

# Climatology of the United States

## No. 20

### 1971-2000

**Station: HAYFIELD PUMPING PLANT, CA**

**COOP ID: 043855**

**Climate Division: CA 7**

**NWS Call Sign:**

**Elevation: 1,370 Feet Lat: 33° 42N**

**Lon: 115° 38W**

### 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	65.6	38.9	52.3	86+	1971	21	56.3	1986	14	1950	7	46.5	1979	396	0	.0	.0	30.4	.0	5.2	.0
Feb	69.8	42.3	56.1	91	1986	27	61.5	1995	21	1985	1	50.9	1975	258	6	.0	.1	27.8	@	2.0	.0
Mar	74.6	46.3	60.5	95+	1997	22	67.9	1972	18	1977	2	55.2	1991	189	46	.0	1.2	31.0	.0	.5	.0
Apr	81.8	51.7	66.8	105	1989	8	74.5	1989	31	1975	2	58.9	1975	85	138	.4	6.4	30.0	.0	@	.0
May	89.8	58.8	74.3	111+	1984	30	82.8	1997	31	1977	19	67.1	1977	20	309	3.5	17.8	31.0	.0	@	.0
Jun	99.7	65.8	82.8	119+	1994	30	88.0	1981	49+	1993	7	78.5	1998	0	533	16.6	27.2	30.0	.0	.0	.0
Jul	104.2	73.0	88.6	119	1995	29	92.3	1996	56	1987	18	84.1	1993	0	731	25.9	30.8	31.0	.0	.0	.0
Aug	102.8	72.2	87.5	116+	1996	1	92.1	1994	56+	1978	25	82.7	1976	0	698	23.9	30.4	31.0	.0	.0	.0
Sep	97.5	65.5	81.5	120	1950	2	85.7	1995	46	1986	27	75.0	1985	0	496	13.2	26.2	30.0	.0	.0	.0
Oct	86.7	54.5	70.6	108	1980	2	76.8	1999	29	1971	31	64.4	1971	36	210	2.5	12.7	31.0	.0	@	.0
Nov	74.1	44.0	59.1	92+	1967	3	63.5	1995	26	2000	14	53.4	1994	205	27	.0	.7	30.0	.0	1.3	.0
Dec	66.2	38.2	52.2	86	1958	4	57.7	1980	15	1968	22	47.2	1987	399	2	.0	.0	30.6	.0	5.8	.0
Ann	84.4	54.3	69.4	120	Sep 1950	2	92.3	Jul 1996	14	Jan 1950	7	46.5	Jan 1979	1588	3196	86.0	153.5	363.8	@	14.8	.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

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### 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	.74	.37	1.80	1993	17	4.47	1993	.00+	1999	3.4	1.9	.4	.1	.00	.01	.06	.15	.26	.40	.59	.85	1.23	1.91	2.61
Feb	.67	.40	1.27	1980	14	3.64	1980	.00+	1999	3.0	1.6	.4	.1	.00	.00	.00	.07	.20	.35	.55	.81	1.18	1.82	2.46
Mar	.61	.20	1.63	1983	3	3.06	1983	.00+	1999	3.0	1.5	.3	.1	.00	.00	.00	.03	.11	.23	.40	.65	1.04	1.76	2.51
Apr	.11	.01	.45	1975	9	.73	1988	.00+	2000	1.2	.4	.0	.0	.00	.00	.00	.00	.00	.00	.03	.09	.18	.37	.57
May	.11	.02	1.62	1980	2	1.64	1980	.00+	2000	.8	.3	@	@	.00	.00	.00	.00	.00	.00	.03	.09	.18	.36	.55
Jun	.01	.00	.53	1952	3	.10	1972	.00+	2000	.2	.0	.0	.0	**	**	**	**	**	**	**	**	**	**	**
Jul	.23	.00	1.26+	1997	23	1.52	1985	.00+	2000	.8	.4	.1	.1	.00	.00	.00	.00	.00	.00	.01	.09	.30	.76	1.30
Aug	.70	.26	2.24	1983	18	5.06	1983	.00+	2000	1.9	1.4	.4	.2	.00	.00	.00	.02	.12	.28	.49	.79	1.23	2.02	2.83
Sep	.35	.04	3.87	1976	24	5.42	1976	.00+	2000	1.3	.6	.1	.1	.00	.00	.00	.00	.00	.02	.10	.24	.52	.99	1.63
Oct	.29	.05	1.34	1978	21	1.75	1978	.00+	1999	1.6	.7	.1	.1	.00	.00	.00	.00	.01	.06	.14	.27	.49	.90	1.34
Nov	.25	.03	1.10	1960	6	1.93	1985	.00+	1999	1.4	.6	.2	@	.00	.00	.00	.00	.00	.05	.12	.24	.42	.77	1.15
Dec	.43	.17	1.42	1959	25	1.84	1992	.00+	2000	2.2	1.1	.2	.0	.00	.00	.00	.00	.03	.14	.29	.48	.77	1.27	1.78
Ann	4.50	3.81	3.87	Sep 1976	24	5.42	Sep 1976	.00+	Dec 2000	20.8	10.5	2.2	.8	.86	1.27	1.93	2.54	3.16	3.82	4.58	5.49	6.70	8.64	10.49

+ 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](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

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NWS Call Sign:

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Lon: 115° 38W

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	#	1987	15	#+	1987	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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	#	.0	N/A	N/A	#	Jan 1987	15	#+	Jan 1987	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

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<b>Freeze Data</b>									
<b>Spring Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of later date in spring (thru Jul 31) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	4/08	3/29	3/22	3/16	3/11	3/05	2/27	2/20	2/10
<b>32</b>	3/26	3/12	3/02	2/22	2/14	2/06	1/28	1/18	1/04
<b>28</b>	2/21	2/09	1/31	1/24	1/16	1/08	12/30	12/15	0/00
<b>24</b>	1/31	1/18	1/08	12/26	0/00	0/00	0/00	0/00	0/00
<b>20</b>	12/22	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>16</b>	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>Fall Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of earlier date in fall (beginning Aug 1) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	10/30	11/06	11/11	11/15	11/19	11/22	11/27	12/01	12/08
<b>32</b>	11/09	11/16	11/21	11/25	11/29	12/03	12/08	12/13	12/20
<b>28</b>	11/21	11/28	12/03	12/08	12/12	12/17	12/23	12/31	0/00
<b>24</b>	12/16	12/31	1/14	2/01	0/00	0/00	0/00	0/00	0/00
<b>20</b>	2/05	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>16</b>	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
<b>Freeze Free Period</b>									
<b>Temp (F)</b>	<b>Probability of longer than indicated freeze free period (Days)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	283	273	265	258	252	246	239	232	221
<b>32</b>	329	315	305	296	288	280	271	261	247
<b>28</b>	>365	>365	>365	341	329	320	312	303	291
<b>24</b>	>365	>365	>365	>365	>365	>365	>365	>365	336
<b>20</b>	>365	>365	>365	>365	>365	>365	>365	>365	>365
<b>16</b>	>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:

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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		396	258	189	85	20	0	0	0	0	36	205	399	1588
60		252	142	99	33	6	0	0	0	0	10	105	258	905
57		175	90	58	17	2	0	0	0	0	4	63	183	592
55		132	61	38	11	0	0	0	0	0	2	42	142	428
50		53	16	11	1	0	0	0	0	0	0	11	63	155
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		627	672	881	1043	1311	1523	1754	1721	1486	1197	812	626	13653
55		46	90	205	364	598	833	1041	1008	796	485	164	54	5684
57		27	62	164	310	538	773	979	946	736	425	125	34	5119
60		11	30	112	236	449	683	886	853	646	338	77	15	4336
65		0	6	46	138	309	533	731	698	496	210	27	2	3196
70		0	0	15	67	190	385	576	543	349	110	6	0	2241

### 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	404	487	650	815	1081	1307	1542	1506	1277	976	594	405	404	891	1541	2356	3437	4744	6286	7792	9069	10045	10639	11044
45	258	344	496	665	926	1157	1387	1351	1127	821	445	258	258	602	1098	1763	2689	3846	5233	6584	7711	8532	8977	9235
50	130	210	343	516	771	1007	1232	1196	977	666	299	129	130	340	683	1199	1970	2977	4209	5405	6382	7048	7347	7476
55	48	101	204	369	616	857	1077	1041	827	512	172	45	48	149	353	722	1338	2195	3272	4313	5140	5652	5824	5869
60	9	38	98	235	461	707	922	886	677	362	74	8	9	47	145	380	841	1548	2470	3356	4033	4395	4469	4477
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	255	306	401	514	682	800	946	932	796	616	383	265	255	561	962	1476	2158	2958	3904	4836	5632	6248	6631	6896

(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.  
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 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/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)