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: **JULY** YEAR: **2021**

TO: Hydrometeorological Information Center, W/OH12x1
National Weather Service/Office of Hydrology
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Silver Spring, MD 20910

SIGNATURE: Kevin Durfee
(In Charge of Hydrologic Service Area)

DATE: August 2, 2021

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 no flooding occurred for the month within this hydrologic service area.
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July, 2021 will best be remembered for its relentless heat in the foothills, desert and San Joaquin Valley. To quantify just how hot it was, every single day brought high temperatures above the century mark in the Kern county desert. In the San Joaquin Valley, 28 days were at or above 100 degrees in Hanford and Bakersfield. Triple digit heat was recorded in Fresno on all but 3 days during the month, and on most of those days, thermometer readings peaked at 99 degrees. It should come as no surprise then that Fresno and Bakersfield observed its warmest July ever with records dating back to the late 19th century. Elsewhere across the HSA, July, 2021 averaged much warmer than normal as a strong upper level ridge of high pressure dominated the pattern.

From a hydrologic aspect, July, 2021 was a fizzler. The maps provided below this summary show the departure from normal rainfall over the Golden State for July and so far this water year which began October 1st. Although this is typically the dry season, any convection that develops over the HSA, particularly over the higher terrain is normally the result of northward influxes of monsoonal moisture. There was indeed a few notable occurrences where monsoonal surges produced higher elevation thunderstorms. The first couple of monsoonal influxes were rather shallow and brought mainly dry afternoon thunderstorms to the higher elevations of the Sierra from the 10th through the 12th and again on the 18th. A northwestward surge of somewhat richer moisture brought isolated rain producing thunderstorms to the foothills, mountains and desert by the afternoon and early evening hours of the 19th. Rain amounts of up to a tenth of an inch fell over the higher terrain. A few thunderstorms brought drenching rain totals of a half inch to just under three quarters of an inch in the desert and over the high Sierra. In the few locations that received heavy rain there were no incidents of flooding. A southeasterly flow aloft carried a few thunderstorms Into the east side and south end of the San Joaquin Valley during these monsoonal events, but most did not bring measurable precipitation on the valley floor. Bakersfield's Meadows Field airport reported trace amounts of rain on the 13th and 18th.

A deeper influx of monsoonal moisture produced daily mainly afternoon and early evening thunderstorms over the mountains and desert from the 26th through the 31st. During this 5 day period, rain totals generally ranged from a few hundredths to a few tenths of an inch while some of the higher elevations of the Sierra three quarters of an inch to nearly two inches in places. Although no occurrence of flash flooding were reported from the heavier thunderstorms, strong outflow winds from thunderstorms in Yosemite National Park on the afternoon of the 28th felled trees and damaged unoccupied tents in the vicinity of Curry Village within the park. As in previous monsoonal events during the month, a few remnant thunderstorms were carried into the southeastern part of the San Joaquin Valley. A trace of rain was observed at Bakersfield's Meadows Field airport on the 26th.

While the influxes of monsoonal moisture brought beneficial precipitation into the mountains and desert, it was too little and too sparse to put much of a dent in central California's drought. Thunderstorms associated with these monsoonal surges also created lightning caused wildfires in the mountains of the HSA. In summary, the month was drier than normal and this only worsened the drought over much of the Golden State. By the

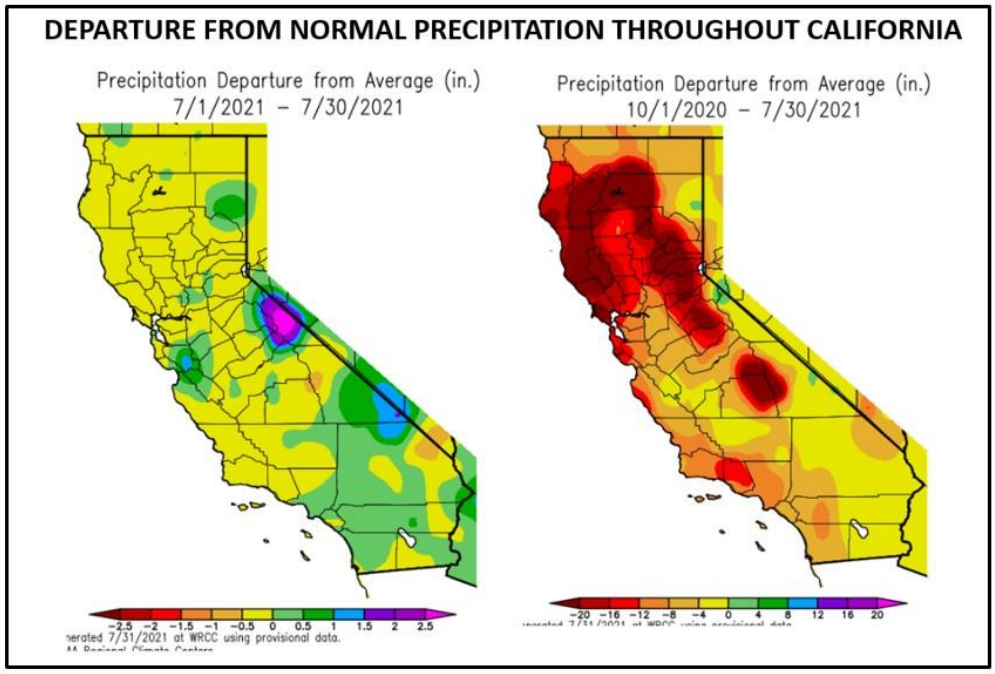
29th, exceptional drought conditions existed over much of the central California interior. This is the highest and most severe drought classification in the Drought Monitor product (see map below). There were several impacts during the month that warranted the upgrade to exceptional drought status. In the San Joaquin Valley, for example, wells continued to dry up and there were increased water demands for irrigation needs in the agricultural communities. Meanwhile, water levels continued to lower in the reservoirs. In fact, water levels dropped so low in some of the lakes that boats had to be removed from their marinas. Additionally, unusually low flows and stages were observed on many rivers throughout the HSA and were comparable to the drought years of 2014 through 2016. The Merced river at Stevinson had a historically low flow of only 3 cubic feet per second. This was even lower than the flow of 4 cubic feet per second observed in early August, 1977, which coincidentally was the driest year so far on record throughout central California. As of August 2nd, reservoirs within the HSA were holding only about 25 percent of their normal water capacity.

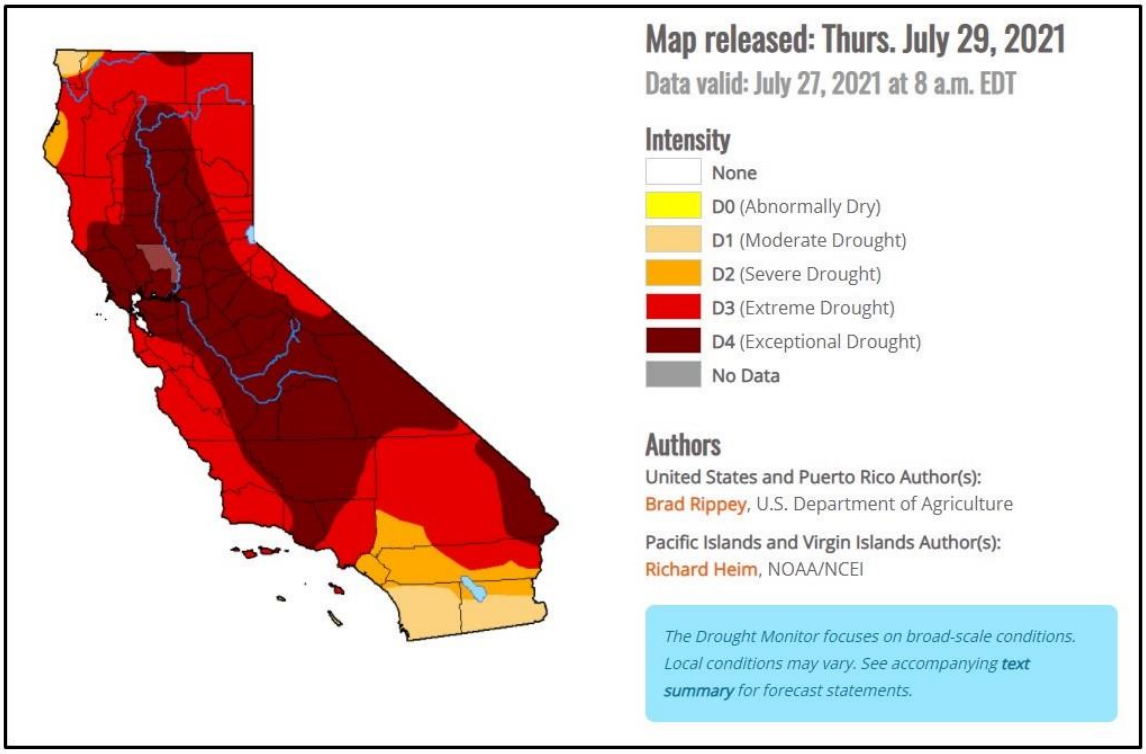
HYDROLOGIC PRODUCTS ISSUED THIS MONTH

FLASH FLOOD WARNINGS*

Northeast Fresno County (high Sierra)	2236Z 28-JUL
Eastern Madera County and NE Fresno County (high Sierra)	2302Z 28-JUL
SE Tuolumne County, NE Madera County (high Sierra)	2320Z 28-JUL
NE Mariposa County, SE Tuolumne County, NE Madera County (high Sierra)	0007Z 29-JUL
NE Mariposa County, SE Tuolumne County, NE Madera County (high Sierra)	0023Z 29-JUL
East central Mariposa County, NE Madera County (high Sierra)	2103Z 29-JUL
NE Mariposa County, SW Tuolumne County (high Sierra)	2221Z 29-JUL
North central Mariposa County (high Sierra)	2246Z 29-JUL
NE Madera County (high Sierra)	0020Z 30-JUL
NE Madera County, North central Fresno County (high Sierra)	2152Z 30-JUL
NE Madera County, NE Mariposa County, NE Fresno County (high Sierra)	2230Z 30-JUL
North central Mariposa County, SE Tuolumne County (high Sierra)	2302Z 30-JUL
NE Mariposa County (high Sierra)	2333Z 30-JUL
NE Kern County (Indian Wells Valley)	2308Z 31-JUL
NE Kern County (Indian Wells Valley)	0018Z 01-AUG

*Note: Numerous Flash Flood Statements were issued as follow-ups to the initial Flash Flood Warnings.





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W/OH12X1
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