19	35.54	39.73	46.06	51.74	

+ 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

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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	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	#	.0	0	0	#	1986	7	#	1986	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	#	May 1986	7	#	May 1986	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0

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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	5/07	4/24	4/14	4/05	3/29	3/21	3/12	3/03	2/17
32	3/16	3/04	2/22	2/14	2/07	1/30	1/21	1/10	12/21
28	2/07	1/23	1/09	12/18	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
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	10/28	11/05	11/10	11/15	11/20	11/24	11/29	12/04	12/12
32	11/12	11/24	12/02	12/10	12/17	12/25	1/03	1/15	0/00
28	12/09	12/23	1/07	0/00	0/00	0/00	0/00	0/00	0/00
24	1/14	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	288	270	257	246	235	225	214	201	183
32	>365	364	337	322	310	299	287	274	257
28	>365	>365	>365	>365	>365	>365	>365	>365	306
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)

Base	Heating Degree Days (1)												
	Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
65	446	347	343	258	194	101	72	58	85	153	320	459	2836
60	292	213	200	131	86	24	11	6	21	51	184	307	1526
57	207	141	128	78	42	6	2	0	7	18	118	222	969
55	155	101	91	49	23	2	0	0	3	8	83	171	686
50	61	32	25	10	3	0	0	0	0	0	25	75	231
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	577	577	681	738	840	907	982	1000	956	881	671	565	9375
55	19	34	58	97	150	218	269	287	269	176	64	22	1663
57	9	18	33	65	107	163	209	225	213	124	39	12	1217
60	2	6	12	29	58	90	125	138	137	64	15	4	680
65	0	0	0	5	11	18	31	35	50	11	1	0	162
70	0	0	0	0	0	0	3	2	9	1	0	0	15

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	329	367	432	496	594	677	738	758	716	638	431	320	329	696	1128	1624	2218	2895	3633	4391	5107	5745	6176	6496
45	180	227	277	346	439	527	583	603	566	483	284	177	180	407	684	1030	1469	1996	2579	3182	3748	4231	4515	4692
50	68	99	140	198	285	377	428	448	416	328	142	62	68	167	307	505	790	1167	1595	2043	2459	2787	2929	2991
55	14	29	37	77	138	227	273	293	266	177	52	6	14	43	80	157	295	522	795	1088	1354	1531	1583	1589
60	0	0	0	17	42	90	122	138	126	66	7	0	0	0	0	17	59	149	271	409	535	601	608	608
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	176	196	238	284	337	391	437	450	424	368	238	176	176	372	610	894	1231	1622	2059	2509	2933	3301	3539	3715

(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.

- | | |
|---|---|
| <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