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: PASADENA, CA **COOP ID: 046719**

Climate Division: CA 6 **NWS Call Sign:** **Elevation: 864 Feet** **Lat: 34˚09N** **Lon: 118˚09W**

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	67.8	44.3	56.1	93	1971	18	61.1	1986	23+	1949	4	51.7	1979	281	3	.0	.1	30.8	.0	.2	.0
Feb	70.3	45.9	58.1	92	1995	20	63.7	1991	26	1929	9	54.3	1975	205	11	.0	.2	28.1	.0	.2	.0
Mar	71.3	47.2	59.3	96+	1997	19	64.3	1997	23	1978	2	54.9	1973	200	22	.0	.5	31.0	.0	.1	.0
Apr	76.0	50.0	63.0	105	1989	6	68.2	1992	34	1933	19	56.1	1975	129	69	.1	2.4	30.0	.0	.0	.0
May	78.2	53.5	65.9	102	1942	20	71.9	1984	37	1930	8	60.5	1977	80	106	.2	3.1	31.0	.0	.0	.0
Jun	84.0	57.4	70.7	110	1990	27	76.5	1981	41	1998	13	65.2	1982	20	191	.9	7.1	30.0	.0	.0	.0
Jul	89.4	61.1	75.3	110	1934	27	78.8	1985	45	1933	10	71.4	1987	0	318	1.5	15.3	31.0	.0	.0	.0
Aug	90.6	62.0	76.3	107+	1998	30	81.6	1998	48	1935	19	72.5	1976	2	352	2.4	17.2	31.0	.0	.0	.0
Sep	88.5	60.6	74.6	110	1988	4	80.8	1984	44+	1948	26	68.1	1986	8	294	2.9	13.8	30.0	.0	.0	.0
Oct	82.5	55.2	68.9	108	1991	11	74.4	1999	37	1971	30	65.5	1975	34	153	.8	6.3	31.0	.0	.0	.0
Nov	73.8	48.1	61.0	98	1997	2	65.5	1976	29	1931	23	55.8	1994	156	33	.0	.9	30.0	.0	@	.0
Dec	68.0	44.1	56.1	93+	1958	3	60.3	1980	26+	1990	23	51.4	1971	283	6	.0	.0	31.0	.0	.5	.0
Ann	78.4	52.5	65.4	110+	Jun 1990	27	81.6	Aug 1998	23+	Mar 1978	2	51.4	Dec 1971	1398	1558	8.8	66.9	364.9	.0	1.0	.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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1927-2001

(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	4.48	3.02	7.08	1943	22	18.46	1995	.00	1976
Feb	5.00	3.44	4.50	1991	28	19.70	1980	.00	1984
Mar	4.38	3.74	7.70	1938	2	12.86	1978	.00+	1997
Apr	1.22	.63	3.30	1929	4	7.77	1983	.00+	1997
May	.45	.13	1.82	1977	9	4.41	1998	.00+	1997
Jun	.21	.05	1.58	1995	16	1.93	1995	.00+	2000
Jul	.05	.00	.45	1992	12	.82	1992	.00+	2000
Aug	.21	.00	2.16	1977	17	2.27	1977	.00+	1999
Sep	.48	.06	4.90	1939	25	3.93	1976	.00+	1999
Oct	.65	.42	3.26	1934	17	3.34	1987	.00+	1999
Nov	1.50	1.00	5.55	1970	29	6.80	1982	.00+	2000
Dec	2.46	1.47	6.17	1933	31	7.74	1984	.00	1989
Ann	21.09	18.84	7.70	Mar 1938	2	19.70	Feb 1980	.00+	Nov 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.2	5.3	2.9	1.6
Feb	6.7	5.0	3.0	1.8
Mar	7.7	5.1	3.0	1.4
Apr	4.1	2.1	.7	.3
May	2.8	1.0	.2	.2
Jun	1.6	.4	.1	.1
Jul	.5	.1	.0	.0
Aug	.7	.4	.1	.1
Sep	1.7	.8	.3	.2
Oct	2.6	1.2	.4	.2
Nov	3.4	2.2	1.2	.5
Dec	4.8	3.2	1.8	.7
Ann	43.8	26.8	13.7	7.1

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	.03	.18	.59	1.14	1.83	2.70	3.80	5.27	7.41	11.17	15.01
Feb	.03	.20	.67	1.28	2.05	3.02	4.24	5.88	8.25	12.43	16.69
Mar	.00	.34	1.06	1.74	2.47	3.28	4.25	5.42	7.06	9.77	12.43
Apr	.00	.00	.04	.17	.36	.60	.93	1.39	2.06	3.27	4.53
May	.00	.00	.01	.04	.09	.18	.30	.47	.75	1.28	1.84
Jun	.00	.00	.00	.00	.01	.05	.11	.20	.35	.65	.98
Jul	.00	.00	.00	.00	.00	.00	.00	.00	.03	.14	.29
Aug	.00	.00	.00	.00	.00	.00	.00	.06	.26	.71	1.24
Sep	.00	.00	.00	.00	.00	.05	.16	.37	.75	1.48	2.33
Oct	.00	.00	.02	.10	.21	.36	.54	.77	1.12	1.72	2.35
Nov	.00	.00	.11	.30	.54	.84	1.23	1.76	2.52	3.88	5.27
Dec	.04	.17	.46	.79	1.18	1.65	2.22	2.96	4.01	5.81	7.61
Ann	6.80	8.80	11.76	14.28	16.71	19.22	21.98	25.20	29.36	35.82	41.79

\+ 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: 1927-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	#	.0	0	0
Feb	.0	.0	0	0
Mar	.0	.0	0	0
Apr	.0	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	0	0
Nov	.0	.0	0	0
Dec	.0	.0	0	0
Ann	#	.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	#	1979	28	#+	1979	0	0	0	0	0
Feb	.0	0	0	.0	0	0	0	0	0	0
Mar	.0	0	0	.0	0	0	0	0	0	0
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	.0	0	0	.0	0	0	0	0	0	0
Nov	.0	0	0	.0	0	0	0	0	0	0
Dec	.0	0	0	.0	0	0	0	0	0	0
Ann	#	Jan 1979	28	#+	Jan 1979	0	0	0	0	0

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.0	.0	.0	.0	.0
Feb	.0	.0	.0	.0	.0
Mar	.0	.0	.0	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.0	.0	.0	.0	.0
Dec	.0	.0	.0	.0	.0
Ann	.0	.0	.0	.0	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.0	.0	.0	.0
Feb	.0	.0	.0	.0
Mar	.0	.0	.0	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.0	.0	.0	.0
Dec	.0	.0	.0	.0
Ann	.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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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	3/19	3/04	2/20	2/10	2/01	1/21	1/09	12/21	0/00
32	2/08	1/19	12/31	12/02	0/00	0/00	0/00	0/00	0/00
28	1/06	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	11/17	12/01	12/11	12/20	12/29	1/08	1/20	2/11	0/00
32	12/12	1/01	1/21	0/00	0/00	0/00	0/00	0/00	0/00
28	1/24	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	328	310	296	282	264
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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	281	205	200	129	80	20	0	2	8	34	156	283	1398
60	146	102	99	56	25	4	0	0	0	7	69	152	660
57	87	59	54	28	11	1	0	0	0	2	35	94	371
55	56	35	32	17	6	0	0	0	0	0	20	63	229
50	11	8	7	3	0	0	0	0	0	0	4	15	48
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	745	731	845	930	1049	1161	1341	1373	1276	1142	868	745	12206
55	89	122	164	257	342	471	628	660	586	429	198	96	4042
57	58	89	124	208	285	411	566	598	526	368	153	64	3450
60	24	48	75	146	207	324	473	505	436	280	97	29	2644
65	3	11	22	69	106	191	318	352	294	153	33	6	1558
70	0	0	4	22	39	90	173	211	168	65	7	0	779

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	505	532	605	699	810	932	1108	1132	1044	905	635	507	505	1037	1642	2341	3151	4083	5191	6323	7367	8272	8907	9414
45	350	387	450	549	655	782	953	977	894	750	485	355	350	737	1187	1736	2391	3173	4126	5103	5997	6747	7232	7587
50	205	251	297	401	500	632	798	822	744	595	337	207	205	456	753	1154	1654	2286	3084	3906	4650	5245	5582	5789
55	87	121	159	255	346	482	643	667	594	440	196	88	87	208	367	622	968	1450	2093	2760	3354	3794	3990	4078
60	27	45	64	133	198	333	488	512	444	287	83	26	27	72	136	269	467	800	1288	1800	2244	2531	2614	2640
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	289	314	349	417	493	597	726	740	674	569	380	293	289	603	952	1369	1862	2459	3185	3925	4599	5168	5548	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:
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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.
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