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: MANZANITA LAKE, CA **COOP ID: 045311**

Climate Division: CA 2 **NWS Call Sign:** **Elevation: 5,750 Feet** **Lat: 40˚33N** **Lon: 121˚35W**

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	41.9	21.1	31.5	66+	1989	31	37.0	1986	-13+	1969	29	25.7	1973	1039	0	.0	.0	7.2	4.0	29.3	.5
Feb	42.9	21.4	32.2	68+	1986	28	39.2	1991	-11	1950	2	26.5	1990	919	0	.0	.0	7.0	3.0	26.6	.4
Mar	45.7	24.0	34.9	69	1994	14	40.5	1986	-7	1956	6	28.5	1973	919	0	.0	.0	11.0	1.6	28.2	.1
Apr	51.5	27.7	39.6	78	1981	30	46.6	1987	-2	1955	2	30.1	1975	762	0	.0	.0	17.1	.4	22.8	.0
May	60.8	34.0	47.4	88	1954	19	54.9	1992	11+	1986	6	38.7	1998	546	0	.0	.0	25.7	@	14.1	.0
Jun	70.2	40.4	55.3	93	1950	30	60.3	1977	20	1990	1	49.3	1980	300	8	.0	.1	28.7	.0	3.5	.0
Jul	78.3	44.7	61.5	96	1972	16	66.9	1988	30+	1985	31	56.0	1983	149	40	.0	.9	30.9	.0	.7	.0
Aug	77.8	43.7	60.8	96+	1981	9	64.2	1992	28+	1985	22	54.9	1976	161	29	.0	1.2	30.9	.0	.6	.0
Sep	71.7	39.9	55.8	96	1988	4	61.6	1974	19	1986	28	48.0	1986	289	12	.0	.2	29.0	@	3.6	.0
Oct	60.6	33.3	47.0	88	1991	14	54.1	1988	10	1971	29	40.5	1984	561	1	.0	.0	25.1	.2	14.6	.0
Nov	46.4	25.8	36.1	78	1966	2	44.9	1976	2	1985	21	26.9	1994	867	0	.0	.0	11.3	1.8	25.2	.0
Dec	41.7	21.8	31.8	68+	1985	21	38.0	1989	-13	1990	21	24.7	1990	1031	0	.0	.0	7.6	4.5	29.1	.4
Ann	57.5	31.5	44.5	96+	Sep 1988	4	66.9	Jul 1988	-13+	Dec 1990	21	24.7	Dec 1990	7543	90	.0	2.4	231.5	15.5	198.3	1.4

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1949-2001

(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	5.84	4.60	5.90	1953	9	15.54	1995	.21	1984
Feb	5.59	4.99	3.30	1986	15	13.68	1986	.30	1988
Mar	5.86	4.99	3.16	1970	1	14.05	1989	2.08	1994
Apr	3.44	2.97	2.05	1991	6	7.56	1993	.56	1985
May	2.84	2.08	3.00	1957	19	10.23	1998	.35	1999
Jun	1.60	1.17	2.60	1958	12	4.57	1971	.00	1986
Jul	.48	.19	1.15	1974	10	2.05	1991	.00+	1999
Aug	.69	.39	1.95	1984	30	3.98	1976	.00+	1998
Sep	1.57	1.22	3.32	1957	28	6.36	1986	.00+	1999
Oct	3.07	2.87	5.50	1962	12	9.00	1981	.00	1978
Nov	5.31	4.01	4.32	1960	26	15.45	1983	1.11	1976
Dec	5.08	4.03	5.50	1996	31	19.42	1996	.00	1989
Ann	41.37	38.11	5.90	Jan 1953	9	19.42	Dec 1996	.00+	Sep 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.0	9.5	3.9	1.7
Feb	12.1	9.2	4.1	1.5
Mar	13.8	10.9	3.9	1.2
Apr	10.0	6.8	2.3	.6
May	8.2	6.2	1.7	.7
Jun	4.9	3.4	1.2	.3
Jul	1.8	1.1	.3	.1
Aug	2.2	1.3	.4	.3
Sep	4.0	2.7	1.2	.4
Oct	6.5	4.7	2.0	.9
Nov	11.2	8.9	3.7	1.4
Dec	11.9	8.8	3.4	1.3
Ann	98.6	73.5	28.1	10.4

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	.68	1.13	1.94	2.76	3.63	4.60	5.73	7.13	9.05	12.20	15.26
Feb	1.11	1.61	2.43	3.19	3.95	4.76	5.69	6.80	8.28	10.64	12.88
Mar	1.69	2.24	3.08	3.81	4.52	5.26	6.08	7.05	8.30	10.26	12.09
Apr	.92	1.24	1.74	2.18	2.61	3.06	3.56	4.15	4.93	6.14	7.28
May	.42	.65	1.06	1.46	1.86	2.31	2.83	3.47	4.32	5.71	7.04
Jun	.04	.13	.34	.56	.82	1.12	1.48	1.95	2.60	3.70	4.81
Jul	.00	.00	.00	.04	.12	.23	.37	.56	.83	1.32	1.81
Aug	.00	.00	.00	.04	.14	.29	.49	.77	1.19	1.94	2.72
Sep	.00	.00	.06	.28	.56	.90	1.33	1.89	2.70	4.09	5.52
Oct	.16	.44	.91	1.36	1.84	2.38	3.01	3.79	4.85	6.60	8.30
Nov	.78	1.22	1.99	2.72	3.49	4.33	5.30	6.49	8.09	10.69	13.20
Dec	.35	.87	1.68	2.43	3.21	4.07	5.06	6.27	7.91	10.59	13.18
Ann	24.08	27.17	31.27	34.48	37.39	40.26	43.27	46.65	50.82	57.00	62.46

\+ 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: 1949-2001
(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	29.2	25.9	18	14
Feb	34.4	29.0	23	23
Mar	32.4	24.5	21	19
Apr	18.6	16.8	10	3
May	7.0	5.5	1	#
Jun	1.3	.0	#	0
Jul	.1	.0	#	0
Aug	.0	.0	0	0
Sep	.5	.0	#	0
Oct	3.7	.5	#	#
Nov	14.3	10.8	3	1
Dec	25.6	20.9	10	7
Ann	167.1	133.9	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	32.0	1993	1	54.5	1973	78	1993	10	66	1993
Feb	19.0	1999	21	85.0	1999	84	1993	24	66	1993
Mar	20.0	1982	31	79.5	1982	76	1993	1	50	1993
Apr	22.0	1978	6	57.5	1975	67	1975	10	55	1975
May	14.5	1991	18	28.5	1998	53	1975	4	23	1975
Jun	6.0	1971	1	6.0+	1975	6+	1975	24	#+	1999
Jul	1.0	1987	17	1.0+	1997	1+	1997	1	#+	1997
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	5.0	1986	19	6.5	1971	5	1986	19	#+	1998
Oct	10.0	1985	21	17.0	1996	10	1985	21	1+	2000
Nov	17.0	1994	10	65.5	1984	33	1985	30	20	1994
Dec	20.0	1993	14	76.5	1992	49	1994	4	42	1994
Ann	32.0	Jan 1993	1	85.0	Feb 1999	84	Feb 1993	24	66+	Feb 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	8.7	7.8	4.1	2.3	.5
Feb	9.4	8.3	4.7	2.8	.6
Mar	9.5	8.7	4.7	2.2	.5
Apr	5.9	5.5	2.5	1.1	.3
May	2.5	2.1	.9	.5	.1
Jun	.5	.5	.2	.1	.0
Jul	.1	.1	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.2	.2	.1	@	.0
Oct	1.4	1.3	.5	.2	@
Nov	5.9	5.1	2.7	1.3	.2
Dec	7.9	7.1	3.7	2.4	.5
Ann	52.0	46.7	24.1	12.9	2.7

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	26.5	24.8	22.4	15.1
Feb	23.5	21.0	18.7	17.0
Mar	24.9	22.3	20.1	14.9
Apr	10.7	8.4	6.6	4.3
May	2.8	1.2	.6	.1
Jun	.5	.2	.1	.0
Jul	.1	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.2	.1	@	.0
Oct	1.5	.7	.4	@
Nov	11.9	7.7	5.2	2.8
Dec	23.3	18.0	14.4	9.3
Ann	125.9	104.4	88.5	63.5

+ 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	7/30	7/24	7/19	7/15	7/12	7/08	7/05	6/30	6/24
32	7/18	7/10	7/05	7/01	6/26	6/22	6/18	6/12	6/05
28	6/20	6/14	6/09	6/05	6/01	5/28	5/24	5/19	5/13
24	6/01	5/24	5/18	5/13	5/08	5/03	4/28	4/23	4/14
20	5/20	5/12	5/06	4/30	4/26	4/21	4/16	4/10	4/01
16	5/03	4/25	4/19	4/15	4/10	4/06	4/01	3/26	3/19

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	8/04	8/10	8/15	8/19	8/22	8/26	8/30	9/04	9/10
32	8/22	8/30	9/05	9/10	9/15	9/20	9/25	10/01	10/09
28	9/14	9/23	9/28	10/04	10/08	10/13	10/18	10/24	11/01
24	9/30	10/08	10/14	10/19	10/23	10/28	11/02	11/08	11/16
20	10/13	10/21	10/27	11/01	11/06	11/10	11/15	11/21	11/29
16	10/31	11/07	11/12	11/16	11/20	11/24	11/28	12/03	12/10

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	70	60	53	46	41	35	29	22	12
32	111	100	92	86	80	74	67	59	49
28	159	149	141	135	129	123	116	109	98
24	206	192	183	175	168	160	152	143	129
20	230	218	208	201	193	186	178	169	157
16	251	242	235	229	223	217	211	204	195

***** 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	1039	919	919	762	546	300	149	161	289	561	867	1031	7543
60	884	779	780	612	400	176	65	71	170	413	717	876	5943
57	791	695	687	526	317	118	31	34	115	330	627	783	5054
55	729	639	625	470	266	86	18	19	85	278	568	721	4504
50	574	499	474	336	161	31	3	3	31	168	425	567	3272
32	100	93	75	40	5	0	0	0	0	5	64	128	510

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	84	97	162	268	483	698	915	891	714	468	187	120	5087
55	0	0	0	8	31	94	219	197	109	28	1	0	687
57	0	0	0	4	20	66	171	150	79	18	0	0	508
60	0	0	0	0	10	34	112	94	43	8	0	0	301
65	0	0	0	0	0	8	40	29	12	1	0	0	90
70	0	0	0	0	0	0	10	6	1	0	0	0	17

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	14	18	32	104	261	466	671	645	478	253	54	14	14	32	64	168	429	895	1566	2211	2689	2942	2996	3010
45	0	0	0	41	150	323	516	491	339	147	14	0	0	0	0	41	191	514	1030	1521	1860	2007	2021	2021
50	0	0	0	7	76	196	363	343	210	66	2	0	0	0	0	7	83	279	642	985	1195	1261	1263	1263
55	0	0	0	0	31	97	219	202	102	24	0	0	0	0	0	0	31	128	347	549	651	675	675	675
60	0	0	0	0	5	37	103	95	35	5	0	0	0	0	0	0	5	42	145	240	275	280	280	280
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	23	23	35	87	193	312	442	432	331	191	45	27	23	46	81	168	361	673	1115	1547	1878	2069	2114	2141

(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