

# Veles Water Weekly Report

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# WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Robin Bieber

**CLICK THE LINK BELOW**

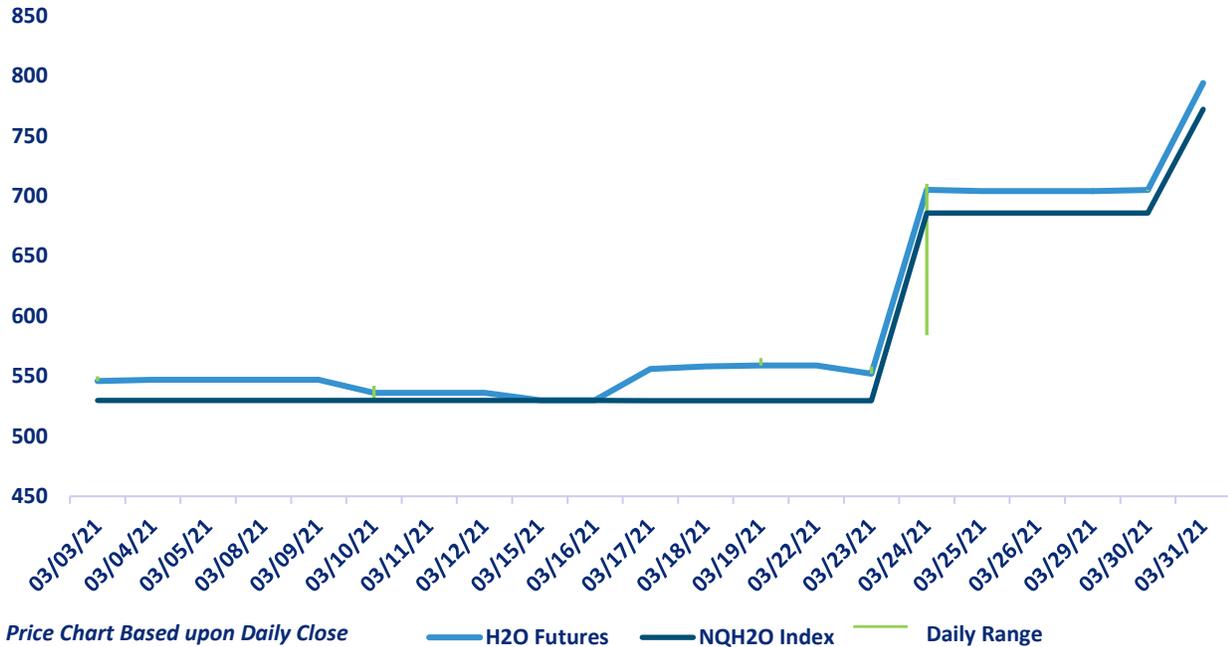
*"A 2 minute technical analysis video of H2O futures by Robin Bieber."*

<https://vimeo.com/531678644/442ae6dc1e>



## NQH2O INDEX PRICE vs H2O FUTURES PRICE

1 Month Price Performance NQH2O Index vs H2O Futures

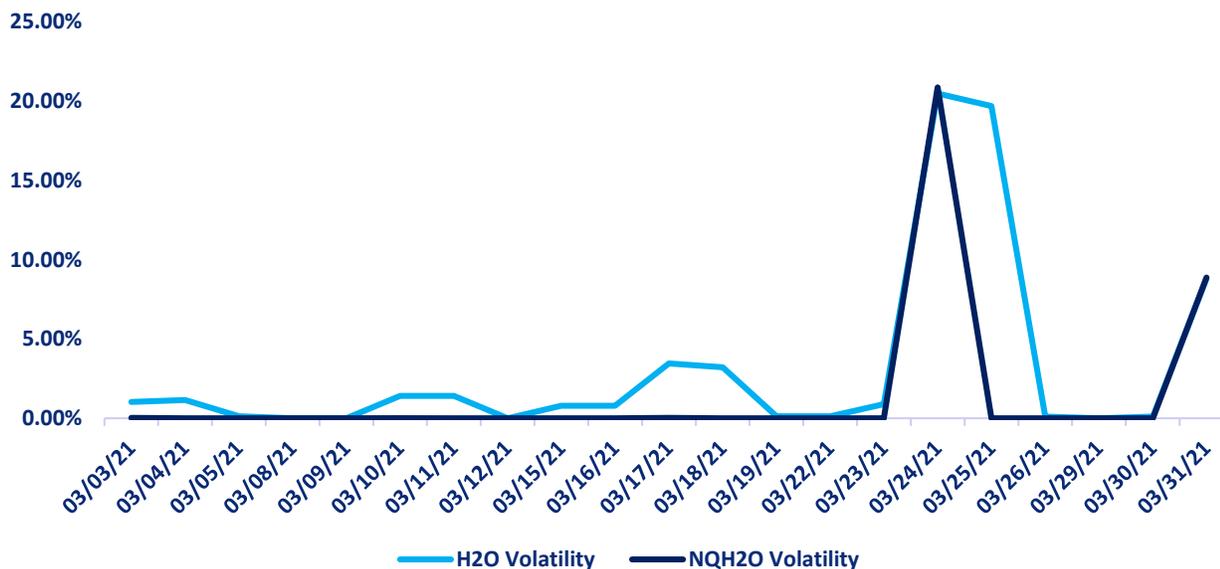


Another week of large upwards price movement in both the index and the futures. The week starting on the 24<sup>th</sup> March began with a new index level of \$685.89 up \$156.31 from the previous week. On the 31<sup>st</sup>, the index increased a further 12.57% to \$772.10. The futures ranged from a low of \$704 on the 25<sup>th</sup>, to the high of the week at \$794 reflecting the new index levels on the 31<sup>st</sup>. The futures closed yesterday at a premium of \$21.90 to the index. The futures reflected this move by increasing 12.62%, up from \$705 to close at \$794. The futures premium showing sentiment that it may go higher. This has been a phenomenal 46% increase in the index over 2 weeks and a year-to-date increase of 54.47%.



## H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

### Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	63.18%	27.06%	27.97%	16.947%
H2O FUTURES	N/A	31.6%	30.30%	25.62%

The large price move on the 31<sup>th</sup> has caused a significant increase in the index and futures volatility with an average volatility increase in the region of 25%. In the week beginning the 24<sup>th</sup> March the two month futures volatility is at a premium of 4.54% to the index. The one-month futures volatility is at a premium of 2.33% to the index. The one-week futures volatility is also at a premium of 8.68% to the index which has inverted from the previous week.

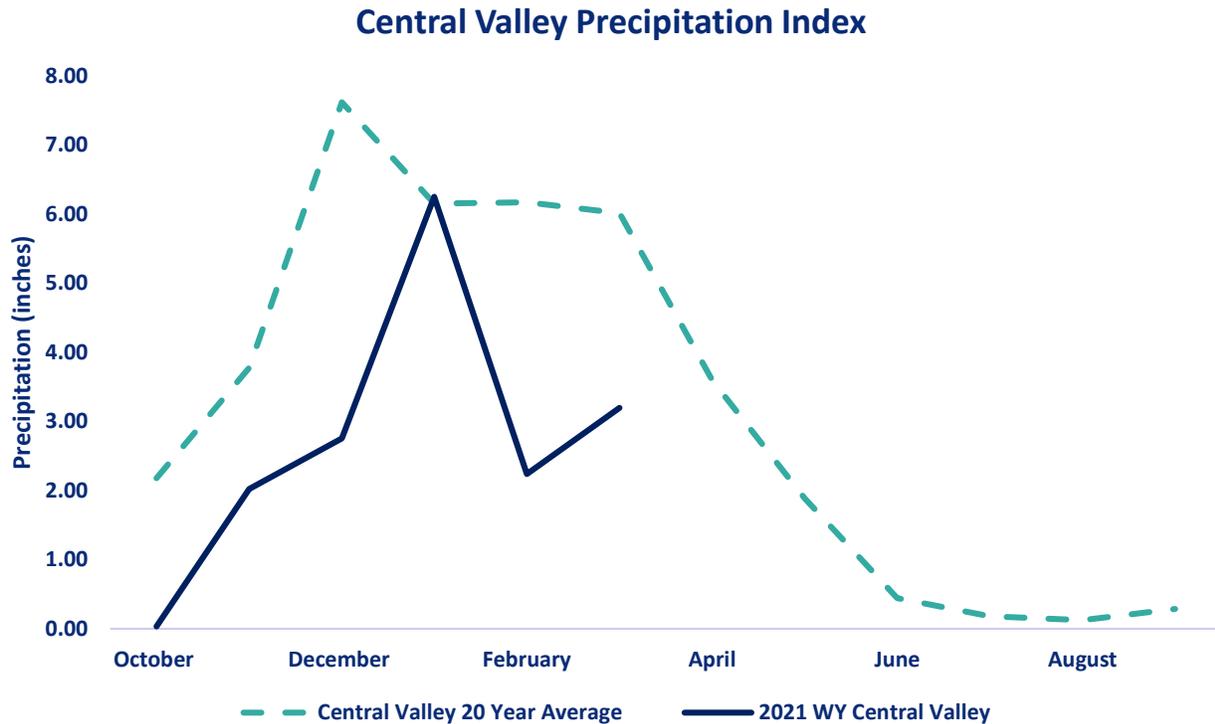
#### DAILY VOLATILITY

The daily volatility high for futures for the week was 19.70% on the 25<sup>th</sup> March with a low of 0.00% on the 29<sup>th</sup> March. Earlier in the week there were small intraday movements.

*Above prices are all **HISTORIC VOLATILITIES** and **IMPLIED VOLATILITIES** will be introduced once an options market has been established.*



## CENTRAL VALLEY PRECIPITATION REPORT



Central Valley average is calculated using data from 19 weather stations in the Central Valley, California.  
Data accurate as of 03/31/2021

STATION	MTD (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF 20 YEAR AVERAGE MTD	2021 WYTD VS 2020 WYTD %	2021 WY VS 20 YEAR AVERAGE TO DATE %
SAN JOAQUIN 5 STATION (5SI)	3.54	0.00	60%	52	54
TULARE 6 STATION (6SI)	1.74	0.00	43%	47	40
NORTHERN SIERRA 8 STATION (8SI)	4.31	0.01	54%	55	52
CENTRAL VALLEY TOTAL	9.59	0.01	52%	51	48.66

## RESERVOIR STORAGE

RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	HISTORIC ANNUAL AVERAGE CAPACITY %
TRINITY LAKE	1,290,157	53	81	67
SHASTA LAKE	2,390,143	53	79	65
LAKE OROVILLE	1,429,140	40	65	53
SAN LUIS RES	1,126,365	55	73	61

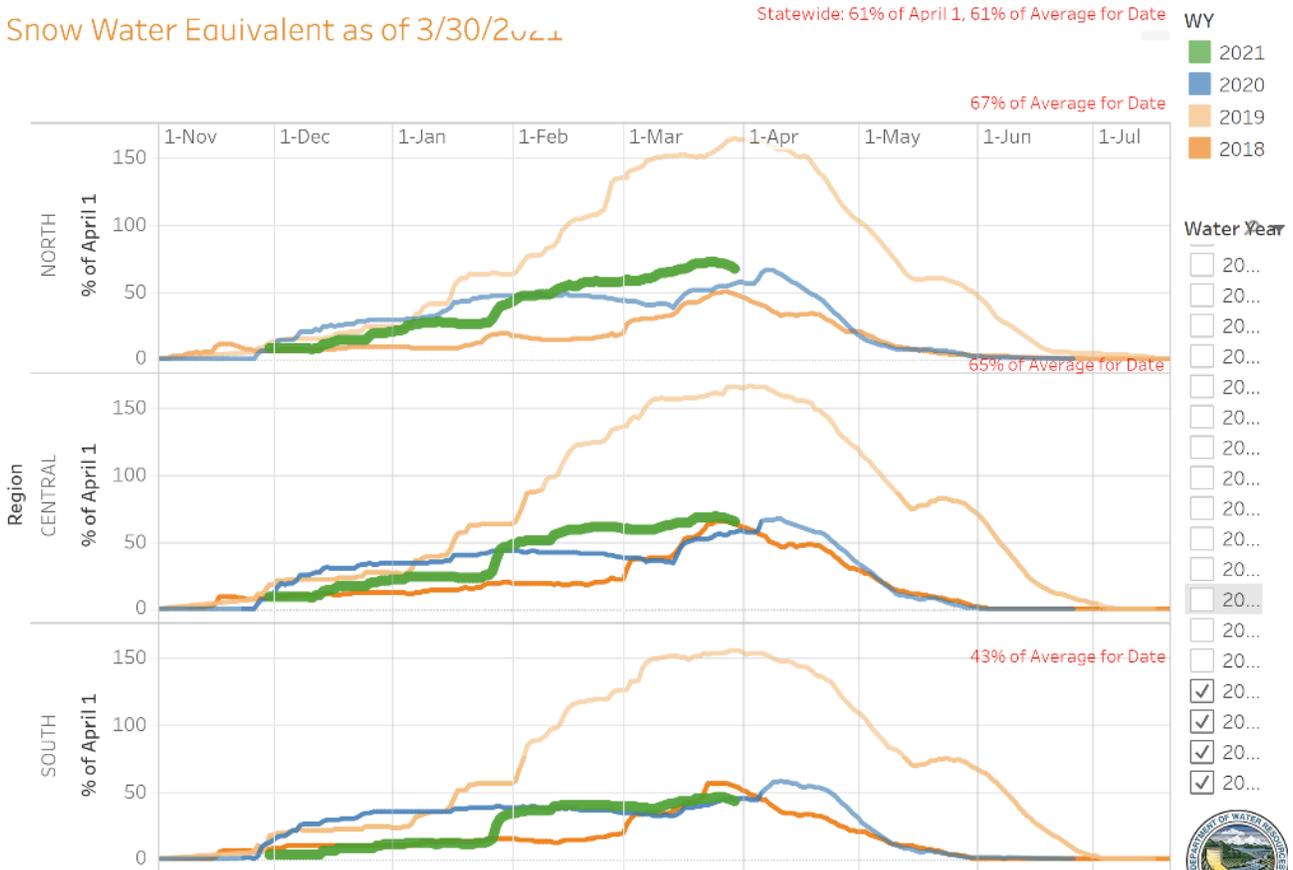


# SNOWPACK WATER CONTENT

## Snow Water Equivalent Dashboard

Snow Water Equivalent as of 3/30/2021

Statewide: 61% of April 1, 61% of Average for Date



Last Updated: 3/31/2021 8:50:28 AM



REGION	*SNOWPACK WATER EQUIVALENT (INCHES)	WEEK ON WEEK CHANGE %	% OF AVERAGE LAST YEAR	% OF 20 YEAR HISTORICAL AVERAGE	% OF HISTORICAL **APRIL 1ST BENCHMARK
NORTHERN SIERRA	20.1	-4.98	56	67	67
CENTRAL SIERRA	20.3	-3.98	57	65	65
SOUTHERN SIERRA	10.7	0.93	45	43	43
STATEWIDE	17.8	-3.93	54	61	61

\*Snow Water Equivalent, or SWE, is a commonly used measurement used by hydrologists and water managers to gauge the amount of liquid water contained within the snowpack. In other words, it is the amount of water that will be released from the snowpack when it melts. SWE has regional variance.

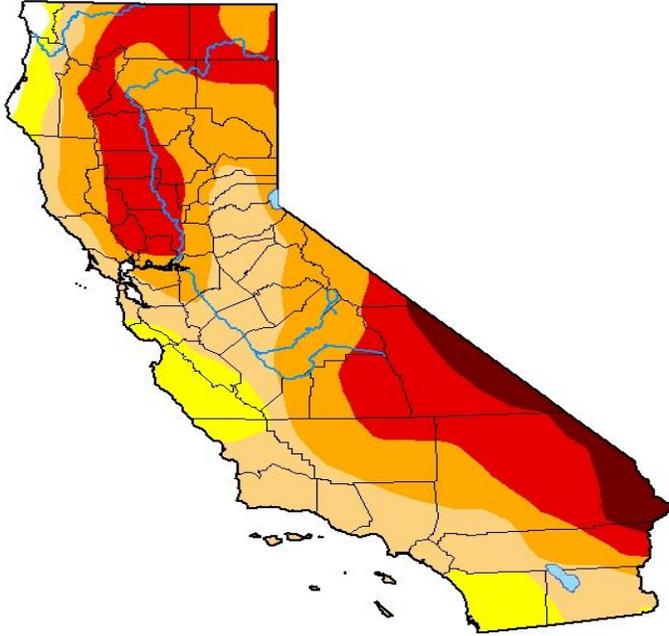
\*\* April 1<sup>st</sup> is used as the benchmark as it when the snow pack in California is generally deepest. It has been used the benchmark date since 1941 by DWR and can be used to predict spring river flow.



# DROUGHT MONITOR

## U.S. Drought Monitor California

**March 23, 2021**  
(Released Thursday, Mar. 25, 2021)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.70	99.30	90.66	64.02	31.76	5.36
<b>Last Week</b> 03-16-2021	0.78	99.22	90.62	58.59	29.54	3.75
<b>3 Months Ago</b> 12-22-2020	0.00	100.00	95.17	74.34	33.75	1.19
<b>Start of Calendar Year</b> 12-29-2020	0.00	100.00	95.17	74.34	33.75	1.19
<b>Start of Water Year</b> 09-29-2020	15.35	84.65	67.65	35.62	12.74	0.00
<b>One Year Ago</b> 03-24-2020	24.86	75.14	40.42	1.30	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

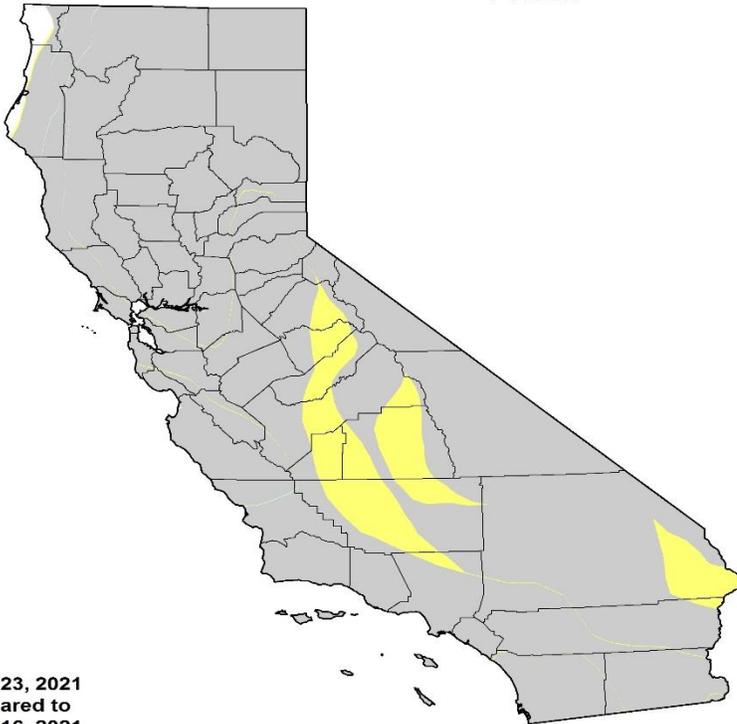
Author:

Brad Pugh  
CPC/NOAA



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

### U.S. Drought Monitor Class Change - California 1 Week



March 23, 2021  
compared to  
March 16, 2021

[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

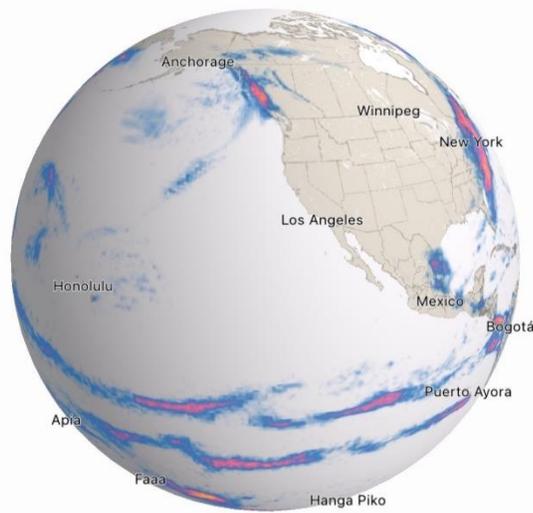


- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. Map courtesy of NDMC.



## CURRENT SATELLITE IMAGERY



Over the last week there have been small amounts of precipitation along the CA/OR border and along the CA/MX border. The central regions of CA have stayed dry with rising temperatures and high winds. Current imagery does not show any expected notable precipitation events.

The US Drought Monitor release their statistics with a 1-week lag to this report. As you can see from the ‘Drought Change’ map on the previous page there has been a ‘Class 1 Degradation(worsening)’ in the central region of CA. This has been caused by the lack of precip. and the rising temperatures in the region.

See “Climate Forecast” for a 1-10 day outlook and full weather discussion.

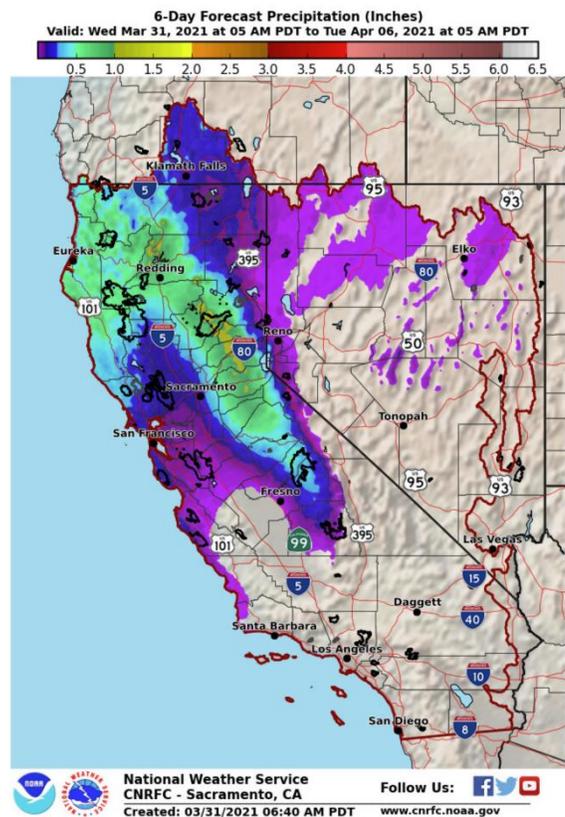
Ref. Dark Sky

## CLIMATE FORECAST

### 1-10 Day Outlook

Dry and warming conditions expected in CA throughout the rest of the week and into the weekend. Temperatures could rise as much as 10-20 degrees above normal.

At best the Sierra Mountain range could see 0-0.5 inches of precipitation, however for the majority of the state it expected to stay dry and warm with high winds.





## CALIFORNIA WEATHER DISCUSSION

Precipitation in March has been disappointing bringing no respite to the dry conditions. With precipitation levels in the Central Valley sitting at 48.6% of the 20-year average it could be a very long and dry summer for those that rely on California's water supply.

Our analysis indicates that snowpack levels have not caught up to the April 1st benchmark, an important indicator of spring river flow and a vital source of water for California. The Northern Sierra saw a 4.98% drop in SWE whilst the Southern Sierra saw nearly 1% gain, however the Southern Sierra still sits at a worrying 43% of the April 1st benchmark.

Another alarming metric is state reservoir levels. Lake Oroville is at 40% capacity and only 53% of the historical average for this time of year. Other major reservoirs are also worryingly low in capacity sitting below 70% of their average capacity.

Analysis of Californian drought condition indicate that 99.30% of the state is in some form of drought. 64.02% of the state is in 'severe drought' conditions. In areas near the Sierra and Southern California drought levels have worsened since October. Some of this can likely be attributed to a La Nina winter, where odds for seeing average precipitation are lower from about the Central Coast down into Southern California. This is common when the jet stream tends to favor a Pacific Northwest focus through winter as resilient high pressure to the west of California sends storms more northward.

As drought conditions are more intense this year versus last year, odds are currently higher for an early start to fire season should drier than average and warmer than average temperatures continue through spring. NQH2O is acting as an environmental warning signal to the authorities and managers of assets in Southern California.



## REGULATORY NEWS

### **Proposal to create state water court gets broad support**

NEVADA- The Nevada Supreme court held a public hearing Wednesday to consider the creation of a commission to study the adjudication of water law cases, with an eye toward creating a water law specialty court.

The petition was filed by Chief Justice James Hardesty, who believes the study is “warranted to improve the education, training, specialization, timeliness, and efficiency” of the court’s approach to water law.

Water law cases frequently involve the assessment of lengthy records, specific scientific concepts, conflicting expert testimony, and years of relevant Nevada history, Hardesty noted in his petition.

Cases can take years to adjudicate, adversely delaying final water law decisions in the state. State water regulators say there’s been an increase in frivolous claims and unnecessary litigation over the past 10 years

*Source: [Nevada Current](#)*

### **Water Infrastructure Funding**

The Senate Committee on Environment and Public Works advanced legislation that would authorize a total of \$35 billion in water and wastewater investments. Remember, though that authorization does not mean appropriation, and the program funding would depend on the annual budget process.

The bill includes authorization of \$14.7 billion over five years for both the Drinking Water and Clean Water State Revolving Funds. The bill also authorizes funding for lead pipe removal, asset management aid to small systems, workforce training, septic system repairs, and a report on water affordability.

*Source: [Senate Bill S.914](#)*

### **Water for Conservation and Farming Act**

OREGON- Oregon’s Democratic senators introduced the Water for Conservation and Farming Act, which would establish a water infrastructure fund within the Bureau of Reclamation. The bill authorizes \$300 million annually to the fund, from 2031 through 2061, for water reuse, conservation, and dam safety. Among environmental provisions,



## VELES WATER WEEKLY REPORT

there is fisheries drought planning and a \$3.5 million program to pay farmers who create bird habitat on their land.

Source:

[Senate Bill](#)

### **Strong state oversight needed to ensure California's wetlands are protected**

CALIFORNIA- According to a just-released study from Audubon, [tens of millions of land birds](#) rely on the Central Valley as well, including 60% of all Tree Swallows, 40% of Anna's Hummingbird and other backyard favorites.

But today, the situation is dire. More than 90% of wetlands in the Central Valley – and throughout California – have disappeared beneath tractors and bulldozers. It is not surprising that multiple studies show a similar decline in bird populations that depend on them, in California and beyond.

Central Valley wetlands are managed wetlands and are, therefore, tied in closely with state and local water management systems and management decisions. Because of the damming of California's rivers for development, agriculture and flood control, wetlands in the Central Valley are disconnected from natural water sources and maintained through applied water. Surface water delivered through a series of aqueducts and canals or groundwater pumped from local wells is applied to shallow ponds to create flooded wetland habitat.

State oversight is needed by the Department of Water Resources and the State Water Resources Control Board to ensure that California's last, precious wetlands are protected in the process of long-overdue water management fixes.

Source: [Cal Matters](#)



## WATER NEWS

### **Delta Study Predicts Stronger Floods and Less Water Supply**

While it is not common knowledge, practically all Californians are linked to the Bay-Delta region via its triple function as a source of drinking water for some 27 million Californians, a critical water provider for the Golden State's hefty agricultural industry, and a rich and unique ecosystem. But for those who live in the legal Delta zone – some 630,000 people – the braided weave of the Sacramento and San Joaquin Rivers and their maze of associated wetlands and levees provides a place of home, community, and recreation. And, as a recent study by the Delta Stewardship Council shows, climate change is tugging on the watery thread holding it all together.

“Two-thirds of Californians get their water from here, which is why climate change in the Delta has a large effect on statewide water availability,” says Harriet Lai Ross, assistant planning director with the Delta Stewardship Council. “There are over 750 species in the Delta, and we are part of the state's three-trillion-dollar economy. [Our climate study] is the first time we've looked at all of the pieces comprehensively.”

The council's overview reveals a grim outlook for the millions of people that are tethered to the region's water: drought similar to that experienced in 2012-2016 will be five to seven times more likely by 2050. This will result in more severe and frequent water shortages and, as the report bluntly states, “lower reliability of Delta water exports.”

*Source: [SF Estuary](#)*

### **Below-Average Winter Prompts California Water Conservation**

The second consecutive dry winter has prompted state water managers to reduce allocations to the state water project that supplies millions of Californians and 750,000 acres of farmland. The state Department of Water Resources announced this week that it will only be able to deliver 5% of the requested allocations following below-average precipitation across the state. That figure is down from the initial allocation of 10% announced in December. Many of the state's major reservoirs are recording just 50% of average water storage for this time of year, and won't see a major increase due to a snowpack that is averaging just 65% of normal, according to state statistics..

*Source: [KCRA](#)*

**Some water suppliers have just 5% amid drought. Oakdale district has surplus to sell**

The winter just ended has been especially dry, but the effects vary widely for farm water suppliers in and near Stanislaus County.

The Oakdale and South San Joaquin irrigation districts actually have surpluses to sell thanks to storage in New Melones Reservoir from 2020.

They have lined up buyers on the west side of the San Joaquin Valley, where some districts can expect just 5% allotments from the federal and state canal systems.

The Modesto and Turlock irrigation districts are capping their growers, but at levels that will still provide roughly 80% of the accustomed supplies. Carryover in Don Pedro Reservoir helped make this possible.

The federal Central Valley Project last month announced allotments that range from 5% to 75% for water pumped south from the Sacramento-San Joaquin Delta. The higher amount will go to four districts between Crows Landing and Mendota that have priority due to water rights predating the CVP.

*Source: [Modesto Bee](#)*

**California to add nearly 1,400 firefighters amid dry weather**

California Gov. Gavin Newsom said Tuesday that the state will hire nearly 1,400 additional firefighters as an unusually dry winter raises fears of another devastating wildfire season.

California depends on snowfall in the mountains for much of its water. But the latest snow survey recorded a statewide “snow water equivalent” of just 15 inches, or about 54% of average for April 1, when the state’s snowpack is the deepest.

The state had a similarly dry winter last year. What followed was a record-setting wildfire season where more than 4% of the state’s land burned, destroying nearly 10,500 buildings and killing 33 people.

On Tuesday, Newsom said he was using his emergency authority to spend \$80.74 million to hire 1,399 additional firefighters at the California Department of Forestry and Fire Protection, better known as Cal Fire. More than 19,000 firefighters battled blazes in California last year.

*Source: [Associated Press](#)*



**Utah is a leader in cloud seeding. Is it working?**

For nearly 50 years, the second-driest state in the nation has been giving natural winter storms an engineered boost to help deepen its snowpack through a program largely funded by state taxpayers, local governments and water conservancy districts. More recently, the states that rely on water from the lower Colorado River — California, Arizona and Nevada — have been paying for additional cloud seeding in Utah.

Thanks to the steady funding stream, Utah’s program has developed into one of the most comprehensive weather modification efforts in the West, and, after decades of expansion, every major mountain range in the state now sees extensive cloud seeding. The Utah Division of Water Resources estimates the state’s cloud seeding led to an 8% jump in overall snowpack last year, and an average of 7% in previous seasons since the program began in 1973. Federal researchers have reached similar conclusions about the effectiveness of seeding. But unlike Colorado and New Mexico, which could potentially expand cloud seeding as a drought response, Utah doesn’t have as much room for growth because there are fewer gaps in its seeding program.

Source: [The Salt Lake Tribune](#)

***Note the attachment is not an inducement to trade and Veles Water does not give advice on investments.***