

# Climatology of the United States

## No. 20

### 1971-2000

**Station: TWENTYNINE PALMS, CA**

**COOP ID: 049099**

**Climate Division: CA 7**

**NWS Call Sign:**

**Elevation: 1,975 Feet Lat: 34°08N**

**Lon: 116°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	63.9	36.1	50.0	85	1971	20	55.0	1986	13+	1974	3	44.8	1973	465	0	.0	.0	30.2	.0	9.1	.0
Feb	68.8	39.2	54.0	90+	1986	28	59.3	1995	18+	1972	3	50.6	1979	309	2	.0	.1	27.6	.1	3.8	.0
Mar	74.7	43.4	59.1	93	1966	31	65.6	1972	23	1971	1	53.4	1973	220	36	.0	.6	31.0	.0	1.5	.0
Apr	82.7	49.3	66.0	102	1949	24	73.0	1989	24	1970	27	58.4	1975	94	124	.3	7.0	30.0	.0	.1	.0
May	91.4	57.1	74.3	110+	1984	30	81.8	1997	33	1975	20	67.4	1977	20	307	4.1	19.7	31.0	.0	.0	.0
Jun	101.3	65.1	83.2	117+	1961	20	87.7	1981	43+	1970	9	78.5	1998	0	545	19.3	28.2	30.0	.0	.0	.0
Jul	105.8	71.0	88.4	118	1961	11	91.6	1996	53	1987	18	84.7	1987	0	725	28.3	30.9	31.0	.0	.0	.0
Aug	103.6	70.1	86.9	115	1993	2	90.6	1998	53	1959	20	82.8	1983	0	677	25.4	30.5	31.0	.0	.0	.0
Sep	97.3	63.5	80.4	114	1950	2	84.1	1995	38	1971	29	74.3	1986	0	462	11.6	26.0	30.0	.0	.0	.0
Oct	85.8	52.2	69.0	106	1980	1	74.9	1988	24	1971	30	63.3	1972	50	174	1.3	10.6	31.0	.0	.3	.0
Nov	71.9	40.9	56.4	92	1988	4	62.7	1995	21	1958	18	49.9	1994	270	12	.0	.1	30.0	.0	2.9	.0
Dec	63.6	35.4	49.5	92	1975	11	55.8	1980	10	1990	23	44.8	1990	482	0	.0	@	29.8	.0	10.2	.0
Ann	84.2	51.9	68.1	118	Jul 1961	11	91.6	Jul 1996	10	Dec 1990	23	44.8+	Dec 1990	1910	3064	90.3	153.7	362.6	.1	27.9	.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	Median	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	.56	.31	1.14	1995	5	2.63	1993	.00+	1984	3.2	1.6	.2	@	.00	.00	.01	.07	.16	.28	.43	.64	.95	1.49	2.05
Feb	.52	.32	1.10	1980	17	2.45	1980	.00+	1989	3.0	1.5	.3	.1	.00	.00	.00	.05	.13	.24	.38	.59	.90	1.45	2.02
Mar	.49	.21	1.43	1983	3	2.40	1983	.00+	1999	2.8	1.5	.4	@	.00	.00	.00	.09	.19	.30	.44	.61	.85	1.26	1.67
Apr	.14	.01	.67	1999	12	1.37	1999	.00+	2000	1.2	.4	@	.0	.00	.00	.00	.00	.00	.00	.04	.11	.23	.45	.68
May	.12	.03	.61	1997	19	.64	1997	.00+	2000	1.1	.3	.1	.0	.00	.00	.00	.00	.01	.04	.08	.13	.22	.36	.51
Jun	.01	.00	.11	1959	30	.10	1990	.00+	2000	.2	.0	.0	.0	**	**	**	**	**	**	**	**	**	**	**
Jul	.64	.46	2.36	1979	20	3.12	1984	.00+	2000	1.8	1.1	.4	.1	.00	.00	.00	.04	.18	.34	.53	.78	1.13	1.72	2.31
Aug	.76	.26	2.16	1961	15	4.93	1983	.00+	1998	2.4	1.5	.5	.2	.00	.00	.00	.01	.08	.21	.42	.74	1.26	2.27	3.36
Sep	.55	.08	2.64	1976	10	3.96	1997	.00+	1996	1.7	.8	.3	.1	.00	.00	.00	.00	.01	.07	.22	.47	.90	1.73	2.63
Oct	.17	.03	2.55	1963	18	1.23	1983	.00+	1999	1.1	.5	@	@	.00	.00	.00	.00	.00	.02	.07	.15	.28	.53	.78
Nov	.21	.07	1.31	1978	24	1.37	1978	.00+	2000	1.4	.6	.1	@	.00	.00	.00	.00	.01	.06	.13	.23	.37	.61	.87
Dec	.40	.21	1.16	1982	8	2.46	1982	.00+	2000	2.2	1.0	.2	@	.00	.00	.00	.01	.07	.16	.28	.44	.69	1.14	1.60
Ann	4.57	4.04	2.64	Sep 1976	10	4.93	Aug 1983	.00+	Dec 2000	22.1	10.8	2.5	.5	1.26	1.70	2.35	2.92	3.48	4.07	4.71	5.48	6.47	8.03	9.49

+ 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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Lat: 34°08N

Lon: 116°02W

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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	#	.0	0	0	#	1987	25	#	1987	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	.2	1971	28	.2	1971	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	.2	Oct 1971	28	.2	Oct 1971	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>	4/25	4/15	4/08	4/02	3/27	3/22	3/16	3/09	2/27
<b>32</b>	4/04	3/25	3/18	3/11	3/06	2/28	2/22	2/15	2/05
<b>28</b>	3/02	2/20	2/13	2/06	2/01	1/26	1/19	1/11	12/30
<b>24</b>	2/08	1/29	1/21	1/13	1/06	12/27	12/10	0/00	0/00
<b>20</b>	1/28	1/15	1/02	12/14	0/00	0/00	0/00	0/00	0/00
<b>16</b>	12/19	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>	10/27	11/01	11/04	11/07	11/10	11/13	11/16	11/20	11/25
<b>32</b>	11/03	11/09	11/13	11/17	11/20	11/24	11/28	12/02	12/08
<b>28</b>	11/10	11/19	11/25	12/01	12/06	12/11	12/17	12/24	1/03
<b>24</b>	12/01	12/11	12/18	12/25	1/02	1/11	0/00	0/00	0/00
<b>20</b>	12/19	1/03	1/17	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>	264	251	242	234	227	220	212	203	190
<b>32</b>	294	282	273	266	259	252	245	236	225
<b>28</b>	>365	344	327	316	306	297	288	278	263
<b>24</b>	>365	>365	>365	>365	>365	>365	343	323	301
<b>20</b>	>365	>365	>365	>365	>365	>365	>365	>365	333
<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

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**Lat: 34°08N**

**Lon: 116°02W**

### 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
65	465	309	220	94	20	0	0	0	0	50	270	482	1910
60	316	181	122	39	6	0	0	0	0	15	153	334	1166
57	231	117	76	20	2	0	0	0	0	6	98	251	801
55	180	83	52	13	0	0	0	0	0	3	70	201	602
50	85	24	16	2	0	0	0	0	0	0	23	105	255
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
32	558	617	839	1020	1310	1535	1748	1700	1452	1147	732	541	13199
55	25	56	178	343	597	845	1035	987	762	437	111	30	5406
57	14	34	141	290	537	785	973	925	702	378	80	18	4877
60	5	13	93	219	447	695	880	832	612	294	44	8	4142
65	0	2	36	124	307	545	725	677	462	174	12	0	3064
70	0	0	11	57	189	396	570	522	316	85	2	0	2148

### 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	319	417	600	789	1070	1302	1510	1461	1217	905	496	306	319	736	1336	2125	3195	4497	6007	7468	8685	9590	10086	10392
45	181	279	445	639	915	1152	1355	1306	1067	750	350	164	181	460	905	1544	2459	3611	4966	6272	7339	8089	8439	8603
50	75	150	293	489	760	1002	1200	1151	917	596	214	65	75	225	518	1007	1767	2769	3969	5120	6037	6633	6847	6912
55	19	60	162	343	605	852	1045	996	767	443	106	14	19	79	241	584	1189	2041	3086	4082	4849	5292	5398	5412
60	1	14	69	213	451	703	890	841	617	300	34	0	1	15	84	297	748	1451	2341	3182	3799	4099	4133	4133
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	220	285	396	502	665	774	894	877	750	570	337	219	220	505	901	1403	2068	2842	3736	4613	5363	5933	6270	6489

(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)