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: **FEBRUARY** YEAR: **2021**

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: March 3, 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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¦ ¦ An **X** inside this box indicates no flooding occurred for the month within this hydrologic service area.
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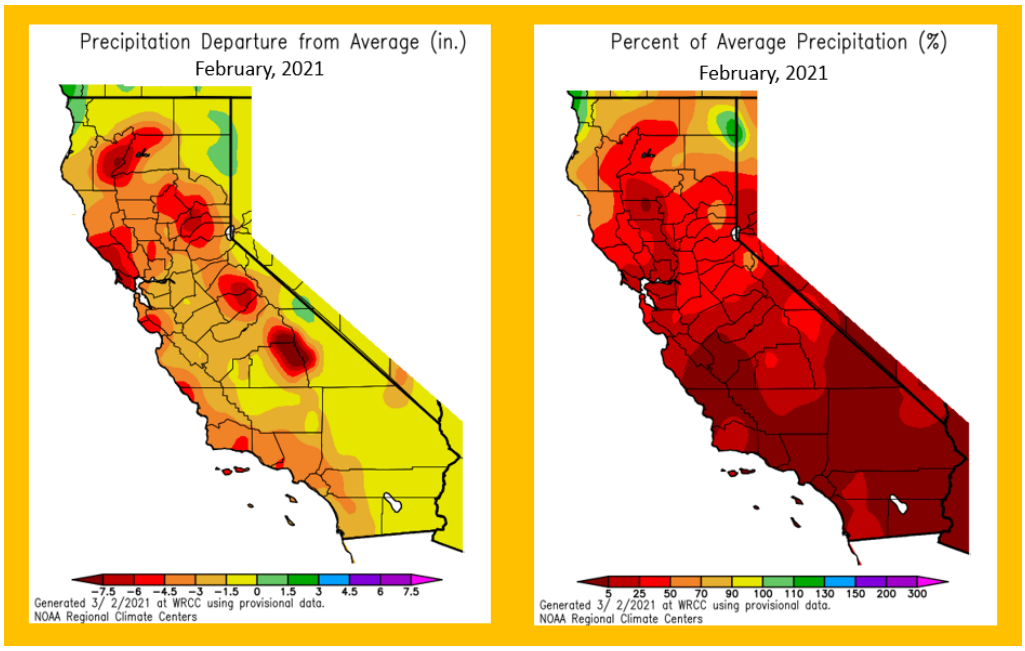
February, 2021 was an abysmal month, hydrologically, with well below normal precipitation throughout the central California interior. From a historical perspective, with rainfall archives dating as far back as the late 19th century, February, 2021 was one of the top ten driest Februarys on record in Merced, Madera, Hanford and Bakersfield. February's absence of adequate rain and mountain snow exacerbated the drought over the Golden State, particularly over the Sierra which, as of March 1st, was suffering from a seasonal precipitation deficit of as much as 28 inches. As the month drew to a close, most locations in the Sierra had less than 35 percent of their normal precipitation for the season. At this point it would take a record setting wet March and April to bring precipitation to normal in this region. As of March 1st, the Sierra 5 station index and Tulare Lake 6 station index ranked near the top as the driest seasons on record. Graphs for departure from normal precipitation and percentage of normal precipitation as well as the state's Drought Monitor are provided below this summary.

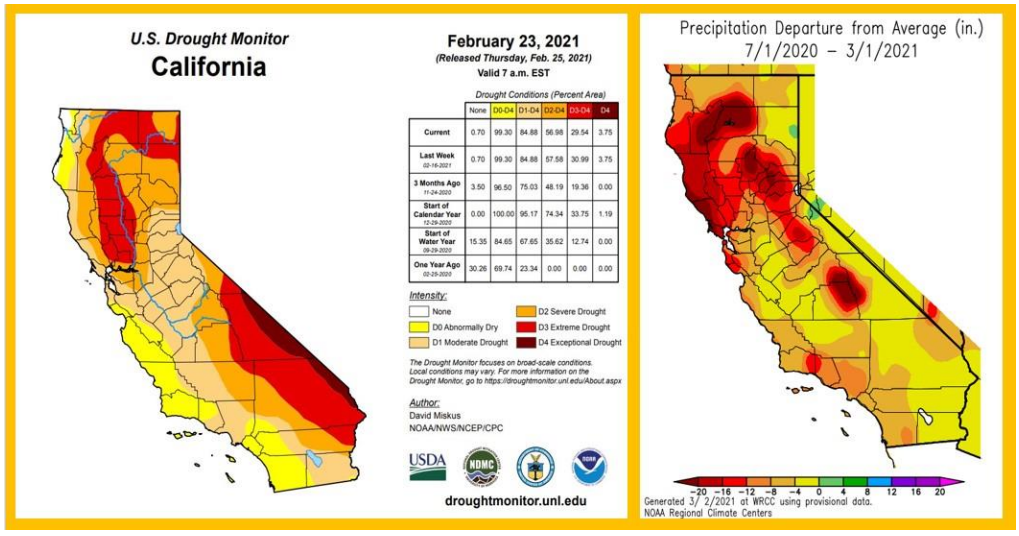
Several cold fronts breezed southward through the central California interior during the month, most with little or no precipitation as "inside slider' troughs of low pressure tracked out of western Canada into the Great Basin. Every one of these cold fronts were accompanied and followed by blustery winds on the west side of the San Joaquin and through and below the mountain passes of Kern County. Low stratus settled into the east side of the San Joaquin Valley and adjacent foothills on the morning of the 4th behind one of these cold fronts, and drizzle was the only precipitation that fell from these clouds. Patchy fog formed in the middle of the San Joaquin Valley during the early morning hours of the 5th and 6th and became the last occurrence of fog in the San Joaquin Valley for the Winter season. A cold frontal passage during the early morning hours of the 16th also produced nominal precipitation in its wake on the east side of the San Joaquin Valley and adjacent foothills. Up to 4 inches of snow fell over the higher elevations of the Sierra north of Kings Canyon National Park from this system. An upper level trough that tracked a bit farther west than any of the other upper level troughs brought the month's most substantial precipitation to the HSA from the 11th into the 12th of February. Up to a foot of snow fell in the Sierra above 7,000 feet from this storm system. Rainfall amounts in the San Joaquin Valley ranged from a couple hundredths to nearly a half inch in Merced County. Between a quarter of an inch and three quarters of an inch generally fell in the foothills and mountains with local amounts of around an inch in the Sierra. Although precipitation was nominal, it was the only occurrence of showers for the month in the Kern county desert where rain totals of less than a tenth of an inch were observed. Cold frontal passages on the 2nd and 15th of February brushed the foothills and higher elevations of the Sierra mainly north of Sequoia National Forest with light precipitation. Up to a few inches of snow fell over the highest elevations of Yosemite National Park with these cold fronts. Otherwise, precipitation totals of a tenth of an inch or less were common with local amounts of up to a quarter of an inch in Yosemite National Park. A cold frontal passage on the 20th brushed the northernmost San Joaquin Valley and the foothills and higher elevations of the Sierra north of Fresno County with light precipitation. Up to an inch or so of snow fell above 6,000 feet from this system. Two more cold fronts swept southward through the HSA; one on the 24th and the other on the 27th with no precipitation.

Temperature-wise, February, 2021 averaged slightly warmer than normal over much of the HSA. The month brought many afternoons of Springlike warmth to the San Joaquin Valley, lower foothills and the Kern county desert where thermometer readings climbed above 70 degrees. Nightly temperatures were relatively chilly, however. The coldest mornings began frosty in some locations of the San Joaquin Valley and the Kern county desert with daybreak temperatures as low as the mid 20s in the desert and the upper 20s to lower 30s in the valley.

Water levels at most of the major reservoirs changed little throughout the month with an average water capacity around 25 percent of normal. With little additional new snow falling over the southern Sierra during the month, the snowpack steadily diminished and averaged about 45 percent of normal by March 1st.

NO HYDROLOGIC PRODUCTS WERE ISSUED THIS MONTH.





SIERRA PRECIP INDEX SUMMARY

1-Mar-21

SIERRA INDEX	2020-2021 Rainfall Season TOTAL	Seasonal Rainfall Average to Date	Percent Season to Date Average	Annual Rainfall Season Average	Percentage Annual Rainfall Season Average	Amount Left to Reach Avg. Total Rainfall Season
NS8SI	18.24	29.65	61.5%	54.52	33.5%	-36.28
SJ5SI	14.20	29.93	47.4%	42.57	33.4%	-28.37
TL6SI	7.62	21.35	35.7%	30.50	25.0%	-22.88

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	
14.20	2020-2021	9.22	1976-1977	66.26	1982-1983	78.71	1982-1983
17.03	1923-1924	12.71	1923-1924	64.65	2016-2017	71.40	2016-2017
18.67	1976-1977	13.67	1975-1976	62.86	1968-1969	70.90	1994-1995
18.86	2014-2015	14.14	2020-2021	60.65	1977-1978	68.16	1968-1969
19.52	2013-2014	15.90	2014-2015	60.36	1994-1995	64.37	2010-2011
22.80	1975-1976	17.35	2013-2014	56.35	1937-1938	64.07	1997-1998
23.09	1993-1994	17.57	1930-1931	56.25	1981-1982	63.55	1981-1982
23.10	1930-1931	18.31	1938-1939	53.15	1966-1967	61.62	1977-1978
23.37	1986-1987	18.45	1986-1987	53.05	1997-1998	59.03	1937-1938
23.43	1960-1961	18.59	1989-1990	53.03	2005-2006	57.75	1985-1986
24.44	1967-1968	19.29	1933-1934	52.32	1955-1956	56.63	1955-1956
24.55	1933-1934	19.54	1993-1994	51.83	1985-1986	56.38	2005-2006

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	
7.62	2020-2021	5.97	1976-1977	51.54	1968-1969	58.31	1982-1983
13.04	2014-2015	7.61	2020-2021	48.82	1982-1983	55.86	1968-1969
13.65	1923-1924	10.40	2014-2015	47.83	1966-1967	53.59	1997-1998
14.31	1958-1959	10.44	1923-1924	45.52	1937-1938	49.04	1966-1967
14.70	2013-2014	11.20	1975-1976	45.19	1977-1978	47.11	1937-1938
15.15	1960-1961	11.78	1958-1959	44.17	2016-2017	46.59	1977-1978
15.45	2012-2013	12.26	2013-2014	42.59	1951-1952	46.08	2016-2017
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	39.87	1985-1986	44.30	1951-1952
16.30	1971-1972	13.69	1971-1972	38.57	1936-1937	42.69	1985-1986
16.77	2006-2007	13.94	1989-1990	38.55	2010-2011	42.49	1942-1943

CC:
W/OH12X1
W/WR2
CNRFC
WFO HNX
WFO STO