

Climatology of the United States

No. 20

1971-2000

Station: MOUNT SHASTA, CA

COOP ID: 045983

Climate Division: CA 2

NWS Call Sign: MHS

Elevation: 3,590 Feet Lat: 41° 19N

Lon: 122° 18W

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	44.2	26.4	35.3	67	2001	4	41.4	1986	-2+	1962	21	30.5	1993	921	0	.0	.0	7.1	1.9	24.4	@
Feb	47.6	28.7	38.2	71	1953	27	44.4	1995	-3	1989	6	32.7	1989	753	0	.0	.0	10.2	.7	20.7	.1
Mar	52.1	30.3	41.2	80	1966	31	45.9	1986	13	1990	13	37.2	1991	738	0	.0	.0	17.5	.1	21.1	.0
Apr	59.2	33.3	46.3	86	1981	30	52.5	1987	14	1955	27	39.5	1975	563	0	.0	.0	23.9	.0	14.2	.0
May	67.3	39.0	53.2	96	1986	30	60.8	1992	21	1954	1	45.9	1977	374	7	.0	.3	29.7	.0	4.4	.0
Jun	75.5	44.9	60.2	98	1985	18	65.2	1986	25	1952	12	53.9	1980	175	31	.0	1.6	30.0	.0	.4	.0
Jul	83.2	48.9	66.1	100+	1988	21	70.0	1988	32	1976	1	60.1	1983	66	100	.1	7.9	31.0	.0	@	.0
Aug	82.6	47.5	65.1	105	1981	7	67.8	1971	34+	1999	31	59.9	1976	65	66	.3	6.5	31.0	.0	.0	.0
Sep	76.0	42.9	59.5	103	1955	2	64.3	1991	25	1965	17	53.4	1986	196	29	.0	1.9	29.8	.0	1.0	.0
Oct	64.4	36.6	50.5	93	1980	2	57.4	1987	20+	1991	30	45.6	1984	451	2	.0	.1	28.5	.0	7.5	.0
Nov	49.9	29.9	39.9	80	1949	2	46.5	1995	6+	1993	25	32.8	1994	753	0	.0	.0	13.8	.2	19.3	.0
Dec	43.8	25.8	34.8	72	1958	11	38.7	1980	-13	1990	22	28.3	1990	936	0	.0	.0	7.1	1.7	25.7	.3
Ann	62.2	36.2	49.2	105	Aug 1981	7	70.0	Jul 1988	-13	Dec 1990	22	28.3	Dec 1990	5991	235	.4	18.3	259.6	4.6	138.7	.4

+ 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	7.06	5.83	5.97	1995	9	27.48	1995	.19	1984	12.7	8.9	4.1	2.1	.49	.92	1.82	2.78	3.87	5.12	6.63	8.56	11.23	15.75	20.22
Feb	6.45	4.62	3.93	1958	24	21.80	1998	.21	1971	12.7	8.4	4.0	1.9	.44	.84	1.66	2.54	3.53	4.67	6.06	7.81	10.26	14.39	18.49
Mar	5.81	4.56	3.90	1989	9	18.86	1995	.43	1988	13.5	9.3	3.8	1.6	.67	1.11	1.93	2.74	3.60	4.57	5.70	7.10	9.01	12.15	15.21
Apr	2.65	2.63	2.80	1965	15	6.05	1978	.08	1985	10.4	5.4	1.4	.6	.40	.62	1.00	1.37	1.75	2.17	2.65	3.24	4.04	5.33	6.57
May	1.87	1.38	2.29	1990	27	9.30	1990	.01	1992	7.8	4.2	1.0	.4	.05	.11	.29	.52	.80	1.15	1.60	2.19	3.06	4.57	6.13
Jun	.99	.65	1.64	2001	27	3.56+	1997	.00	1973	4.7	2.7	.7	.1	.01	.06	.18	.31	.46	.65	.88	1.19	1.61	2.35	3.09
Jul	.39	.19	1.14	2000	5	1.69	1985	.00+	1999	2.0	.9	.3	.1	.00	.00	.00	.06	.13	.22	.33	.47	.67	1.03	1.38
Aug	.43	.29	1.20	1997	20	2.55	1976	.00+	1995	2.5	1.2	.2	.1	.00	.00	.03	.10	.17	.26	.37	.52	.73	1.08	1.44
Sep	.87	.45	3.40	1957	26	3.84	1986	.00+	1999	4.1	2.1	.5	.1	.00	.00	.02	.14	.28	.47	.71	1.02	1.48	2.28	3.11
Oct	2.21	1.83	4.13	1950	29	7.71	1989	.00	1978	6.6	3.8	1.2	.4	.05	.20	.49	.80	1.15	1.56	2.06	2.69	3.57	5.06	6.55
Nov	5.08	3.84	4.37	1981	16	17.22	1973	.52	1995	11.6	7.4	3.1	1.3	.45	.80	1.48	2.18	2.96	3.83	4.88	6.19	8.00	11.02	13.98
Dec	5.35	3.49	4.81	1995	12	22.32	1996	.07	1989	12.0	8.0	3.0	1.6	.35	.68	1.35	2.08	2.90	3.86	5.01	6.48	8.54	12.01	15.45
Ann	39.16	34.78	5.97	Jan 1995	9	27.48	Jan 1995	.00+	Sep 1999	100.6	62.3	23.3	10.3	17.34	20.83	25.69	29.65	33.34	37.06	41.05	45.63	51.39	60.15	68.05

+ 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															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	18.1	12.4	5	1	25.1	1975	31	50.8	1996	51	1993	1	40	1993	6.7	4.4	2.3	1.1	.3	13.0	10.3	8.9	5.4
Feb	18.0	12.4	3	2	23.0	1998	21	61.7	1998	33+	1993	2	21	1993	6.6	4.0	2.0	1.2	.4	9.9	7.7	6.0	3.2
Mar	12.7	7.2	1	1	13.3	1975	21	46.8	1991	21	1983	24	3+	1993	5.9	3.2	1.5	.7	.2	5.1	3.2	2.1	.5
Apr	4.4	2.6	#	0	8.5	1999	8	20.4	1999	14	1982	2	3	1982	3.2	1.3	.4	.1	.0	1.2	.5	.4	.1
May	.5	.0	#	0	4.8	1991	18	6.1	1991	#+	1991	18	#	2000	.5	.2	@	.0	.0	.0	.0	.0	.0
Jun	.1	.0	#	0	1.3	1988	7	1.3	1988	#+	1995	7	#	1995	.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	.5	.0	0	0	5.5	1971	15	7.1	1971	#+	1996	19	0	0	.3	.2	@	@	.0	.0	.0	.0	.0
Nov	8.2	5.9	1	0	14.9	1977	21	41.1	1994	14	1977	22	7	1994	3.9	1.9	.9	.4	.1	3.2	2.0	1.5	.5
Dec	19.5	12.0	2	1	27.0	1992	31	104.8	1992	52	1992	31	9+	1992	6.4	4.2	2.0	1.3	.3	10.0	6.8	4.9	1.8
Ann	82.0	52.5	N/A	N/A	27.0	Dec 1992	31	104.8	Dec 1992	52	Dec 1992	31	40	Jan 1993	33.5	19.4	9.1	4.8	1.3	42.4	30.5	23.8	11.5

+ 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	7/05	6/29	6/25	6/21	6/17	6/14	6/10	6/05	5/30
32	6/13	6/06	6/02	5/28	5/25	5/21	5/16	5/12	5/05
28	5/19	5/13	5/08	5/04	4/30	4/26	4/22	4/17	4/11
24	5/01	4/24	4/19	4/15	4/11	4/07	4/03	3/29	3/22
20	4/10	3/31	3/24	3/18	3/12	3/06	2/28	2/21	2/10
16	3/19	3/07	2/25	2/17	2/10	2/03	1/26	1/16	1/04
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	8/31	9/05	9/09	9/13	9/16	9/19	9/22	9/26	10/02
32	9/13	9/19	9/23	9/27	9/30	10/03	10/07	10/11	10/17
28	10/07	10/12	10/16	10/19	10/22	10/25	10/28	11/01	11/06
24	10/20	10/25	10/30	11/02	11/05	11/09	11/12	11/16	11/22
20	10/29	11/06	11/11	11/16	11/20	11/24	11/29	12/04	12/12
16	11/14	11/23	11/29	12/04	12/09	12/14	12/19	12/25	1/03
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	113	105	99	95	90	85	80	75	67
32	153	144	138	133	128	123	117	111	102
28	202	192	185	180	174	169	163	156	147
24	232	223	217	212	208	203	198	192	183
20	295	281	270	261	252	244	235	224	210
16	342	323	313	304	297	290	283	274	263

* 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	921	753	738	563	374	175	66	65	196	451	753	936	5991
60	766	613	583	417	239	84	18	14	101	305	603	781	4524
57	673	529	490	335	172	46	7	3	60	226	513	688	3742
55	611	473	429	282	134	29	3	1	40	180	454	626	3262
50	456	337	284	169	61	6	0	0	11	87	313	471	2195
32	48	22	9	4	0	0	0	0	0	0	19	55	157

Base	Cooling Degree Days (1)												
	Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
32	150	193	294	431	655	846	1057	1024	824	574	256	142	6446
55	0	0	1	19	77	185	346	312	173	41	1	0	1155
57	0	0	0	12	52	143	288	252	134	25	0	0	906
60	0	0	0	5	26	90	206	169	85	11	0	0	592
65	0	0	0	0	7	31	100	66	29	2	0	0	235
70	0	0	0	0	0	7	32	13	7	0	0	0	59

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	27	53	99	219	432	636	840	807	600	352	79	19	27	80	179	398	830	1466	2306	3113	3713	4065	4144	4163
45	0	10	32	114	287	486	685	652	451	216	25	0	0	10	42	156	443	929	1614	2266	2717	2933	2958	2958
50	0	0	1	46	169	342	530	497	306	107	4	0	0	0	1	47	216	558	1088	1585	1891	1998	2002	2002
55	0	0	0	10	81	210	378	345	183	42	0	0	0	0	0	10	91	301	679	1024	1207	1249	1249	1249
60	0	0	0	0	30	103	232	197	85	11	0	0	0	0	0	0	30	133	365	562	647	658	658	658
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	16	43	80	162	286	409	534	514	400	246	61	16	16	59	139	301	587	996	1530	2044	2444	2690	2751	2767

(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
- 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