

## **NOVEMBER 2015 WEATHER SUMMARY FOR THE CENTRAL CALIFORNIA INTERIOR**

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This month began with warmer than average temperatures and dry conditions; however, this weather did not last long as the ridge of high pressure eventually gave way to a relatively cold storm that moved from the Gulf of Alaska. Temperatures rose into the lower to mid-80s in the warmest spots.

On the 2<sup>nd</sup>, the storm moved into central California and brought much cooler temperatures and abundant rainfall and mountain snow for the next couple of days; this system was able to draw in quite a bit of subtropical moisture from the south. Some San Joaquin Valley locations received around an inch or just above, mainly in the east side from Fresno County and northward. Locations to the south received mainly around a quarter to half of an inch during the 2<sup>nd</sup> and into the 3<sup>rd</sup>. Sierra Nevada foothill rainfall amounts exceeded two inches in quite a few locations, and snow amounts were around several inches to a foot in the higher elevations (mainly around 7,000 feet and above) of the southern Sierra Nevada, mainly from Yosemite to Tulare County.

Afterward, much cooler temperatures prevailed during the 4<sup>th</sup> and the 5<sup>th</sup>, and some locally dense fog developed in parts of the San Joaquin Valley during the morning hours. During this period, high temperatures remained in the lower to mid-60s in the San Joaquin Valley and Kern County desert areas.

High pressure prevailed for the next few days and brought gradually warming temperatures. Low temperatures remained slightly below average during the 6<sup>th</sup> until the morning of the 8<sup>th</sup> with mainly shallow ground fog developing in parts of the San Joaquin Valley. High temperatures in the warmest locations reached the lower 70s on the 7<sup>th</sup> and 8<sup>th</sup>; however, they were much lower (or by around 10 to 15 degrees) than at the beginning of the month.

By the evening of the 8<sup>th</sup> and into the daytime hours of the 9<sup>th</sup>, another low pressure system brought cooler temperatures and rain with mountain snow to central California. Around a tenth to a quarter inch of rain fell in the San Joaquin Valley, while several inches of snow fell in the higher elevations of the Sierra Nevada (around 7-12 inches above 7000 feet and locally heavier), mainly north of Tulare County. The Sierra Nevada foothills received around a half inch to three quarters of an inch of rain, mainly from Fresno County and northward, while the foothills in Tulare County received a quarter inch to half an inch. Behind the system, some gusty winds developed during the 10<sup>th</sup> in the Kern County mountains and desert; a few locations gusted above

60 mph, including at Indian Wells Canyon to the west of Ridgecrest and in Mojave. A semi-truck was reported overturned just to the north of town near Mojave on Highway 58. Elsewhere, cooler than average temperatures and breezy conditions prevailed during the 10<sup>th</sup>.

On the 11<sup>th</sup> through the 14<sup>th</sup>, high pressure rebuilt over the region, and temperatures gradually warmed to slightly above average by the 14<sup>th</sup>. Patchy dense fog developed during the morning hours in parts of the San Joaquin Valley. Local visibility was around 200-300 feet at times on some mornings, including in Hanford and the usual fog-prone areas nearby.

Temperatures on the 15<sup>th</sup> and 16<sup>th</sup> were much cooler than average as a low pressure system impacted the area once again. This system was even colder than the one that impacted the region about a week prior and brought active weather to much of our forecast area, including thunderstorms with hail and strong and gusty winds. On the morning of the 15<sup>th</sup>, the system began to move over the northern part of the forecast area, or in Merced and Mariposa Counties. Also, about 8-12 inches of snow fell in the Sierra Nevada at elevation 5000 feet and above during the much of the daytime and into the evening hours. Through the day, the cold air spread into much of the area and brought mainly instability showers to the region. In addition, some areas, such as the west side of the San Joaquin Valley and the Kern County desert, experienced gusty winds by the evening hours. These areas had a Wind Advisory in effect; gusts were as high as 50 mph near the passes on the west side of the San Joaquin Valley and over 60 mph near the passes and canyons in the Kern County mountains and desert. In addition, there was a thunderstorm that produced a tornado that caused at least some minor damage in Stanislaus County just to the north of the Merced County line that afternoon. After the tornadic storm cell crossed into Merced County, it prompted an issue of a Severe Thunderstorm Warning as radar continued to show signs of rotation aloft. About a tenth to a quarter inch of rain fell in much of the San Joaquin Valley mainly during the afternoon and early evening hours, while around a quarter to two thirds of an inch fell in the Sierra Nevada foothills during this time frame, except amounts were locally higher in areas where thunderstorms developed. Some scattered thunderstorms also developed in Kern County, including near the Grapevine, during that afternoon and even into the Sierra Nevada foothills. By the following night and into the early morning hours, there were some reports of snow in the Tehachapi Mountains; Tehachapi experienced closures of schools on the 16<sup>th</sup>, as sufficient snow (around 2-3 inches) fell there during the early morning hours. There was some slush on the roadways of Interstate 5 through the Grapevine on the morning of the 16<sup>th</sup>. Overall, the precipitation occurred mainly during the afternoon and evening hours of the 15<sup>th</sup> throughout the central California interior, although snow continued to fall during the early morning hours of the 16<sup>th</sup> in the Kern County mountains. On the morning of the 16<sup>th</sup>, gusty winds persisted in the desert areas and even became stronger, so a High Wind Warning was issued, as there was a report of a gust to 70 mph at Mojave during the early morning hours.

By the 17<sup>th</sup>, much colder temperatures prevailed throughout the region. Some locations in the San Joaquin Valley dropped below freezing for the first time during the cooler season. Morning low temperatures fell well into the 20s at quite a few locations in the Kern County desert. Relatively cool temperatures continued for the next couple of days, then trended upward, eventually back to above average, as high pressure and dry conditions returned to the region.

Above average daytime high temperatures were common throughout the central California interior during the 20<sup>th</sup> through the 23<sup>rd</sup> due to high pressure in control. On the 23<sup>rd</sup>, record high daytime maximum temperatures were reached in a few San Joaquin Valley locations. In fact, Bakersfield (Meadows Field Airport) broke a record high that was last set for the date in 1907 (observed high was 82 degrees, while the old record was 81 degrees).

On the morning of the 24<sup>th</sup>, there was patchy dense fog in a few locales in the San Joaquin Valley; the fog persisted in Visalia until around noon that day. By the late afternoon of the 24<sup>th</sup>, a low pressure system arrived in the northern part of the forecast area (or from Merced County and east towards Yosemite) and brought generally light showers. This low pressure system was quite cold, and snow fell at around 2,500 feet into the Sierra Nevada foothills, including a dusting in Oakhurst. Similar amounts of snow fell with this system as the one that occurred on the 15<sup>th</sup> of the month, or around 7-11 inches from the 5,000 foot level and above from Yosemite to Sequoia National Park. Around 2 to 6 inches fell in the Sierra Nevada and foothills from around 3500 feet to 5000 feet elevation, mainly from northern Tulare County and north towards Mariposa County. There were some locally gusty winds, with gusts to 35 mph and just above, along the west side of the San Joaquin Valley. Kern County mountain and desert locations had locally gusty winds to around 60 mph; however, the majority of the locations in these areas gusted to around 35-45 mph.

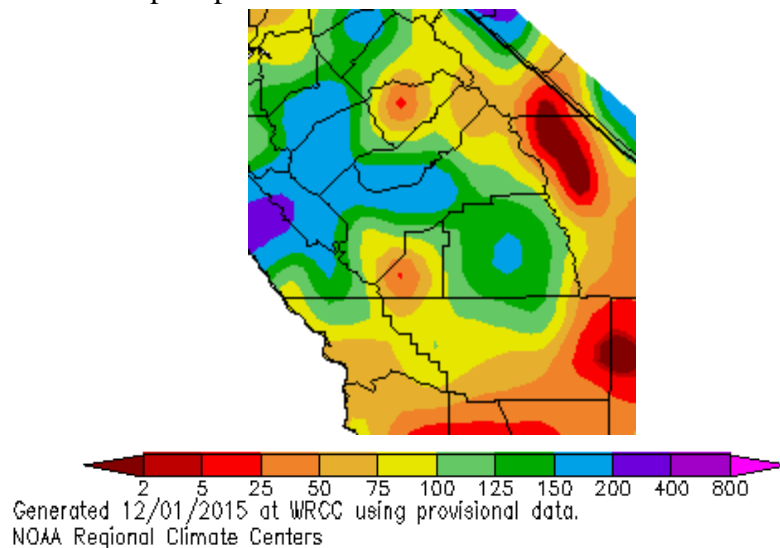
Cold morning low temperatures prevailed throughout the region, including in the San Joaquin Valley, from the 26<sup>th</sup> until the end of the month. Foggy conditions were patchy and mainly occurred early in the mornings, although there were no reports of dense fog during the 26<sup>th</sup> through the 30<sup>th</sup>. Desert locations dropped into the teens for overnight lows in eastern Kern County for the last couple of days of the month, and higher elevation Sierra Nevada locations dropped into the single digits to just below zero. The coldest temperatures were observed during this period since the previous winter.

Precipitation was variable throughout the central California interior, although locations in the San Joaquin Valley, especially along the east side, received near to above average rainfall. However, cooler than average temperatures prevailed during this month, unlike during the previous November (see Table 1 and Figs 1-2 on the next page). Bakersfield had its 22<sup>nd</sup> coolest November on record, while Fresno ranked at 24<sup>th</sup> (both reached into the top 20 percent for coolest Novembers, based on available records).

**Table 1 - Nov 2015 Summary Statistics for ASOS locations**

<b>Location</b>	<b>Monthly Avg Temp</b>	<b>Departure From Normal</b>	<b>Total Monthly Precipitation</b>	<b>Departure From Normal</b>
Bakersfield	53.5	-1.6	0.61	-0.03
Fresno	52.0	-2.3	1.74	0.67
Hanford	50.2	-1.8	0.85	-0.15
Madera	50.6	-2.1	1.77	0.62
Merced	50.1	-2.3	1.72	0.54

**Fig 1 - Percent of normal precipitation for November 2015:**



**Fig 2 - Departure from average temperature (°F) for November 2015:**

