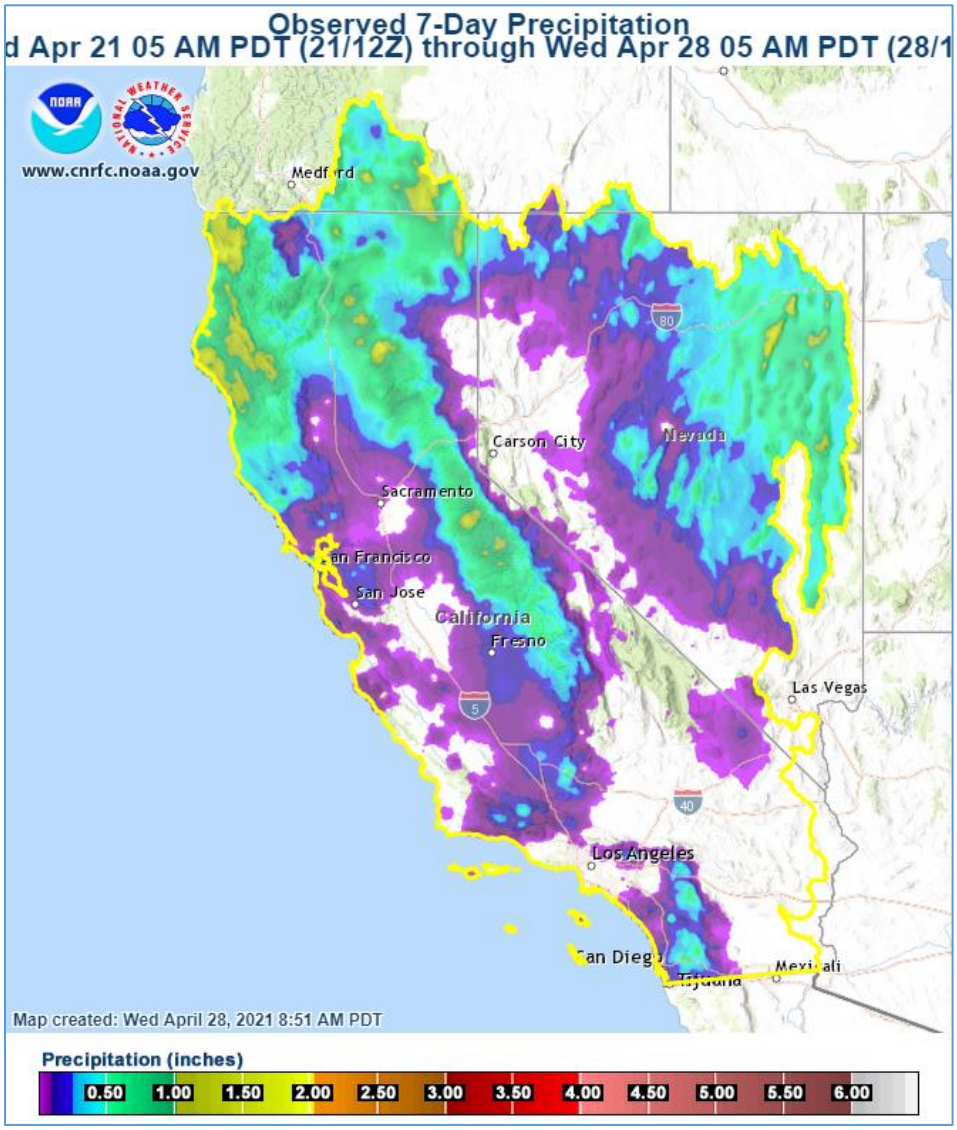
WY2021 Water Resources Update – April 28, 2021

**Summary:**

- 8 Station Index (8SI) 19 month accumulation is at its 2nd driest on record.
- Remaining snowpack has dropped to 2013 and 2014 levels.
- Forecasted flow on the Sacramento River is expected to be the driest since 1976-1977.

**Details:**

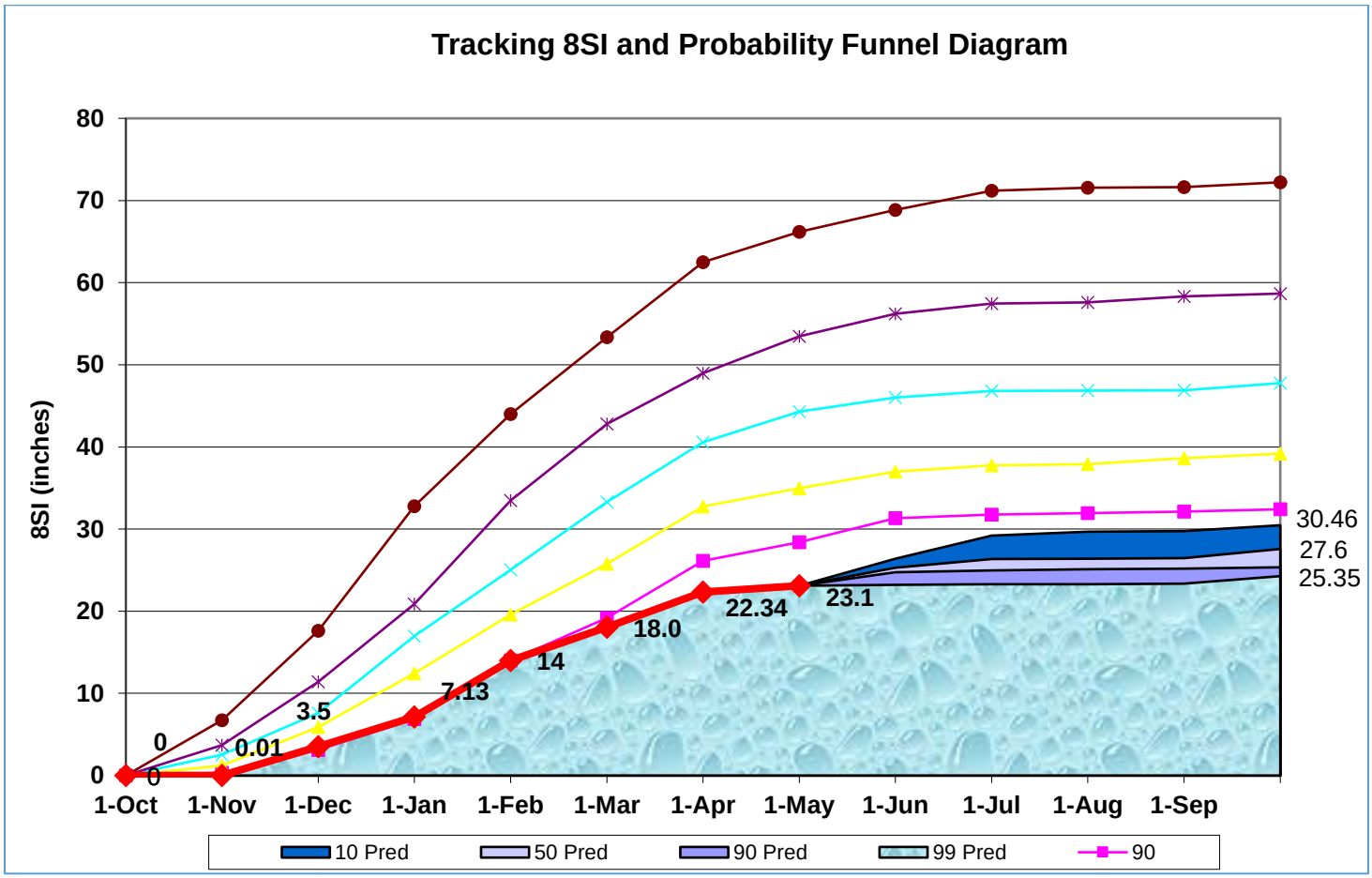
Rainfall over the past 7 days was disappointing. After numerical models were advertising decent rainfall for the end of April (sometimes as much as 2-5 inches), the reality was the 8 Station Index only managed 0.67 inch of precipitation.



**Very dry in the Eight Station Index (8SI)**

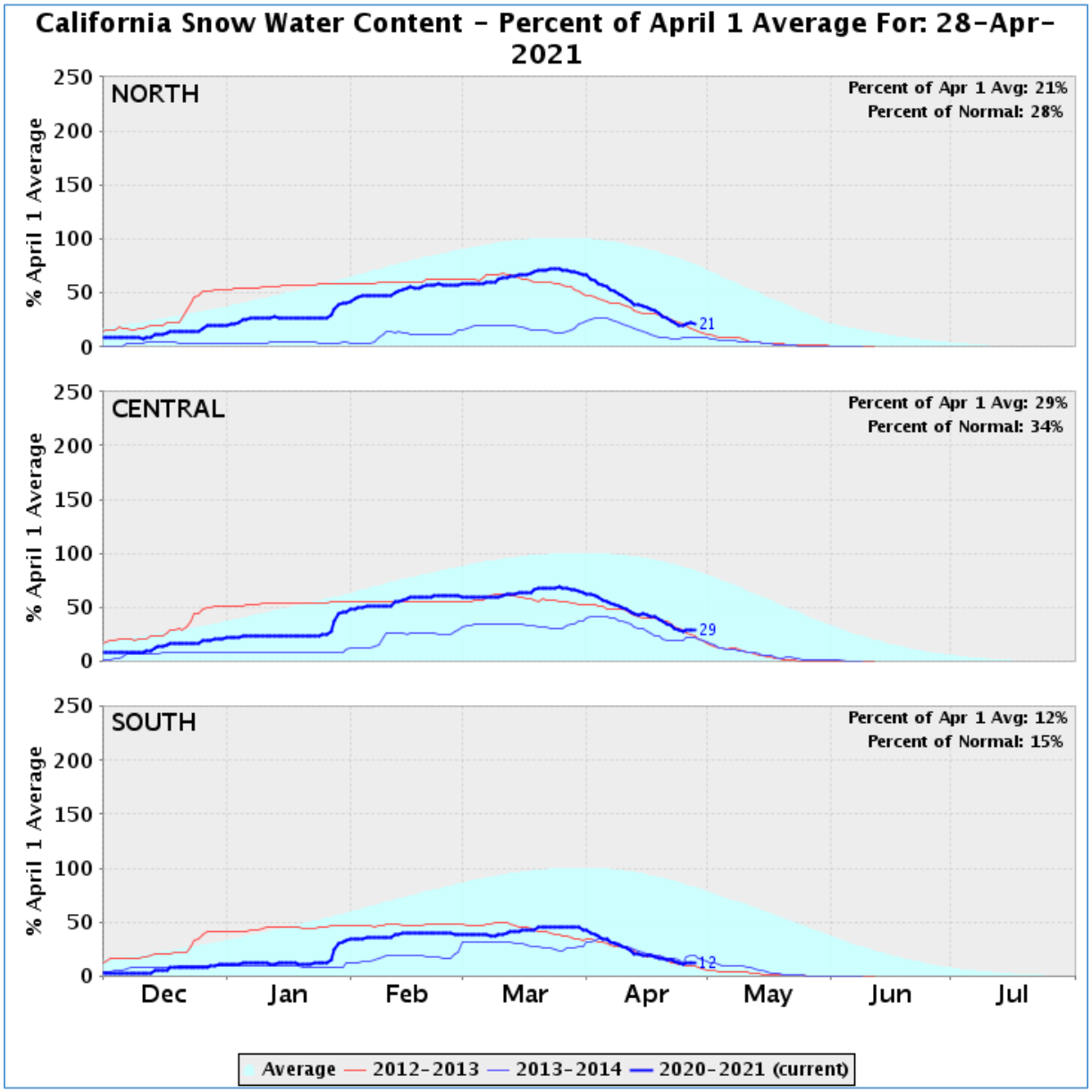
We are now over 90% of the way through the water year in terms of average accumulation of rainfall to this date. That means there's very little expectation of major changes over the next 5 months. With the 8 Station Index at 23.1 inches, there is now an 80% chance that the 8SI will remain below 30 inches, the first time since 1987. The median projection is 27.6 inches.

For the past 19 months (Oct. 1, 2019 – present) the 8SI has accumulated 54.8 inches, the second driest 19-month accumulation, second only to 1977 (which was a dismal 40.3 inches).



**Snowpack will soon to be gone.**

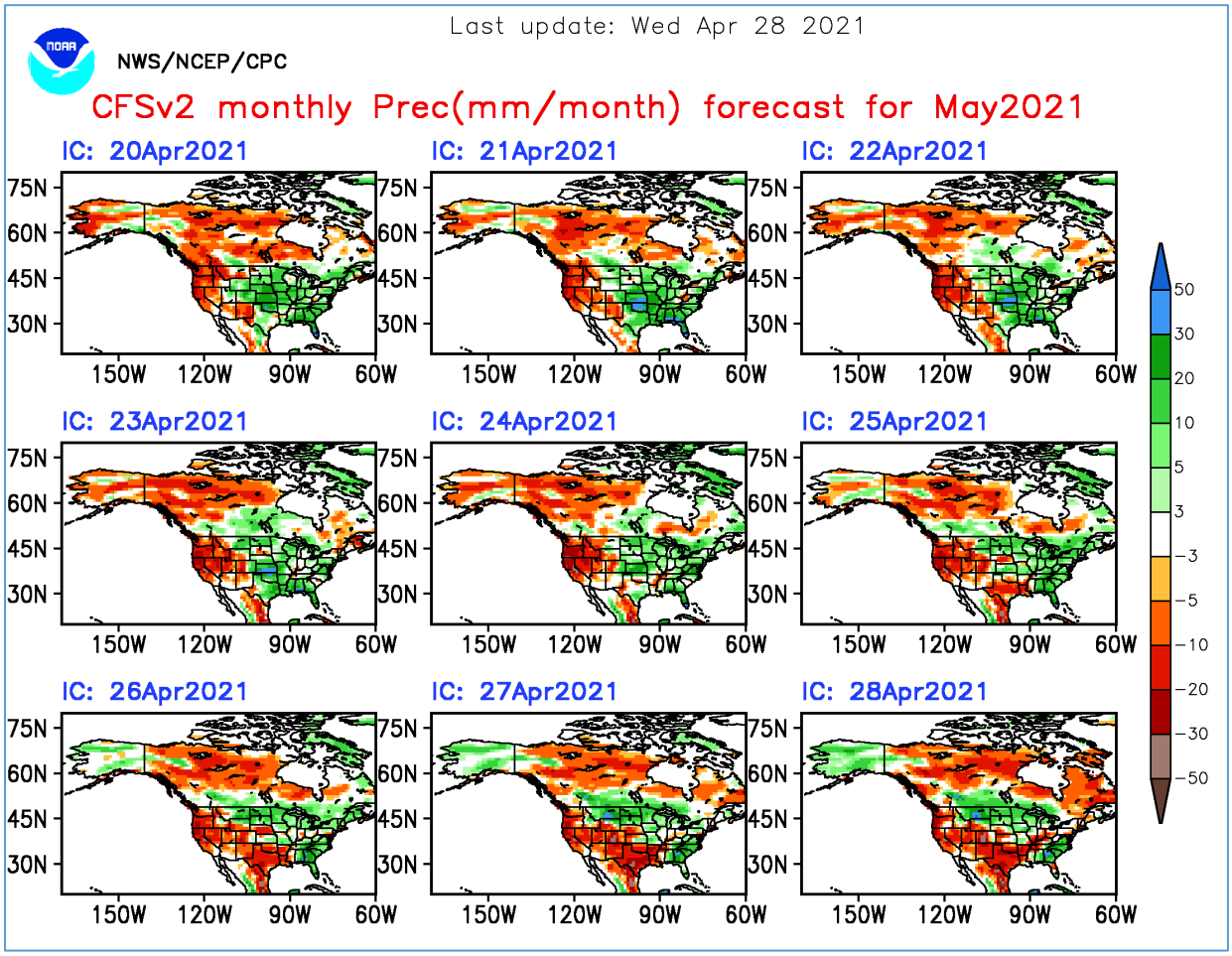
With a dry forecast and warm temperatures, much of the remaining snowpack is expected to melt over the next few weeks. Current snowpack is similar to 2013 and 2014 levels, at 27% of average overall.




Source: https://cdec.water.ca.gov/snowapp/swcchart.action

**May Precipitation Outlook**

ECMWF and CFSV2 (see below) are both looking dry for the month of May:



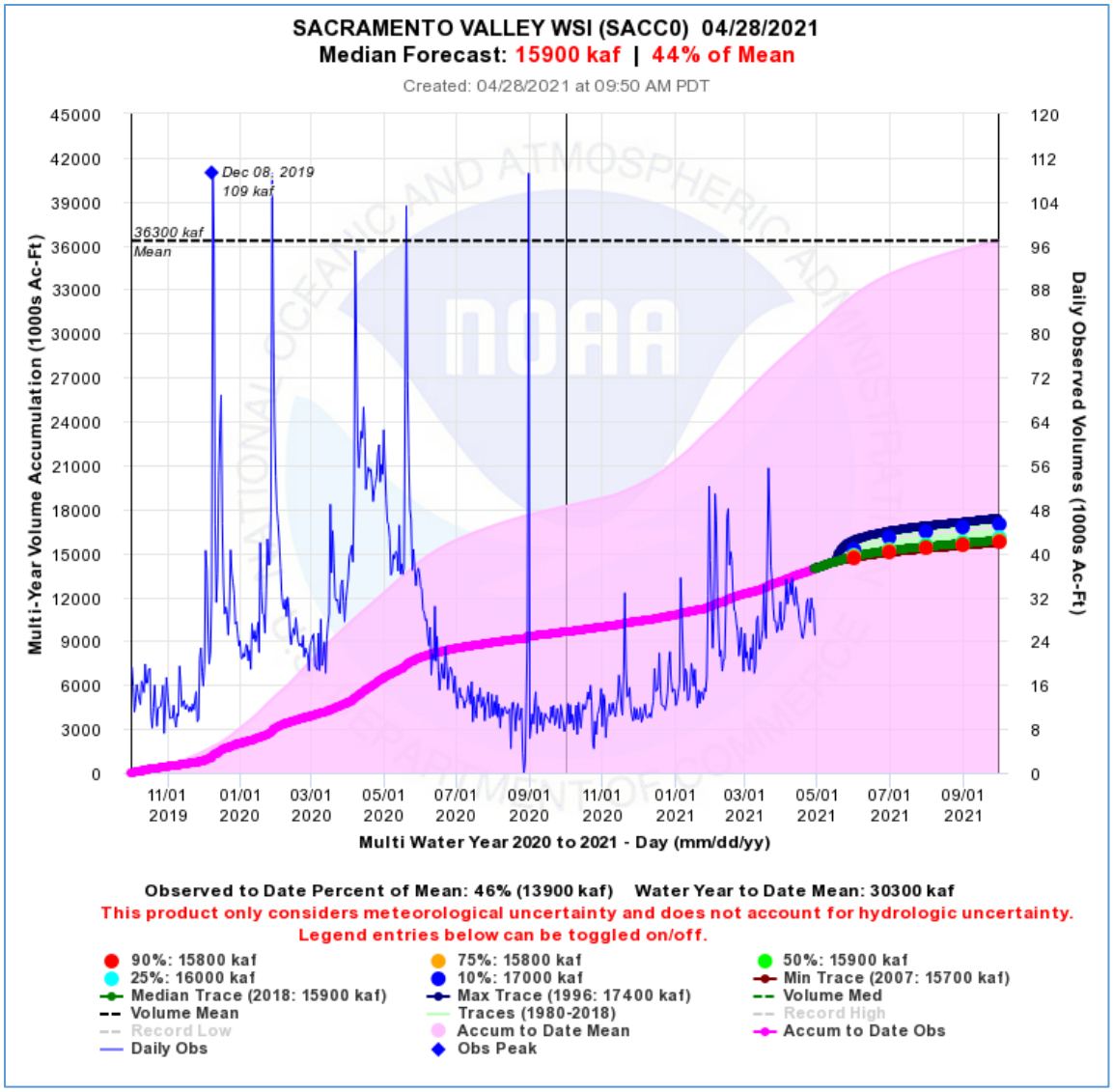

**Source :**

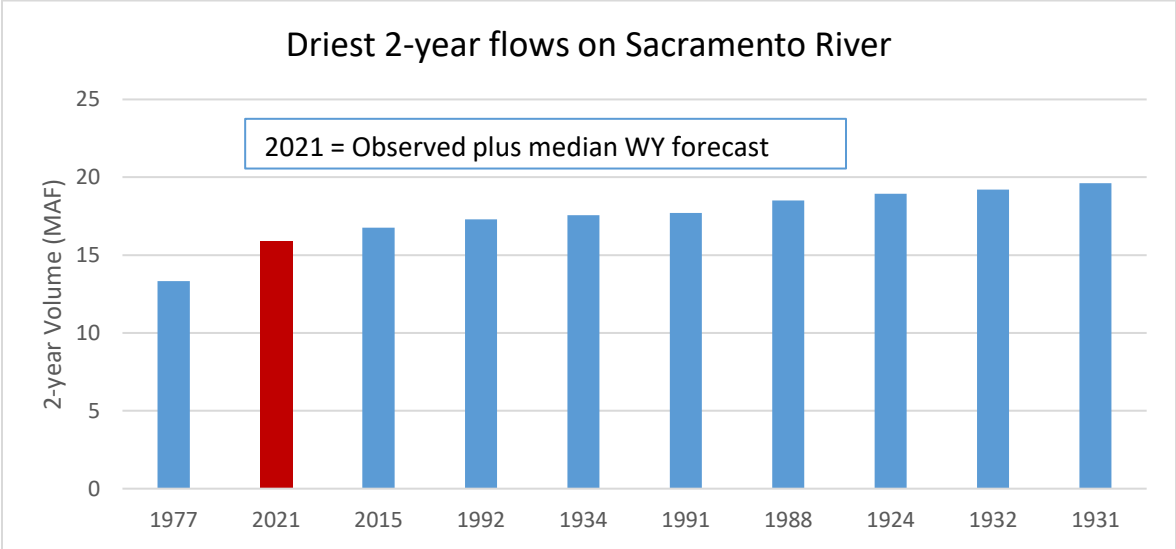
https://www.cpc.ncep.noaa.gov/products/people/mchen/CFSv2FCST/monthly/images/summaryCFSv2.NaPrec.202105.gif

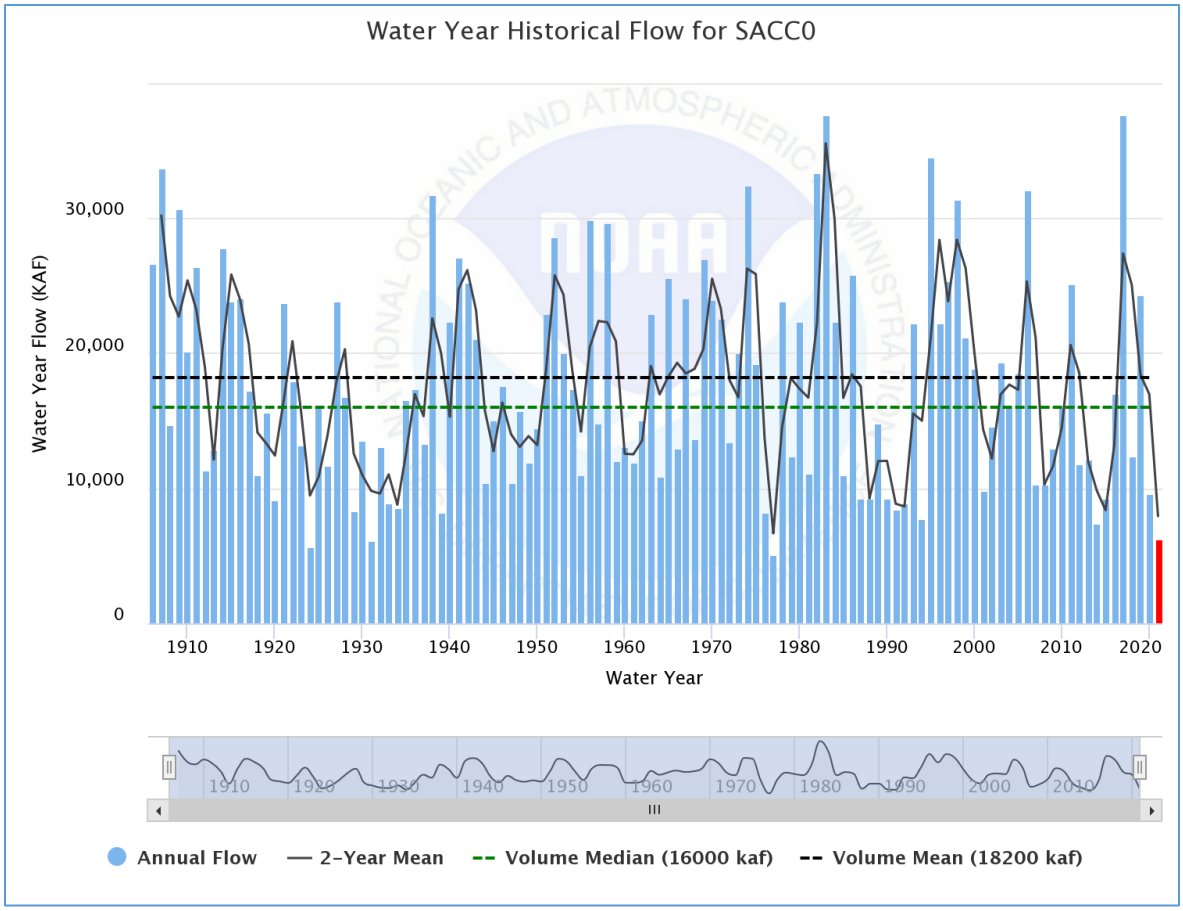
**Near Record low runoff on the Sacramento River**

The four rivers that comprise the Sacramento River Index (Sacramento, Feather, Yuba and American Rivers) are also nearing record low levels for a two-year drought, again second only to 1976-1977.

By the end of the 2021 Water Year, the two-year projected flow accumulation is forecast to be around 15.9-17.0 MAF, ranking WY2020-2021 drier than the WY2014-2015 accumulated flow. The average annual volume of water is 18.2 MAF; so essentially, we've lost over an entire year of runoff.


SACRAMENTO VALLEY WSI (SACC0) 04/28/2021
Median Forecast: 15900 kaf | 44% of Mean
Created: 04/28/2021 at 09:50 AM PDT
Dec 08, 2019
109 kaf
36300 kaf
Mean
Multi-Year Volume Accumulation (1000s Ac-Ft)
Daily Observed Volumes (1000s Ac-Ft)
45000
42000
39000
36000
33000
30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
120
112
104
96
88
80
72
64
56
48
40
32
24
16
8
0
11/01 2019
01/01 2020
03/01 2020
05/01 2020
07/01 2020
09/01 2020
11/01 2020
01/01 2021
03/01 2021
05/01 2021
07/01 2021
09/01 2021
Multi Water Year 2020 to 2021 - Day (mm/dd/yy)
Observed to Date Percent of Mean: 46% (13900 kaf) Water Year to Date Mean: 30300 kaf
This product only considers meteorological uncertainty and does not account for hydrologic uncertainty.
Legend entries below can be toggled on/off.
90%: 15800 kaf
75%: 15800 kaf
50%: 15900 kaf
25%: 16000 kaf
10%: 17000 kaf
Min Trace (2007: 15700 kaf)
Median Trace (2018: 15900 kaf)
Max Trace (1996: 17400 kaf)
Volume Med
Volume Mean
Traces (1980-2018)
Record High
Record Low
Accum to Date Mean
Accum to Date Obs
Daily Obs
Obs Peak


Driest 2-year flows on Sacramento River
2021 = Observed plus median WY forecast
2-year Volume (MAF)
25
20
15
10
5
0
1977
2021
2015
1992
1934
1991
1988
1924
1932
1931




Source: https://cnrfc.noaa.gov/ensembleProduct.php?id=SACC0&prodID=12

**Conclusion:**

When you have two dry years in a row like this in Northern California, you can expect that drought impacts will get progressively worse in a much broader region. Any additional rainfall in May and June would have to overcome large soil deficits to produce any runoff in most regions. It looks like we're in for our worst Northern California drought since 1976-77.

Pete Fickenscher / CNRFC