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: **JUNE** YEAR: **2021**

TO: Hydrometeorological Information Center, W/OH12x1
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DATE: July 6, 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).

| **X** | An **X** inside this box indicates no flooding occurred for the month within this hydrologic service area.

June, 2021 was a hot month. There were three heat waves and each of them brought widespread 100 degree high temperatures to the San Joaquin Valley, lower foothills and the Kern County desert. In the hottest locations, thermometer readings topped 110 degrees in the valley and foothills and peaked around 115 degrees in parts of the Kern County desert. If you surmised that June, 2021 was one of the warmest Junes on record, you'd be correct. It was the 2nd warmest June ever in Fresno with records dating back to the late 19th century. June, 2021 was the 3rd and 4th warmest June on record in Hanford and Bakersfield, respectively. A strong upper level ridge of high pressure anchored near the Four Corners region was responsible for the triple digit heat. The ridge was only ousted twice from this location during the month by upper level troughs of low pressure that moved inland through the Pacific Northwest. Each time this happened, a westerly flow prevailed over the central California interior and brought a much cooler air mass into the HSA . A particularly deep marine intrusion between the 7th and 11th of June cooled high temperatures into the mid to upper 70s in the San Joaquin Valley. A second somewhat shallower marine intrusion occurred between the 22nd and 26th and kept high temperatures near or slightly below normal in the valley and lower foothills.

Although June is typically dry, there were a few northerly surges of monsoonal moisture during the month that were accompanied by isolated thunderstorms, mainly over the Sierra. The first monsoonal influx brought widely scattered thunderstorms into the Kern county mountains and desert on the 17th. Later that evening into the early morning hours of the 18th, a few of those thunderstorms drifted into the southern and eastern San Joaquin Valley and adjacent foothills and produced local rain amounts of up to a tenth of an inch. The lightning from these storms sparked a handful of small wildfires in the foothills and higher elevations. Occasional monsoonal surges took place between the 25th and 30th and produced isolated thunderstorms over the Sierra. A few of them brought heavy rain to the Yosemite high country. In Tuolumne Meadows, thunderstorms popped up on three consecutive afternoons during the last few days of the month and brought a total of more than two inches of rain to this location. The rain that fell was certainly a commodity in an otherwise parched HSA . Otherwise, precipitation for the month ended up below normal over most of the central California interior.
It was a similar story for much of the rest of California which fell short of its normal June precipitation. The only part of the state that ended up slightly wetter than normal was the northwestern corner of the state and a part of southeastern California, but even in these areas, June rainfall did little to ease the drought. By the end of June, California's seasonal precipitation deficit was quite phenomenal. For the 12 month period ending June 30th, a precipitation shortage of 3 to as much as 9 inches existed over much of the central California interior. Parts of the southern Sierra suffered a precipitation deficit of as much as 26 inches for the season! Maps below this summary show how abnormally dry much of the Golden State was for the month and the season.

California's drought worsened as the month of June progressed. Exceptional drought conditions existed over the higher elevations of the Sierra, most all of Kern County as well as southern Kings County and southwestern Tulare County while extreme drought conditions prevailed elsewhere over the rest of the HSA . Dam owners were frugal with water releases to accommodate irrigation needs of valley growers. Water levels in the reservoirs were otherwise abnormally low and continued to drop throughout the month. By July 5th, the water

capacity of the reservoirs averaged only 25 percent of normal. Meanwhile, historically low flows were observed on all of the mainstem rivers. A few of the rivers were ankle deep at best and were reduced to dry river channels in places. The San Joaquin river at Newman had an observed flow of only 45 cubic feet per second as the month drew to a close and was the lowest flow recorded there since August, 2016. The Merced river at Stevinson was flowing at only 4 cubic feet per second at the end of June. The last time there was so little water flowing at this river forecast point was in August, 1977, which coincidentally was the driest year in central California history.

HYDROLOGIC PRODUCTS ISSUED THIS MONTH

Small Stream Flood Advisory for the higher elevations of Yosemite NP	2329Z 02-JUN
Small Stream Flood Advisory for the higher elevations of Yosemite NP	2242Z 30-JUN