NOVEMBER 2011 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

By Gary Sanger, Climate Services Focal Point
And Brian Ochs, Assistant Climate Focal Point
WFO San Joaquin Valley-Hanford

November began with an upper-level ridge over California giving way to a short-wave trough that cooled temperatures to below normal This short-wave set the stage for the arrival of a strong Pacific storm that brought rain and mountain snow to the region.

Strong winds developed in the Tehachapi Mountains and over the south end of the San Joaquin Valley on November 2nd. Winds gusted as high as 70 mph at the base of the Grapevine, and blowing dust was reported in Tehachapi and in downtown Bakersfield.

Winds increased elsewhere in the San Joaquin Valley during the afternoon and evening of November 3rd as the cold front moved into the Valley. Tuolumne Meadows in Yosemite National Park received 8 inches of snow during the night of November 3rd-4th, and an inch of snow fell at Bear Valley Springs and Pine Mountain Club in the Tehachapi Mountains during the morning of the 4th.

Behind the cold front was an unseasonably cold airmass that plunged snow levels into the foothills. By the morning of November 6th, snow was falling down to 2700 feet near Lake Isabella (a half inch of snow was reported at Mountain Mesa), and up to 2 inches of snow fell at 4000 feet. Further north, Tuolumne Meadows received another 8 inches of snow durimng the night of November 5th-6th.

The San Joaquin Valley saw temperatures fall to well below normal. The high temperature at Bakersfield on November 4th was only 56 degrees, just 1 degree above the record low maximum temperature for that date (55 in 1996). The next day, Fresno did break its record low maximum temperature for the 5th with a high of 57 degrees; the old record was 58, set in 1996. Two days later, Bakersfield tied its record low maximum temperature for November 7th of 58 degrees, last set in 1963.

In the cold, unstable air behind the front, scattered showers developed across interior central California, and even isolated thunderstorms. The airmass over the San Joaquin Valley stabilized as an upper-level ridge built into California behind the trough. With ground moisture from the showers of November 6th, conditions were right for the development of patchy fog the following morning. Fog was not the only concern for interior central California, however. The

unseasonably cold airmass also brought sub-freezing temperatures to parts of the Kern County deserts.

The next trough moved into California on November 10th-11th. Ahead of the trough, a strong off-shore flow brought southeast wind to the region. As these winds downsloped through the Tejon and Tehachapi Passes, adiabatic warming resulted in well above-normal temperatures in the south end of the San Joaquin Valley. Bakersfield had a high of 78 on November 10th, and 76 the next day. Gusts at the base of the Grapevine reached 61 mph during the afternoon of November 10th, and 73 mph before sunrise the next morning.

The above-mentioned storm actually had two troughs associated with it. The first trough was the one that affected the region on November 10th-12th. Snow fell at Pine Mountain Club (at 6100 feet in the western Tehachapi Mountains) during the evening of November 11th, and winds gusted to 56 mph at the base of the Grapevine during the morning g hours of the 12th.

The second trough dropped south off the California coast with little impact on the central California interior. An upper-level ridge built over the east Pacific, setting up a dry northwest flow over California.

Patchy fog developed over parts of the San Joaquin Valley during the morning of November 14th. Late night and morning Valley fog was the main weather factor for the next few days, until the next trough mixed the low levels of the atmosphere and brought a temporary halt to fog development. This storm, which moved through California on November 18th, brought much colder temperatures to the region but only light precipitation.

The next in the series of storms arrived two days later. The storm brought a reinforcing push of cold air into the San Joaquin Valley, plunging high temperatures into the 50s. The high temperature at Bakersfield on November 20th was only 53 degrees, only 4 degrees warmer than the record low maximum temperature for the date of 49 degrees, set in 1922. Fresno had a high of 55 on the 20th, again only 4 degrees warmer than the record low maximum of 51 degrees, set in 1972. For both cities, this was the coldest high temperature for the month.

The upper-level low stayed off the California coast, spinning moisture into the state from the south. As a result, this storm brought more rain to the Southern San Joaquin Valley than to the central Valley. Even so, there was sufficient rain over most of the Valley floor to recharge the ground moisture. Areas of dense fog developed over the central and southern San Joaquin Valley during the morning of November 21st, persisting into the late morning hours in some locations. Morning fog also developed the next two mornings. Fog also developed in the Kern County deserts during the night of November 20th-21st, with the visibility at Edwards Air Force Base falling to less than a quarter mile shortly after midnight.

An upper-level trough moved into California on November 24th. This system brought some light rain to the region, but the main impact was from the mid and high clouds ahead of the cold front. These clouds inhibited fog development, resulting in a mostly fog-free Thanksgiving Day morning. Dense fog returned the next morning, mainly over the east side of the San Joaquin Valley and persisting into the late morning hours. The dense night and morning fog became more widespread over the central and southern San Joaquin Valley from November 26th through the 28th as a stagnant weather pattern lingered over central California.

A strong upper-level trough approached the central California interior on November 29th, destabilizing the airmass and reducing the San Joaquin Valley fog. A tight surface pressure gradient developed over California, resulting in northeast winds gusting over 60 mph across the Southern Sierra Nevada. At the lower elevations, a cold front moved through the San Joaquin Valley on November 30th, bringing northwest winds gusting to near 50 mph. The front also triggered gusty winds over the Kern County deserts, with a gust to 55 mph at Inyokern that caused some roof damage. Mountain waves developed over the south end of the Sierra Nevada during the evening of November 30th. One wave touched down near the Walker Pass, with the Blue Max RAWS reporting a gust to 88 mph.