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: **MARCH** 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: April 2, 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.

March, 2017 came in as gentle as a lamb but ended with a lion's roar as a deep storm system brought powerful, locally damaging winds into the San Joaquin Valley and the Kern county mountains and desert from the 30th into the 31st. Peak wind gusts during this period ranged from 35 to 45 mph in the San Joaquin Valley to 55 mph or higher in the Kern county mountains and desert. In addition to blowing dust, the winds downed trees and power lines in some locations of the San Joaquin Valley on the 30th. In the Kern county mountains, winds gusted as high as 97 mph at Birds Spring Pass (elevation 6300 feet).

From a hydrological perspective, March, 2017 was a dud. Precipitation averaged well below normal over the HSA. The maps at the end of this summary reflect how dry the month was across central California. Most of the central California interior received less than 50 percent of its normal monthly precipitation. In the Sierra, precipitation totals fell a good 1 to 3 inches short of what a normal March would bring. In fact, during the first 19 days of the month, only one storm system brought wet weather into the HSA. From the evening of the 4th into the evening of the 5th, a few hundredths to a few tenths of an inch of rain fell in the San Joaquin Valley while a quarter of an inch to as much as 1.5 inches of precipitation fell in the foothills and mountains. Up to a foot of new snow fell over the high Sierra during this period while the Kern county desert remained bone dry. The bulk of the month's precipitation fell during the 4th week of March. Three separate storm systems trekked through central California between the 20th and the 27th. During this period, less than a tenth of an inch of rain fell in the Kern county desert. A tenth of an inch to a little over an inch of rain fell in the Kern county mountains and the San Joaquin Valley. The foothills and higher elevations of the Sierra fared a little better during this period with precipitation totals of a half inch to nearly two inches. It was also a good week for snow in the Sierra above 7,000 feet where several inches of new snow fell.

In the broader historical picture, thanks to a very wet December, January and February, precipitation indices for the San Joaquin and Tulare Lake basins as of April 1st ended up in the Top 10 list for wettest season and wettest 6 month period on record. (See charts at the end of this summary.) Water releases from many of the major dams kept mainstem rivers running high through the end of March. The Merced River at Stevinson fluctuated around its respective Flood Stage for most of the month while the San Joaquin River at Newman remained above its monitor stage. Although water levels dropped slightly in most of the dams by month's end, most were still holding large volumes of water. San Luis Reservoir, for example, remained nearly full the entire month. Pine Flat, Buchanan and Exchequer Dam were at least 60 percent full. Friant Dam and Isabella Dam held water capacities of around 40 percent. In general, water capacities averaged about 58 percent of normal in the reservoirs as of April 1st. Melting snow over the southern Sierra reduced the snowpack to 164 percent of normal by the end of the month.

Temperature-wise, March averaged much warmer than normal. High temperatures during the 3rd week of March were in the 80s in the San Joaquin Valley, lower foothills and the Kern county desert. A few spots at the south end of the valley touched the 90-degree mark that week. The high of 90 degrees in Bakersfield on the 15th fell four degrees shy of the record for that date and was the first 90 degree day of the year.

HYDROLOGIC PRODUCTS ISSUED THIS MONTH

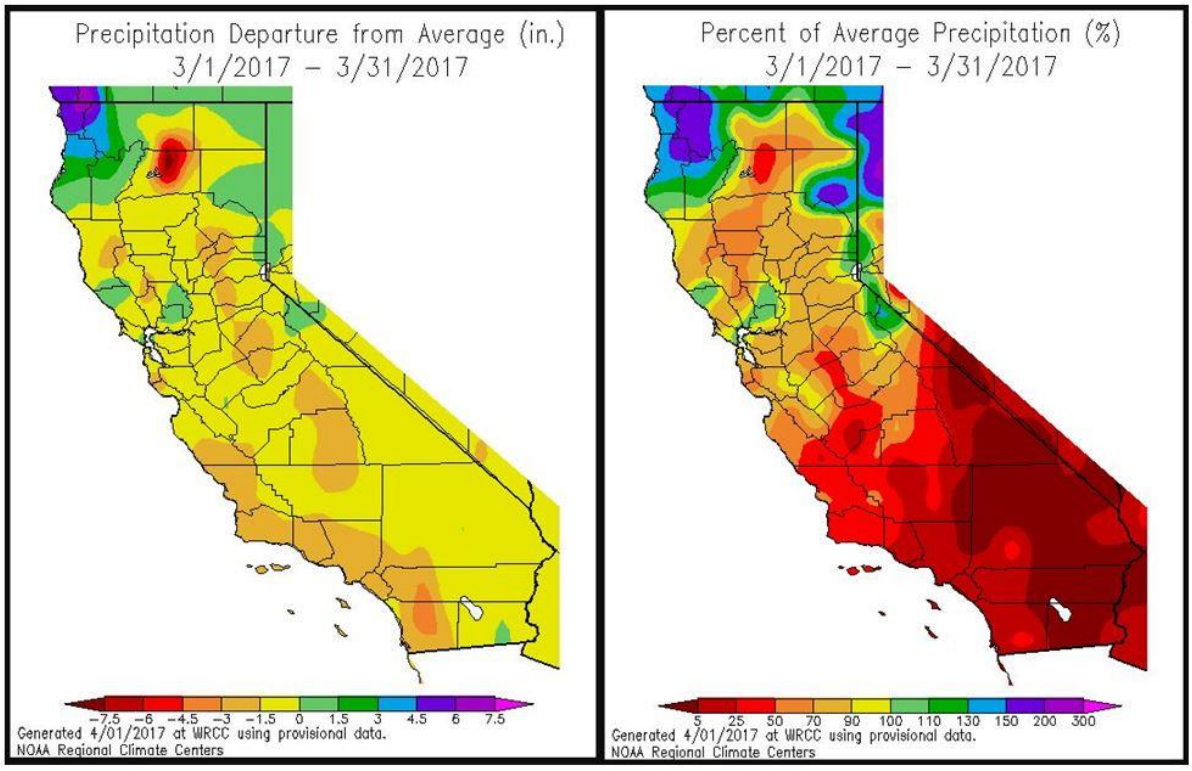
Flood Advisories

San Joaquin River below Friant Dam*		ongoing
(* remained in effect through March 20th)		
Urban/Small Stream (foothills and higher elevations of the Sierra north of Madera county)	0030Z	22-MAR
Urban/Small Stream (foothills and higher elevations of the Sierra from Fresno county northward)	0345Z	22-MAR

Hydrologic Statements

San Joaquin R @Newman, Merced R @Stevinson	2143Z	1-MAR
San Joaquin R @Newman, Merced R @Stevinson	1712Z	2-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2145Z	2-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1543Z	3-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2213Z	3-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1614Z	4-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2038Z	4-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1644Z	5-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2120Z	5-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2136Z	6-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1606Z	7-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2155Z	7-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1534Z	8-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2142Z	8-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1551Z	9-MAR
San Joaquin R @Newman, Merced R @Stevinson	1654Z	10-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1655Z	11-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2231Z	11-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1506Z	12-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1639Z	13-MAR
San Joaquin R @Newman, Merced R @Stevinson	1530Z	14-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2104Z	14-MAR
San Joaquin R @Newman, Merced R @Stevinson,	1514Z	15-MAR
San Joaquin R @Newman, Merced R @Stevinson,	2026Z	15-MAR
San Joaquin R @Newman, Merced R @Stevinson	2249Z	15-MAR
San Joaquin R @Newman, Merced R @Stevinson	1524Z	16-MAR
San Joaquin R @Newman, Merced R @Stevinson	2055Z	16-MAR
San Joaquin R @Newman, Merced R @Stevinson	1513Z	17-MAR
San Joaquin R @Newman, Merced R @Stevinson	2057Z	17-MAR
San Joaquin R @Newman, Merced R @Stevinson	1522Z	18-MAR
San Joaquin R @Newman, Merced R @Stevinson	2151Z	18-MAR
San Joaquin R @Newman, Merced R @Stevinson	1537Z	19-MAR
San Joaquin R @Newman, Merced R @Stevinson	2038Z	19-MAR
San Joaquin R @Newman, Merced R @Stevinson	1521Z	20-MAR
San Joaquin R @Newman, Merced R @Stevinson	1700Z	21-MAR
San Joaquin R @Newman, Merced R @Stevinson	2156Z	21-MAR
San Joaquin R @Newman, Merced R @Stevinson	1646Z	22-MAR
San Joaquin R @Newman, Merced R @Stevinson	1828Z	23-MAR
San Joaquin R @Newman, Merced R @Stevinson	2023Z	24-MAR
San Joaquin R @Newman, Merced R @Stevinson	1429Z	27-MAR
San Joaquin R @Newman, Merced R @Stevinson	2059Z	27-MAR
San Joaquin R @Newman, Merced R @Stevinson	1815Z	28-MAR
San Joaquin R @Newman, Merced R @Stevinson	2222Z	28-MAR
San Joaquin R @Newman, Merced R @Stevinson	1552Z	29-MAR
San Joaquin R @Newman, Merced R @Stevinson	2046Z	29-MAR
San Joaquin R @Newman, Merced R @Stevinson	1550Z	30-MAR

Note…Numerous follow up Flood Advisories were issued for the San Joaquin River below Friant Dam until water releases dropped low enough to end the threat of downstream flooding.



HISTORICAL CLIMATE RECORDS FOR THE SJ5SI							
Top 12 Driest Rainfall Season		Driest 6 Months; Nov-Apr		Wettest 6 Months; Nov-Apr		Top 12 Wettest Rainfall Season	
17.03	1923-1924	9.22	1976-1977	66.26	1982-1983	78.71	1982-1983
18.67	1976-1977	12.71	1923-1924	62.86	1968-1969	70.90	1994-1995
18.86	2014-2015	13.67	1975-1976	60.65	1977-1978	68.16	1968-1969
19.52	2013-2014	15.90	2014-2015	60.36	1994-1995	64.95	2016-2017
22.80	1975-1976	17.35	2013-2014	58.58	2016-2017	64.37	2010-2011
23.09	1993-1994	17.57	1930-1931	56.35	1937-1938	64.07	1997-1998
23.10	1930-1931	18.31	1938-1939	56.25	1981-1982	63.55	1981-1982
23.37	1986-1987	18.45	1986-1987	53.15	1966-1967	61.62	1977-1978
23.43	1960-1961	18.59	1989-1990	53.05	1997-1998	59.03	1937-1938
24.44	1967-1968	19.29	1933-1934	53.03	2005-2006	57.75	1985-1986
24.55	1933-1934	19.54	1993-1994	52.32	1955-1956	56.63	1955-1956
24.63	2006-2007	20.31	1960-1961	51.83	1985-1986	56.38	2005-2006

San Joaquin 5 station Precipitation Index

HISTORICAL CLIMATE RECORDS FOR THE TL6SI							
Top 12 Driest Rainfall Season		Driest 6 Months; Nov-Apr		Wettest 6 Months; Nov-Apr		Top 12 Wettest Rainfall Season	
13.04	2014-2015	5.97	1976-1977	51.54	1968-1969	58.31	1982-1983
13.65	1923-1924	10.40	2014-2015	48.82	1982-1983	55.86	1968-1969
14.31	1958-1959	10.44	1923-1924	47.83	1966-1967	53.59	1997-1998
14.70	2013-2014	11.20	1975-1976	45.52	1937-1938	49.04	1966-1967
15.15	1960-1961	11.78	1958-1959	45.19	1977-1978	47.11	1937-1938
15.45	2012-2013	12.26	2013-2014	42.59	1951-1952	46.59	1977-1978
15.87	1933-1934	12.48	1933-1934	42.48	1997-1998	45.83	1994-1995
16.10	1976-1977	13.12	1960-1961	41.57	1942-1943	44.72	2010-2011
16.24	1975-1976	13.65	2012-2013	41.58	2016-2017	44.30	1951-1952
16.30	1971-1972	13.69	1971-1972	39.87	1985-1986	43.25	2016-2017
16.77	2006-2007	13.94	1989-1990	38.57	1936-1937	42.69	1985-1986
18.06	1967-1968	14.92	1986-1987	38.55	2010-2011	42.49	1942-1943

Tulare Lake 6 station Precipitation Index

CC:

W/OH12x1
W/WR2
CNRFC
WFO HNX
WFO STO