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: KLAMATH, CA **COOP ID: 044577**

Climate Division: CA 1 **NWS Call Sign:** **Elevation: 25 Feet** **Lat: 41˚31N** **Lon: 124˚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	55.1	37.7	46.4	75	1986	12	51.2	1986	18	1962	22	43.0	1972	576	0	.0	.0	26.4	.0	5.9	.0
Feb	56.3	39.5	47.9	80+	1971	11	52.1	1980	19	1989	6	41.9	1989	494	0	.0	.0	25.0	.1	3.8	.0
Mar	57.2	40.2	48.7	81	1978	18	53.1	1978	27+	1977	29	45.1	1999	490	0	.0	.0	29.5	.0	2.2	.0
Apr	59.0	41.9	50.5	86	1951	10	54.4	1989	28	1972	18	45.7	1975	438	0	.0	.0	29.6	.0	1.0	.0
May	61.9	45.4	53.7	91	1970	31	56.8	1997	31	1955	13	50.8	1999	352	0	.0	@	31.0	.0	@	.0
Jun	64.8	48.9	56.9	98	1960	4	59.3	2000	35	1955	1	55.1	1976	245	0	.0	.1	30.0	.0	.0	.0
Jul	66.7	51.5	59.1	89	1950	30	61.1	1990	40	1956	28	57.2	1973	184	0	.0	.0	31.0	.0	.0	.0
Aug	66.7	51.7	59.2	93	1968	30	61.4	1999	42	1956	1	56.3	1973	181	1	.0	.0	31.0	.0	.0	.0
Sep	67.1	49.0	58.1	95	1964	24	62.5	1979	36+	1958	24	55.0	1993	213	4	.0	.1	30.0	.0	.0	.0
Oct	64.2	44.8	54.5	90+	1987	5	57.1	1979	28+	1971	29	50.9	1971	326	0	.0	.1	31.0	.0	.1	.0
Nov	58.1	40.9	49.5	78	1962	1	53.7	1999	25+	1978	11	43.5	1994	465	0	.0	.0	28.4	.0	2.3	.0
Dec	54.8	37.3	46.1	72+	1980	15	49.6	1995	16	1972	9	40.1	1990	589	0	.0	.0	26.2	@	6.0	.0
Ann	61.0	44.1	52.6	98	Jun 1960	4	62.5	Sep 1979	16	Dec 1972	9	40.1	Dec 1990	4553	5	.0	.3	349.1	.1	21.3	.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

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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	12.24	12.01	9.82	1953	17	24.42	1995	.87	1985
Feb	11.20	9.88	4.52	1956	20	26.58	1986	.57	1988
Mar	10.99	11.15	8.90	1972	2	21.25	1972	3.63	1988
Apr	5.89	5.48	4.12	1974	1	14.62	1982	.90	1985
May	3.70	3.54	4.24	1949	1	9.16	1993	.00	1992
Jun	1.70	1.15	3.60	1971	25	5.52	1988	.07+	1999
Jul	.37	.12	3.19	1983	1	3.40	1983	.00+	1999
Aug	.75	.18	2.80	1968	25	4.98	1983	.00+	1998
Sep	1.99	.81	5.58	1977	28	11.17	1977	.00+	1999
Oct	5.25	4.15	6.92	1950	28	15.48	1975	.13	1978
Nov	11.65	8.56	8.98	1998	21	35.30	1973	3.21	1989
Dec	13.40	12.21	8.21	1954	30	33.78	1996	1.53	1976
Ann	79.13	75.11	9.82	Jan 1953	17	35.30	Nov 1973	.00+	Sep 1999

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	16.7	13.5	8.1	4.4
Feb	16.3	13.7	7.7	4.0
Mar	17.3	13.7	7.6	3.7
Apr	13.2	9.7	4.6	1.7
May	8.9	6.0	2.8	1.3
Jun	5.1	3.2	1.1	.4
Jul	2.0	.7	.2	.1
Aug	2.5	1.3	.4	.2
Sep	4.5	3.0	1.3	.6
Oct	8.3	6.1	3.5	1.7
Nov	16.5	13.3	7.9	4.2
Dec	16.4	13.3	9.0	4.9
Ann	127.7	97.5	54.2	27.2

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	3.36	4.52	6.28	7.82	9.34	10.92	12.67	14.75	17.44	21.68	25.64
Feb	2.75	3.80	5.43	6.88	8.32	9.84	11.54	13.55	16.19	20.37	24.29
Mar	3.71	4.75	6.27	7.56	8.79	10.07	11.46	13.09	15.18	18.42	21.40
Apr	1.42	1.97	2.83	3.60	4.36	5.16	6.06	7.13	8.53	10.75	12.83
May	.24	.61	1.19	1.73	2.30	2.93	3.66	4.56	5.78	7.77	9.70
Jun	.10	.21	.42	.65	.91	1.22	1.59	2.06	2.73	3.85	4.97
Jul	.00	.00	.00	.04	.09	.17	.27	.42	.64	1.03	1.44
Aug	.00	.00	.00	.02	.10	.23	.43	.74	1.24	2.19	3.22
Sep	.00	.01	.08	.24	.49	.85	1.37	2.13	3.29	5.48	7.80
Oct	.46	.82	1.52	2.25	3.05	3.96	5.04	6.40	8.27	11.39	14.46
Nov	2.77	3.86	5.56	7.08	8.59	10.19	11.98	14.11	16.90	21.33	25.50
Dec	2.68	3.89	5.86	7.66	9.49	11.44	13.65	16.31	19.83	25.47	30.82
Ann	48.33	53.95	61.33	67.06	72.24	77.31	82.62	88.56	95.86	106.62	116.08

\+ 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

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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	.4	.0	#	0
Feb	.5	.0	#	0
Mar	#	.0	0	0
Apr	.0	.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	.0	.0	0	0
Nov	.0	.0	0	0
Dec	.3	.0	#	0
Ann	1.2	.0	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	4.5	1971	13	5.0	1971	4+	1972	27	#+	1972
Feb	12.5	1989	3	12.5	1989	8	1989	4	1	1989
Mar	#	1976	2	#+	1976	0	0	0	0	0
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	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	.0	0	0	.0	0	0	0	0	0	0
Nov	.1	1978	12	.1	1978	0	0	0	0	0
Dec	4.1	1972	7	5.7	1972	3	1972	7	1	1972
Ann	12.5	Feb 1989	3	12.5	Feb 1989	8	Feb 1989	4	1+	Feb 1989

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.2	.1	.1	.0	.0
Feb	.1	.1	.1	.1	@
Mar	.0	.0	.0	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.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	.0	.0	.0	.0	.0
Nov	@	.0	.0	.0	.0
Dec	.1	.1	@	.0	.0
Ann	.4	.3	.2	.1	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.1	.1	.0	.0
Feb	.3	.2	.1	.0
Mar	.0	.0	.0	.0
Apr	.0	.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	.0	.0	.0	.0
Nov	.0	.0	.0	.0
Dec	.4	@	.0	.0
Ann	.8	.3	.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

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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	5/21	5/11	5/04	4/28	4/22	4/16	4/10	4/03	3/24
32	4/25	4/12	4/02	3/25	3/17	3/09	3/01	2/19	2/06
28	3/10	2/22	2/09	1/30	1/19	1/07	12/23	11/26	0/00
24	1/15	12/17	0/00	0/00	0/00	0/00	0/00	0/00	0/00
20	12/13	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	10/19	10/24	10/28	11/01	11/04	11/07	11/11	11/15	11/20
32	10/28	11/07	11/14	11/20	11/25	12/01	12/07	12/14	12/23
28	11/13	11/28	12/10	12/20	12/30	1/11	1/26	0/00	0/00
24	1/03	2/04	0/00	0/00	0/00	0/00	0/00	0/00	0/00
20	1/16	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	229	218	209	202	195	188	181	173	161
32	303	285	273	262	252	242	232	219	202
28	>365	>365	>365	>365	359	331	311	292	268
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

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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	576	494	490	438	352	245	184	181	213	326	465	589	4553
60	421	339	351	288	200	101	47	54	91	174	316	434	2816
57	329	260	264	204	119	40	8	14	44	97	233	343	1955
55	271	209	207	152	77	16	1	4	21	58	181	285	1482
50	138	104	96	57	14	0	0	0	2	8	82	155	656
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	447	445	517	552	671	745	840	844	781	697	525	435	7499
55	4	10	11	14	35	71	127	135	112	42	16	7	584
57	1	5	6	6	15	35	72	83	75	19	8	2	327
60	0	0	0	0	3	6	18	29	32	3	1	0	92
65	0	0	0	0	0	0	0	1	4	0	0	0	5
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	227	250	283	330	441	523	612	622	565	479	312	219	227	477	760	1090	1531	2054	2666	3288	3853	4332	4644	4863
45	101	123	140	181	286	373	457	467	415	324	171	96	101	224	364	545	831	1204	1661	2128	2543	2867	3038	3134
50	31	39	46	63	137	224	302	312	265	175	60	28	31	70	116	179	316	540	842	1154	1419	1594	1654	1682
55	1	2	0	8	40	85	147	157	127	58	11	0	1	3	3	11	51	136	283	440	567	625	636	636
60	0	0	0	0	2	11	30	33	30	9	0	0	0	0	0	0	2	13	43	76	106	115	115	115
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	92	106	127	146	205	255	310	318	289	237	134	95	92	198	325	471	676	931	1241	1559	1848	2085	2219	2314

(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