

SAN JOAQUIN VALLEY - HANFORD , CA

REPORT FOR:

MONTHLY REPORT OF RIVER AND
FLOOD CONDITIONS

MONTH: **OCTOBER** YEAR: **2015**

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: November 3, 2015

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).

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

October, 2015 certainly had its share of hydrologic impacts! In retrospect, it was very fortunate that prompt issuances of Flash Flood Warnings and Flash Flood Statements by the National Weather Service prior to the flash flood event during the evening of the 15th in the Tehachapi mountains saved countless lives. As of this writing, a search and recovery effort is still ongoing for one missing person who might've drowned or was caught in a debris flow that evening. Specific details on this event are provided below. Otherwise, precipitation was highly varied throughout the HSA this month. Some areas received well above normal rainfall while other areas remained relatively dry. A map at the end of this summary depicts where above and below normal precipitation occurred throughout California this month. Temperature-wise, October averaged much warmer than normal. The warmest day occurred on the 10th. On that particular afternoon, thermometer readings in the hottest locations of the San Joaquin Valley briefly touched the century mark.

A chronological summary of synoptic scale hydrologic events this October are as follows:

During the first two days of the month, a storm system that originated in western Canada tracked southwestward toward central California. As this storm approached from the north, it produced strong westerly winds on the west side of the San Joaquin Valley during the afternoon and evening hours of October 3rd. Winds gusted as high as 70 mph immediately below the west side passes during this period. Otherwise, this storm brought scattered showers to much of the HSA from the 3rd through the 4th. Elevations above 9,000 feet in the Sierra received a dusting to as much as 4 inches of snow from this system. Three inches of snow fell over Tioga Pass and prompted Yosemite NP officials to close this portion of Highway 120 during the early morning hours of the 4th. Otherwise, precipitation that fell from this system was generally light with the exception of the Kern County mountains and desert which received the lion's share of it with rain amounts of a half inch to an inch in the desert and one to two inches in the mountains. One rain gage in the Caliente Creek watershed of the Tehachapi mountains reported 3.12 inches. Flooding occurred in the vicinity of Onyx during the midday hours of the 4th and along a small segment of Highway 14 in the Kern County desert. Additionally, Red Rock-Randsburg Road and Garlock Road were closed due to high water.

Afterward, this storm made a left turn and drifted into Arizona from the 5th through the 7th. Instead of continuing eastward like most storms normally do, this storm made a right turn into Mexico, retrograded southwestward, crossed the Baja peninsula on the 9th and emerged out over the Pacific Ocean on the 10th. The storm stalled off the coast of northern Baja on Columbus Day. While this system was anchored off the northern Baja coast, it tapped into a rich supply of tropical moisture and spawned numerous showers and thunderstorms over southern California on the 14th. As the storm migrated toward Point Conception, showers and thunderstorms spread northward into Kern County by the afternoon of the 15th. Locally heavy rain produced flooding in the southern San Joaquin Valley south of Bakersfield by the early evening hours of the 15th and also caused serious life-threatening flash flooding in the Kern County mountains as mentioned above. A substantial amount of mud and debris flowed onto Highway 58 through Tehachapi Pass between

4 pm and 6 pm on October 15th and stranded 118 vehicles along a two mile stretch of Highway 58. The mud was reportedly 4 to 6 feet deep along this portion of Highway 58 and up to 12 feet deep near the intersection of Willow Springs Road. CHP closed this portion of Highway 58 which remained closed for nearly a week so that Caltrans could clean up and remove the mud, debris and vehicles from the road. Additionally, mud and debris flows also occurred along Interstate 5 through the Grapevine during the late afternoon and evening hours of the 15th and forced CHP to close this section of the freeway. Interstate 5 through the Grapevine did not open in entirety until 5 pm the following day. Thunderstorms that trained through this region during the late afternoon and early evening hours of the 15th produced one inch to as much as 4 inches of rain in just a couple of hours. Minor flooding also occurred in the southern San Joaquin Valley south of Bakersfield in the city of Lamont during the evening of the 15th where just over two inches of rain fell. Rain amounts elsewhere across the HSA were significantly lighter and ranged from just a few hundredths to around a half inch. In retrospect, this storm was one for the record books, not only for its boomerang path, but also for its change in characteristics, first coming into central California as a cold system then returning eleven days later as a warm, tropical moisture-laden storm system. A graphical representation of the track of this storm is included at the end of this summary along with a map of where the most severe flooding and mud flows occurred along Highway 58 in the Tehachapi mountains.

A cold frontal passage during the early morning hours of the 18th was marked by a line of showers and thunderstorms as it trekked eastward across the San Joaquin Valley into the Sierra foothills. Heavy downpours associated with these thunderstorms produced localized flooding in Visalia and Tulare prior to daybreak. Highway 99 near the intersection of Highway 198 had to be closed for a couple of hours because of flooding. Nearly an inch of rain fell from these thunderstorms in Visalia and Tulare. The remainder of the San Joaquin Valley received little if any rain from this cold front. However, this front also brought beneficial precipitation to the foothills and higher elevations of the Sierra on the morning of the 18th. Rain totals in these areas ranged from a quarter of an inch to just over an inch in the Sierra foothills and a half inch to nearly two inches over the higher terrain. Another cold front that approached from the Pacific a week later tapped into some high level tropical moisture from Hurricane Olaf east of the Hawaiian islands. As a result, the entire HSA was blanketed by a thick veil of cirrostratus on the 26th. This cold front finally moved inland and brought light precipitation to much of the HSA on the 28th. Rain amounts from this cold front were generally less than a quarter of an inch although the wettest locations in the foothills and higher elevations of the Sierra received nearly four tenths of an inch of rain.

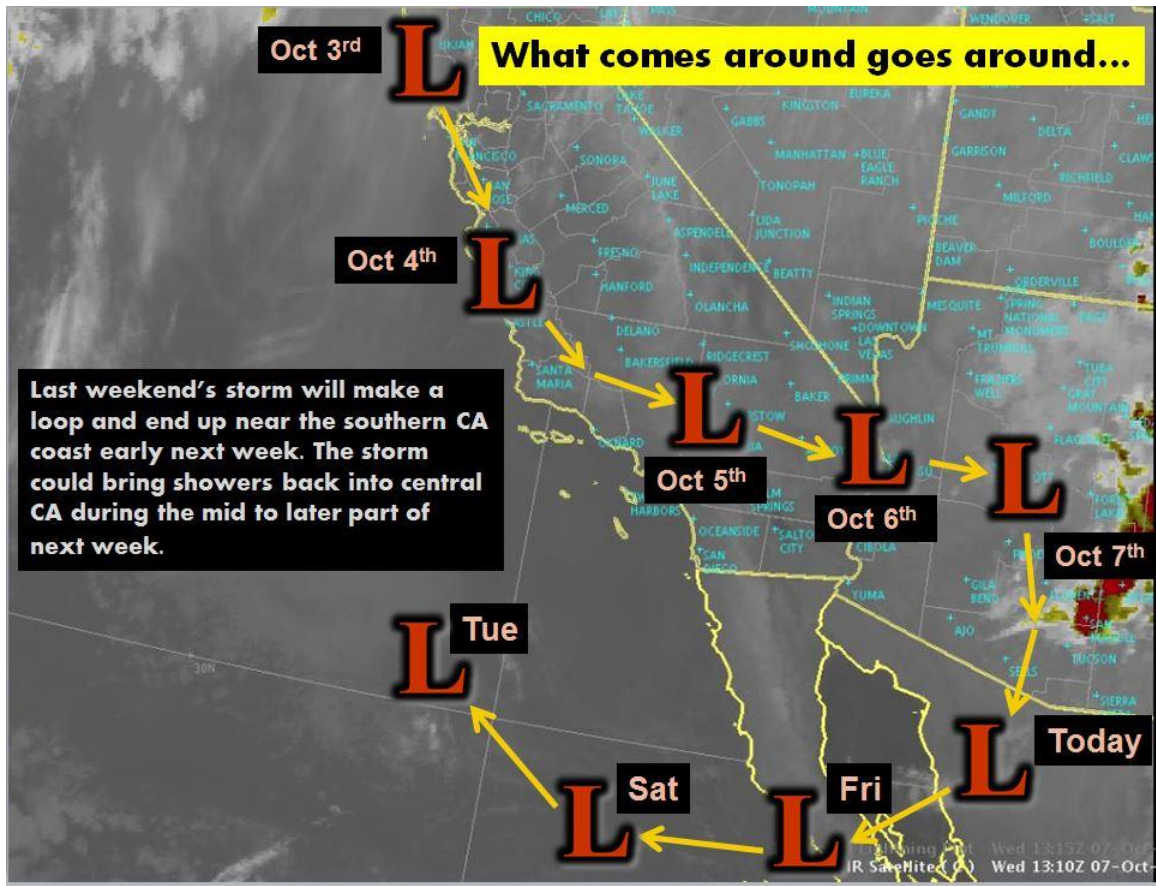
Outside of the hydrologic episodes above, a strong ridge of High Pressure dominated the weather pattern this month and brought several days of unseasonably warm weather to the HSA. In Madera, Fresno and Hanford, only one day this month had an average temperature that was below normal. (October 4th). High temperatures were in the 80s for a total of 22 days this month and on 7 of those days, maximum temperatures of 90 degrees or better occurred.

Water levels at all of the major reservoirs remained historically low this month. As of November 1st, the water capacity ranged from just 5 percent of normal at Hidden Dam to 33 percent of normal at Friant Dam and averaged out to only 11 percent of normal for all of the major reservoirs.

HYDROLOGIC PRODUCTS ISSUED THIS MONTH

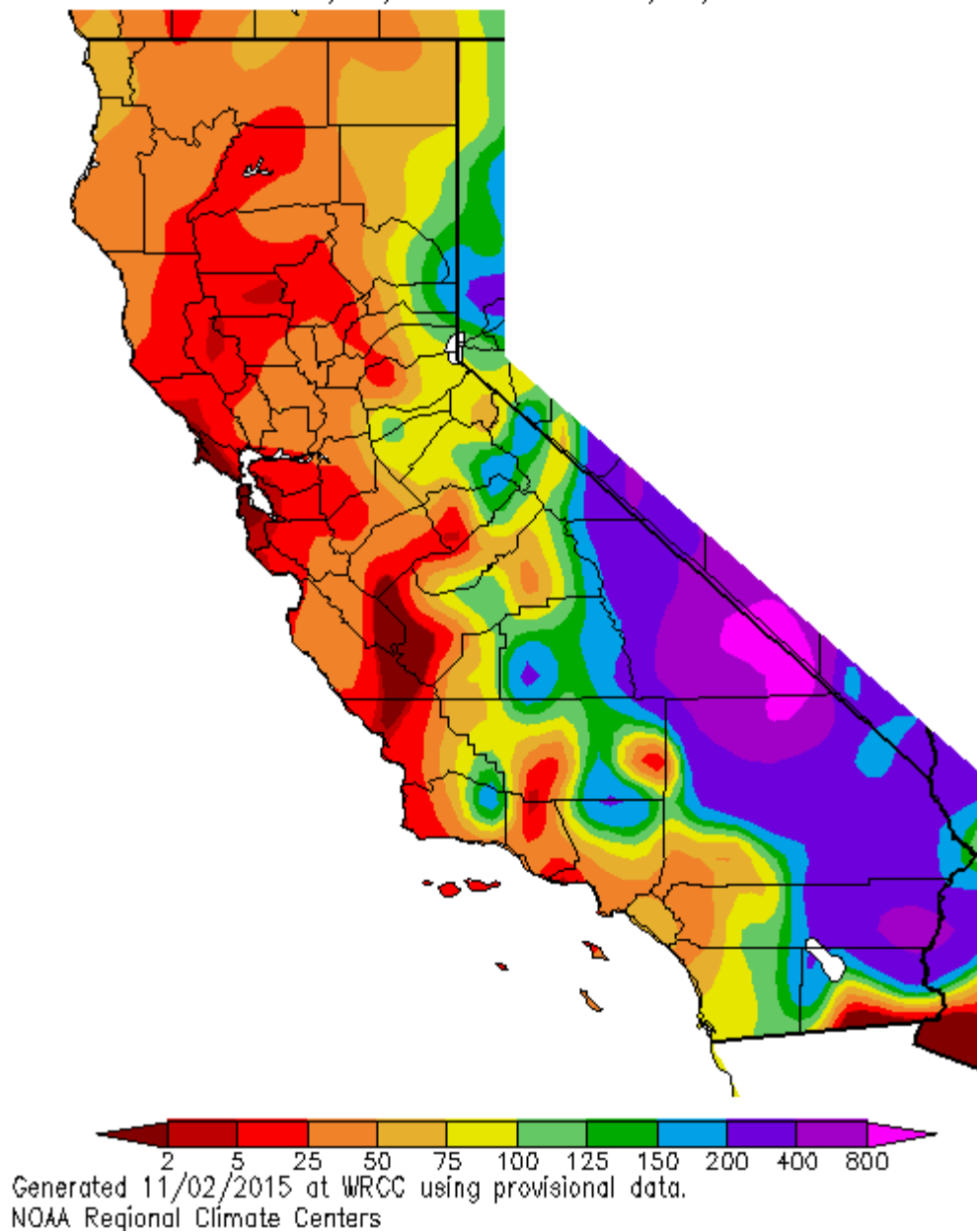
Flood Advisory.....Kern County mountains and desert	1929Z	04-OCT
Small Stream Flood Advisory.....Kern County mountains	1005Z	05-OCT
Flood Warning.....Kern County mountains in the vicinity of Onyx	0016Z	06-OCT
Urban/Small Stream Flood Advisory.....Southwestern Kern County	0014Z	15-OCT
Flash Flood Warning...Kern County mountains (Maricopa, Pine Mountain Club)	2011Z	15-OCT
Flash Flood Warning...Kern County mountains (Frazier Park, Lebec, Grapevine)	2155Z	15-OCT
Flood Advisory...Kern County mountains and the southern San Joaquin Valley	2235Z	15-OCT
Flood Advisory....southern San Joaquin Valley	2300Z	15-OCT
Flood Warning....Kern County mountains and the southern San Joaquin Valley	2310Z	15-OCT
Flood Warning....western Tulare County in the vicinity of Porterville	0149Z	16-OCT
Flash Flood Watch...Kern County mountains and desert	1151Z	16-OCT
Flash Flood Warning...Kern County desert (China Lake, Inyokern)	1817Z	16-OCT
Flash Flood Warning...West side of the San Joaquin Valley (Mendota, Firebaugh)	1846Z	16-OCT
Flash Flood Warning...Rough Wildfire Burn Scar in the vicinity of Hume Lake	2316Z	16-OCT
Flash Flood Watch....Kern County mountains and desert	1144Z	17-OCT
Flood Advisory...eastern third of the San Joaquin Valley	1032Z	18-OCT

Note...numerous Flash Flood Statements were issued as follow-ups to the Flash Flood Warnings.



Section of Highway 58 that experienced mud and debris flow on October 15, 2015

Percent of Average Precipitation (%)
10/1/2015 – 11/1/2015



cc:

W/OH12x1
W/WR2
CNRFC
WFO HNX
WFO STO