

## Storm Data and Unusual Weather Phenomena - September 2012

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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### CALIFORNIA, South Central

#### KERN COUNTY --- 0.9 SW EDWARDS [34.91, -117.93]

09/10/12 15:59 PST		0		Thunderstorm Wind (MG 50 kt)
09/10/12 16:14 PST		0		Source: Mesonet

Edwards lake bed sensor measured a gust to 58 mph with a thunderstorm outflow boundary. No damage was reported.

The upper-level ridge that was over California at the end of August began to give way to an approaching east-Pacific upper-level trough. The trough brought an influx of marine air into the San Joaquin Valley, dropping temperatures well below normal. Both Bakersfield and Fresno only reached highs of 88 degrees on September 1st.

The marine air remained over the San Joaquin Valley through the 2nd, keeping temperatures across much of the central and southern San Joaquin Valley below normal. The trough lifted northeast on September 3rd, allowing temperatures to warm rapidly. Fresno saw a return of triple-digit heat on the 4th, while Bakersfield reached a high of 99. The next day saw tropical moisture from the remnants of former Hurricane Ileana bring a few showers as far north as the south end of the San Joaquin Valley. Clouds over the southern part of the Hanford warning/forecast area kept nights warm and daytime highs well below normal. On September 5th, the high at Bakersfield only reached 87 degrees, after a low of 74 the previous day. On the 6th, the high at Taft was only 89 degrees.

The tropical moisture triggered thunderstorms over the mountains and deserts that started during the morning of September 5th, with a few showers pushing into the southern San Joaquin Valley. Bakersfield reported a trace of rain during the early afternoon of September 5th, and again during the middle of the afternoon on the 6th. By the late afternoon of September 5th, thunderstorms had moved into Merced County, and during the evening a spotter in Ponderosa Basin (Mariposa County) reported a dry thunderstorm in progress.

The morning of September 7th saw a significant non-meteorological event affect the central and southern San Joaquin Valley. A pair of earthquakes, both approximately magnitude 4 on the Richter scale, occurred at 6:2:10 AM PDT and 6:23:48 AM PDT. Both were centered about 9 miles north-northeast of Avenal and were felt as far as Hanford. No damage was reported from either quake.

The upper-level ridge over the southwestern United States began building into California on the 7th. This pushed mid and high level clouds from another tropical system, John, northward as the clouds wrapped around the periphery of the ridge. A trough off the coast kept the ridge in check for the next several days, resulting in only minor fluctuations in high temperatures. Bakersfield had a high of 95 degrees on September 8th, 9th, 10th and 12th, and the high on the 11th was 96 degrees.

Monsoonal moisture surged into central California from the south, bringing thunderstorms to the mountains of Kern and Tulare Counties, and the Kern County deserts, during the afternoon and evening of September 8th, and again the next day. The thunderstorms on September 9th were stronger than those of the 8th. One midday thunderstorm dropped 0.50 inch of rain on Ponderosa in Tulare County. Another midday thunderstorm gave Frazier Park 0.14 inch of rain.

Thunderstorms continued to develop over the southern parts of the Hanford warning/forecast area on September 10th. A late-afternoon thunderstorm over Edwards Air Force Base produced outflow winds that gusted to 58 mph. A Severe Thunderstorm Warning had been issued for that storm 34 minutes before the gusts occurred.

An upper-level trough moved into California on September 12th. The southwesterly flow aloft ahead of the trough kept thunderstorms confined to near the Southern Sierra Nevada crest. The trough quickly moved through California, allowing an upper-level ridge to move into the state behind the trough.

The ridge strengthened over the state on September 13th, bringing both Bakersfield and Fresno a four-day stretch of triple-digit highs. September 14th was the hottest day of the stretch, with Fresno setting a record high of 106 degrees and just missing its record high minimum temperature by one degree.

The ridge began weakening on September 17th, resulting in a deepening of the marine layer along the coast. Marine air spilled into the central and southern San Joaquin Valley. September 18th saw Bakersfield and Fresno only reach highs of 92 degrees, with both cities remaining in the lower to mid 90s the next several days.

September 21st saw the central California interior between an upper-level ridge to the south and a short-wave along the coast to the north. This set up a southwest flow aloft which streamed mid and high clouds into the central California interior during the day and continuing overnight. The clouds began clearing out during the day on the 22nd, but lingered over Kern County. As a result, Fresno reached a high of 97 on the 22nd, which Bakersfield only reached 92 degrees.

Temperatures in the central and southern San Joaquin Valley—south of Merced County—warmed the next day, with both Bakersfield and Fresno seeing a return of triple-digit heat. This was the result of a weak downslope southeast wind over much of the San Joaquin Valley, which warmed the Valley floor. High clouds associated with an upper-level trough moving through the Pacific Northwest kept

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Merced near persistence, but highs in the upper 90s to 103 were reported south of Merced County.

An upper-level low moved through Oregon on September 23rd and dropped into eastern Nevada the next day. As the associated trough moved through California, the marine layer deepened along the coast and cool marine air spilled into the San Joaquin Valley. Temperatures cooled several degrees, with Merced and Los Banos only reaching the upper 80s while Bakersfield reached 97 degrees and Wasco reported 100. The trough also brought gusty winds to the Kern County mountains and deserts during the afternoon of the 24th, with gusts as high as 53 mph.

With marine air in place over the San Joaquin Valley, highs on September 25th were only in the upper 80s to lower 90s. After a prolonged period of above-normal temperatures, the 25th finally saw temperatures cool to near normal. The respite from the heat was short-lived, as the upper-level ridge rebuilt into California over the few days of the month. Some monsoonal moisture wrapping around the ridge brought isolated thunderstorms to the high country of the Southern Sierra Nevada during the afternoon of September 28th, with Tuolumne Meadows in Yosemite National Park reporting 0.02 inch of rain.

An upper-level short-wave that moved through the Pacific Northwest on September 29th weakened the ridge and lowered temperatures a few degrees, but central and southern San Joaquin Valley highs topped out in the lower to mid 90s, several degrees above the normal of upper 80s.

The short-wave moved into the northern Rocky Mountains on September 30th. This allowed the ridge to resume building over the central California interior. At the surface, a light offshore flow brought early-morning warming to the south end of the San Joaquin Valley. This set the stage for September to end with temperatures well above normal. Fresno had its hottest September on record, and Bakersfield had its sixth hottest September on record. Temperature records for both cities go back more than 120 years.