

Veles Water Weekly Report

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April 29th 2021

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WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Robin Bieber

CLICK THE LINK BELOW

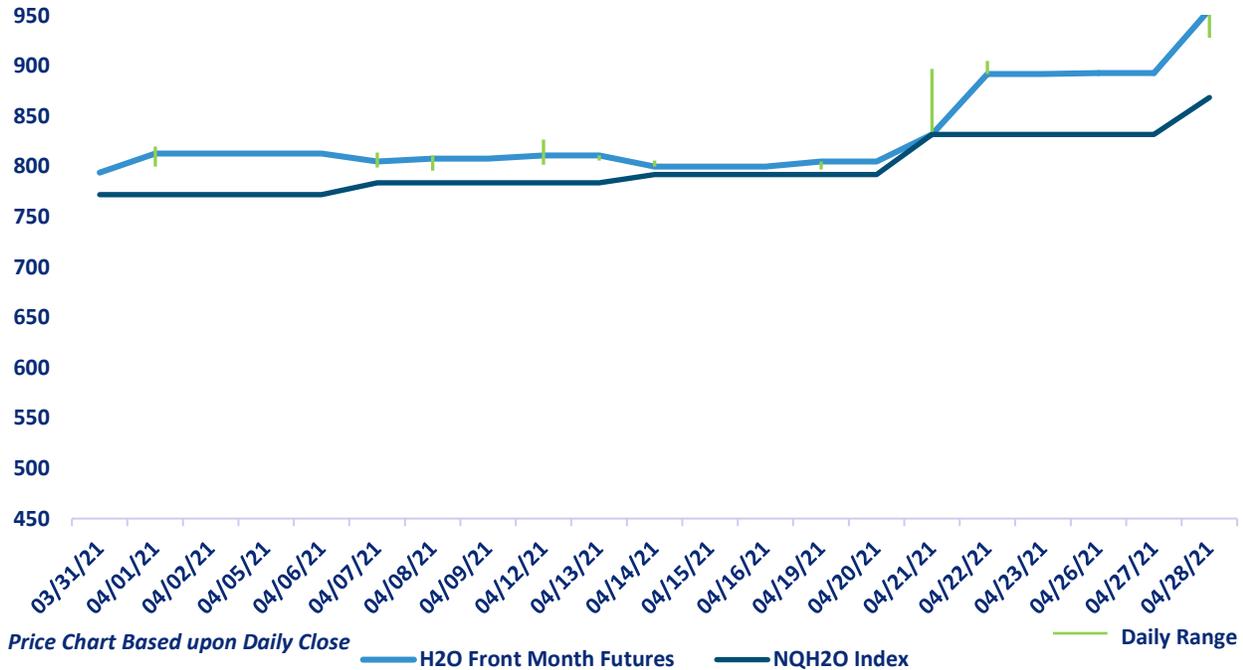
“A 2 minute technical analysis video of H2O futures by Robin Bieber.”

<https://vimeo.com/543023501/499c83a2a0>



NQH2O INDEX PRICE vs H2O FUTURES PRICE

1 Month Price Performance NQH2O Index vs H2O Futures

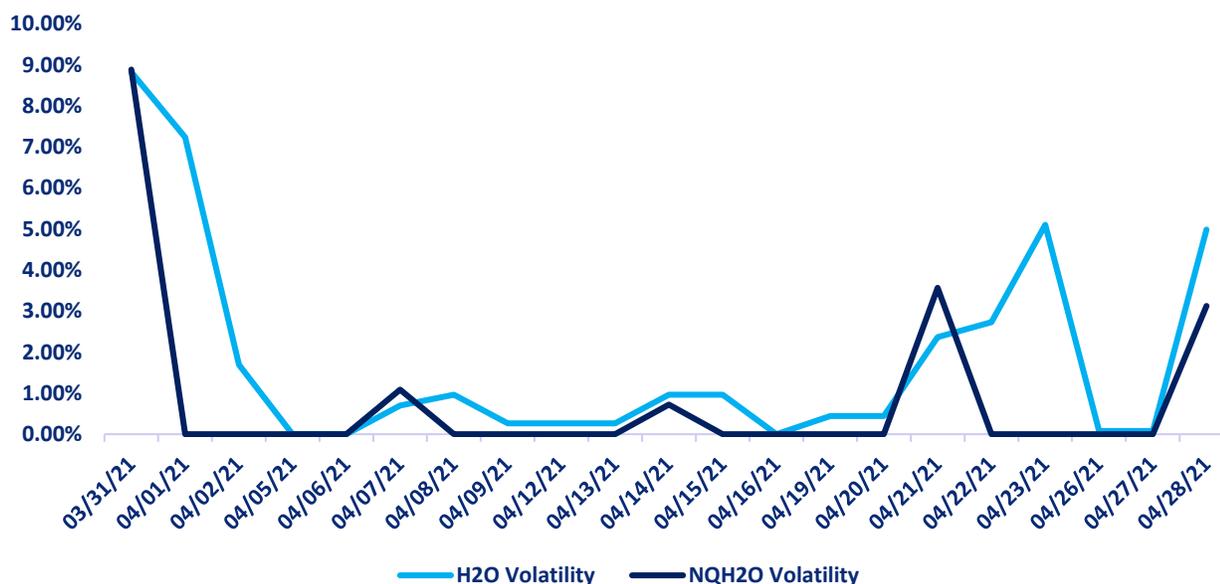


The NQH2O index increased by a further \$36.74, or 4.42% up yesterday, making a new all-time high at \$868.70. The May futures contract, now the front month contract traded a low of the week on the 22nd at \$892 to a high of the week yesterday printing \$956 at close. For most of the week the futures have been trading at a premium to the index of between \$60.04- \$61.04. However yesterday the premium increased further to the index at \$87.30. This indicates that the market believes the price may move even higher over the length of this contract. With the index surpassing its all-time high previously achieved in 2014 the Year-to-Date increase for NQH2O is 73.8%.



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	59.40%	26.40%	4.04%	0.633%
H2O FUTURES	N/A	31.8%	10.33%	7.79%

In the week beginning the 21st April the two month futures volatility is at a premium of 5.40% to the index up 1.37% from the previous week. The one-month futures volatility is at a premium of 6.29% to the index, down 13.32% for the week. The one-week futures volatility has again reverted back to a premium of 7.16%.

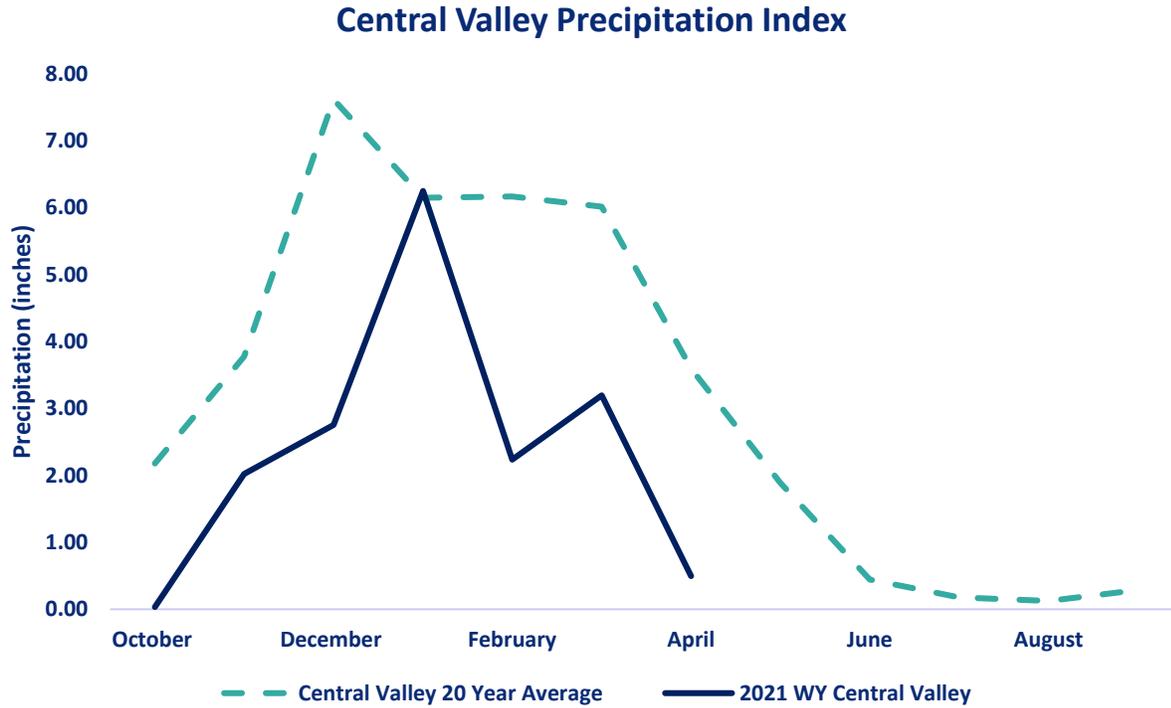
DAILY VOLATILITY

The daily volatility high for the May futures for the week was 5.10% on the 23rd April with a low of 0.08% on the 26th April.

*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 as of 04/28/2021

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)	0.52	0.52	14.00%	62	50
TULARE 6 STATION (6SI)	0.22	0.22	8.19%	67	36
NORTHERN SIERRA 8 STATION (8SI)	0.75	0.71	17.10%	58	49
CENTRAL VALLEY TOTAL	1.49	1.45	13.10%	62	45

RESERVOIR STORAGE

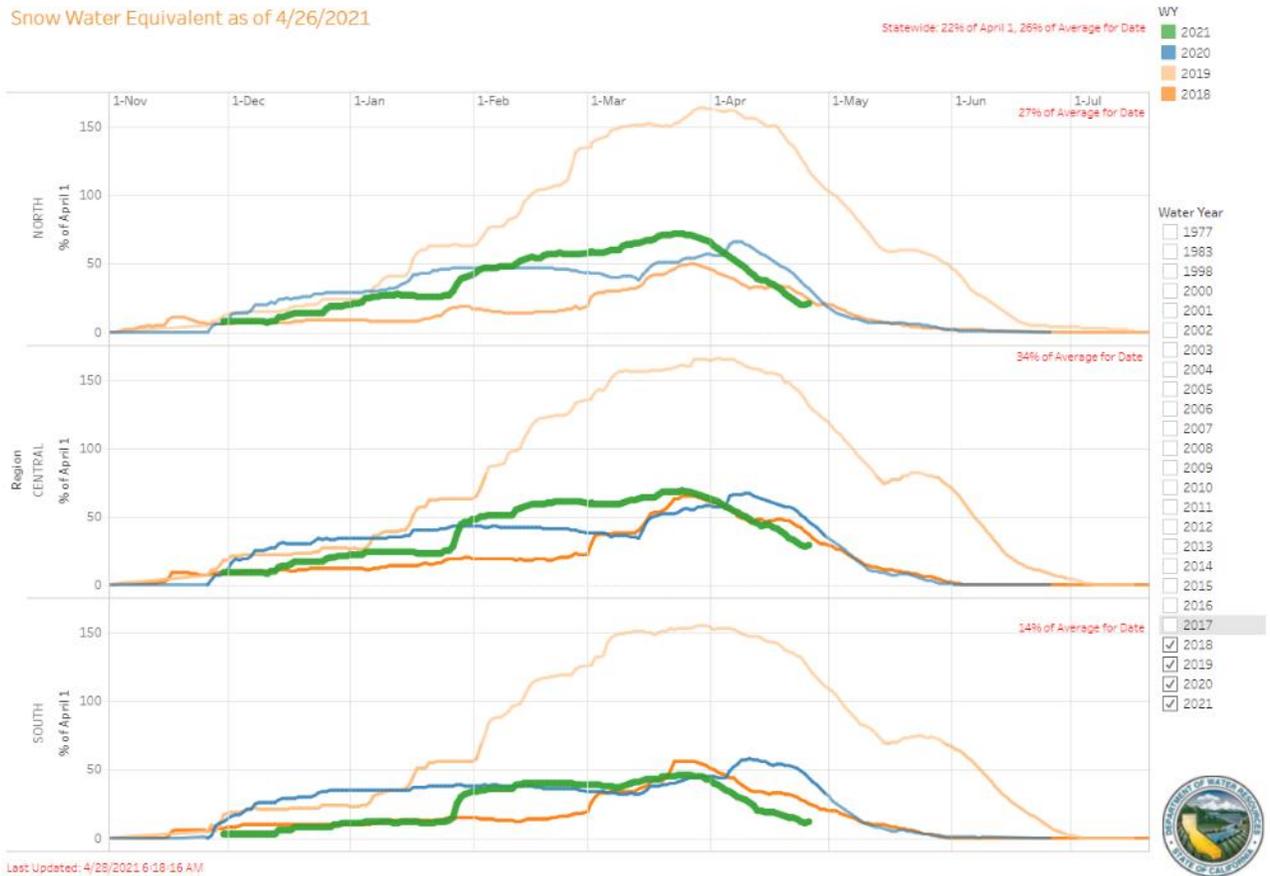
RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	HISTORIC ANNUAL AVERAGE CAPACITY %
TRINITY LAKE	1,313,032	54	79	65
SHASTA LAKE	1,316,670	51	82	60
LAKE OROVILLE	1,496,696	42	70	53
SAN LUIS RES	1,032,565	51	75	57



SNOWPACK WATER CONTENT

Snow Water Equivalent Dashboard

Snow Water Equivalent as of 4/26/2021



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	6.1	21.79%	38	28	22
CENTRAL SIERRA	8.7	20.18%	53	34	29
SOUTHERN SIERRA	3	46.43%	49	14	12
STATEWIDE	6.3	21.25%	47	28	23

*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.

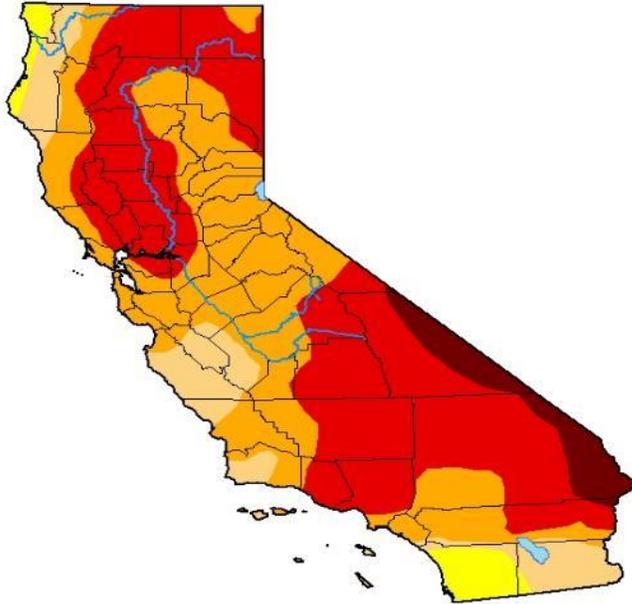
** April 1st is used as the benchmark as it when the snow pack in California is generally deepest. It has been used the benchmark date since 1941 by DWR and can be used to predict spring river flow.



DROUGHT MONITOR

U.S. Drought Monitor California

April 20, 2021
(Released Thursday, Apr. 22, 2021)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	96.54	85.37	49.86	5.36
Last Week 04-13-2021	0.78	99.22	94.14	76.97	38.68	5.36
3 Months Ago 01-19-2021	0.00	100.00	95.20	78.12	39.46	1.19
Start of Calendar Year 12-29-2020	0.00	100.00	95.17	74.34	33.75	1.19
Start of Water Year 09-29-2020	15.35	84.65	67.65	35.62	12.74	0.00
One Year Ago 04-21-2020	41.80	58.20	35.70	19.59	4.66	0.00

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

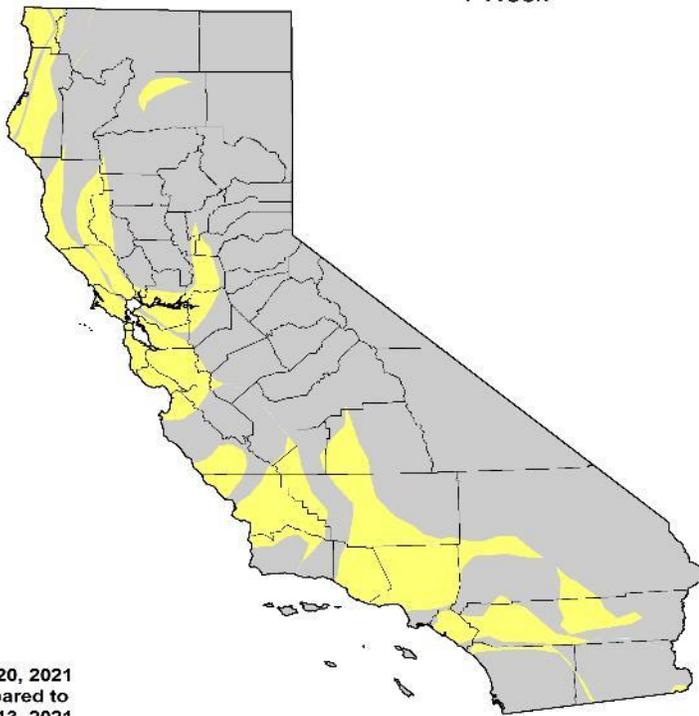
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:
Richard Heim
NCEI/NOAA



droughtmonitor.unl.edu

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



April 20, 2021
compared to
April 13, 2021



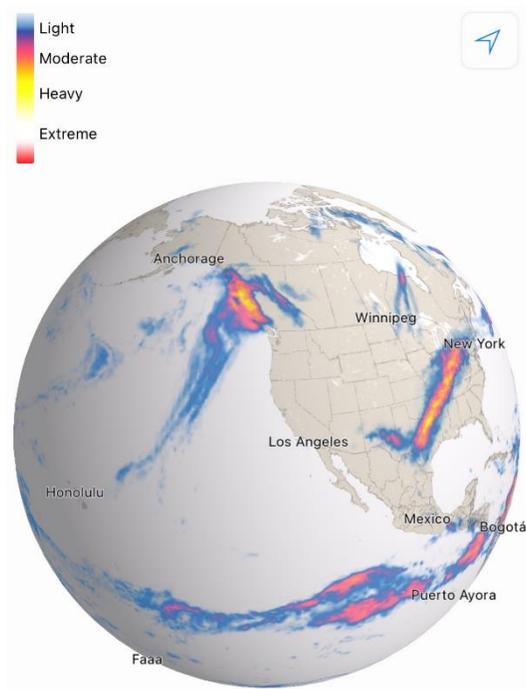
5 Class Degradation
 4 Class Degradation
 3 Class Degradation
 2 Class Degradation
 1 Class Degradation
 No Change
 1 Class Improvement
 2 Class Improvement
 3 Class Improvement
 4 Class Improvement
 5 Class Improvement

droughtmonitor.unl.edu

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



Since last weekend CA has seen some slight relief in terms of precipitation and snowfall in the Sierra. Temperatures are 15-20 degrees below the average for this time of year which has eased conditions slightly in the region.

The US Drought Monitor release their statistics with a 1-week lag to this report. What can be seen from the “Drought Change Map” on the previous page is that there has been a “class 1 degradation” in drought condition along the coast. 100% of CA is classed as “Abnormally Dry D0-D4”. “Extreme Drought conditions D3-D4” have increased by nearly 10% since the last monitor.

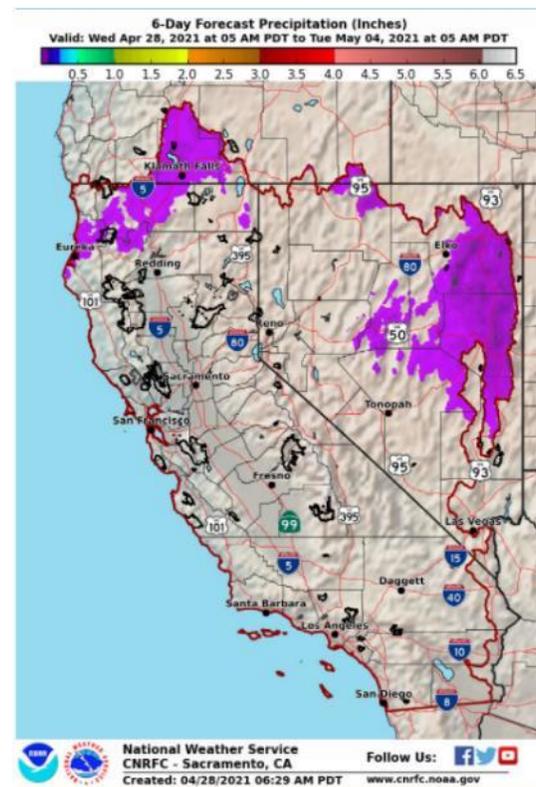
See “Climate Forecast” for a 1-10 day outlook and

full weather discussion.

Ref. Dark Sky

1-10 Day Outlook

An upper air low over southern CA is contributing to showers over Northern CA and eastern portions of the transverse ranges of southern CA. As the upper low works its way to the south, expect enough moisture/instability for afternoon showers over portions the southern half of the Sierra, and southern CA higher terrain. Temperatures ranging from near normal to well-below normal today should warm quickly to 10-20 deg above normal for most locations by Fri-Sat with mainly dry conditions. A trough expected to bring slightly cooler temps across much of the area (but still generally above normal) as well as potential light precipitation in the upper Klamath basin by this weekend.





CALIFORNIA WEATHER DISCUSSION

Over the past 2 weeks we have ranged from record setting April highs to 10-20 degree below average temperatures for this time of year. The cooler temperatures have brought with it some light precipitation which has been much needed for the month of April.

Since last week's report parts of the central valley has received some precipitation, the first rainfall this month. The first half of the water year has concluded and with the wet season almost finished, 2021 ranks the fourth driest on record. The Central Valley sits at only 13.10% of its 20 Year Average Precipitation levels for April.

Whilst the Sierra has seen some snow over the past week it has done little to slow the rate at which the snowpack has been melting as you can see from the dashboard earlier in this report. Looking forward over the next week do not expect to see a repeat of last week and conditions will more than likely return those we have seen so far this month.

Whilst the drought monitor is released at a one-week lag to this report, it has been following a pattern we do not expected it to diverge from and that is that conditions are worsening. Gov. Newsom last week declared a water emergency in 2 counties in Northern CA. This week water officials have declared drought in the East Bay Municipal Utility District asking residents to conserve water before an official state call to issue a formal drought declaration.

In lighter news, the Metropolitan Water District of Southern California (MWD) has announced that they have record 3.2 million acre-feet of water stored, enough to serve its population of customers for this year and into the next. However, whilst the "gap" may be filled this year, MWD have emphasized the continued need to conserve water as nobody can predict when these arid conditions will ease.



REGULATORY NEWS

Kern supervisors prepare to declare local drought emergency

The Kern County Board of Supervisors is preparing to declare a state of emergency due to drought, which could put pressure on Gov. Gavin Newsom to do the same statewide. For weeks, pressure has grown across the Central Valley for a statewide drought emergency declaration. Last week, Supervisor Phillip Peters joined officials from seven other Central Valley counties urging the governor to issue an emergency drought declaration, which would give state agencies special powers to address the weather conditions and launch a public awareness campaign.

Kern's state lawmakers have also joined other legislators in calling on the governor to grant emergency powers to address the drought.

However, state officials have so far pushed back against the requests, saying the state is only in the first or second year of a drought whereas in 2014 — the last year an emergency drought declaration was issued — the state was in the third dry year.

Original Article: [Bakerfield.com](https://www.bakerfield.com) by Sam Morgan

Hurtado Bill to Repair and Restore State Water Project and Central Valley Project Infrastructure Passes Senate Natural Resources and Water Committee 6-0

Senator Melissa Hurtado (D-Sanger) released the following statement after her bill, SB 559—the State Water Resiliency Act of 2021—was approved by the Senate Natural Resources and Water Committee by a 6-0 vote:

“We are on the verge of a global food crisis and Californians can avoid by learning from the crisis in 1974,” said Senator Hurtado. “Hunger and famine are not just a reality in some far away land anymore, it could be a real possibility for Americans if we fail to be proactive. The State Water Resiliency Act of 2021 will provide much needed funding for canal conveyance repairs throughout the Central Valley that will impact more than 31 million Californians. These projects represent access and reliability of clean, safe, drinking water, health, jobs, and our food supply chain. Two-thirds of the nation’s fruits and nuts come from California--one-third of its vegetables-- and this drought, as well as the damage to our water infrastructure has threatened our ability to produce food at the volume we do. SB 559 provides us the opportunity to not only plan for our future, but to protect it as well.”



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Original Article: [Senator Melissa Hurtado by Michelle Sherwood](#)

East Bay water officials declare drought, ask residents to conserve water

East Bay Municipal Utility District officials declared a “Stage 1” drought on Tuesday, asking residents to cut down their water consumption as the region faces its driest year on record amid statewide drought conditions.

The water district serves most of the East Bay, including Berkeley and Oakland, and officials said during their board meeting Tuesday that rainfall this winter season fell far short of the levels needed to meet storage targets and provide water to its 1.4 million customers.

The Mokelumne River watershed in the Sierra Nevada, which houses the region’s water, has only received about half of its average yearly rainfall overall with no more rain in sight, said Lena Tam, EBMUD manager of water resources planning. Rainfall in the East Bay has been even worse, creating the driest year on record, and rainfall expected last weekend did not materialize.

As a result, the water district is setting a voluntary, region-wide conservation goal of up to 10% to avoid more restrictive, mandatory conservation targets and worse drought conditions during a year when California is also expected to experience a severe fire season. This will be an average goal, so customers are encouraged to conserve even more than 10% to offset those who conserve significantly less.

Original Article: [Berkeleyside by Supriya Yelimeli](#)

First federally declared water shortage projected for Lake Mead

Lake Mead is still expected to experience its first federally declared water shortage next year, a recently released federal study shows.

Projections released by the U.S. Bureau of Reclamation last week show Lake Mead’s elevation at the end of this year reaching 1,067 feet, a level that would trigger a shortage declaration. The projection was based on the most probable inflow.

Bureau of Reclamation spokeswoman Patti Aaron said officials have worked for years to ensure reliable water and power, so the projections are not cause for immediate concern. But that doesn’t mean the region’s water challenges should be ignored.

“We’re in the 22nd year of drought, it’s important to pay attention to conservation,” Aaron said. “And everyone needs to contribute to doing the best we can to save water.”

If Bureau of Reclamation projections in August show the lake level below 1,075 feet at the beginning of next year, a shortage will be declared. That means Nevada’s allocation



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of water from the Colorado River would be reduced from 300,000 acre feet to 287,000 acre feet.

Original Article: [Las Vegas Review Journal by Blake Appar](#)

County Adopts Water Management Amendment to State Water Project After Months of Deliberation

After nearly three months of deliberation, the Santa Barbara County Board of Supervisors unanimously voted to adopt a water management amendment to the State Water Project that allows local water districts to buy and sell water supplies outside of the county.

The amendment was adopted with a sense of urgency as the Central Coast Water Authority, which manages and operates the State Water Project infrastructure for the county and coordinates deliveries of the allocated water and supplemental purchased water, was concerned that it would not be able to acquire water for local water districts when supplies are low, according to Ray Stokes, executive director of CCWA.

The State Department of Water Resources decreased water allocations this year from 10% to 5%, an amount so low that it ties the 2014 amount of the lowest allocation on record, according to Stokes.

“We are pleased that the county heard our need to purchase additional water supplies in this critically dry year, and really the only way to do that is through this amendment,” Stokes said, adding that the CCWA is already reaching out to other State Water Project contractors to see if it can now purchase additional water supplies.

Original Article: [Noozhawk by Martinez Poque](#)

White House steps up efforts to address prolonged drought in West

The Biden administration has launched a working group focused on addressing drought conditions in the West as the region continues to suffer from a long period of water scarcity.

The group, which will be co-chaired by the departments of the Interior and Agriculture, will work with state, local and tribal governments on community needs in weathering drought, according to a news release from the Interior Department.

“Water is a sacred resource. This interagency working group will deliver a much-needed proactive approach to providing drought assistance to U.S. communities, including efforts to build long-term resiliency to water shortages,” Interior Secretary Deb Haaland said in the release.



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The United States Drought Monitor lists about 90% of Nevada in three drought classifications — “severe,” “extreme” and “exceptional” — in order of severity. Clark County is ranked in the “exceptional drought” category.

Original Article: [Las Vegas Sun by John Sadler](#)

Federal, State Money Aims To Mitigate Drought Harms

As drought realities set in, money is flowing to water authorities to fix wells and watersheds.

Fresno and Madera water sources will get their piece of \$26 million in grants from the State of California’s Department of Water Resources, according to a press release from the agency.

The money is intended to go toward overdrafted groundwater basins that communities rely on during times of drought.

“California’s current drought conditions following a second consecutive dry year speak to the importance of managing our groundwater for long-term reliability,” said DWR Director Karla Nemeth in a press release. “Today’s funding awards further the state’s support for local leaders as they manage their groundwater supplies, particularly supporting communities at risk of drought impacts.”

Sixteen individual construction projects will be funded in the Central Valley. Of those projects, one in Fresno County will construct 60 wells that will be used to replenish depleted groundwater aquifers with stormwater.

Another three projects in Madera County will provide access to aquifers on 45,000 acres of ag land.

This month, the Friant Water Authority also approved a cost-sharing agreement with the Bureau of Reclamation to repair the Friant-Kern Canal. Bidding on the construction is expecting to be completed by summer and the first phase is expected to be finished by 2024.

Federal funding passed by Congress in 2020 will provide \$206 million. Another \$125 million will come from an agreement with the Eastern Tule Groundwater Sustainability Agency.

Original Article: [The Business Journal](#)



Full U.S. Senate Set To Consider Major Water Infrastructure Bill

The full U.S. Senate is set to consider a major bipartisan water bill that would provide upgrades to Arizona's water infrastructure. It's the first legislation to advance out of Senate committee related to the Biden-Harris administration's recent sweeping infrastructure proposal. KNAU's Ryan Heinsius reports.

The \$35 billion Drinking Water and Wastewater Infrastructure Act would invest in alternate water sources like desalination and storm and wastewater reuse.

One key component, however, is the reauthorization of the Indian Reservation Drinking Water Program, which would fund 10 tribal water projects a year in Arizona.

Original Article: [KNAU by Ryan Heinsius](#)

WATER NEWS

Drought-hit California moves to halt Nestlé from taking millions of gallons of water

California water officials have moved to stop Nestlé from siphoning millions of gallons of water out of California's San Bernardino forest, which it bottles and sells as Arrowhead brand water, as drought conditions worsen across the state.

The draft cease-and-desist order, which still requires approval from the California Water Resources Control Board, is the latest development in a protracted battle between the bottled water company and local environmentalists, who for years have accused Nestlé of draining water supplies at the expense of local communities and ecosystems.

Nestlé has maintained that its rights to California spring water dates back to 1865. But a 2017 investigation found that Nestlé was taking far more than its share. Last year the company drew out about 58m gallons, far surpassing the 2.3m gallons per year it could validly claim.

Original Article: [The Guardian by Maanvi Singh](#)



Marin explores revival of Richmond Bridge water pipeline

The potential for water shortages in Marin has become so acute that the Marin Municipal Water District is in early talks with East Bay officials to build a pipeline across the Richmond-San Rafael Bridge to pump water into the county.

The last such drastic move was during the 1976-1977 drought, when the district cut water use by 57% and faced running out of water within four months. The 6-mile pipeline gained statewide and federal attention and became a symbol of the state's drought of record.

Rebuilding the pipeline is one of several options being considered by the district, including adding a temporary desalination plant, should this upcoming winter be as dry as 2019 and 2020, said Ben Horenstein, the district general manager.

"It's a very complex and costly project and it has a lot of elements that have to come together for it to be successful," Horenstein said. "This would only be considered if the drought continues into a third year or longer."

Original Article: [Mercury News by Will Houston](#)

California Farm Water Coalition Details How Water Cuts Are Affecting Ag

The California Farm Water Coalition (CFWC) has detailed how limited water supplies are affecting agricultural production. Dry conditions in California have resulted in a decline in acreage of several crops due to significantly reduced water availability. Approximately two million acres of irrigated farmland has had a reduction of 95 percent of its water supply for the year. That amounts to about one out of every four acres receiving only five percent of its intended supply of water. Another one million acres have had water supplies cut by 80 percent.

CFWC compares current conditions to those experienced in 2015, which resulted in the fallowing of more than half a million acres and an economic loss of \$2.7 billion. Major reservoirs are currently storing over a million acre-feet of water less than the levels recorded at the end of March in 2015. CFWC has developed a map detailing the impact that the lack of rain has had on water supplies throughout California.

Original Article: [AqNet West by Brian German](#)



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How independent government agencies will play a role in water management

The government says it is forging ahead with plans to create an integrated framework to regulate and manage water resources.

This plan would cause independent government agencies to work with the department of water & sanitation to address some of the challenges arising from the fragmented, undercapitalised and dysfunctional system...

Original Article: [Business Live by Linda Ensor](#)

Facing Drought, Southern California Has More Water Than Ever

The cracked and desiccated shoreline of Lake Mendocino made a telling backdrop for California Governor Gavin Newsom's message at a news conference last week: Drought conditions are here, and climate change makes the situation graver.

But water supplies vary across regions, which is why the governor limited a drought emergency declaration to just two northern counties. In fact, highly urbanized Southern California has a record 3.2 million acre-feet of water in reserve, enough to quench the population's needs this year and into the next.

That's thanks in large part to tremendous gains in storage infrastructure and steady declines in water use — driven by mandates, messaging, and incentive programs — belied by the region's storied reputation for thirst.

Brad Coffey leads water resource management at the Metropolitan Water District, the wholesale water cooperative that serves about half the state's population via 26 member agencies in Southern California. Talking about the state's drought cycles, he invoked John Steinbeck, who once wrote: "It never failed that during the dry years the people forgot about the rich years, and during the wet years they lost all memory of the dry years."

Original Article: [Bloomberg by Laura Bliss](#)

Santa Maria begins providing 100% groundwater supplies

As a result of the drought and reduced state water deliveries, the city of Santa Maria is now providing customers with 100% groundwater supplies.

The city continues to meet all drinking water standards while on groundwater, but city customers may notice a difference in the water due to the increased hardness and mineral content.

As California experiences a second consecutive dry year, the California Department of Water Resources recently set its state water allocation for the 2021 water year at 5%.



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Allocations represent the amount of state water that the department will deliver for the year and are set based on several factors, including water in storage, environmental requirements and rain and snowmelt runoff projections. At this time, the state department anticipates it will only be able to deliver 5% of state water supplies. In a typical month, Santa Maria uses state water to provide approximately 90% of the domestic water supply, with the balance consisting of local groundwater.

Original Article: [Santa Barbara News Press by Grayce McCormick](#)

California wells will go dry this summer. ‘Alarm bells are sounding’ in the Valley

Thousands of wells that bring water to San Joaquin Valley homes are at risk of drying up this summer, leaving families without running water for drinking, cleaning and bathing. While no one knows the extent of the threat from this second year of drought conditions, Jonathan Nelson with the Community Water Center says “the alarm bells are sounding.”

Homes, farms and entire communities that rely on shallow wells as their only source of water are vulnerable to declining groundwater levels from dry conditions and agricultural pumping.

“It’s going to be ugly. It’s going to be real bad,” said Wesley Harmon, a well driller with Big River Drilling in Riverdale. “It’s going to get worse and worse. And, the price of wells is going up.”

He’s preparing for a busy season. Last Friday, he got 15 to 20 calls by midday, all from residents in Fresno and Kings counties needing their pump lowered or a new well drilled. They may be surprised with the cost, as the price of gravel and plastic piping doubled in the last six months.

Original Article: [The Fresno Bee by Monica Vaughan](#)

Water Authority Offers to Help Parched Areas of California with Stored Supply in Central Valley

The San Diego County Water Authority’s board has directed its staff to explore opportunities to help other water districts weather an emerging drought across California.

The authority said that because of three decades of investment in supply reliability, along with a continued emphasis on water-use efficiency, the San Diego region has sufficient water supplies for multiple dry years.



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Those investments include high-priority Colorado River water from the Imperial Valley, seawater desalination, and access to the Semitropic Original Water Bank in Kern County, where the authority has stored about 16,000 acre-feet of water — enough to supply more than 30,000 homes for a full year.

Original Article: [Times of San Diego by Chris Jennewein](#)

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