

# Climatology of the United States No. 20

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

Station: ORLAND, CA

1971-2000

COOP ID: 046506

Climate Division: CA 2

NWS Call Sign:

Elevation: 254 Feet

Lat: 39°45N

Lon: 122°12W

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	55.6	37.4	46.5	78+	1976	31	50.6	1978	20+	1975	28	43.1	1972	573	0	.0	.0	24.7	.0	9.3	.0
Feb	61.2	40.5	50.9	82+	1992	26	55.5	1991	19	1949	2	46.7	1990	395	0	.0	.0	26.6	.1	3.5	.0
Mar	65.6	43.3	54.5	89	1960	24	58.9	1984	24	1966	3	49.4	1991	334	7	.0	.0	30.2	.0	1.2	.0
Apr	72.4	46.2	59.3	95+	1987	27	64.3	1987	27	2001	8	52.9	1975	201	30	.0	.6	30.0	.0	.2	.0
May	80.5	52.8	66.7	110	1950	30	73.9	1992	32	1950	3	58.7	1998	88	139	.7	6.4	31.0	.0	.0	.0
Jun	88.3	59.0	73.7	114	1961	16	79.5	1981	31	1982	2	68.2	1980	10	269	3.9	14.2	30.0	.0	@	.0
Jul	93.9	62.3	78.1	115+	1988	20	82.7	1984	49+	1975	2	73.0	1987	0	406	6.7	23.5	31.0	.0	.0	.0
Aug	93.1	60.8	77.0	117	1971	11	80.3	1996	47	2000	20	72.4	1976	0	370	6.0	21.5	31.0	.0	.0	.0
Sep	89.2	57.9	73.6	114	1988	4	76.9	1991	39	1971	30	68.4	1986	4	260	2.8	16.1	30.0	.0	.0	.0
Oct	79.2	51.1	65.2	105	2001	2	71.0	1991	31	1948	30	60.9	1975	91	96	.6	4.6	31.0	.0	.0	.0
Nov	64.0	42.7	53.4	93	1966	1	59.2	1995	21+	1985	21	48.0	1994	355	4	.0	.0	29.2	.0	2.2	.0
Dec	55.7	37.0	46.4	81	1980	16	50.3	1977	15	1990	23	40.9	1972	579	0	.0	.0	24.5	.1	9.4	.0
Ann	74.9	49.3	62.1	117	Aug 1971	11	82.7	Jul 1984	15	Dec 1990	23	40.9	Dec 1972	2630	1581	20.7	86.9	349.2	.2	25.8	.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/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: 1948-2001

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

# 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: ORLAND, CA**

**COOP ID: 046506**

**Climate Division: CA 2**

**NWS Call Sign:**

**Elevation: 254 Feet Lat: 39°45N**

**Lon: 122°12W**

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	4.37	3.62	2.64	1995	10	17.37	1995	.22	1976	11.0	7.2	3.2	1.4	.30	.57	1.12	1.71	2.39	3.16	4.10	5.29	6.95	9.76	12.54
Feb	3.85	3.09	4.36	1998	3	18.04	1998	.02	1971	9.0	6.3	2.8	1.0	.10	.24	.61	1.08	1.66	2.38	3.30	4.53	6.30	9.42	12.60
Mar	3.51	3.16	3.76	1995	9	11.04	1983	.11	1994	9.1	6.6	2.4	.7	.29	.53	.99	1.48	2.01	2.63	3.36	4.28	5.55	7.68	9.78
Apr	1.14	.91	1.59	1953	27	3.64	1978	.08	1987	5.3	2.9	.7	.1	.10	.18	.33	.49	.66	.86	1.09	1.39	1.80	2.48	3.15
May	.96	.49	1.45	1977	27	4.65	1998	.00+	1992	4.0	2.5	.5	.2	.00	.00	.06	.18	.34	.54	.80	1.14	1.64	2.51	3.40
Jun	.40	.14	1.75	1993	5	1.84	1993	.00+	1994	2.0	.9	.3	@	.00	.00	.00	.00	.07	.19	.32	.49	.72	1.12	1.51
Jul	.08	.00	.74	1974	8	1.32	1974	.00+	2000	.4	.2	.1	.0	.00	.00	.00	.00	.00	.00	.00	.00	.03	.22	.43
Aug	.15	.00	1.76	1968	21	1.27	1979	.00+	2000	.6	.4	.1	@	.00	.00	.00	.00	.00	.00	.00	.04	.18	.50	.87
Sep	.40	.16	1.68	1957	27	3.81	1989	.00+	1999	1.9	1.1	.2	@	.00	.00	.00	.00	.06	.16	.28	.45	.71	1.15	1.60
Oct	1.17	.94	2.11	1962	12	4.35	1982	.00+	1999	3.9	2.3	.8	.3	.00	.00	.08	.25	.45	.70	1.00	1.41	1.99	2.98	3.98
Nov	2.77	2.37	2.76	1954	9	8.37	1983	.00	1995	7.9	5.2	2.1	.6	.05	.21	.55	.93	1.37	1.89	2.53	3.35	4.51	6.49	8.47
Dec	3.03	2.85	2.93	1995	12	10.59	1983	.00	1989	9.1	5.7	1.9	.8	.23	.55	1.04	1.48	1.95	2.45	3.03	3.74	4.70	6.26	7.76
Ann	21.83	19.17	4.36	Feb 1998	3	18.04	Feb 1998	.00+	Aug 2000	64.2	41.3	15.1	5.1	8.72	10.73	13.58	15.94	18.17	20.43	22.87	25.69	29.27	34.76	39.75

+ 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

Complete documentation available from:  
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

# 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](http://www.ncdc.noaa.gov)

**Station: ORLAND, CA**

**COOP ID: 046506**

**Climate Division: CA 2**

**NWS Call Sign:**

**Elevation: 254 Feet**

**Lat: 39°45N**

**Lon: 122°12W**

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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Mar	.2	.0	0	0	4.0	1976	3	4.0	1976	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	.1	.0	#	0	2.0	1972	13	2.0	1972	2	1972	13	#	1972	@	@	.0	.0	.0	@	.0	.0	.0
Ann	.3	.0	N/A	N/A	4.0	Mar 1976	3	4.0	Mar 1976	2	Dec 1972	13	#	Dec 1972	@	@	@	.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

Complete documentation available from:

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

# Climatography of the United States

## No. 20 1971-2000

Station: ORLAND, CA

COOP ID: 046506

Climate Division: CA 2

NWS Call Sign:

Elevation: 254 Feet

Lat: 39° 45N

Lon: 122° 12W

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	5/06	4/25	4/17	4/10	4/04	3/28	3/22	3/14	3/03
32	4/12	3/29	3/19	3/11	3/03	2/23	2/14	2/04	1/21
28	3/02	2/18	2/09	2/01	1/25	1/17	1/09	12/30	12/15
24	1/18	1/08	12/30	12/15	0/00	0/00	0/00	0/00	0/00
20	12/31	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	10/29	11/04	11/08	11/11	11/15	11/18	11/22	11/26	12/01
32	11/10	11/16	11/21	11/25	11/28	12/02	12/06	12/10	12/17
28	11/18	11/28	12/05	12/11	12/17	12/23	12/30	1/07	1/19
24	12/13	12/24	1/04	1/20	0/00	0/00	0/00	0/00	0/00
20	1/02	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	262	249	240	232	224	217	209	200	187
32	314	299	288	279	270	261	252	241	226
28	>365	355	341	331	323	315	307	298	286
24	>365	>365	>365	>365	>365	>365	>365	>365	345
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

Complete documentation available from:

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

**Climatography  
of the United States  
No. 20  
1971-2000**

**Station: ORLAND, CA**

**COOP ID: 046506**

**Climate Division: CA 2**

**NWS Call Sign:**

**Elevation: 254 Feet    Lat: 39°45N    Lon: 122°12W**

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	573	395	334	201	88	10	0	0	4	91	355	579	2630
60	418	259	200	105	35	1	0	0	0	35	222	424	1699
57	326	184	136	63	18	0	0	0	0	16	155	334	1232
55	266	139	102	41	11	0	0	0	0	9	117	276	961
50	132	56	36	11	2	0	0	0	0	1	48	148	434
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	450	529	696	819	1074	1250	1429	1393	1245	1028	640	444	10997
55	2	24	85	169	372	560	716	680	555	324	66	7	3560
57	0	13	57	131	317	500	654	618	495	269	45	3	3102
60	0	4	28	84	241	411	561	525	406	195	22	0	2477
65	0	0	7	30	139	269	406	370	260	96	4	0	1581
70	0	0	0	8	66	149	259	220	133	36	0	0	871

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	196	308	447	589	847	1030	1198	1143	998	766	387	199	196	504	951	1540	2387	3417	4615	5758	6756	7522	7909	8108
45	81	174	296	440	692	880	1043	988	848	611	243	83	81	255	551	991	1683	2563	3606	4594	5442	6053	6296	6379
50	25	72	162	293	537	730	888	833	698	456	121	18	25	97	259	552	1089	1819	2707	3540	4238	4694	4815	4833
55	1	20	62	166	385	580	733	678	548	308	43	1	1	21	83	249	634	1214	1947	2625	3173	3481	3524	3525
60	0	0	14	71	246	433	578	523	399	179	8	0	0	0	14	85	331	764	1342	1865	2264	2443	2451	2451
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	103	168	252	359	525	653	749	714	622	472	220	108	103	271	523	882	1407	2060	2809	3523	4145	4617	4837	4945

(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)