

# Climatology of the United States

## No. 20

**Station: SAN LUIS OBISPO POLYTECH, CA**

## 1971-2000

**COOP ID: 047851**

**Climate Division: CA 4**

**NWS Call Sign:**

**Elevation: 315 Feet**

**Lat: 35° 18N**

**Lon: 120° 40W**

### 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	64.6	41.9	53.3	88	1976	17	57.3	1986	15	1963	12	49.5	1972	364	0	.0	.0	30.9	.0	1.3	.0
Feb	65.9	43.6	54.8	89	1995	21	59.4	1977	28+	1990	16	51.2	1979	288	2	.0	.0	27.9	.0	.6	.0
Mar	66.8	44.5	55.7	89	1988	27	59.3	1997	28	1962	1	51.0	1973	279	6	.0	.0	30.9	.0	.2	.0
Apr	70.8	45.4	58.1	104	1989	8	63.9	1992	29	1975	26	51.4	1975	220	14	.1	.5	30.0	.0	.1	.0
May	73.2	47.5	60.4	102	2000	22	67.2	1997	34+	1990	2	57.0	1991	174	30	@	1.1	31.0	.0	.0	.0
Jun	77.6	50.6	64.1	106	1976	26	71.7	1981	37	1991	1	60.0	1991	85	58	.4	1.8	30.0	.0	.0	.0
Jul	80.3	52.7	66.5	106	1973	26	70.5	1985	41	1971	11	63.5	1994	34	80	.2	2.1	31.0	.0	.0	.0
Aug	81.7	53.3	67.5	105	1962	28	71.1	1998	40	1970	10	64.4	1989	22	99	.2	2.6	31.0	.0	.0	.0
Sep	81.8	52.8	67.3	112	1971	14	75.8	1984	40	1948	26	62.8	1986	53	120	.6	3.6	30.0	.0	.0	.0
Oct	78.7	49.8	64.3	109	1980	2	68.4	1983	30	1971	28	61.1	1971	65	43	.4	2.4	31.0	.0	@	.0
Nov	72.0	45.5	58.8	98+	1997	3	63.1	1976	30	1986	7	52.5	1994	206	18	.0	.3	30.0	.0	.3	.0
Dec	66.4	41.6	54.0	92	1958	4	59.5	1977	12	1987	13	47.4	1971	348	6	.0	.0	30.5	.0	1.5	.0
Ann	73.3	47.4	60.4	112	Sep 1971	14	75.8	Sep 1984	12	Dec 1987	13	47.4	Dec 1971	2138	476	1.9	14.4	364.2	.0	4.0	.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/normal/usnormals.html](http://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	5.28	3.53	5.90	1969	25	16.09	1995	.01	1976	9.0	6.6	3.5	1.7	.16	.38	.92	1.58	2.39	3.37	4.61	6.25	8.61	12.72	16.89	
Feb	5.41	2.87	4.74	1986	13	15.07	1998	.08	1977	8.5	6.2	3.5	1.8	.23	.50	1.10	1.81	2.65	3.65	4.88	6.48	8.76	12.69	16.63	
Mar	4.48	3.31	4.26	1974	2	16.48	1995	.00+	1997	9.1	6.4	2.8	1.4	.00	.49	1.30	2.02	2.75	3.55	4.48	5.59	7.11	9.60	12.01	
Apr	1.31	.85	3.12	1982	11	4.37	1978	.00	1973	4.5	2.9	.8	.3	.02	.07	.22	.39	.60	.85	1.16	1.57	2.16	3.17	4.19	
May	.47	.02	1.23	1977	9	3.41	1998	.00+	1999	2.3	1.0	.3	.1	.00	.00	.00	.00	.00	.03	.15	.36	.74	1.51	2.37	
Jun	.09	.00	.62	1991	28	.80	1991	.00+	1999	.6	.2	.1	.0	.00	.00	.00	.00	.00	.00	.00	.02	.11	.29	.50	
Jul	.03	.00	.46	1950	10	.44	1992	.00+	2000	.5	.1	.0	.0	.00	.00	.00	.00	.00	.00	.00	.00	.01	.09	.20	
Aug	.08	.00	1.01	1976	20	1.41	1976	.00+	2000	.4	.2	.1	@	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.49	
Sep	.44	.03	2.00	1994	29	3.87	1976	.00+	1997	1.4	.7	.3	.2	.00	.00	.00	.00	.00	.03	.12	.32	.67	1.37	2.18	
Oct	.99	.93	2.21	1983	1	2.72	1972	.00+	1999	2.8	1.8	.7	.2	.00	.00	.00	.20	.40	.63	.90	1.24	1.71	2.52	3.30	
Nov	2.17	1.87	2.67	1972	14	6.79	1972	.00+	1992	5.2	3.9	1.7	.4	.00	.05	.27	.55	.90	1.33	1.87	2.58	3.61	5.41	7.24	
Dec	3.61	3.03	3.90	1955	24	10.88	1996	.00	1989	5.9	4.3	2.5	1.3	.10	.36	.84	1.36	1.94	2.60	3.40	4.41	5.81	8.18	10.52	
Ann	24.36	22.88	5.90	Jan 1969	25	16.48	Mar 1995	.00+	Aug 2000	50.2	34.3	16.3	7.4	9.72	11.97	15.15	17.79	20.27	22.80	25.53	28.69	32.69	38.82	44.40	

+ 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:  
[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

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**NWS Call Sign:**

**Elevation: 315 Feet**

**Lat: 35° 18N**

**Lon: 120° 40W**

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	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	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

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<b>Freeze Data</b>									
<b>Spring Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of later date in spring (thru Jul 31) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	5/10	4/22	4/09	3/29	3/19	3/08	2/25	2/13	1/26
<b>32</b>	3/29	3/08	2/21	2/07	1/24	1/08	12/18	0/00	0/00
<b>28</b>	1/16	1/02	12/17	0/00	0/00	0/00	0/00	0/00	0/00
<b>24</b>	12/16	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>20</b>	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>16</b>	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>Fall Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of earlier date in fall (beginning Aug 1) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	10/26	11/08	11/17	11/24	12/01	12/08	12/16	12/25	1/06
<b>32</b>	11/10	11/26	12/08	12/19	12/30	1/11	1/30	0/00	0/00
<b>28</b>	12/23	1/08	1/30	0/00	0/00	0/00	0/00	0/00	0/00
<b>24</b>	12/23	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>20</b>	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>16</b>	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>Freeze Free Period</b>									
<b>Temp (F)</b>	<b>Probability of longer than indicated freeze free period (Days)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	325	294	277	264	252	241	229	215	196
<b>32</b>	>365	>365	>365	>365	>365	324	297	274	247
<b>28</b>	>365	>365	>365	>365	>365	>365	>365	>365	352
<b>24</b>	>365	>365	>365	>365	>365	>365	>365	>365	>365
<b>20</b>	>365	>365	>365	>365	>365	>365	>365	>365	>365
<b>16</b>	>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	364	288	279	220	174	85	34	22	53	65	206	348	2138
60	217	161	164	112	83	24	4	2	13	10	104	212	1106
57	140	101	105	66	43	9	0	0	5	2	61	145	677
55	99	70	73	41	25	4	0	0	1	0	40	110	463
50	28	17	20	9	5	0	0	0	0	0	11	40	130
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	659	637	733	784	879	963	1069	1101	1058	1001	802	681	10367
55	45	63	93	134	191	276	356	388	369	288	152	77	2432
57	24	38	63	99	147	221	295	326	313	227	114	51	1918
60	8	15	28	56	93	146	205	234	231	143	66	24	1249
65	0	2	6	14	30	58	80	99	120	43	18	6	476
70	0	0	0	1	7	12	14	22	47	5	3	0	111

### 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	409	428	477	528	615	703	806	835	792	727	541	424	409	837	1314	1842	2457	3160	3966	4801	5593	6320	6861	7285
45	257	286	322	380	460	553	651	680	642	572	391	275	257	543	865	1245	1705	2258	2909	3589	4231	4803	5194	5469
50	126	151	179	235	306	403	496	525	492	418	244	138	126	277	456	691	997	1400	1896	2421	2913	3331	3575	3713
55	43	55	73	115	158	253	341	370	342	266	119	47	43	98	171	286	444	697	1038	1408	1750	2016	2135	2182
60	2	15	25	43	64	116	186	215	196	132	44	9	2	17	42	85	149	265	451	666	862	994	1038	1047
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	226	233	256	304	348	412	490	515	482	435	316	244	226	459	715	1019	1367	1779	2269	2784	3266	3701	4017	4261

(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.  
Complete documentation for the 1971-2000 Normals is available on the internet from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://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](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)