

**SUMMARY OF THE DECEMBER 1988 WEATHER ON THE MONTEREY
PENINSULA, CALIFORNIA**
(With Information on the year 1988)

General: The first fourteen days of December were unusually warm and foggy, and bone dry! The last seventeen days were record breaking cold as well as stormy and wet! Winds were seasonal overall but light in the first fourteen days and gusty in the last seventeen days.

Temperature: First, the bland monthly averages: 50.6°F overall (normal is 52.3°F), 59.2°F for the average maximum (normal is 61.0°F) and 42.0°F for the average minimum (normal is 43.7°F). These figures indicate that Dec 1988 temperatures are below the 37-year normal with nearly equal contributions from daytime and nighttime conditions. However, breaking the month into two periods, the first fourteen and the final seventeen days, yields a much more dramatic story about the weather of Dec 1988.

The first 14 days of Dec 1988 the temperature averaged a very warm 56.8°F (4.5°F above normal) with an average maximum of 67.1°F (6.1°F above normal) and an average minimum of 46.4°F (2.7°F above normal). Those figures exceed any temperature in the 37-year December record except for the month of Dec 1958 when the month's temperature averaged 57.6°F with an average maximum of 69.6°F. Also, a 14-day record in 1985 (14-27 Dec) gave an average high of 68.4°F.

In the last seventeen days, Monterey was in the grip of a cold snap nearly unequalled in the past 37 Decembers. In that period the overall average was 45.5°F (6.8°F below normal) while the highs averaged 52.6°F (8.4°F below normal) and the lows averaged 38.4°F (5.3°F below normal). It was colder in Dec 1972. In the first 17 days of that month the average high was only 51.7°F while the average low was 43.8°F. The temperature change that Monterey experienced this December, from the first 14 to the last 17 days, is unprecedented in the 37-year record.

Many daily temperature records were set in Dec 1988.

Minimums:	26 Dec	33°F beats 34°F in 1954;
	29 Dec	31°F beats 32°F in 1955;
	30 Dec	34°F ties same temperature in 1949.
Maximums:	25 Dec	46°F, colder than 51°F in 1971;
	26 Dec	50°F, colder than 50°F in 1971; (Ed: actually ties 1971)
	28 Dec	47°F, colder than 50°F in 1974.

There were three days with maximums no higher than 49°F in Dec 88. Only one other December had more maximums not reaching 50°F, namely 1972 with six such days.

The first day of frost at the ground (defined as the first day with a thermal shelter temperature 39°F or below) occurred on 13 Dec 88, which is 13 days later than normal. The first day with a killing frost/freeze at the ground (defined as the first day with a thermal shelter temperature 34°F or lower) occurred on 26 Dec 88, which is exactly the normal day. In Dec 1988, temperatures down to 31°F were observed (i.e., on 29 Dec) and there were three other days with temperatures below 35°F (33°F on 26 Dec, 33°F on 27 Dec, and 34°F on 30 Dec). The month's high was 74°F on 01 Dec 88.

The annual averages for 1988 are as follows:

Overall: 57.0°F (0.4°F above normal);
Maximum: 65.9°F (0.6°F above normal);
Minimum: 48.0°F (0.2°F above normal).

The last three years (1988 included) have been above normal.

Precipitation: If December rainfall is a key to that of the whole rain year, then prospects are good for a wet year since Dec 1988 turned in a 3.44" record (in 11 days with measureable rainfall), which is above the 37-year norm by 0.39". It is the second above-normal month in a row bringing the rain year total to 6.44" at month's end. Normal is 6.85". Last year at this time 6.24" was collected.

The 1988 calendar year total is 12.34" and this is the lowest such value since 11.46" in calendar year 1976 and the fifth lowest calendar year value in 27 years of record-keeping (10.85" in 1961, 10.85" in 1956, and 8.95" in 1953 – all calendar year values).

All of December's measureable rainfall came in the last 16 days of the month as a cold wet pattern established itself in the eastern North Pacific/U.S. west coast area. Rainfall was much higher to the north and in the Santa Lucia Mountains to the south. For example, Three Peaks, in the mountains near the southern end of Monterey County, received 7.05" in a 10-hour period ending 09:00 on 24 Dec 88 while only 0.62" fell at the National Weather Service (NWS) Station in Monterey.

Hail fell at the station and in the area generally on 24, 27 and 28 Dec 1988. Snow was reported down to near sea level several places around the Peninsula, especially on Christmas morning in Carmel Valley and the San Benancio Canyon area, and, of course, Mt. Toro was snow covered from Christmas Day through the end of the month. There was even a report of snowflakes, melting as they fell, in Pacific Grove about 3 a.m. Christmas morning.

Lightning was observed to the east of Christmas Eve with thunder heard as close as the San Benancio area. Five thunderstorm days, i.e., days with thunder, were recorded in 1988, which is normal. The last thunderstorm day on the Peninsula was in June 1988.

Snow at the NWS Station is not rare but certainly is uncommon. There was a trace of snow on 30 Jan 1979, a trace of sleet on 2-3 Mar 1976, 0.2" of sleet/hail/snow on 05 Feb 1976, snow flurries on 08 Dec 1972, and the most memorable snow (several inches in parts of Monterey) in recent times on 21, 22 Jan 1962. Days with hail only are more common – over 150 hail days in the past 37 years.

Wind: When the rains came in late Dec 88 strong winds were part of the picture. Gusts to 34 miles per hour (mph) on 22 Dec and 47 mph on 24 Dec caused minor tree damage and power outages. Gusts on the 24th probably exceed 60 mph in unprotected near-ocean sections of the area.

Airport winds averaged 7.1 mph (period 6 a.m. to 11 p.m. each day) while maximum daily gusts at the NWS station averaged 18.9 mph, with four days in the thirties and forties.

Fog: Fog days (days with one or more hours of fog) in December 1988 exceeded the normal of seven days by one, with seven of the fog days within the first 14 days of the month.

There were 158 fog days in 1988 which is 17 more than normal. The last four years (1988 included) have recorded above normal fog in the area.

