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: SHASTA DAM, CA **COOP ID: 048135**

Climate Division: CA 2 **NWS Call Sign:** **Elevation: 1,075 Feet** **Lat: 40˚43N** **Lon: 122˚25W**

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	53.2	39.4	46.3	75	1968	23	50.2	1984	7	1985	26	40.7	1982	580	0	.0	.0	20.8	.0	3.3	.0
Feb	56.8	41.4	49.1	81	1995	23	55.5	1991	21+	1989	6	44.1	1998	445	0	.0	.0	22.1	@	1.3	.0
Mar	61.4	43.3	52.4	85+	1966	31	57.1	1986	29+	1971	1	47.3	1975	398	7	.0	.0	28.1	.0	.6	.0
Apr	68.3	47.5	57.9	95	1985	14	66.0	1985	29	1982	4	50.5	1975	248	36	.0	.3	29.2	.0	.2	.0
May	77.4	54.7	66.1	107	1973	19	74.8	1992	35	1950	3	55.4	1998	113	146	@	3.9	31.0	.0	.0	.0
Jun	86.5	62.2	74.4	111	1956	29	79.6	1985	41	1993	5	67.4	1980	14	294	2.1	12.1	30.0	.0	.0	.0
Jul	94.5	67.9	81.2	115	1976	28	85.3	1985	50+	1997	1	75.3	1983	0	502	8.9	23.5	31.0	.0	.0	.0
Aug	93.7	66.4	80.1	115	1981	8	83.6	1996	44	1978	22	73.1	1976	0	467	7.2	22.4	31.0	.0	.0	.0
Sep	87.1	61.9	74.5	114	1955	3	80.8	1991	43	1971	30	68.7	1985	16	302	2.1	13.7	30.0	.0	.0	.0
Oct	75.6	54.5	65.1	103	1980	4	71.9	1988	34	1971	30	59.0	1984	120	121	.1	2.9	30.9	.0	.5	.0
Nov	59.9	44.9	52.4	90	1949	4	58.8	1986	30+	1982	16	46.0	1994	387	9	.0	.0	26.6	.0	.7	.0
Dec	53.3	39.8	46.6	76	1958	3	50.9	1989	14+	1990	22	39.4	1972	573	0	.0	.0	21.9	.1	3.0	.0
Ann	72.3	52.0	62.2	115+	Aug 1981	8	85.3	Jul 1985	7	Jan 1985	26	39.4	Dec 1972	2894	1884	20.4	78.8	332.6	.1	9.6	.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

Issue Date: February 2004

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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	11.47	9.78	7.74	1973	16	38.21	1995	.58	1984
Feb	10.76	9.07	6.98	1980	17	36.73	1998	.10	1988
Mar	10.79	9.33	6.95	1998	24	34.55	1983	.34	1988
Apr	4.18	4.35	4.96	1959	26	11.52	1982	.02	1973
May	2.80	1.87	3.98	1996	17	12.76	1990	.00+	1982
Jun	1.25	.70	5.27	1992	30	6.78	1992	.00+	1986
Jul	.26	.03	2.63	1974	9	4.03	1974	.00+	1999
Aug	.42	.05	3.40	1976	15	5.47	1976	.00+	2000
Sep	1.63	.78	4.43	1957	27	8.89	1977	.00+	1999
Oct	2.97	2.22	3.95	1950	28	7.99	1979	.00+	1995
Nov	7.86	5.56	6.53	1970	28	27.62	1973	.27	1995
Dec	9.01	6.58	11.64	1964	22	27.82	1996	.00	1989
Ann	63.40	62.26	11.64	Dec 1964	22	38.21	Jan 1995	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.8	10.2	6.5	3.8
Feb	11.7	9.6	6.4	3.8
Mar	12.7	10.1	6.4	3.9
Apr	8.4	5.9	2.8	1.3
May	6.2	4.1	1.7	.8
Jun	3.0	1.9	.8	.3
Jul	1.1	.4	.2	.1
Aug	1.6	.7	.2	.1
Sep	3.1	2.0	1.0	.5
Oct	5.5	3.4	1.8	.9
Nov	10.4	8.2	4.7	2.8
Dec	11.6	9.1	4.5	2.9
Ann	88.1	65.6	37.0	21.2

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	1.02	1.82	3.35	4.94	6.69	8.67	11.02	13.97	18.04	24.83	31.50
Feb	.50	1.05	2.28	3.70	5.36	7.33	9.77	12.92	17.38	25.04	32.72
Mar	1.09	1.88	3.36	4.86	6.49	8.32	10.47	13.17	16.85	22.96	28.94
Apr	.39	.69	1.25	1.83	2.47	3.18	4.03	5.10	6.55	8.99	11.37
May	.00	.06	.32	.67	1.12	1.67	2.38	3.31	4.66	7.04	9.46
Jun	.00	.00	.07	.22	.43	.69	1.02	1.47	2.12	3.25	4.42
Jul	.00	.00	.00	.00	.01	.03	.09	.21	.41	.73	1.18
Aug	.00	.00	.00	.00	.00	.02	.12	.32	.66	1.36	2.12
Sep	.00	.00	.00	.00	.30	.70	1.22	1.91	2.90	4.63	6.37
Oct	.00	.17	.60	1.04	1.54	2.11	2.80	3.65	4.86	6.88	8.89
Nov	.30	.66	1.51	2.52	3.73	5.18	7.00	9.37	12.76	18.63	24.54
Dec	.32	1.02	2.30	3.61	5.04	6.67	8.61	11.04	14.40	20.03	25.56
Ann	29.06	34.64	42.36	48.60	54.42	60.26	66.50	73.65	82.63	96.23	108.48

\+ 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

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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	#	.0	#	0	#	1974	3	#	1974	#	1974	3	#	1974	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	.0	.0	#	0	.0	0	0	.0	0	#	1990	1	#	1990	.0	.0	.0	.0	.0	.0	.0	.0	.0
Mar	.6	.0	#	0	5.5	1976	2	5.5	1976	6	1976	2	#	1976	.2	.2	.1	.1	.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	.6	.0	0	0	10.0	1977	21	10.0	1977	0	0	0	0	0	.1	.1	.1	.1	.1	.0	.0	.0	.0
Dec	.5	.0	#	0	7.5	1972	6	7.5	1972	8	1972	6	#	1972	.2	.2	.2	.1	.0	.0	.0	.0	.0
Ann	1.7	.0	N/A	N/A	10.0	Nov 1977	21	10.0	Nov 1977	8	Dec 1972	6	#+	Feb 1990	.5	.5	.4	.3	.1	@	@	@	.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	4/21	4/11	4/03	3/28	3/22	3/16	3/09	3/02	2/20
32	4/01	3/16	3/05	2/23	2/14	2/05	1/26	1/14	12/26
28	1/29	1/13	12/29	12/10	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	11/04	11/13	11/19	11/24	11/29	12/04	12/10	12/16	12/25
32	11/15	11/26	12/04	12/11	12/18	12/25	1/01	1/10	1/24
28	12/01	12/22	1/10	2/04	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	296	281	270	261	252	243	234	223	208
32	>365	>365	340	321	307	293	279	263	242
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	Ann
65	580	445	398	248	113	14	0	0	16	120	387	573	2894
60	425	313	260	149	54	3	0	0	4	57	258	420	1943
57	333	239	190	102	31	1	0	0	1	33	192	332	1454
55	276	193	151	75	21	0	0	0	0	22	153	276	1167
50	144	104	73	29	6	0	0	0	0	6	78	155	595
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	Ann
32	443	479	632	778	1056	1270	1525	1490	1275	1024	612	451	11035
55	6	28	70	163	364	580	812	777	585	333	75	14	3807
57	2	17	47	129	312	521	750	715	526	282	54	8	3363
60	0	8	24	86	241	433	657	622	439	213	30	2	2755
65	0	0	7	36	146	294	502	467	302	121	9	0	1884
70	0	0	0	12	75	174	350	314	184	58	2	0	1169

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	211	279	394	538	817	1038	1284	1247	1045	777	382	222	211	490	884	1422	2239	3277	4561	5808	6853	7630	8012	8234
45	97	151	250	391	662	888	1129	1092	895	622	237	101	97	248	498	889	1551	2439	3568	4660	5555	6177	6414	6515
50	26	62	131	252	507	738	974	937	745	471	120	32	26	88	219	471	978	1716	2690	3627	4372	4843	4963	4995
55	1	19	55	146	361	588	819	782	595	326	52	2	1	20	75	221	582	1170	1989	2771	3366	3692	3744	3746
60	0	0	12	68	232	441	664	628	447	204	12	0	0	0	12	80	312	753	1417	2045	2492	2696	2708	2708
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	80	117	194	299	504	677	834	806	679	475	172	82	80	197	391	690	1194	1871	2705	3511	4190	4665	4837	4919

(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