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: TULELAKE, CA **COOP ID: 049053**

Climate Division: CA 1 **NWS Call Sign:** **Elevation: 4,035 Feet** **Lat: 41˚57N** **Lon: 121˚28W**

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	39.1	19.5	29.3	62+	1961	20	38.5	1986	-28	1962	22	14.3	1977	1108	0	.0	.0	3.3	5.0	27.6	2.0
Feb	45.3	23.0	34.2	70+	1977	19	41.0	1991	-24	1989	6	23.3	1989	864	0	.0	.0	9.6	1.8	24.3	.9
Mar	51.9	25.8	38.9	77+	1966	31	44.7	1978	-2	1974	8	33.9	1977	810	0	.0	.0	18.9	.1	25.3	.1
Apr	59.4	29.5	44.5	84	1981	30	51.0	1990	6	1971	10	38.3	1975	618	0	.0	.0	24.6	.0	20.0	.0
May	67.7	36.4	52.1	95	1986	30	60.3	1992	18+	1975	6	45.3	1977	405	4	.0	.3	29.9	.0	9.3	.0
Jun	75.8	42.5	59.2	97+	1961	16	64.3	1986	23	1962	4	54.4	1980	198	23	.0	1.2	30.0	.0	1.5	.0
Jul	83.5	45.8	64.7	99+	1960	18	69.1	1994	29+	1966	3	59.5	1993	85	74	.0	6.7	31.0	.0	.1	.0
Aug	83.1	43.3	63.2	102+	1981	8	66.6	1992	24	1954	29	58.8	1976	99	43	.2	6.1	31.0	.0	.3	.0
Sep	76.2	36.8	56.5	99	1955	3	60.0	1991	17	1970	14	50.5	1986	265	10	.0	1.9	29.9	.0	6.4	.0
Oct	64.7	29.6	47.2	90	1933	3	53.1	1988	7+	1954	30	41.9	1971	554	0	.0	.0	28.3	.0	19.9	.0
Nov	47.0	24.3	35.7	75	1936	18	42.5	1995	-10	1955	15	27.5	1985	880	0	.0	.0	12.6	.9	24.5	.3
Dec	38.7	19.2	29.0	68	1958	15	35.5	1995	-27	1932	11	22.8	1971	1117	0	.0	.0	2.8	5.5	28.1	1.6
Ann	61.0	31.3	46.2	102+	Aug 1981	8	69.1	Jul 1994	-28	Jan 1962	22	14.3	Jan 1977	7003	154	.2	16.2	251.9	13.3	187.3	4.9

\+ 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: 1932-2001

(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	1.35	1.19	1.20	2000	11	3.15	2000	.04	1984
Feb	1.18	1.09	1.32	1999	9	2.98	1996	.19	1988
Mar	1.26	1.02	1.50	1948	23	3.68	1995	.36	1994
Apr	.90	.70	.92	1978	1	3.26	1978	.02	1977
May	.97	.78	1.14	1958	11	3.84	1998	.11	1975
Jun	.79	.70	1.59	1948	2	2.83	1998	.00	1973
Jul	.35	.21	1.05	1987	17	2.60	1987	.00+	1981
Aug	.53	.23	1.37	1993	15	4.30	1976	.00+	1998
Sep	.60	.47	1.31	1948	17	1.83	1977	.00+	1999
Oct	.87	.83	2.02	1962	10	2.89	1979	.04	1978
Nov	1.27	1.00	1.40	1955	20	3.30	1973	.18	1974
Dec	1.28	.91	1.65	1992	10	4.31	1983	.12	1976
Ann	11.35	10.55	2.02	Oct 1962	10	4.31	Dec 1983	.00+	Sep 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.9	4.4	.4	@
Feb	10.9	3.6	.4	.1
Mar	11.8	4.0	.3	.1
Apr	8.4	2.9	.2	.0
May	7.9	3.3	.2	.0
Jun	5.4	2.2	.2	.1
Jul	2.6	.8	.1	@
Aug	2.8	1.3	.4	.1
Sep	4.1	1.7	.3	@
Oct	6.5	2.6	.3	@
Nov	11.4	4.3	.3	.0
Dec	11.8	3.9	.5	@
Ann	95.5	35.0	3.6	.4

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	.21	.32	.52	.70	.89	1.11	1.35	1.64	2.04	2.69	3.31
Feb	.23	.34	.51	.67	.83	1.00	1.20	1.43	1.75	2.25	2.73
Mar	.34	.46	.64	.80	.96	1.12	1.30	1.52	1.80	2.23	2.64
Apr	.10	.17	.29	.42	.55	.70	.88	1.10	1.39	1.88	2.36
May	.11	.19	.32	.46	.60	.76	.95	1.18	1.50	2.02	2.53
Jun	.03	.09	.20	.32	.44	.59	.76	.97	1.27	1.76	2.24
Jul	.00	.00	.01	.05	.10	.18	.27	.40	.59	.94	1.30
Aug	.00	.00	.00	.02	.09	.20	.35	.57	.91	1.53	2.18
Sep	.00	.00	.08	.19	.30	.42	.57	.75	1.00	1.42	1.83
Oct	.07	.13	.24	.36	.50	.65	.83	1.05	1.37	1.90	2.41
Nov	.20	.31	.49	.67	.85	1.05	1.27	1.55	1.91	2.51	3.08
Dec	.15	.25	.43	.61	.80	1.01	1.26	1.57	1.98	2.67	3.33
Ann	6.92	7.73	8.78	9.60	10.35	11.07	11.83	12.69	13.73	15.28	16.63

\+ 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: 1932-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	3.4	1.5	1	#
Feb	3.6	2.3	1	#
Mar	2.7	2.2	#	#
Apr	.7	.0	#	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.2	.0	#	0
Nov	2.9	1.7	#	#
Dec	5.5	2.8	1	#
Ann	19.0	10.5	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	8.0	1988	16	15.9	1996	21	1993	10	14	1993
Feb	12.0	1999	9	12.5	1975	13	1975	5	6	1993
Mar	7.0	1971	12	8.5	1995	7	1971	12	1	1993
Apr	3.0	1999	5	5.3	1999	2	1982	1	#+	2000
May	.5	1988	5	.5+	1998	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	2.0	1984	18	4.0	1984	1+	1984	29	#+	1984
Nov	7.0	1994	17	14.0	1985	7	1979	25	1+	2000
Dec	9.0	1998	3	21.5	1983	10	1992	29	5	1992
Ann	12.0	Feb 1999	9	21.5	Dec 1983	21	Jan 1993	10	14	Jan 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.7	2.2	.6	.1	.0
Feb	2.6	1.5	.4	.1	@
Mar	1.9	1.0	.3	@	.0
Apr	.7	.3	.1	.0	.0
May	.1	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.2	.1	.0	.0	.0
Nov	1.8	1.3	.3	.1	.0
Dec	3.3	2.1	.6	.2	.0
Ann	14.3	8.5	2.3	.5	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	7.4	2.9	.6	.0
Feb	3.8	1.9	.7	.1
Mar	.9	.3	@	.0
Apr	.1	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.1	.0	.0	.0
Nov	2.8	.7	@	.0
Dec	7.3	4.3	1.3	.0
Ann	22.4	10.1	2.6	.1

+ 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	7/25	7/19	7/14	7/11	7/07	7/04	6/30	6/25	6/19
32	6/29	6/23	6/19	6/15	6/11	6/08	6/04	5/31	5/24
28	6/05	5/30	5/26	5/22	5/19	5/15	5/12	5/07	5/01
24	5/23	5/16	5/11	5/07	5/03	4/29	4/25	4/20	4/13
20	5/09	5/01	4/25	4/20	4/15	4/10	4/05	3/30	3/22
16	4/14	4/06	3/30	3/25	3/20	3/15	3/10	3/03	2/23

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	8/05	8/11	8/16	8/19	8/23	8/26	8/30	9/04	9/10
32	8/24	8/29	9/02	9/05	9/08	9/11	9/15	9/18	9/23
28	9/07	9/12	9/16	9/20	9/23	9/27	9/30	10/04	10/10
24	9/23	9/28	10/01	10/04	10/07	10/10	10/13	10/16	10/21
20	10/10	10/15	10/19	10/22	10/25	10/28	11/01	11/05	11/10
16	10/21	10/27	10/31	11/03	11/07	11/10	11/13	11/18	11/23

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	71	62	56	51	46	41	36	30	22
32	112	104	98	93	88	84	79	73	65
28	152	143	137	132	127	122	116	110	101
24	180	172	166	161	156	151	146	141	132
20	221	211	204	198	192	187	181	174	164
16	262	251	243	237	231	225	218	210	200

***** 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	1108	864	810	618	405	198	85	99	265	554	880	1117	7003
60	953	724	655	470	266	99	24	28	146	401	730	962	5458
57	860	640	562	385	195	57	10	10	92	312	640	869	4632
55	798	584	500	331	154	36	4	4	64	257	580	807	4119
50	654	448	351	208	74	9	0	0	19	140	434	652	2989
32	220	82	21	7	0	0	0	0	0	1	62	170	563

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	134	142	234	380	622	815	1012	968	735	470	172	76	5760
55	0	0	0	13	63	161	303	259	109	13	0	0	921
57	0	0	0	7	41	122	247	203	77	6	0	0	703
60	0	0	0	2	20	74	169	128	41	2	0	0	436
65	0	0	0	0	4	23	74	43	10	0	0	0	154
70	0	0	0	0	0	4	19	7	1	0	0	0	31

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	7	29	64	171	392	587	777	737	520	263	46	4	7	36	100	271	663	1250	2027	2764	3284	3547	3593	3597
45	0	2	18	81	251	438	622	582	372	144	10	0	0	2	20	101	352	790	1412	1994	2366	2510	2520	2520
50	0	0	0	29	140	300	467	427	239	58	0	0	0	0	0	29	169	469	936	1363	1602	1660	1660	1660
55	0	0	0	4	63	169	319	278	123	16	0	0	0	0	0	4	67	236	555	833	956	972	972	972
60	0	0	0	0	21	77	183	140	42	1	0	0	0	0	0	0	21	98	281	421	463	464	464	464
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	1	34	71	160	291	401	514	504	406	250	48	1	1	35	106	266	557	958	1472	1976	2382	2632	2680	2681

(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:
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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