NWS FORM E-5 U.S. DEPARTMENT OF COMMERCE HYDROLOGIC SERVICE AREA:
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE **SAN JOAQUIN VALLEY - HANFORD, CA**

REPORT FOR:

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

MONTH: **DECEMBER** YEAR: **2017**

TO: Hydrometeorological Information Center, W/OH12x1
National Weather Service/Office of Hydrology
1325 East-West Highway #7116
Silver Spring, MD 20910

SIGNATURE:

Kevin Durfee
(In Charge of Hydrologic Service Area)

DATE: January 1, 2018

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (WSOM E-41).

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¦ X ¦ An **X** inside this box indicates that no flooding occurred for the month
+---+ within this hydrologic service area.

December, 2017 was about as dry as they come. As far back as records go (the late 1800s), December, 2017 ended up as the 5th driest in Fresno and the 12th driest in Bakersfield with both locations only receiving four hundredths of an inch of rain. Sadly, the month was so dry that this report could pose as a drought summary instead of a hydrological summary. Indeed, the culmination of an abysmally dry November and a historically dry December has now put all of central California in D0 drought classification status. Conditions are worse in southern California where a moderate drought (D1) has become widespread.

Measurable rain fell on only one day in the San Joaquin Valley this December. That was on the 20th and from a cold front that moved swiftly southward across the HSA during the morning hours. The precipitation this front brought was scanty at best and ranged from just a hundredth of an inch at the south end of the San Joaquin Valley to as much as a third of an inch in the foothills and mountains. The Kern county desert remained dry as brisk winds associated with this cold front descended the east slopes of the Tehachapi mountains. Up to four inches of snow fell over the higher elevations of the Sierra, and it was the only accumulating snow that fell in the Sierra for the entire month. By December 31st, the snowpack over the southern Sierra was pathetically scarce and averaged only 23 percent of normal. A slide that shows a year to year comparison of percentage of normal snowpack over the southern Sierra during the past decade has been provided below this summary.

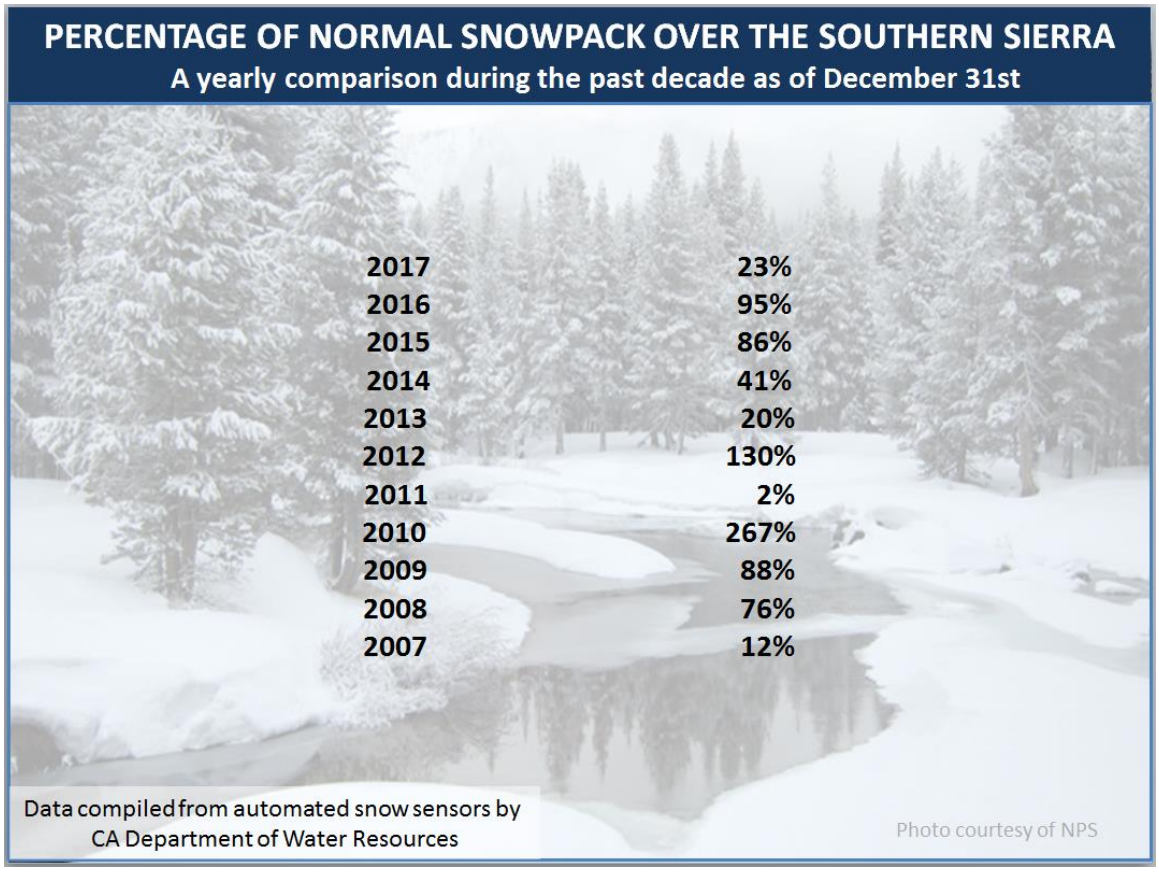
Two other cold fronts breezed through the central California interior during the month. Neither of them brought more than isolated showers and flurries to the high Sierra during their nightly passages on the 3rd and the 15th. However, in the wake of the cold front on the 15th, blustery northwest winds gusted as high as 55 mph on the west side of the San Joaquin Valley on the 16th and produced areas of blowing dust. These frontal passages were minor interruptions in an otherwise benign weather pattern across central California that was dominated by a very strong and resilient upper level ridge of high pressure anchored along the West coast for most of the month. This ridge effectively halted the eastward movement of storm systems over the central Pacific. In addition to keeping skies mostly clear, this ridge brought many balmy afternoons to the central California interior. Thermometer readings climbed well into the 60s in the San Joaquin Valley on a majority of days and occasionally rose into the lower 70s in the foothills and in the Kern county desert. On at least three occasions, the relative humidity fell into the single digits in the mountains, remained there for long periods of time and produced Red Flag conditions, namely from December 7th through the 8th, December 12th through the 15th and for a third time Christmas weekend. Below the inversion, a stagnant, hazy air mass existed in the San Joaquin Valley underneath this high pressure ridge with poor air quality.

Temperature-wise, December, 2017 ended up slightly warmer than normal. Nonetheless, unseasonably cold air masses did invade the HSA during the month accompanied by frosty overnight temperatures in the San Joaquin Valley and the Kern county desert. From December 5th through the 15th, nightly minimum temperatures in the San Joaquin Valley dipped just below freezing outside of the urban areas. An Arctic air mass settled into central California on the 20th and plunged the HSA into a deep freeze the following two

nights. December 22nd dawned harshly cold with minimum temperatures as low as the single digits in the Kern county desert and the mid to upper teens in the coldest locations of the San Joaquin Valley. Nightly temperatures recovered to seasonable levels Christmas weekend. The remaining days of 2017 were dry with mild afternoons and seasonably chilly nights. With no appreciable water in the ground, occurrences of dense fog in the San Joaquin Valley were rare. The most notable episode of dense fog happened in the wake of a cold frontal passage during the early morning hours of the 21st on the east side of the San Joaquin Valley. Dense fog slowed commuter traffic that morning along the highway 99 corridor from Merced to Earlimart until it burned off by 9 am.

In spite of well below normal precipitation, water levels remained fairly constant in the reservoirs through the month with water capacities averaging about 41 percent of normal as of January 1st.

NO HYDROLOGIC PRODUCTS WERE ISSUED THIS MONTH



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W/OH12x1
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