Storm Data and Unusual Weather Phenomena - February 2014

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details

CALIFORNIA, South Central

(CA-Z089) W CENTRAL S.J. VALLEY, (CA-Z090) E CENTRAL S.J. VALLEY, (CA-Z091) SW S.J. VALLEY, (CA-Z092) SE S.J. VALLEY, (CA-Z093) S SIERRA FOOTHILLS, (CA-Z094) TULARE CTY FOOTHILLS, (CA-Z095) KERN CTY MTNS, (CA-Z096) S SIERRA MTNS, (CA-Z097) TULARE CTY MTNS, (CA-Z098) INDIAN WELLS VLY, (CA-Z099) SE KERN CTY DESERT

	02/01/14 00:00 PST	0	Drought
	02/28/14 23:59 PST	0	

The California drought continued in full force during the month of February, 2014. Extreme drought was detected by the U.S. Drought Monitor for much of the region, with exceptional drought detected along the west side of the San Joaquin Valley. For California as a whole, 2013 was the driest year on record. As the 2013-2014 winter progresses, little rain has fallen across California.

There continues to be significant media coverage on the on-going drought conditions. These reports include discussion of significant re-allocation of water resources from the east to west side of the San Joaquin Valley, farmers forgoing planting of some crops, a decrease in the snow-related tourism activity in the Southern Sierra Nevada, reduction in air quality due to persistent stagnant air, loss or reduction of ground water, and an unprecedented increase in fire danger across the Southern Sierra Nevada and Tehachapi Mountains. For the first time on record, red flag warnings were issued in January for not only the Southern Sierra Nevada and the Tehachapi Mountains but also the south end of the San Joaquin Valley.

(CA-Z089) W CENTRAL S.J. VALLEY, (CA-Z090) E CENTRAL S.J. VALLEY, (CA-Z091) SW S.J. VALLEY, (CA-Z092) SE S.J. VALLEY

	02/05/14 02:00 PST	0	Frost/Freeze
	02/05/14 08:00 PST	0	

(CA-Z096) S SIERRA MTNS, (CA-Z097) TULARE CTY MTNS

	02/06/14 04:00 PST	0	Winter Weather
	02/08/14 04:00 PST	0	

MARIPOSA COUNTY --- 1.6 E ELLIOTT CORNER [37.47, -119.74]

	02/06/14 08:19 PST	0	Heavy Rain
	02/06/14 08:19 PST	0	Source: Trained Spotter

Trained spotter reported 0.22 inches of rain in Ponderosa Basin.

FRESNO COUNTY --- 2.3 WNW GLORIETTA [36.86, -119.71]

	02/06/14 11:15 PST	0	Heavy Rain
	02/06/14 11:15 PST	0	Source: Trained Spotter

Spotter reported heavy rain with 0.89 inches in Clovis.

FRESNO COUNTY --- 2.3 WNW GLORIETTA [36.86, -119.71]

	02/06/14 12:40 PST	0	Heavy Rain
	02/06/14 12:40 PST	0	Source: Trained Spotter

Heavy rain in Clovis with 1.05 inches.

FRESNO COUNTY --- 1.3 ESE MELVIN [36.81, -119.65]

	02/06/14 12:55 PST	0	Heavy Rain
	02/06/14 12:55 PST	0	Source: Trained Spotter

One inch of new rainfall in Clovis.

TULARE COUNTY --- 3.5 NW TRAVER [36.49, -119.52], 5.0 NW TRAVER [36.50, -119.55], 3.0 WNW TRAVER [36.47, -119.53], 2.1 N TRAVER [36.48, -119.49], 3.5 WSW DELFT COLONY [36.51, -119.51]

	02/06/14 12:56 PST	0	Flood (due to Heavy Rain)
	02/06/14 13:56 PST	0	Source: Law Enforcement

Flooding on SR 99 and 384 near Traver.

KERN COUNTY --- GLENNVILLE [35.73, -118.70]

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	02/07/14 08:41 PST		0	Heavy Rain
	02/07/14 08:41 PST		0	Source: Trained Spotter

Heavy rain with 0.66 inches.

MARIPOSA COUNTY --- 1.6 E ELLIOTT CORNER [37.47, -119.74]

	02/07/14 09:26 PST		0	Heavy Rain
	02/07/14 09:26 PST		0	Source: Trained Spotter

Twenty six hundredths of an inch reported by a spotter.

KERN COUNTY --- 3.6 NE LAKE ISABELLA [35.64, -118.41]

	02/07/14 11:35 PST		0	Heavy Rain
	02/07/14 11:35 PST		0	Source: Trained Spotter

Heavy rainfall in Lake Isabella.

KERN COUNTY --- 4.2 WSW ROWEN [35.20, -118.67]

	02/07/14 11:40 PST		0	Heavy Rain
	02/07/14 11:40 PST		0	Source: Trained Spotter

A rain and snow mix. Heavy rain also occurred during a 24 hour period in Bear Valley Springs.

The storm that reached the central California interior at the end of January heralded a week of unsettled weather for the region. February 1st saw low-level clouds banked against the San Joaquin Valley-facing slopes of the mountains in Kern and Tulare Counties, with clouds pushing into the Tehachapi Pass. The next day, a low-pressure system dropped south along the northern California coast, bringing precipitation to the region during the afternoon. This was a cold system, with the snow level down to around 3000 feet (and even lower in stronger snow showers). Yet despite the cold, unstable airmass, cloud cover inhibited thunderstorm development.

Despite the generally light rainfall amounts on the San Joaquin Valley floor, there was enough boundary-layer moisture to trigger patchy dense fog development in eastern Kings and western Tulare Counties (where the heaviest rain had fallen) around sunrise on February 3rd. Over the mountains, clouds rimmed the San Joaquin Valley and isolated showers were reported over the Southern Sierra Nevada.

Low temperatures in the central and southern San Joaquin Valley dropped below freezing during the morning of February 4th, with patchy frost reported in the coldest rural areas. These cold low temperatures continued the next morning, then clouds associated with the first major winter storm of the season arrived during the afternoon of the 5th.

The storm brought moderate to heavy rain to the central and southern San Joaquin Valley on February 6th, except for the strongly rain-shadowed south end of the Valley. Fresno received 0.80 inch of rain on the 6th, nearly two thirds of the total for November through January of 1.26 inch. In sharp contrast, Bakersfield only recorded 0.04 inch, one twentieth of Fresno's amount. Heavy snow fell in the Southern Sierra Nevada, with the snotel at Big Meadows receiving an estimated two feet of new snow, with Dana Meadows getting only a few inches less.

Unsettled weather continued through February 10th. As upper-level impulses moved over the area, periods of light showers continued across the central California interior. However, rainfall amounts, even when totaled from February 7th through the 10th, were considerably less than on the 6th. In the Southern Sierra Nevada, an estimated 4 to 7 inches of additional snow fell above 9000 feet. Further south, a mix of rain and snow was reported on February 7th near Bear Valley Springs in the Tehachapi Mountains.

(CA-Z089) W CENTRAL S.J. VALLEY, (CA-Z090) E CENTRAL S.J. VALLEY, (CA-Z091) SW S.J. VALLEY, (CA-Z092) SE S.J. VALLEY

	02/11/14 05:00 PST		0	Dense Fog
	02/13/14 15:00 PST		0	

Moisture from the rains saturated the airmass near the San Joaquin Valley floor, bringing the first episodes of Tule Fog of the winter. Of the four days (February 12th-15th) with locally dense fog, the 13th saw the most fog. Even so, the fog was mostly patchy and formed mainly in the Madera-Atwater and Selma-Hanford/Visalia areas. Dense fog also formed near daybreak along the Highway 41 corridor in western Fresno County and the Highway 198 corridor from Lemoore to Hanford.

In addition to the low-level moisture, fog development was aided by a stable airmass due to an upper-level ridge over the central California interior. This high pressure aloft also brought a warming trend, with above-normal temperatures from February 12th through the 17th.

(CA-Z089) W CENTRAL S.J. VALLEY, (CA-Z091) SW S.J. VALLEY

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	02/26/14 02:00 PST		4K	Strong Wind (MAX 43 kt)
	02/26/14 12:00 PST		0	
(CA-Z095) KERN CTY MTNS				
	02/27/14 22:00 PST		0	High Wind (MAX 77 kt)
	02/28/14 16:00 PST		0	
(CA-Z096) S SIERRA MTNS, (CA-Z097) TULARE CTY MTNS				
	02/27/14 22:00 PST		0	Winter Storm
	02/28/14 23:59 PST		0	
FRESNO COUNTY --- 0.9 NW HAMMOND [36.78, -119.79]				
	02/28/14 11:05 PST		0	Lightning
	02/28/14 11:05 PST	1	0	Source: Newspaper

Lightning caused an injury to a man who was in an oil field near Fresno.

TULARE COUNTY --- 1.5 NNW DINUBA [36.55, -119.39], 2.0 W DINUBA [36.53, -119.42], 0.6 S DINUBA [36.52, -119.38], 1.5 ENE DINUBA [36.54, -119.36]

02/28/14 12:51 PST		0	Flood (due to Heavy Rain)
02/28/14 12:51 PST		0	Source: Trained Spotter

Small hail, frequent cloud to ground lightning, wind gusts to 50 mph, and flooded roads along Road 80 just south of Dinuba. This weather was caused by a cluster of thunderstorms moving through the area.

KERN COUNTY --- 0.7 S BAKERSFIELD [35.36, -119.00]

02/28/14 13:00 PST		35K	Thunderstorm Wind (EG 39 kt)
02/28/14 13:00 PST		0	Source: Broadcast Media

A large tree was uprooted and totaled a car due to thunderstorm winds. Location was at Jenkins and Rosedale.

TULARE COUNTY --- 0.9 SW PORTERVILLE [36.06, -119.03]

02/28/14 13:00 PST		2M	Thunderstorm Wind (EG 50 kt)
02/28/14 13:00 PST		0	Source: Newspaper

Trees down across Porterville. Damages reported to several houses due to fallen trees and limbs.

FRESNO COUNTY --- 4.4 WSW DUNLAP [36.70, -119.19]

02/28/14 13:10 PST		0.50M	Thunderstorm Wind (EG 56 kt)
02/28/14 13:10 PST		0	Source: Public

Wind damage caused by thunderstorms near Squaw Valley, reported by the public and trained spotters. Roof damage and several downed trees.

TULARE COUNTY --- 0.6 E CINOWTHS CORNER [36.33, -119.32], 1.3 WSW PATTERSON TRACT [36.36, -119.32], 1.7 NE VISALIA [36.35, -119.28], 1.1 E VISALIA [36.33, -119.28]

02/28/14 13:20 PST		0	Flood (due to Heavy Rain)
02/28/14 14:20 PST		0	Source: NWS Employee

An off duty NWS meteorologist reported flooded streets in downtown Visalia.

KERN COUNTY --- 1.8 NW RAND [35.42, -117.72], 2.8 NNE GARLOCK [35.43, -117.75], 1.7 ENE GARLOCK [35.41, -117.75], 1.5 NNE RAND [35.42, -117.69], 3.0 NNE RAND [35.44, -117.68]

02/28/14 14:00 PST		20K	Flood (due to Heavy Rain)
02/28/14 15:00 PST		0	Source: Trained Spotter

Mud and debris on the road along Garlock Rd just west of US 395.

FRESNO COUNTY --- 1.3 ESE FIGARDEN [36.81, -119.85]

02/28/14 15:33 PST		10K	Thunderstorm Wind (EG 45 kt)
02/28/14 15:33 PST		0	Source: Public

A 2-3 foot tree was blown down in Fresno.

Storm Data and Unusual Weather Phenomena - February 2014

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details

A dry storm system moved through the central California interior on February 18th, bringing a push of cold air that lowered temperatures briefly to near normal. Behind the cold front, gusty winds developed over the mountains and deserts on the 19th. The winds began during the early morning hours, with a gust to 60 mph at Bear Peak in Tulare County, and a gust to 53 mph at Mojave, during the pre-dawn hours. Winds gusted over 45 mph in the eastern Kern County desert during the morning and early afternoon of the 19th, and gusts to 50 mph were recorded in the Piutes.

An upper-level ridge of high pressure returned to California on the 19th behind the departing low-pressure system. High temperatures warmed to above normal for the next several days before the next storm arrived during the afternoon of February 26th. This warming trend peaked with Bakersfield hitting 81 degrees on the 25th, and Fresno reaching 80 degrees. This was the first time either city had seen 80 degrees since November 10th, 2013.

The storm that reached the central California interior on February 26th was the first of two closely-spaced systems. Together, the two storms brought as much as 4 inches of rain to the Southern Sierra Nevada foothills, and over an inch of rain to the Kern County deserts. Fresno had a three-day storm total of 1.11 inch, bringing the total rainfall for February to 2.11 inch. This was 0.08 inch greater than the normal of 2.03 inches and was the first time since December 2012 that Fresno had above-normal rainfall for a month.

The south end of the San Joaquin Valley was rain-shadowed, with Bakersfield receiving only 0.28 inch of rain, almost all of which fell from the second storm on February 28th. The second storm was located off the central California coast, and was impressive on satellite pictures with a tightly-wound structure and a clear center much like the eye of a tropical system. The circulation around the storm produced a southerly wind over the Tehachapi Mountains which funneled through Tejon Pass and down the Grapevine into the south end of the San Joaquin Valley. Winds gusted as high as 89 mph at Grapevine Peak, and to 50 mph at Sunflower Valley on the west side of the Valley. At Buck Rock, in the Sierra Nevada in Tulare County, winds gusted to 66 mph.
Several thunderstorms were spawned by the storms, with the second system being the most potent. Numerous trees were toppled in both the San Joaquin Valley and the Sierra foothills by winds, in many cases pulling down power lines. One thunderstorm at Squaw Valley in the foothills produced a gust estimated at 65 mph, which toppled trees and damaged the roof of a garage. On the Valley floor, there were reports of houses and parked vehicles damaged by falling trees or large limbs. Near Fresno, a tree 3 feet in diameter was toppled.

Street flooding was reported at several locations, not only in the San Joaquin Valley but also in eastern Kern County where the Garlock Road flooded. (Garlock Road is prone to flooding from runoff from the El Paso Mountains.). In Dinuba, water covering the road was estimated at 8 to 12 inches deep.

In the Southern Sierra Nevada, estimates of new snowfalls were as high as four feet. (These were Snotel observations; a post-storm snow survey had not been conducted at the time of this summary.)

February 2014 was much warmer than normal, and was Fresno's warmest February on record. Bakersfield tied for its 6th warmest February on record.