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: **NOVEMBER** YEAR: **2020**

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: December 4, 2020

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 no flooding occurred for the month within this hydrologic service area.
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Two back to back storms, the first storms of the season, brought beneficial precipitation to the HSA from November 7th through November 9th. Prior to their arrival, gusty winds kicked up a considerable amount of dust in the San Joaquin Valley on the 6th and hampered containment of the wildfires that continued to burn in the Sierra. Fortunately the wet weather that followed finally doused those fires and smothered the higher elevations of the burn areas with a thick blanket of snow. The storms also cleansed the San Joaquin Valley after weeks of wildfire smoke and persistently poor air quality. Considering their origins in the Gulf of Alaska, the storms brought unseasonably cold air into the HSA during the first weekend of the month. Snow fell down to pass level by the evening of the 8th and slowed traffic along the major arteries leading out of the San Joaquin Valley into the Kern County desert and the Los Angeles area. Although less than an inch of snow fell over the Kern County mountain passes, it was enough for CHP to escort traffic along Interstate 5 through the Grapevine. The storm dumped several inches of snow over the higher elevations. By the time the second storm of this double barreled storm system exited into the Great Basin on the 9th, it left up to a foot of snow in the Sierra above 7,000 feet. The storm also brought the first wetting rain of the season to much of the San Joaquin Valley and the Sierra foothills. Rain amounts ranged from a few hundredths in the Kern County desert to nearly four tenths of an inch in the San Joaquin Valley. Up to a half inch of precipitation fell in the Kern County mountains which equated to about 6 inches of snow above 5,000 feet. The foothills and higher elevations of the Sierra fared well during this period with precipitation amounts of a half inch to a little more than an inch.

A weak cold front swept through the central California interior on the 13th and brushed the northern part of the HSA with light precipitation. Trace amounts of rain fell in the San Joaquin Valley from Fresno County northward while the foothills and higher elevations of the Sierra received up to a quarter of an inch. It wasn't long afterward that the San Joaquin Valley's first Tule fog event of the season occurred. Fog developed in Merced County during the predawn hours of the 14th and become more widespread the following morning (November 15th) and blanketed much of the valley.

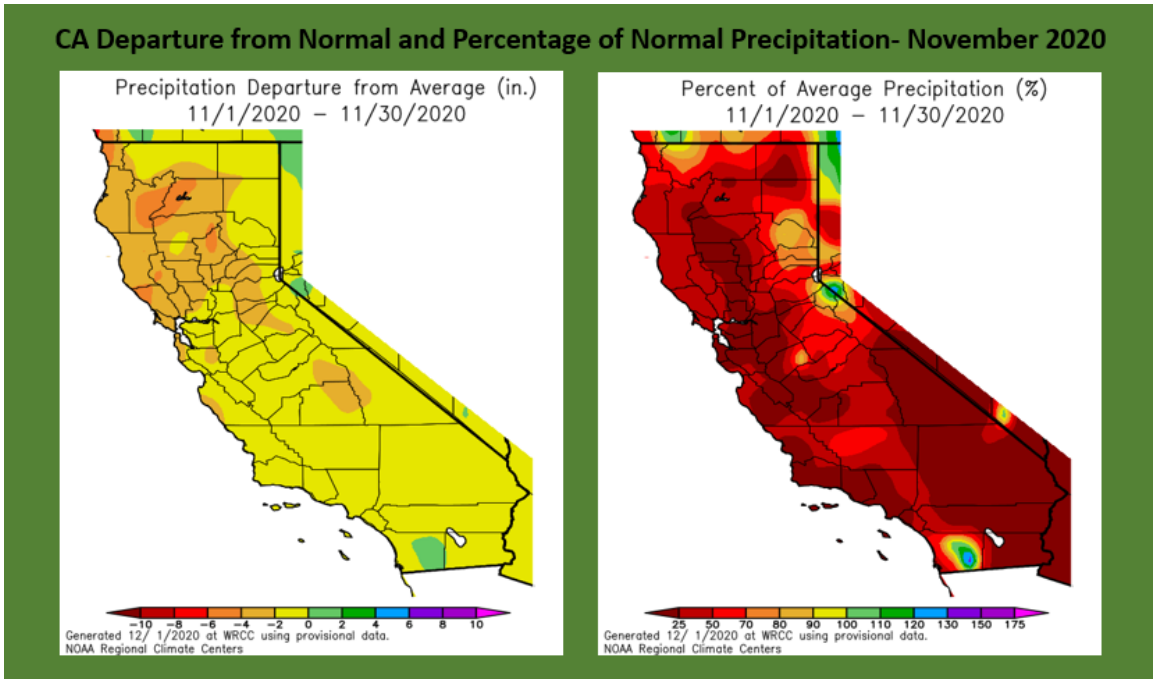
Another episode of wet weather, albeit brief, occurred during the third week of the month. A Pacific cold front trekked eastward across the HSA during the early morning hours of the 18th. It was a dry frontal passage in Kern County accompanied by brisk westerly winds in the mountains and desert. The wet weather this system brought was most substantial in the foothills and higher elevations of the Sierra from Fresno County northward where totals of a half inch to an inch and a half were observed. Up to 7 inches of snow fell in the Sierra above 8,000 feet. In the San Joaquin Valley,

rain totals ranged from less than a tenth of an inch in Kings County and Tulare County to nearly six tenths of an inch in Merced County.

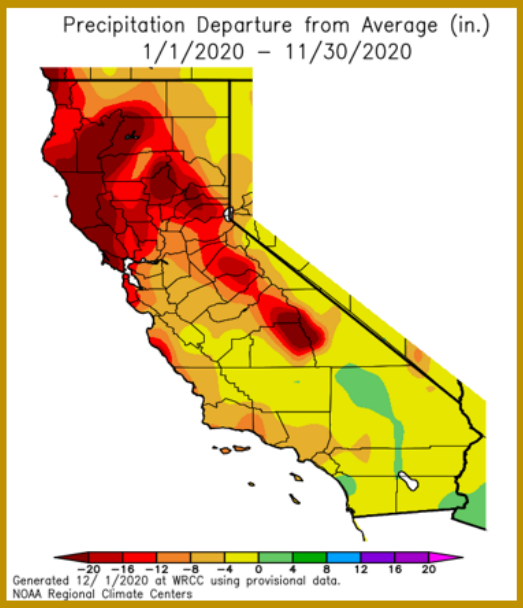
From a hydrologic perspective, November 2020 was much drier than normal and ended up as one of the top 20 driest Novembers on record in Hanford and Madera with records dating back to 1900 and 1928 respectively. Much of the HSA north of Kern County, which was already suffering from a precipitation deficit so far in the calendar year, was pushed deeper into its drought as the month came to a close. This was especially true in the Sierra, as well as the northern half of the state. Maps that show the precipitation and percentage of normal precipitation for the month and the calendar year through November as well as the drought status are provided below this summary.

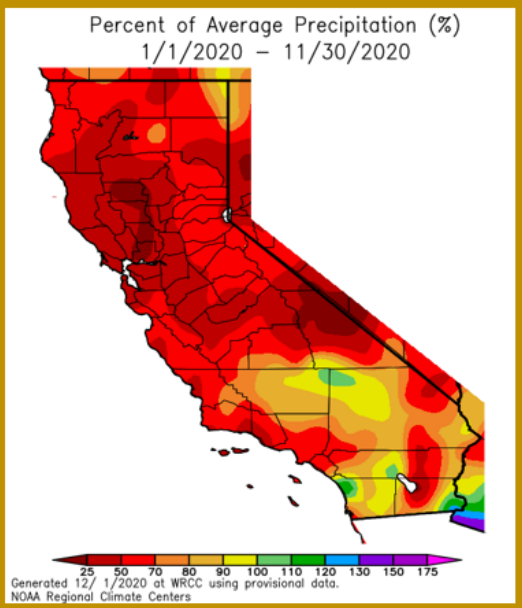
Temperature-wise, November, 2020 averaged pretty close to normal. Nevertheless, it was a month of extremes with spells of unseasonably cold weather and near record or record breaking warmth. Cold air masses that invaded the central California interior on the 9th and 10th and again during the last weekend of the month were accompanied by frost and sub-freezing minimum temperatures in the San Joaquin Valley and the Kern County desert. Cold weather toward the end of the month was more prolonged. Every morning from November 27th through November 30th brought widespread frost with minimum temperatures in the coldest locations of the desert and the San Joaquin Valley in the upper teens and mid 20s respectively. In contrast, the month brought several days of well above normal temperatures. Much of the San Joaquin Valley and lower foothills basked in 80-degree warmth during the first four days of the month. Unseasonably warm high temperatures returned during the middle of the month. Thermometer readings jumped into the 70s on the 16th and 17th in the San Joaquin Valley. Downslope winds at the south end of the San Joaquin Valley on the 17th enhanced the warmup and caused temperatures to skyrocket into the 80s in the Kern County portion of the San Joaquin valley. Bakersfield's Meadows Field airport achieved a record shattering high of 87 degrees that afternoon.

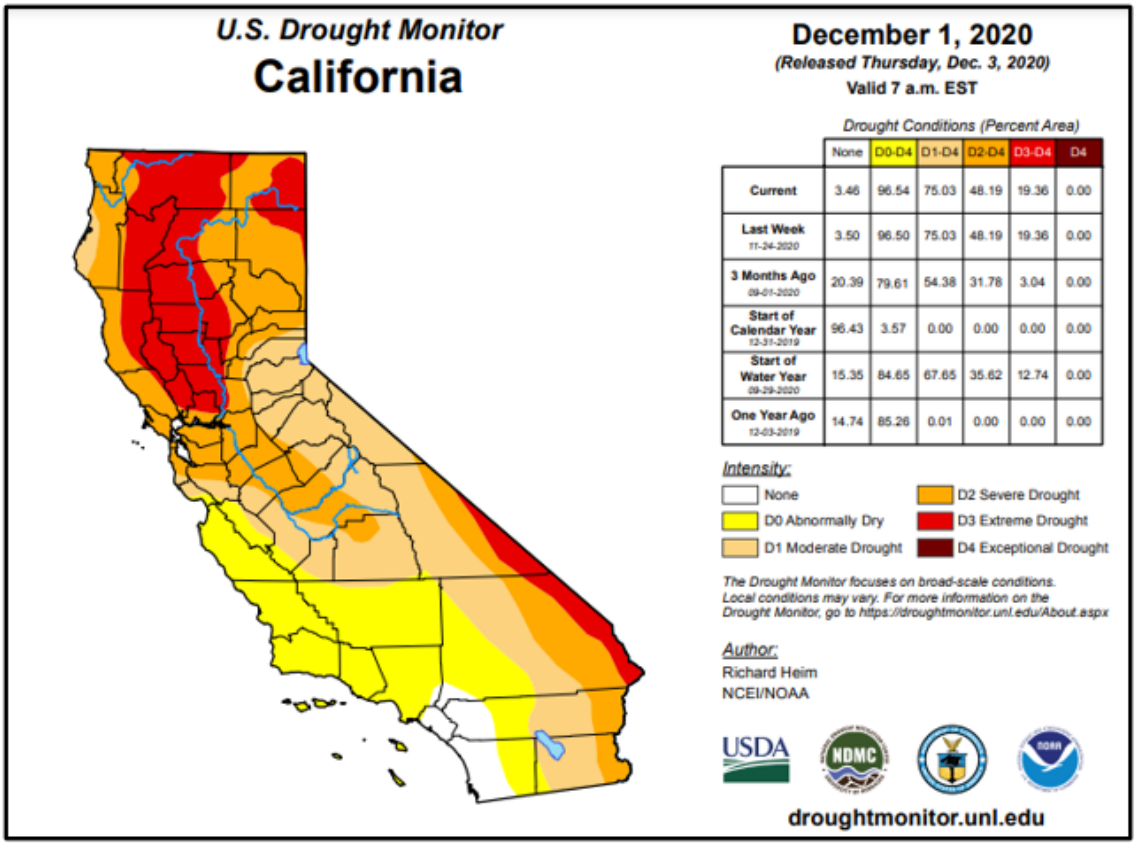
Water levels in area reservoirs averaged well below normal during the month. November is usually part of the wet season in central California and normally a time when storms bring beneficial rain and mountain snow to the region. The month's drier than normal weather kept water levels in the reservoirs unusually low. As of December 2nd, the water capacity averaged only 21 percent of normal in the lakes above the dams. Much of the snow that fell in the mountains earlier in the month melted and left a snowpack that averaged only 20 percent of normal by the end of the month.



CA Departure from Normal and Percentage of Normal Precip- Jan thru Nov 2020







NO HYDROLOGIC PRODUCTS WERE ISSUED THIS MONTH.