JANUARY 2012 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

The year 2012 began with warmer than average temperatures due to a dominating upper-level ridge of high pressure. Temperatures were well above average in the Southern Sierra Nevada foothills where highs reached into the upper 70s. However, temperatures elsewhere were generally milder in terms of highs; reaching into the 60s in the Kern County deserts and the central and southern San Joaquin Valley, with the exception of the south end. Maximum temperatures reached into the lower 70s in this part of the Valley, including in Bakersfield, as downslope winds allowed for further warming in this area. Rather cool overnight lows continued over much of the valley, and patchy dense fog briefly developed during the early morning hours. An upper-level short-wave trough brought high clouds to the region during the night of January 1st-2nd, mostly suppressing fog formation in the San Joaquin Valley, although some fog did form in Merced County during the evening of the 1st.

At the surface, a strong offshore flow developed over the Tehachapi Mountains. The winds funneled through the Tehachapi and Tejon Passes, gusting to around 45 mph and warming the south end of the San Joaquin Valley to well above normal temperatures. The high at Bakersfield on January 2nd was 82 degrees, not only setting a record for the date but also tying the warmest day on record for January (January 16th, 1923 and January 31st, 1984).

Highs at many locations in the south end of the San Joaquin Valley reached well into the 70s. Representative highs for the south end of the San Joaquin Valley are listed below (including airports and NWS cooperative program sites):

Taft: 78
Porterville: 75
Delano: 74
Visalia: 70
Wasco: 77
Arvin: 75
Avenal: 74

However, locations in the central part of the San Joaquin Valley, such as Fresno, Madera, and Merced, only reached into the 60s during the 2nd due to high cloud cover that occurred during much of the day.

Dense fog returned to the central San Joaquin Valley on January 3rd, extending south from Merced to northern Tulare County. Visalia remained on the edge of the fog, and saw visibilities

fluctuate through the early morning. On the 3rd and 4th, temperatures moderated behind the previous upper-level disturbance and the upper-level ridge once again began to take control. Another upper-level trough passed over the area late on the 3rd; it was at least enough to prevent widespread fog development, except dense fog managed to formed in the low-lying center of the valley, including Hanford, Selma, and areas west of Fresno (such as Kerman).

Dry cold fronts moved through the central California interior on January 5th and 6th. While lowering temperatures, these systems did nothing to break the dry spell which began on November 20th, 2011, the last day most of the central and southern San Joaquin Valley had seen measurable rain.

A flat upper-level ridge continued over California through the second week of January, keeping temperatures near to above normal. From January 5th to the 15th, Fresno had 9 days with highs in the mid 60s. Temperatures in the south end of the San Joaquin Valley were less consistent, as episodes of downslope winds warmed highs into the lower to mid 70s.

An upper-level low over the eastern Pacific spun high clouds over California, while at the surface, high pressure dropping into the Great Basin brought an off- shore flow to the region on the 11th-12th. Once again, winds funneling through the passes of the Tehachapi Mountains warmed the south end of the San Joaquin Valley, with temperatures reaching the lower 60s around 1:30 AM. Bakersfield stayed warm all day, reaching a high of 68 degrees on the 12th.

Dry low-level air moved into the San Joaquin Valley on January 16th. With mostly clear skies and light winds, the stage was set for the second significant freeze event of this winter. Low temperatures around the central and southern San Joaquin Valley were mostly in the 20s on the 17th, with a few spots falling into the upper teens. Below freezing temperatures continued through the morning of January 19th, and a few stations dropped to critical temperatures during the morning of the 20th.

The models began converging on a major change in the weather pattern beginning late in the day on January 19th. A Winter Storm Watch was issued for the Southern Sierra Nevada, and Tioga Pass was closed on the 17th; this was the latest date on record that the Pass had been open until. A weak upper-level trough moved through the central California interior during the night of January 19th-20th. While the trough brought less rain than the computer models had indicated, it did knock down the ridge that had been in place over the state.

The second trough arrived during the evening of the 20th. From midnight to 4 AM on the 21st, 0.63 inch of rain fell on Fresno, a record-setting end to a 60-day stretch without measurable rain. The total rainfall for Fresno on the 21st was 0.79 inch; the old record rainfall had been 0.52 inch, set in 2010.

Lines of showers with a few embedded thunderstorms moved through the central California interior during the early morning hours of January 21st. These lines of convective activity brought locally heavy rain, gusty winds and a few lightning strikes. Scattered thunderstorms continued through the day, producing pea-size hail and a funnel cloud. Tree limbs were blown down by the winds, with downed limbs reported near Lake Isabella and in Yosemite National Park. One large tree limb in the Park fell on a tent cabin, resulting in the death of the occupant. The third, and final, trough reached central California on the 23rd. This system also brought thunderstorms with small hail. A funnel cloud also was observed. In the Southern Sierra Nevada, snowfall totals from the three storms reached 1½ feet in the high country.

An upper-level ridge built into California behind the departing storm. With abundant ground moisture, the stable airmass allowed the lower layers of the atmosphere to cool to saturation. Consequently, areas of dense fog developed the central and southern San Joaquin Valley. The next few nights saw less fog, mainly confined to west of Highway 99. Clouds over the region during the night of January 26th-27th kept the San Joaquin Valley mostly fog free. However, an upper-level short-wave passing through California did produce areas of drizzle on the Valley floor. The clouds also kept low temperatures in the central and southern San Joaquin Valley unseasonably warm. Both Bakersfield and Fresno bottomed out in the lower 50s and tied their record high minimum temperatures for the 27th (51 and 52 degrees, respectively).

Low clouds persisted over the San Joaquin Valley through much of the day on the 27th, and redeveloped over much of the Valley overnight. Areas of dense fog formed around sunrise, mainly in Kern and Merced Counties, and persisted through late morning. Dense fog redeveloped over San Joaquin Valley again during the early morning of January 29th, and persisted through late morning; a few fog patches lingered into the early afternoon hours.

Mid and high clouds moved into California on the 29th ahead of an upper-level trough that weakened the persistent ridge. Due to the clouds, fog development during the morning of January 30th was patchy, with some areas not seeing fog until around sunrise.

An upper-level disturbance approached the central California coast on January 30th, and moved inland during the afternoon. The disturbance had enough dynamics to trigger isolated light rain showers over the central California interior. The showers brought measurable rain to a few locations, including Fresno and NAS Lemoore, and lingered past midnight into the early morning hours of January 31st.

Bakersfield tied for its 10th warmest January on record, and Fresno had its 16th warmest January on record. For the rain season to date, the central and southern San Joaquin Valley had only received between a third and a half of normal.