AUGUST 2011 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

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August began with interior central California caught between a strong upper-level ridge over the southern United States and an upper-level trough off the Pacific Northwest coast. A southerly flow aloft brought a push of monsoonal moisture into southern Kern County, triggering strong thunderstorms near Edwards Air Force Base during the afternoon of August 1st. As the storms spread north into the Tehachapi and El Paso Mountains, runoff from the south slopes of the El Paso Range caused flooding of the Red Rock-Randsburg Road, about 5 miles east of Saltdale.

An upper-level trough moved into northern California on the 2nd, turning the flow aloft southwesterly and pushing the monsoonal moisture east of the central California interior. With clearing skies over the region, the Kern County deserts warmed by several degrees. The trough brought breezy conditions to the deserts, and also deepened the marine layer along the coast. By the evening of August 3rd, marine air had begun spilling though the Pacheco Pass into the San Joaquin Valley.

Temperatures were mostly near normal for the first five days of August—including three days of triple-digit heat at the start of the month—then cooled only a couple of degrees as the trough began to sag into northern California. However, as the new 1981-2010 normal high for the first week of August is around 99 degrees for locations in the San Joaquin Valley, even 100 degrees was considered near normal.

Temperatures continued to show the small fluctuations that had been occurring during much of this summer thus far; they remained at around normal to slightly below normal for the second week of the month. Short-wave troughs rotating around a Pacific Northwest long-wave trough allowed for marine intrusions to push into the San Joaquin Valley at times during the week; the most noticeable cooling was observed around Los Banos and the Pacheco Pass (in the northwestern part of the Hanford Warning/Forecast Area). For example, temperatures were around 5-10 degrees cooler on the 11th compared to the 10th at these locations and around 2-4 degrees cooler elsewhere in the San Joaquin Valley.

Temperatures were fairly steady for much of the central California interior during the third week of August. In fact, except for the modest cooling on August 11th and 12th, the high temperature at Fresno remained between 98-100 degrees from August 8th through the 18th, and Bakersfield saw highs mainly between 97 and 99 during the same period. The cause was a blocked weather pattern which left interior central California between a strong upper-level ridge over the Desert Southwest and the persistent upper-level trough over the Pacific Northwest. This pattern also maintained a southwest flow aloft over

California, keeping monsoonal moisture east of the Southern Sierra Nevada and Tehachapi Mountains.

The ridge over the Desert Southwest began building into southeastern California late on August 16th. As the ridge expanded westward, the flow aloft turned southerly, bringing a return of monsoonal moisture to central California. High clouds began moving into Kern County from the south late on the 16th, and by the morning of the 18th, a band of mid-level altocumulus had spread over much of central California. This cloud band had moved north of the region by late in the afternoon of August 18th.

The ridge was weakened on August 19th as the next upper-level trough dropped into northern California. The surface pattern turned onshore for a return of marine air into the San Joaquin Valley for cooler temperatures.

The ridge expanded back into California on August 22nd. Monsoonal moisture rotating around the ridge core brought mid and high clouds to central California on the 22nd, and again the next day. The region was between the ridge and a closed low over the Pacific west of the California coast. This pattern kept a southerly flow aloft over the central California interior, bringing more monsoonal moisture into the region. Thunderstorms developed over the Southern Sierra Nevada on August 24th, producing numerous lightning strikes but little rainfall.

The upper-level ridge core began to shift westward from the Desert Southwest, bringing an increase in temperatures and moisture to move into interior central California by the 26th. Some sprinkles fell in the southern San Joaquin Valley, even from Bakersfield and northward into Hanford and Tulare. A spotter in downtown Bakersfield recorded a measurable rainfall of 0.01 inch, but most locations, including Meadows Field, received only trace amounts. On the following day, two severe thunderstorm warnings were issued for locations in the Indian Wells Valley in Kern County, mainly around Ridgecrest and Inyokern. A 58 mph wind gust was recorded at Indian Wells Canyon, or about 15 miles northwest of Ridgecrest, on the 27th. Flash flooding occurred on Garlock Road just west of U.S. Highway 395, about 20 miles south of Ridgecrest, on the same day.

By the 28th, upper-level winds shifted back to the southwest and allowed drying to commence in the region, except a few isolated thunderstorms developed along the crest of the southern Sierra Nevada. Dry weather returned by the 29th since the moisture moved to the east of the state, and slight cooling occurred throughout the region due to a weak trough over the area on the 30th and 31st.

The month of August was overall dry and slightly above average in terms of temperature throughout the region. A few thunderstorm days occurred intermittently throughout the month in the higher elevations of the Southern Sierra Nevada and the mountain and desert areas in Kern County as the upper-level ridge centered the Desert Southwest repeatedly expanded westward and then contracted in response to upper-level troughs passing through the state. Bakersfield had 9 days with triple digit heat, bringing its total for the summer, through August 31st, to 25 days. Fresno had 11 days of 100+ degree

high temperatures in August, bringing its total, through the end of August, also to 25 days.