

FEBRUARY 2011 WEATHER SUMMARY FOR THE CENTRAL CALIFORNIA INTERIOR

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February began dry and relatively cool due to a northerly flow aloft and an upper-level ridge anchored off the West Coast. Some patches of dense fog formed throughout the San Joaquin Valley during the evening of January 31st, but had dissipated by mid-morning on the 1st. Skies over the San Joaquin Valley were mostly clear, except for stratocumulus clouds banked against the foothills and lower elevations of the southern Sierra Nevada. High pressure remained off the coast through the 3rd, and the circulation around the high allowed cooler and drier air to filter into central California from the Great Basin. This kept skies mostly clear throughout the central California interior.

On the 4th through the 7th, the offshore high pressure built onshore. Temperatures warmed to above normal values with mostly clear skies prevailing throughout the region. Temperatures reached the upper 60s to mid 70s in the San Joaquin Valley and the Kern County deserts on the 6th and 7th. A dry upper-level short-wave trough moved through California on February 6th. This short-wave brought gusty winds to the west side of the San Joaquin Valley and to the Indian Wells Valley, but had no impact on temperatures.

On the morning on February 8th, a dry cold front passed over the area. Ahead of the front, gusty west winds developed over the Kern County deserts during the evening of the 7th. Behind the front, a northerly flow aloft again set up over the area. Cold air moving into the central California interior cooled temperatures by around 10 to 15 degrees in most locations; highs only reached the mid 50s to the lower 60s in the warmest locations, such as central and southern the San Joaquin Valley and the Kern County deserts. After the front passed, the west side of the San Joaquin Valley became quite windy during the daytime on the 8th, and some locations had wind gusts around 45 to 50 mph. Low clouds banked against the foothills along the west side of the Southern Sierra Nevada and remained there much of the day.

The strong northwest to north winds along the west side of the San Joaquin Valley combined with a weaker southeast to south flow over the east side of the Valley to set up an eddy north of Fresno. Some of the clouds along the foothills briefly wrapped around this eddy, and were caught in the northwest flow over the west side of the Valley. As a result, these clouds moved southward from the foothills into parts of the San Joaquin Valley, including Fresno and Hanford.

From February 9th through the 11th, a ridge of high pressure was just off the coast, keeping a cool, dry northerly flow over the area. The reinforcing push of cold air caused morning low temperatures to cool to around freezing in quite a few locations across the San Joaquin Valley.

The ridge moved onto the West Coast on the 12th, pushed by an upper-level trough moving into the Pacific Northwest. With the ridge over the central California interior, temperatures rose to around 10 to 15 degrees above normal; San Joaquin Valley temperatures reached as high as the

mid-70s. Bakersfield and Fresno reached their warmest temperatures for the month, with highs of 76 and 75 respectively. The ridge continued to slowly move to the east on the 13th; as a result, temperatures were slightly cooler than on the 12th.

By February 12th, satellite loops showed a series of storms over the eastern Pacific. Computer forecast models indicated that the storm forecast to arrive around the 17th would be a very cold system with snow levels dropping into the foothills.

The first cold front moved into the central California interior on the 14th, and bringing little precipitation, but noticeably cooler temperatures. There were gusty winds associated with the front with some locations reaching advisory levels along the west side of the San Joaquin Valley and parts of the Kern County deserts. This cold front set the stage for a stronger storm to arrive the late in the following day.

Strong winds developed across the region ahead of the second storm, beginning on the evening of February 15th and continuing into the next day. Bakersfield had gusts to 38 mph during the morning of the 16th, and gusts of 40-50 mph were reported both over the west side of the San Joaquin Valley and in the Kern County deserts. During the morning of the 16th, thunderstorms developed over the central Sierra Nevada along the cold front, and extended as far south as Yosemite National Park. The cold front rapidly moved through central California during the morning hours, with a cold, unstable airmass moving into the San Joaquin Valley behind it. There was some clearing after frontal passage, and this allowed for some solar heating. As a result, a line of thunderstorms developed over southwestern Fresno and northern Kings counties, moving east into northwestern Tulare County. There were several hail reports from these thunderstorms, with hail measuring up to a half-inch in diameter.

Significant rain and snow finally returned by the 16th, with storms impacting the area until the 19th of the month. The strongest storm reached the central California interior on the 18th, bringing heavy rain and snow, very strong winds and a deep pool of cold air; snow levels fell to around 2000 feet, well into the Southern Sierra Nevada foothills. Windy conditions occurred in the southern end of the San Joaquin Valley and Grapevine areas; for instance, a gust of 47 mph occurred at Bakersfield Meadows Field Airport on the 18th. A gust of 86 mph, with a sustained wind speed of 64 mph, occurred on Grapevine Peak during that evening. This wind blew down to the base of the Grapevine, with wind gusts exceeding 70 mph at the California Highway Patrol weigh station at the south end of the San Joaquin Valley. These high winds even briefly hampered travel on Interstate 5 over the Grapevine and through Tejon Pass

.The upper-level low associated with this storm remained off the central California coast. The circulation around the low spun bands of rain northward over the western San Joaquin Valley. The persistent rains caused some street flooding between Coalinga and Fresno during the early morning hours of February 19th. Later that day, thunderstorms developed over the central California coast. A couple of these storms drifted over the Temblors into the west side of the San Joaquin Valley. One thunderstorm dropped hail up to a quarter inch in diameter on Lemoore. Further east, up to 16 inches of new snow fell over the high country of the Southern Sierra Nevada, and spotters in the foothills reported up to 6 inches of snow.

Weak ridging returned to the area by the 20th, with dry, but relatively cool, conditions throughout the central California interior during the next few days. However, by February 24th, the next storm was approaching the California coast and weakening the ridge. Precipitation associated with this storm reached the region late on the 25th, with rain continuing into the 26th. Heavy rain caused some flooding in the south end of the San Joaquin Valley, with road flooding reported as far north as the Lamont area.

This was a cold storm system, bringing measurable snowfall to the foothills along the Southern Sierra Nevada and the mountains along the west side of the San Joaquin Valley. A half inch of snow fell at Granite Station in the foothills of the Kern County Sierra Nevada, at an elevation of 2600 feet. The higher elevations of the Southern Sierra Nevada received up to 3 feet with this storm. During the daytime of the 26th, trace amounts of snow were even observed in some areas of the San Joaquin Valley, including Delano, Taft, Coalinga, Arvin, and some locations near Bakersfield.

The end of the month remained cooler than average, with low temperatures falling to freezing or below due to the residual cold air behind the previous system. On the 27th, some locations, mainly north of Kern County, had minimum temperatures as low as the mid to upper 20s. Lows the next morning were a couple of degrees warmer, but were 32 degrees or colder in several locations.

In summary, February began dry and cool, followed by periods of mild temperatures throughout the central California interior. Until the middle of the month, there was no rain reported in Fresno and Bakersfield, and significant rain and snow did not occur throughout the region until the latter half of the month. Temperatures were cooler than average during this part of the month due to repeated influxes of cold air. Frosty to freezing conditions occurred at times throughout the central and southern San Joaquin Valley, especially during the last two days of the month.