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: **SEPTEMBER** 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: October 4, 2017

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.

Severe thunderstorms, damaging winds, flash flooding, high Sierra snow, and temperatures that ranged from unseasonably cool to excessively hot were all part of the extraordinary weather that the central California interior experienced during the month of September. Here is how it all unfolded:

The first four days of the month brought triple digit heat to the San Joaquin Valley, lower foothills and the Kern County desert. For residents weary of extremely hot weather, this would be the last spell of 100-degree high temperatures of the Summer season. Bakersfield ended up with 67 days of triple digit heat for the year while Fresno tallied 53 of them. This was well above the normal annual number of 33 days and 36 days, respectively.

A northwestward influx of monsoonal moisture during the latter part of Labor Day weekend produced strong thunderstorms over the Kern County mountains during the late afternoon hours of September 3rd. Heavy rain from these thunderstorms caused flash flooding in the Frazier Park/Pine Mountain Club areas that afternoon. These thunderstorms rolled out of the Tehachapi mountains and into the southern San Joaquin Valley shortly after 5 pm that evening and moved northward for a distance of nearly 200 miles before finally dissipating in Mariposa County around 10 pm. As this outflow boundary moved northward, it produced wind gusts of 40 to 50 mph. Strong winds with this feature severely hampered containment efforts on wildfires in the Sierra. In the San Joaquin Valley, the winds downed trees and power lines in some locations and locally reduced visibility to near zero in blowing dust. Heavy rain associated with the thunderstorms in the southern San Joaquin Valley that evening caused mud flows and minor road flooding in the Bakersfield area where local rain amounts exceeded half an inch.

Although tropical moisture lingered over the HSA through September 5th, thunderstorm activity diminished after Labor Day and was generally confined to the Sierra, but it wouldn't be long before another northward surge of monsoonal moisture brought a renewed threat of thunderstorms. The first recurrence of afternoon thunderstorms began over the higher elevations of the Sierra on the 8th, then expanded into the Kern County mountains and desert on September 9th. A much deeper influx of monsoonal moisture brought an increase of afternoon and evening thunderstorms to the HSA during the next two days. Thunderstorm activity peaked in coverage and intensity during the afternoon of September 11th. Several thunderstorms that afternoon reached severe levels, particularly in the San Joaquin Valley, where strong winds downed trees and power lines and caused some property damage in the cities of Hanford, Corcoran and Caruthers. A southwest flow aloft pushed the deepest tropical moisture and the threat of thunderstorms into the Sierra by the 12th. Meanwhile, an upper level disturbance over the eastern Pacific deepened the marine layer along the coast as it approached central California. The onshore flow produced by this feature pushed maritime air inland on the 13th. As this upper level disturbance moved inland, it sparked a few thunderstorms over the southern San Joaquin Valley during the late evening hours of the 13th. Bakersfield received a half inch of rain in less than an hour from these thunderstorms along with some street flooding and established a new rainfall record

for the date.

A storm system originating in the Gulf of Alaska brought an Autumn-like air mass into the HSA on the 21st, coincidentally only one day before the official beginning of Fall. The cold front associated with this storm system moved southward across the central California interior during the morning of the 21st accompanied by rain and briefly gusty winds in the San Joaquin Valley and over much of the higher terrain. Precipitation continued over the mountains into the evening hours of the 21st in the wake of this cold front. Up to 3 inches of snow fell in the Sierra above 7,000 feet and prompted Yosemite Park officials to temporarily close Tioga Pass Road. Elsewhere, rainfall from this storm system ranged from a few hundredths to four tenths of an inch in the San Joaquin Valley, foothills and the Sierra south of Kings Canyon. The heaviest precipitation from this system fell in the Sierra north of Tulare County where amounts of a half inch to around an inch were common. Otherwise, the change to cooler, wet weather put a welcome damper on a very long and active wildfire season across central California. Maximum temperatures in the San Joaquin Valley from the 21st through the 23rd were no higher than the 70s while nightly temperatures in the valley during this period plummeted into the 40s outside of the urban areas.

Although water levels slowly receded in all of the major reservoirs, there was still an abundance of it in most of them. By September standards, water capacities averaged much higher than normal. As of October 2nd, water capacities ranged from 9 percent of normal at Terminus Dam to 86 percent of normal in San Luis Reservoir making for an average water capacity of about 49 percent of normal by the end of September.

In summary, precipitation throughout the HSA was highly varied and ranged from much below normal on the west side of the San Joaquin Valley north of Kern County to much above normal in Yosemite National Park and in the San Joaquin Valley portion of Kern County and the Tehachapi mountains. A statewide look of the percentage of normal precipitation for the month has been provided below. Temperature-wise, September, 2017 averaged much warmer than normal.

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HYDROLOGIC PRODUCTS ISSUED THIS MONTH

Flash Flood Warnings

Higher elevations of the Sierra (Mariposa County, Madera County)	2232Z	3-SEP
Kern County mountains	2234Z	3-SEP
Kern County mountains	2333Z	3-SEP
Kern County mountains	2340Z	3-SEP
Kern County mountains	0034Z	4-SEP
Kern County desert	2242Z	9-SEP
Kern County desert	2329Z	9-SEP
Kern County desert	0022Z	10-SEP
Kern County mountains	0106Z	11-SEP
Kern County mountains	0540Z	11-SEP
Higher elevations of Yosemite National Park	2341Z	13-SEP

Flash Flood Statements

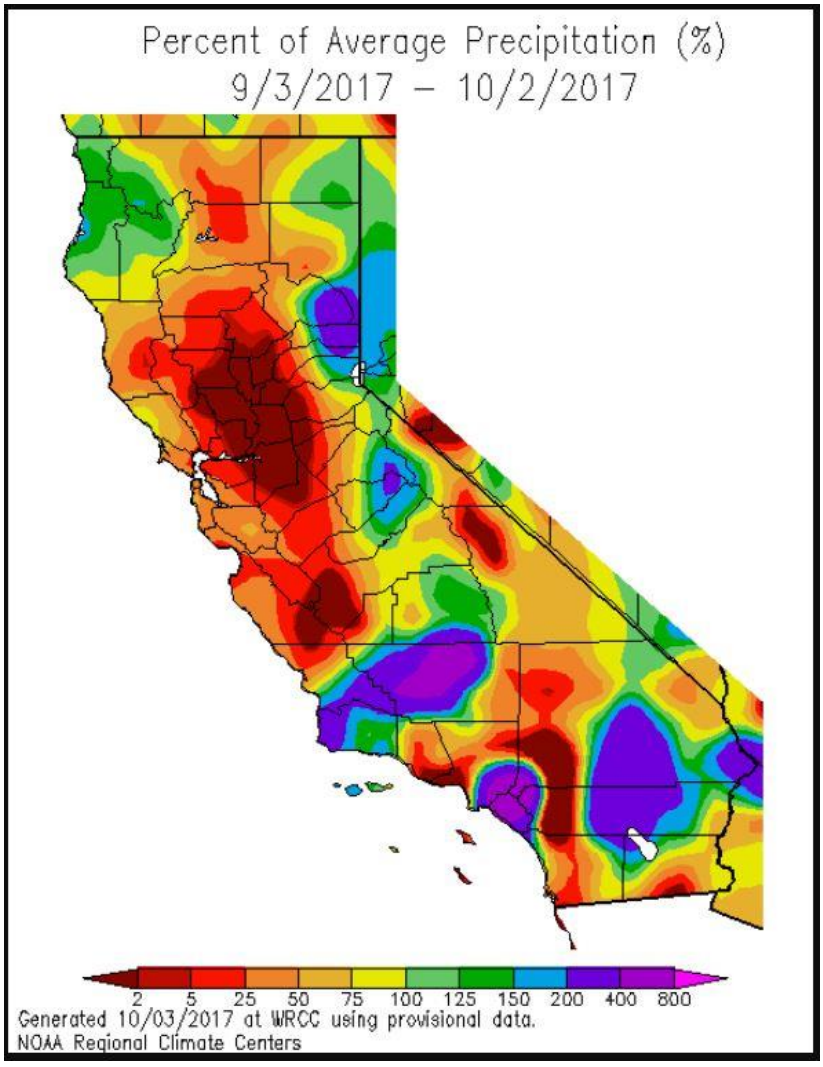
Kern County desert	2300Z	3-SEP
Kern County mountains	2323Z	3-SEP
Kern County mountains	0013Z	4-SEP
Kern County mountains	0022Z	4-SEP
Kern County mountains	0047Z	4-SEP
Kern County mountains	0119Z	4-SEP
Kern County desert	2320Z	9-SEP
Kern County desert	2355Z	9-SEP
Higher elevations of Yosemite National Park	0042Z	14-SEP

Flood Advisories

Urban/Small Stream for the southern San Joaquin Valley (Kern County)	0012Z	4-SEP
Urban/Small Stream for the southern San Joaquin Valley (Kern County)	0557Z	14-SEP
Urban/Small Stream for the southern San Joaquin Valley (Kern County)	0626Z	14-SEP
Urban/Small Stream for the southern San Joaquin Valley (Kern County)	0638Z	14-SEP

Flood/Flash Flood Watches

Kern County mountains and desert	1032Z	9-SEP
Kern County mountains and desert	2230Z	9-SEP
Kern County mountains and desert	1033Z	10-SEP
Kern County mountains and desert	1854Z	10-SEP
Kern County mountains and desert	0250Z	11-SEP



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