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: WOODLAND 1 WNW, CA **COOP ID: 049781**

Climate Division: CA 2 **NWS Call Sign:** **Elevation: 69 Feet** **Lat: 38˚41N** **Lon: 121˚48W**

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	53.7	37.6	45.7	75	1962	9	51.3	1995	21+	1968	5	40.3	1972	600	0	.0	.0	23.4	.0	6.3	.0
Feb	60.3	40.9	50.6	79	1977	15	55.2	1991	25	1989	6	46.7	1974	403	0	.0	.0	27.0	@	1.8	.0
Mar	65.5	44.2	54.9	86+	1972	18	60.0	1997	25	1966	3	50.5	1973	323	9	.0	@	30.8	.0	.3	.0
Apr	72.6	47.2	59.9	95+	1987	28	65.0	1987	31	1963	21	53.1	1975	188	37	.0	.7	30.0	.0	.0	.0
May	80.9	52.4	66.7	106	1950	31	73.3	1997	35	1964	6	59.6	1977	78	129	.5	7.3	31.0	.0	.0	.0
Jun	89.0	57.0	73.0	114	1961	16	78.7	1981	42	1966	3	68.7	1980	5	244	4.6	17.1	30.0	.0	.0	.0
Jul	94.0	58.7	76.4	114	1972	15	80.9	1988	46	1961	30	72.4	1987	0	351	9.0	25.3	31.0	.0	.0	.0
Aug	93.2	57.8	75.5	112	1978	9	79.5	1998	44	1957	30	71.4	1976	0	325	7.4	23.6	31.0	.0	.0	.0
Sep	88.6	55.8	72.2	112+	1950	3	76.4	1991	40	1965	20	66.6	1986	12	227	2.9	16.6	30.0	.0	.0	.0
Oct	78.7	50.3	64.5	105+	2001	3	71.0	1991	31	1961	23	60.1	1971	105	89	.4	4.3	31.0	.0	.0	.0
Nov	63.5	42.5	53.0	88	1955	10	59.8	1995	25+	1961	17	48.1	1982	367	6	.0	.0	29.3	.0	1.2	.0
Dec	54.1	37.0	45.6	76	1958	13	50.9	1995	19+	1990	23	40.3	1972	602	0	.0	.0	23.7	.1	7.1	.0
Ann	74.5	48.5	61.5	114+	Jul 1972	15	80.9	Jul 1988	19+	Dec 1990	23	40.3+	Dec 1972	2683	1417	24.8	94.9	348.2	.1	16.7	.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

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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	4.51	4.14	3.18	1995	10	13.28	1995	.35	1975
Feb	4.13	3.30	3.39	1998	3	12.20	1998	.04	1971
Mar	3.28	2.43	2.15	1982	31	9.11	1991	.09	1972
Apr	1.10	.97	2.70	1982	11	4.56	1982	.04	1977
May	.57	.30	2.03	1996	16	2.42	1998	.00+	1992
Jun	.15	.07	.61	1953	6	.70	1995	.00+	1996
Jul	.03	.00	.56	1974	8	.84	1974	.00+	2000
Aug	.05	.00	.53	1965	12	.43	1976	.00+	2000
Sep	.41	.05	2.74	1982	16	3.72	1982	.00+	1999
Oct	1.07	.82	2.46	1962	13	3.21	1972	.00+	1995
Nov	2.50	1.96	2.62	1970	29	6.83	1984	.01	1995
Dec	2.98	2.73	3.39	1995	12	7.39	1983	.00	1989
Ann	20.78+	18.36+	3.39+	Feb 1998	3	13.28	Jan 1995	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.8	7.2	3.1	1.3
Feb	8.9	6.5	3.1	1.2
Mar	9.1	6.7	2.4	.7
Apr	4.4	2.9	.5	.1
May	3.0	1.6	.3	@
Jun	1.0	.5	@	.0
Jul	.2	.1	@	.0
Aug	.5	.2	.0	.0
Sep	1.5	.9	.2	.1
Oct	3.5	2.1	.7	.2
Nov	7.0	4.7	1.8	.4
Dec	9.0	5.4	2.2	.7
Ann	58.9	38.8	14.3	4.7

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	.32	.60	1.18	1.80	2.49	3.29	4.25	5.47	7.17	10.03	12.86
Feb	.16	.35	.80	1.34	1.97	2.74	3.69	4.93	6.71	9.78	12.87
Mar	.27	.50	.93	1.39	1.89	2.46	3.14	4.00	5.18	7.16	9.11
Apr	.10	.18	.32	.47	.64	.83	1.06	1.34	1.73	2.37	3.01
May	.00	.00	.02	.08	.17	.29	.44	.65	.97	1.53	2.11
Jun	.00	.00	.00	.00	.02	.07	.12	.18	.27	.42	.57
Jul	**	**	**	**	**	**	**	**	**	**	**
Aug	.00	.00	.00	.00	.00	.00	.00	.00	.07	.18	.30
Sep	.00	.00	.00	.00	.00	.05	.17	.36	.68	1.28	1.93
Oct	.00	.05	.19	.35	.53	.74	.99	1.31	1.76	2.52	3.29
Nov	.07	.18	.43	.74	1.12	1.59	2.18	2.96	4.09	6.05	8.05
Dec	.22	.53	1.00	1.44	1.90	2.40	2.97	3.67	4.62	6.17	7.67
Ann	9.33	11.18	13.74	15.81	17.75	19.71	21.80	24.19	27.21	31.78	35.91

+ 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	.1	.0	#	0	1.0	1973	9	1.0	1973	#	1973	9	#	1973	.1	@	.0	.0	.0	.0	.0	.0	.0
Feb	.0	.0	#	0	.3	1976	5	.3	1976	#	1976	5	#	1976	@	.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	.8	1972	13	.8	1972	1	1972	13	#	1972	.1	.0	.0	.0	.0	@	.0	.0	.0
Ann	.1	.0	N/A	N/A	1.0	Jan 1973	9	1.0	Jan 1973	1	Dec 1972	13	#+	Feb 1976	.2	@	.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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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	4/20	4/08	3/31	3/23	3/16	3/10	3/02	2/22	2/10
32	2/28	2/18	2/11	2/05	1/31	1/25	1/19	1/11	12/31
28	2/01	1/22	1/14	1/07	12/30	12/21	12/04	0/00	0/00
24	1/01	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	11/05	11/10	11/14	11/17	11/20	11/23	11/26	11/30	12/05
32	11/13	11/20	11/26	11/30	12/04	12/09	12/13	12/19	12/28
28	12/02	12/11	12/18	12/25	12/31	1/09	0/00	0/00	0/00
24	12/25	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	290	275	265	256	248	239	231	220	206
32	355	333	322	313	305	297	289	280	267
28	>365	>365	>365	>365	>365	>365	344	324	307
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	600	403	323	188	78	5	0	0	12	105	367	602	2683
60	445	266	193	98	28	0	0	0	1	43	236	447	1757
57	357	190	131	58	13	0	0	0	0	21	170	357	1297
55	299	144	98	37	8	0	0	0	0	12	132	300	1030
50	172	60	34	11	1	0	0	0	0	2	60	169	509
32	1	0	0	0	0	0	0	0	0	0	0	0	1

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	425	521	708	838	1074	1229	1374	1348	1206	1007	629	421	10780
55	10	21	93	185	369	539	661	635	516	306	71	8	3414
57	5	11	64	146	312	479	599	573	456	254	49	3	2951
60	0	3	33	96	234	389	506	480	367	182	26	0	2316
65	0	0	9	37	129	244	351	325	227	89	6	0	1417
70	0	0	1	11	56	119	205	181	114	32	1	0	720

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	200	330	479	624	853	1015	1159	1127	995	785	406	199	200	530	1009	1633	2486	3501	4660	5787	6782	7567	7973	8172
45	83	190	325	474	698	865	1004	972	845	630	259	86	83	273	598	1072	1770	2635	3639	4611	5456	6086	6345	6431
50	25	79	183	326	543	715	849	817	695	475	136	18	25	104	287	613	1156	1871	2720	3537	4232	4707	4843	4861
55	0	21	73	189	390	565	694	662	545	321	51	0	0	21	94	283	673	1238	1932	2594	3139	3460	3511	3511
60	0	0	17	89	247	416	539	507	397	185	9	0	0	0	17	106	353	769	1308	1815	2212	2397	2406	2406
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	82	165	261	373	528	625	696	681	614	482	216	92	82	247	508	881	1409	2034	2730	3411	4025	4507	4723	4815

(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

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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