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: INDEPENDENCE, CA **COOP ID: 044232**

Climate Division: CA 7 **NWS Call Sign:** **Elevation: 3,950 Feet** **Lat: 36˚48N** **Lon: 118˚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	54.5	27.3	40.9	80	1989	31	47.9	1986	-5	1937	9	32.4	1974	747	0	.0	.0	22.4	.4	23.6	.0
Feb	59.5	30.4	45.0	86	1986	28	53.3	1995	3	1937	1	39.7	1994	561	0	.0	.0	24.0	.2	15.0	.0
Mar	65.9	34.9	50.4	90	1994	15	57.9	1997	15+	1971	2	43.4	1991	464	10	.0	@	29.4	.0	7.1	.0
Apr	74.1	40.4	57.3	102	1989	9	66.5	1989	21	1999	11	48.5	1975	273	39	.1	1.1	29.8	.0	2.2	.0
May	83.6	49.4	66.5	104+	1986	31	73.9	1984	29	1964	3	57.3	1977	114	160	.6	6.7	31.0	.0	.2	.0
Jun	93.9	58.4	76.2	110+	2000	16	82.5	1981	37+	1950	7	70.1	1998	8	343	5.4	20.5	30.0	.0	.0	.0
Jul	99.7	63.6	81.7	114	1989	7	85.7	1996	43	1987	18	75.4	1987	0	517	14.2	29.2	31.0	.0	.0	.0
Aug	97.4	61.3	79.4	109+	2000	1	83.3	1996	43	1959	20	73.7	1976	0	444	9.7	27.3	31.0	.0	.0	.0
Sep	89.6	55.2	72.4	108+	1988	5	76.3	1979	30	1948	27	66.9	1978	13	235	1.6	15.5	30.0	.0	.0	.0
Oct	77.6	44.5	61.1	99	1978	2	69.0	1988	22	1971	30	56.2	1972	178	55	.0	3.3	30.8	.0	1.2	.0
Nov	63.8	33.7	48.8	91	1988	5	56.8	1995	11	1931	23	43.2	1994	488	1	.0	@	28.1	.0	11.7	.0
Dec	55.3	27.5	41.4	77	1973	30	48.3	1980	-2	1990	23	35.0	1990	733	0	.0	.0	23.9	.3	24.1	@
Ann	76.2	43.9	60.1	114	Jul 1989	7	85.7	Jul 1996	-5	Jan 1937	9	32.4	Jan 1974	3579	1804	31.6	103.6	341.4	.9	85.1	@

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1927-2001

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

Issue Date: February 2004

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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	.99	.62	3.65	1969	25	4.15	1995	.00+	1994
Feb	1.13	.38	3.60	1945	3	4.97	1998	.00+	1997
Mar	.73	.42	2.57	1991	5	4.57	1991	.00+	1990
Apr	.21	.08	.85	1952	10	.94	1982	.00+	1997
May	.19	.08	.83	1957	13	1.05	1977	.00+	2000
Jun	.18	.01	.98	1997	6	1.35	1997	.00+	1999
Jul	.13	.04	.65	1934	29	.98	1976	.00+	2000
Aug	.12	.02	1.36	1963	8	1.13	1983	.00+	1998
Sep	.26	.07	1.35	1976	11	2.16	1976	.00+	2000
Oct	.18	.06	2.07	1945	7	1.08	1992	.00+	1999
Nov	.49	.12	1.31+	1996	22	2.47	1996	.00+	2000
Dec	.59	.39	5.72	1966	6	2.60	1977	.00+	2000
Ann	5.20	4.53	5.72	Dec 1966	6	4.97	Feb 1998	.00+	Dec 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.9	2.1	.7	.1
Feb	3.7	2.3	.8	.2
Mar	3.9	1.9	.3	.2
Apr	1.7	.7	@	.0
May	1.9	.7	@	.0
Jun	1.0	.4	.1	.0
Jul	1.3	.4	.0	.0
Aug	1.3	.3	@	.0
Sep	1.6	.7	.2	@
Oct	1.4	.6	@	@
Nov	2.1	1.1	.3	.1
Dec	2.9	1.3	.2	.1
Ann	26.7	12.5	2.6	.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	.00	.00	.00	.14	.32	.55	.83	1.19	1.71	2.62	3.52
Feb	.00	.00	.02	.13	.30	.54	.85	1.28	1.92	3.07	4.27
Mar	.00	.02	.10	.20	.32	.46	.64	.88	1.21	1.80	2.39
Apr	.00	.00	.00	.00	.02	.07	.14	.24	.38	.63	.89
May	.00	.00	.00	.00	.02	.07	.14	.22	.34	.55	.76
Jun	.00	.00	.00	.00	.00	.00	.03	.11	.26	.58	.94
Jul	.00	.00	.00	.00	.00	.02	.07	.14	.23	.40	.56
Aug	.00	.00	.00	.00	.00	.00	.04	.10	.20	.40	.61
Sep	.00	.00	.00	.00	.01	.06	.15	.27	.46	.79	1.14
Oct	.00	.00	.00	.00	.01	.04	.10	.18	.31	.53	.76
Nov	.00	.00	.00	.01	.07	.17	.31	.52	.84	1.42	2.03
Dec	.00	.00	.01	.05	.13	.25	.42	.65	1.00	1.64	2.31
Ann	1.23	1.72	2.47	3.15	3.82	4.54	5.33	6.28	7.53	9.51	11.36

\+ 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: 1927-2001
(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	1.4	.0	#	0	7.0	1974	7	14.0	1974	8	1974	8	1	1982	.4	.4	.2	.1	.0	.3	.2	.1	.0
Feb	.3	.0	0	0	2.0	1989	4	2.5	1989	9	1976	6	1	1976	.2	.2	.0	.0	.0	.0	.0	.0	.0
Mar	.0	.0	#	0	.5	1973	22	.5	1973	#	1977	31	#	1977	.1	.0	.0	.0	.0	.0	.0	.0	.0
Apr	#	.0	#	0	#	1989	25	#+	1989	#	1989	25	#	1989	.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	.5	1981	28	.5	1981	2	1988	25	#+	1988	@	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.6	.0	#	0	3.0	1971	27	6.0	1984	18	1988	24	1	1988	.3	.2	.2	.0	.0	.2	.1	.1	.0
Ann	2.3	.0	N/A	N/A	7.0	Jan 1974	7	14.0	Jan 1974	18	Dec 1988	24	1+	Dec 1988	1.0	.8	.4	.1	.0	.5	.3	.2	.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	5/19	5/11	5/05	4/30	4/26	4/21	4/16	4/10	4/02
32	5/06	4/26	4/18	4/11	4/05	3/30	3/24	3/16	3/05
28	4/12	4/03	3/27	3/21	3/16	3/11	3/05	2/26	2/17
24	4/01	3/19	3/09	3/01	2/22	2/14	2/06	1/28	1/15
20	2/16	2/06	1/30	1/24	1/18	1/11	1/03	12/22	0/00
16	2/07	1/27	1/19	1/11	1/02	12/16	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	10/08	10/13	10/17	10/20	10/23	10/26	10/29	11/02	11/07
32	10/18	10/23	10/27	10/30	11/02	11/05	11/08	11/12	11/17
28	10/28	11/03	11/07	11/10	11/13	11/17	11/20	11/24	11/30
24	11/08	11/15	11/20	11/25	11/29	12/03	12/08	12/13	12/21
20	11/22	12/01	12/07	12/13	12/19	12/25	1/01	1/12	0/00
16	12/05	12/17	12/26	1/04	1/16	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	207	198	191	185	180	175	169	162	153
32	247	234	225	217	210	203	195	186	173
28	275	263	255	248	242	235	228	220	209
24	329	312	300	289	279	270	259	247	230
20	>365	>365	>365	350	338	327	317	307	292
16	>365	>365	>365	>365	>365	>365	365	333	309

***** 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)

Base — Heating Degree Days (1)

Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	747	561	464	273	114	8	0	0	13	178	488	733	3579
60	592	422	327	173	56	2	0	0	2	91	345	578	2588
57	501	341	255	124	34	0	0	0	0	56	265	485	2061
55	444	290	213	96	23	0	0	0	0	38	217	429	1750
50	304	174	126	43	8	0	0	0	0	11	117	288	1071
32	23	3	2	0	0	0	0	0	0	0	1	18	47

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	299	366	572	756	1070	1325	1540	1467	1212	900	503	308	10318
55	7	10	70	163	380	635	827	754	522	225	29	6	3628
57	2	5	50	131	328	575	765	692	462	180	18	1	3209
60	0	1	29	89	258	486	672	599	374	123	7	0	2638
65	0	0	10	39	160	343	517	444	235	55	1	0	1804
70	0	0	2	15	87	214	363	291	121	18	0	0	1111

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	113	205	371	556	839	1092	1297	1231	987	677	292	117	113	318	689	1245	2084	3176	4473	5704	6691	7368	7660	7777
45	43	106	233	410	684	942	1142	1076	837	526	169	40	43	149	382	792	1476	2418	3560	4636	5473	5999	6168	6208
50	8	43	124	276	532	792	987	921	687	374	84	6	8	51	175	451	983	1775	2762	3683	4370	4744	4828	4834
55	0	11	50	159	384	642	832	766	537	239	27	0	0	11	61	220	604	1246	2078	2844	3381	3620	3647	3647
60	0	3	11	74	250	492	677	611	388	124	4	0	0	3	14	88	338	830	1507	2118	2506	2630	2634	2634
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	105	164	257	364	537	678	794	758	616	438	221	113	105	269	526	890	1427	2105	2899	3657	4273	4711	4932	5045

(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