

# Climatography of the United States No. 20

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
www.ncdc.noaa.gov

Station: WILLOW CREEK 1 NW, CA

1971-2000

COOP ID: 049694

Climate Division: CA 1

NWS Call Sign:

Elevation: 461 Feet

Lat: 40° 57N

Lon: 123° 38W

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	52.2	34.5	43.4	70	1981	22	48.0	1978	17	1979	2	39.7	1975	671	0	.0	.0	21.2	.3	11.0	.0
Feb	57.1	36.8	47.0	76	1992	27	52.2	1995	13+	1976	7	41.4	1990	506	0	.0	.0	23.9	.1	8.6	.0
Mar	62.7	38.4	50.6	85	1986	31	56.4	1978	22	1975	28	44.2	1975	450	2	.0	.0	28.9	.0	4.8	.0
Apr	69.9	40.4	55.2	96	1987	28	61.2	1987	24+	1976	2	47.8	1975	304	9	.0	.5	29.4	.0	4.0	.0
May	78.0	44.5	61.3	105+	2001	22	66.6	1992	29	1976	29	55.3	1998	154	37	.5	4.4	31.0	.0	.4	.0
Jun	86.9	49.3	68.1	112	1992	22	73.3	1977	29	1976	4	62.7	1980	49	142	3.7	11.8	30.0	.0	.1	.0
Jul	94.7	53.5	74.1	119	1972	16	79.1	1996	35	1976	1	69.9	1989	9	291	9.9	21.9	31.0	.0	.0	.0
Aug	94.4	52.4	73.4	115+	1981	9	77.6	1986	39+	2000	21	69.0	1979	2	262	9.5	22.8	31.0	.0	.0	.0
Sep	87.6	47.9	67.8	108+	1998	5	73.0	1991	32	1981	25	63.1	1986	36	118	3.2	14.4	30.0	.0	.6	.1
Oct	74.4	43.0	58.7	99+	1991	1	63.8	1978	22	1971	29	53.1	1981	222	26	.0	2.2	30.9	.0	1.4	.0
Nov	58.3	39.7	49.0	80	1993	1	54.2	1995	19	1978	11	43.5	1994	480	0	.0	.0	27.4	.0	4.3	.0
Dec	50.6	35.4	43.0	65	1980	27	47.6	1981	5	1972	9	38.0	1990	683	0	.0	.0	19.0	.1	10.4	@
Ann	72.2	43.0	57.6	119	Jul 1972	16	79.1	Jul 1996	5	Dec 1972	9	38.0	Dec 1990	3566	887	26.8	78.0	333.7	.5	45.6	.1

+ 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](http://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: 1968-2001

(3) Derived from 1971-2000 serially complete daily data

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**Station: WILLOW CREEK 1 NW, CA**

**COOP ID: 049694**

**Climate Division: CA 1**

**NWS Call Sign:**

**Elevation: 461 Feet Lat: 40°57N**

**Lon: 123°38W**

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	9.33	9.61	4.80	1979	11	23.37	1995	.68	1985	12.5	9.3	4.8	2.2	2.08	2.94	4.31	5.54	6.77	8.09	9.56	11.32	13.65	17.34	20.83
Feb	8.83	8.39	3.13	2000	14	20.97	1986	.94	1988	12.3	9.0	5.2	2.4	2.21	3.04	4.33	5.47	6.59	7.78	9.11	10.68	12.74	15.99	19.04
Mar	7.84	6.87	5.48	1975	18	17.76	1975	1.55	1988	13.3	9.7	4.2	1.8	1.95	2.69	3.83	4.84	5.85	6.90	8.08	9.48	11.30	14.20	16.91
Apr	3.43	3.50	1.61	1992	17	8.31	1993	.23	1985	9.7	5.8	1.8	.6	.56	.85	1.35	1.82	2.31	2.84	3.45	4.19	5.17	6.78	8.31
May	2.04	1.60	1.68	1984	11	7.37	1990	.00	1982	6.2	3.8	1.0	.4	.09	.27	.57	.87	1.19	1.55	1.97	2.50	3.23	4.44	5.62
Jun	.64	.41	1.47	1988	1	2.86	1988	.00	1999	3.5	1.8	.3	.1	.00	.02	.08	.16	.26	.38	.54	.75	1.06	1.60	2.16
Jul	.15	.01	.62	1983	19	1.54	1983	.00+	1999	1.1	.5	.1	.0	.00	.00	.00	.00	.00	.00	.04	.12	.25	.51	.77
Aug	.42	.10	2.70	1983	30	5.37	1983	.00+	1999	1.8	.8	.1	.1	.00	.00	.00	.00	.00	.06	.17	.36	.68	1.30	1.98
Sep	1.14	.56	2.10	1986	26	7.48	1986	.00+	1999	3.6	2.4	.8	.3	.00	.00	.01	.09	.23	.45	.77	1.22	1.93	3.23	4.62
Oct	3.19	2.58	2.41	1991	26	10.25	1975	.00	1978	6.5	4.4	1.9	.9	.09	.32	.75	1.21	1.72	2.31	3.01	3.90	5.14	7.22	9.28
Nov	8.10	6.43	3.38	1996	18	20.35	1984	1.61	1993	11.9	8.9	4.6	2.1	1.19	1.87	3.04	4.16	5.33	6.61	8.09	9.90	12.33	16.28	20.09
Dec	9.38	8.34	3.96	1996	5	22.71	1996	.35	1976	13.3	10.0	5.6	2.5	1.36	2.14	3.49	4.79	6.14	7.63	9.35	11.46	14.29	18.91	23.35
Ann	54.49	49.16	5.48	Mar 1975	18	23.37	Jan 1995	.00+	Sep 1999	95.7	66.4	30.4	13.4	30.18	34.44	40.14	44.63	48.73	52.78	57.05	61.87	67.83	76.72	84.59

+ 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: 1968-2001

(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:  
[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

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Station: WILLOW CREEK 1 NW, CA

COOP ID: 049694

Climate Division: CA 1

NWS Call Sign:

Elevation: 461 Feet

Lat: 40°57N

Lon: 123°38W

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	.4	.0	#	0	4.0	1971	14	5.5	1971	2	1972	27	#+	1977	.3	.2	@	.0	.0	.2	.0	.0	.0
Feb	.5	.0	#	0	5.0	1971	27	7.0	1971	5	1971	28	#+	1975	.2	.2	@	@	.0	.1	.1	.1	.0
Mar	.1	.0	#	0	1.0	1971	1	1.0+	1973	2	1971	1	#+	1976	.1	.1	.0	.0	.0	.1	.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	.1	.0	#	0	2.0	1994	26	2.0	1994	1	1977	21	#	1977	@	@	.0	.0	.0	.0	.0	.0	.0
Dec	1.2	.0	#	0	7.0	1972	6	15.0	1972	11	1972	12	4	1972	.3	.3	.2	.1	.0	.0	.0	.0	.0
Ann	2.3	.0	N/A	N/A	7.0	Dec 1972	6	15.0	Dec 1972	11	Dec 1972	12	4	Dec 1972	.9	.8	.2	.1	.0	.4	.1	.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

Complete documentation available from:

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**NWS Call Sign:**

**Elevation: 461 Feet**

**Lat: 40° 57N**

**Lon: 123° 38W**

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	6/01	5/25	5/19	5/15	5/11	5/07	5/02	4/27	4/20
32	5/17	5/06	4/28	4/21	4/15	4/08	4/02	3/25	3/14
28	4/27	4/08	3/26	3/14	3/04	2/21	2/10	1/27	1/08
24	4/14	3/17	2/25	2/06	1/19	12/30	12/02	0/00	0/00
20	3/19	2/19	1/27	1/03	12/01	0/00	0/00	0/00	0/00
16	12/24	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	9/15	9/25	10/02	10/08	10/13	10/19	10/24	10/31	11/10
32	9/26	10/09	10/18	10/26	11/02	11/10	11/18	11/27	12/10
28	10/11	10/28	11/09	11/19	11/28	12/08	12/18	12/30	1/15
24	10/24	11/14	11/29	12/14	12/28	1/12	2/02	0/00	0/00
20	11/13	12/14	1/07	2/01	3/04	0/00	0/00	0/00	0/00
16	11/25	2/07	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	189	177	169	161	155	148	141	132	120
32	250	233	221	210	201	191	181	169	152
28	360	319	298	281	266	251	235	217	192
24	>365	>365	>365	>365	346	314	291	269	242
20	>365	>365	>365	>365	>365	>365	>365	333	310
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

Complete documentation available from:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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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	671	506	450	304	154	49	9	2	36	222	480	683	3566
60	516	367	306	180	67	13	1	0	7	117	334	528	2436
57	423	287	227	123	33	5	0	0	2	72	251	435	1858
55	362	236	181	91	19	2	0	0	1	49	200	374	1515
50	218	126	93	33	3	0	0	0	0	14	96	231	814
32	1	0	0	0	0	0	0	0	0	0	0	3	4

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	353	418	575	695	907	1083	1304	1283	1072	828	510	343	9371
55	1	10	43	96	213	395	591	570	383	163	20	1	2486
57	0	5	27	67	165	338	529	508	324	124	10	0	2097
60	0	1	13	35	106	256	437	415	239	77	3	0	1582
65	0	0	2	9	37	142	291	262	118	26	0	0	887
70	0	0	0	0	9	64	163	128	38	6	0	0	408

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	124	198	325	432	645	835	1049	1032	823	574	269	116	124	322	647	1079	1724	2559	3608	4640	5463	6037	6306	6422
45	38	87	184	286	490	685	894	877	673	421	138	37	38	125	309	595	1085	1770	2664	3541	4214	4635	4773	4810
50	2	24	76	160	338	535	739	722	524	270	46	1	2	26	102	262	600	1135	1874	2596	3120	3390	3436	3437
55	0	2	19	70	203	388	584	567	376	144	9	0	0	2	21	91	294	682	1266	1833	2209	2353	2362	2362
60	0	0	0	27	94	248	429	412	234	59	0	0	0	0	0	27	121	369	798	1210	1444	1503	1503	1503
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	50	117	204	293	415	507	605	594	511	375	138	40	50	167	371	664	1079	1586	2191	2785	3296	3671	3809	3849

(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:  
[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

## 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](http://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 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.

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)