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: NEWARK (OAKLAND), CA **COOP ID: 046144**

Climate Division: CA 4 **NWS Call Sign:** **Elevation: 10 Feet** **Lat: 37˚31N** **Lon: 122˚02W**

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	57.6	42.0	49.8	74	1962	10	54.7	1986	22	1950	5	46.3	1992	471	0	.0	.0	29.8	.0	.9	.0
Feb	61.4	45.1	53.3	78+	1985	22	56.3	1995	26+	1951	1	48.4	1989	331	1	.0	.0	27.6	.0	.3	.0
Mar	64.3	47.3	55.8	83	1952	26	60.0	1984	25	1953	2	51.1	1991	290	6	.0	.0	31.0	.0	.0	.0
Apr	68.1	49.8	59.0	92	1981	30	63.8	1985	33+	1976	16	53.5	1975	197	15	.0	.1	30.0	.0	.0	.0
May	71.5	52.9	62.2	98	1997	18	67.2	1997	35	1950	2	57.5	1999	129	42	.0	.7	31.0	.0	.0	.0
Jun	75.9	55.9	65.9	107	1961	15	72.7	1981	41	1953	3	61.2	1991	52	79	.2	1.7	30.0	.0	.0	.0
Jul	78.3	57.7	68.0	105+	1988	18	72.7	1984	44+	1954	5	65.9	2000	19	112	.1	1.7	31.0	.0	.0	.0
Aug	78.6	58.4	68.5	102	1993	2	71.8	1983	43	1952	26	65.7	1991	7	115	.1	1.7	31.0	.0	.0	.0
Sep	78.0	57.5	67.8	103	1971	14	74.5	1984	40	1948	27	64.9	1989	35	118	.1	1.9	30.0	.0	.0	.0
Oct	73.5	53.8	63.7	96+	1996	9	66.8	1983	34	1956	25	59.7	1971	82	40	.0	.5	31.0	.0	.0	.0
Nov	64.4	47.1	55.8	84+	1955	11	59.8	1995	30+	1971	21	50.8	1994	280	2	.0	.0	30.0	.0	.1	.0
Dec	57.7	41.7	49.7	73+	1967	28	54.5	1995	21	1990	22	44.1	1990	474	0	.0	.0	29.2	.0	2.0	.0
Ann	69.1	50.8	60.0	107	Jun 1961	15	74.5	Sep 1984	21	Dec 1990	22	44.1	Dec 1990	2367	530	.5	8.3	361.6	.0	3.3	.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

Issue Date: February 2004

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: NEWARK (OAKLAND), CA

COOP ID: 046144

Climate Division: CA 4 **NWS Call Sign:** **Elevation: 10 Feet** **Lat: 37˚31N** **Lon: 122˚02W**

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	2.97	2.44	4.00	1995	10	8.36	1995	.14	1984
Feb	2.89	2.52	3.65	1998	3	10.79	1998	.16	1995
Mar	2.39	2.04	1.39	1963	28	7.17	1983	.04	1972
Apr	.94	.62	1.18	1963	15	3.50	1983	.05	1985
May	.42	.16	1.20+	1994	7	2.06	1998	.00+	1992
Jun	.12	.02	.99	1995	16	1.10	1995	.00+	1996
Jul	.03	.00	.34	1980	2	.38	1980	.00+	2000
Aug	.07	.00	.72	1968	22	.65	1976	.00+	1999
Sep	.20	.08	.75	1959	18	.86	1982	.00+	1997
Oct	.90	.61	1.40	1991	26	2.87	1972	.00+	1995
Nov	1.84	1.08	3.12	1970	29	6.04	1983	.01	1995
Dec	2.08	1.89	1.82	1955	23	5.67	1996	.00	1989
Ann	14.85	13.03	4.00	Jan 1995	10	10.79	Feb 1998	.00+	Jul 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.6	6.5	1.7	.4
Feb	9.3	6.3	1.9	.4
Mar	9.5	6.0	1.4	.1
Apr	5.6	2.8	.3	@
May	2.8	1.3	.1	.1
Jun	1.1	.4	.1	.0
Jul	.4	.1	.0	.0
Aug	.6	.2	.0	.0
Sep	1.5	.6	.1	.0
Oct	3.3	1.9	.5	.1
Nov	7.0	4.2	1.0	.3
Dec	8.8	5.0	1.1	.2
Ann	60.5	35.3	8.2	1.6

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	.26	.47	.87	1.28	1.73	2.24	2.85	3.61	4.66	6.42	8.14
Feb	.25	.45	.84	1.24	1.68	2.18	2.78	3.52	4.55	6.27	7.96
Mar	.18	.33	.64	.97	1.34	1.76	2.27	2.91	3.80	5.29	6.77
Apr	.09	.16	.29	.42	.56	.72	.91	1.14	1.46	1.99	2.51
May	.00	.00	.00	.02	.08	.16	.28	.45	.71	1.19	1.70
Jun	.00	.00	.00	.00	.00	.01	.05	.11	.21	.39	.59
Jul	.00	.00	.00	.00	.00	.00	.00	.00	.03	.13	.21
Aug	.00	.00	.00	.00	.00	.00	.00	.01	.07	.22	.40
Sep	.00	.00	.00	.00	.03	.08	.14	.23	.36	.59	.83
Oct	.00	.03	.13	.26	.40	.58	.80	1.08	1.48	2.17	2.87
Nov	.06	.14	.33	.56	.84	1.18	1.61	2.18	2.99	4.41	5.84
Dec	.22	.46	.81	1.11	1.41	1.74	2.11	2.56	3.16	4.12	5.04
Ann	6.82	8.12	9.92	11.38	12.74	14.11	15.57	17.24	19.33	22.51	25.37

\+ 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

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: NEWARK (OAKLAND), CA **COOP ID: 046144**

Climate Division: CA 4 **NWS Call Sign:** **Elevation: 10 Feet** **Lat: 37°31N** **Lon: 122°02W**

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	.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	.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	#	1979	23	#	1979	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	#	.0	N/A	N/A	#	Dec 1979	23	#	Dec 1979	0	0	0	0	0	.0	.0	.0	.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

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

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: NEWARK (OAKLAND), CA **COOP ID: 046144**

Climate Division: CA 4 **NWS Call Sign:** **Elevation: 10 Feet** **Lat: 37˚31N** **Lon: 122˚02W**

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	3/15	2/28	2/17	2/08	1/30	1/20	1/08	12/22	0/00
32	1/31	1/20	1/11	1/01	12/15	0/00	0/00	0/00	0/00
28	1/08	12/25	0/00	0/00	0/00	0/00	0/00	0/00	0/00
24	0/00	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	11/21	12/01	12/09	12/16	12/23	12/30	1/08	1/25	0/00
32	12/06	12/17	12/27	1/07	1/24	0/00	0/00	0/00	0/00
28	12/20	1/04	0/00	0/00	0/00	0/00	0/00	0/00	0/00
24	0/00	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	>365	>365	>365	355	332	316	302	286	267
32	>365	>365	>365	>365	>365	>365	>365	347	326
28	>365	>365	>365	>365	>365	>365	>365	>365	>365
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

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

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: NEWARK (OAKLAND), CA **COOP ID: 046144**

Climate Division: CA 4 **NWS Call Sign:** **Elevation: 10 Feet** **Lat: 37˚31N** **Lon: 122˚02W**

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	471	331	290	197	129	52	19	7	35	82	280	474	2367
60	317	202	158	94	49	10	1	0	7	17	151	326	1332
57	231	135	99	50	21	2	0	0	1	4	92	243	878
55	178	99	68	29	11	0	0	0	0	1	63	193	642
50	78	33	17	6	1	0	0	0	0	0	18	98	251
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	553	594	738	808	937	1017	1116	1131	1073	981	712	549	10209
55	18	49	93	147	235	328	403	418	383	269	85	30	2458
57	9	28	62	108	183	270	341	356	324	209	55	17	1962
60	1	11	28	62	118	187	249	263	240	130	23	8	1320
65	0	1	6	15	42	79	112	115	118	40	2	0	530
70	0	0	0	2	9	18	28	22	41	6	0	0	126

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	317	391	487	565	680	766	852	871	823	729	478	314	317	708	1195	1760	2440	3206	4058	4929	5752	6481	6959	7273
45	169	251	333	415	525	616	697	716	673	574	328	170	169	420	753	1168	1693	2309	3006	3722	4395	4969	5297	5467
50	58	120	187	267	370	466	542	561	523	419	182	62	58	178	365	632	1002	1468	2010	2571	3094	3513	3695	3757
55	8	40	69	131	218	317	387	406	373	265	73	11	8	48	117	248	466	783	1170	1576	1949	2214	2287	2298
60	0	1	15	46	92	174	232	251	224	125	17	0	0	1	16	62	154	328	560	811	1035	1160	1177	1177
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	135	177	235	288	375	461	535	553	519	424	235	137	135	312	547	835	1210	1671	2206	2759	3278	3702	3937	4074

(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

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