MARCH 2011 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

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The first day of March saw morning lows in the central and southern San Joaquin Valley continuing in the lower to mid 30s, with patchy frost in the outlying areas. A weak upper-level ridge of high pressure that had been over the region since late February was responsible for the cold mornings, but the ridge gave way that afternoon to an approaching upper-level trough.

The trough brought precipitation to the northern parts of the central California interior late in the day of the 1st, with precipitation spreading south the next day. Cold air associated with the trough brought lower maximum temperatures on the 3rd, along with some patchy dense morning fog. By March 4th, another weak ridge of high pressure built into California, bringing dry conditions and slightly warmer temperatures. This ridge was short-lived, as another trough arrived in the area by the 6th.

On the 6th and 7th, the trough brought some rain and mountain snow to the area, but the main threat was strong and damaging winds in much of Kern County, including the desert and mountain areas. On the 6th, Bakersfield experienced gusty winds up to 35 mph as the cold front passed over the area. Wind gusts reached over 80 mph at some locations in the desert on the 7th. On this day, the winds were strongest during the morning and afternoon hours, when pressure gradients and upper level winds were most favorable. Winds subsided during the evening hours, but a few locations in the desert saw gusts continuing at 50-70 mph. By the 8th, temperatures remained several degrees cooler before then next ridge of high pressure strengthened over the area.

On the 9th and 10th, temperatures warmed to several degrees above normal as high pressure moved over California. An upper-level trough moved through the state on the 11th, bringing a push of cold air into the region. High temperatures on the 11th in the central and southern San Joaquin Valley were 10-15 degrees cooler than on the 10th, but then slowly warmed to back above normal by March 14th. The morning of March 11th saw low clouds banked up along the San Joaquin Valley-facing slopes of the Southern Sierra Nevada and Tehachapi Mountains. This created areas of dense fog in both the Tehachapi Pass and the Grapevine, with the California Highway Patrol pacing cars on Interstate 5 through the fog. By the late afternoon, winds had increased over the Kern County deserts, with gusts to 60 mph continuing through the afternoon of the 12th.

Dry conditions prevailed over the area through March 15th, with gusts of 45-60 mph at times in the mountain and desert areas of Kern County. The weather pattern then changed sharply, transitioning to a 12-day period which saw periods of heavy precipitation and below normal temperatures.

From the evening of the 15th until the afternoon of the 16th, a storm system passed over the area, bringing precipitation mainly to the mountains and foothills, but light amounts did fall on the San Joaquin Valley floor. Most of the precipitation fell mainly as rain over the Southern Sierra Nevada in the northern part of WFO San Joaquin Valley-Hanford's forecast/warning area. The highest amounts, which occurred in Yosemite National Park, ranged from about 1.5 to 3 inches; this was the most precipitation that had occurred in the region for the month thus far. However, this was just the harbinger of what was to come only 4 days later.

While the rain was focused toward the north, winds were the main concern over the southern part of the region. The Kern County deserts saw gusts of 45-55 mph, and gusts as high as 66 mph were recorded in the Kern County mountains. The winds pushed clouds over the San Joaquin Valley into the Tehachapi Mountains, creating areas of dense fog. Visibilities as low as 100 feet were reported near Tehachapi.

The next storm arrived two days later. This was a two-part system, with the first part bringing between a tenth and a third of an inch of rain to the central and southern San Joaquin Valley The first wave also brought a very cold airmass to the region. A foot of snow fell at Hetch Hetchy, and 10 inches of snow fell as far south as Lodgepole in Sequoia National Park. Snow even fell in the foothills, with 5 inches falling at Mid Pines at an elevation of 2400 feet.

The main part of the storm arrived on the 20th, bringing record rain to both Bakersfield and Fresno, the latter city recording 1.82 inch of rain. In the Southern Sierra Nevada, there was no break in the snow, as upslope showers continued through the 19th until the second wave arrived. Another foot of snow fell as far south as Fresno County on the 19th, and 4-5 inches in Tulare County.

Strong winds developed ahead of the main storm, with gusts up to 84 mph in the hills above the Grapevine during the night of March 19th-20th, and gusts up to 60 mph at the lower elevations from Frazier Park to the base of the Grapevine.

The winds spread as far north as Bakersfield during the early morning of the 20th, and continued spreading north through the day. The heavy rains caused some road flooding on the San Joaquin Valley floor, as well as on Interstate 5 north of Fort Tejon before the mountain rain turned to snow. Up to 4 feet of snow fell at Frazier Park; the strong winds created drifts as high as 6 feet deep. Snow caused the closure of Interstate 5 over the Grapevine, and snow even fell on the Temblors and Diablo Range along the west side of the San Joaquin Valley. In Yosemite National Park and the surrounding area, winds toppled trees and downed power lines, and the combination of heavy snow and rock slides closed roads into the Park. This was the first time since the floods of January, 1997, that Yosemite National Park was closed due to weather.

The morning of March 21st saw hail falling on the San Joaquin Valley floor, including near Rio Bravo and later over the Fresno-Clovis metro area. By the afternoon, hail was reported in Selma and Visalia, with ½-inch hail reported in the latter city. In the Tehachapi Mountains, up to a foot of new snow was reported.

The trough moved into the Great Basin, but a trailing short-wave brought light showers to the Kern County mountains and the far south end of the San Joaquin Valley during the early morning hours of March 22nd. Isolated showers were reported over parts of downtown Bakersfield, but stayed just south of Meadows Field.

Yet another storm reached the central California interior on March 23rd-24th. A line of thunderstorms developed on the 23rd over Merced County, then moved eastward into Madera and Mariposa Counties. Thunderstorms at the south end of the line propagated southward into Fresno County, ultimately reaching parts of Fresno and near Hanford. In fact, Fresno reported over a half inch of rain that day, with 0.38 inch falling in an hour at Fresno-Yosemite International Airport during the afternoon. Small hail, frequent lightning, and brief heavy rainfall were the main impacts of these storm cells. Funnel clouds were reported west of Madera, and near Clovis and Kerman; none touched down. The heavy rains caused flooding in the Southern Sierra Nevada foothills east of Fresno, as well as in downtown Fresno and southeast of Bakersfield. Convective cooling lowered the snow level down to 2200 feet in Mariposa and Madera Counties.

The last major storm of the month arrived on March 24th. This storm brought gusts to 45 mph to the west side of the San Joaquin Valley, and gusts to 65 mph in the Kern County mountains and deserts. Convective activity was limited to near Merced, with several reports of road flooding due to the already saturated ground. Thunderstorms and showers moved east into the foothills of Madera and Mariposa Counties, where the heavy rains triggered rock and mud slides. Mainly light showers occurred southward. The trough moved east of the region on the 25th, with residual light showers in its wake.

A weak frontal system reached the area on the 26th-27th, bringing cooler temperatures but only light precipitation and a few gusty winds. This storm moved east of the central California interior on the 28th, with an upper-level ridge building into the state behind it to bring a strong warming trend.

High temperatures in the central and southern San Joaquin Valley warmed into the lower 80s on the last day of the month. This was the first day of 2011 that either Bakersfield or Fresno reached 80 degrees, with highs of 82 and 81 degrees, respectively. The last day Fresno had reached 80 degrees was November 5th, 2010, when Fresno had a high of 90 degrees. Bakersfield last saw an 80-degree day on November 6th, 2010, with a high of 85 degrees.

In summary, March was mainly dry during the first half of the month, followed by wet weather from the 15th until around the 27th. Temperatures generally remained near or below average until the last day of the month.