NOVEMBER 2010 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

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November began with a strengthening upper-level ridge building into California. This ridge, combined with a surface high pressure over the Pacific Northwest and a surface trough along the southern California coast for an offshore flow, brought a strong warming trend for the first several days of the month. Temperatures rose to a couple of degrees above normal on the 1st, and a few degrees warmer the next day. By November 3rd, an upper-level trough was digging into the eastern Pacific, while another trough deepened over the Ohio Valley. The ridge over California was caught between the troughs and continued to amplify over California, resulting in very strong warming on the 3rd and 4th. High temperatures across the central and southern San Joaquin Valley reached the lower to mid 80s both days; the normal highs were in the upper 60s to around 70.

The ridge over the central and southern San Joaquin Valley also resulted in clear skies and light winds. As a result, patchy dense fog formed in the Merced area shortly before sunrise each morning. These fog patches were short-lived, typically burning off after a couple of hours.

The east-Pacific trough began moving toward the coast on November 5th. Ahead of the trough, the ridge amplified further, and combined with a southeasterly downslope flow, pushed temperatures across the central California interior to well above normal. Fresno reached a high of 90 degrees on the 5th, the first time on record that the high reached 90 in November. Bakersfield had a high of 94 degrees, just one degree shy of the record high for the month (95 on November 8th, 1918, and November 3rd, 1921).

Temperatures fell the next day as the trough moved onshore. Fresno only had a high of 75 degrees, 15 degrees cooler than the day before. Bakersfield was 10 degrees warmer, but the high of 85 at Meadows Field was down 9 degrees from the 5th. The trough moved into central California on November 7th, bringing colder air and moderate precipitation. Rainfall amounts for the central and southern San Joaquin Valley mostly ranged from ¼ to ½ inch. In the mountains and foothills, up to 1.86 inch of rain was recorded, and up to 16 inches of snow fell in the high country of the southern Sierra Nevada. Gusty winds accompanied the cold front as it moved through the southeastern Kern County desert on the 8th, with gusts of 45-55 mph occurring during the late morning and afternoon.

Temperatures fell to several degrees below normal on November 7th as cold air filled the San Joaquin Valley. Central and southern San Joaquin Valley high temperatures were in the upper 50s and 60s on the 7th, and in the lower to mid 60s the next day as the cold air remained trapped by the mountains surrounding the San Joaquin Valley.

A weak upper-level short-wave moved into California on November 9th, bringing another push of cold air into the central and southern San Joaquin Valley. As a result, the 9th was the coldest

day of the period, with central and south Valley highs only in the upper 50s to mid 60s, The short-wave brushed the northern edge of the central California interior during the night of the 9th-10th, bringing light precipitation as far south as Fresno County.

The cold air pooled over the San Joaquin Valley slowly mixed out over the next couple of days, allowing temperatures to warm a few degrees. Valley highs on November 12th were in the mid 60s to the lower 70s, although lows were in the mid 30s to lower 40s, with patchy frost in the coldest outlying areas around sunrise. Temperatures were even colder in the Kern County deserts, where the coldest spots saw their first hard freeze of the season. An automated station in Rosamond recorded a low of 23 degrees, and Edwards AFB North Base had a low of 26.

High pressure subsequently built along the California coast beginning November 14th, bringing a warming trend that saw high temperatures as much as 10 degrees above normal. In addition to the warming trend, the northerly flow around the periphery of the ridge brought gusty winds to the mountains and deserts. The warming trend lasted through the 18th, then the ridge gave way to a deep upper-level trough. This storm system brought a push of unseasonably cold air to the central California interior. Fresno had a high temperature of 74 on November 18th; the next day, the high was only 60. Bakersfield had a 20-degree change in high temperatures, falling from a high of 79 on November 18th to a high of only 59 degrees on the 19th.

The storm brought the heaviest rainfall for the month to interior central California. The 5-day storm total rainfall for Fresno was 1.23 inch, which accounted for 68.3 percent of the total of 1.80 inch for the month. This 5-day total also was 111.8 % of the normal rainfall for the entire month (1.10 inch). For the same period, Bakersfield recorded 0.54 inch of rain, 64.3 percent of its monthly total of 0.84 inch. The 5-day rainfall nearly matched the normal for November at Bakersfield of 0.59 inch.

In the Southern Sierra Nevada, a total of up to 3 feet of snow fell in some locations above 6000 feet, while in the Kern County Mountains, 4 inches of new snow fell down to 5000 feet. The snow level plunged into the Southern Sierra Nevada foothills, with 7 inches of snow falling at Ponderosa Basin.

Behind the storm, a very cold and dry airmass moved into the central and southern San Joaquin Valley, bringing widespread freezing temperatures to the region. Fresno recorded its first low temperature of 32 degrees for the year on November 25th, with Bakersfield seeing its first freezing low for 2010 on the following morning. The coldest rural locations saw morning lows on both the 24th and 25th drop into the mid 20s. An automated station near Coalinga reported a low temperature of 25 degrees both mornings, and the CIMIS station near Merced also had a low of 25 degrees on the 25th.The dry nature of the airmass meant that, despite abundant ground moisture from the recent rains, fog development was patchy and short-lived.

The Kern County deserts again had a hard freeze in this unseasonably cold airmass. Edwards AFB had a low of 19 degrees on November 25th, and the China Lake Naval Weapons Test Center had a low of 21 degrees.

The final storm of the month moved into northern California late on November 26th, and into central California the following day. The storm was a slow mover, and precipitation did not reach Hanford until the afternoon hours. Rainfall over the central and southern San Joaquin Valley was mostly light, with less than a quarter inch of rain reported south of Merced. In the Southern Sierra Nevada, up to 18 inches of new snow fell as far south as Sequoia National Park through the 28th, but snowfall tapered off sharply south of the Park with the Kern County Mountains receiving only an inch or two of new snow over the higher elevations, and only a light dusting on the Grapevine and Tehachapi Pass.

The trough moved east of California during the night of November 28-29th, allowing an upper-level ridge to build into the state on the 29th. This brought a stable airmass aloft, and patchy San Joaquin Valley fog again developed during the early morning of November 30th, although this time it was mainly in the Hanford area.