

# Veles Water Weekly Report

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**VelesWater**



## WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Joshua Bell

**CLICK THE LINK BELOW**

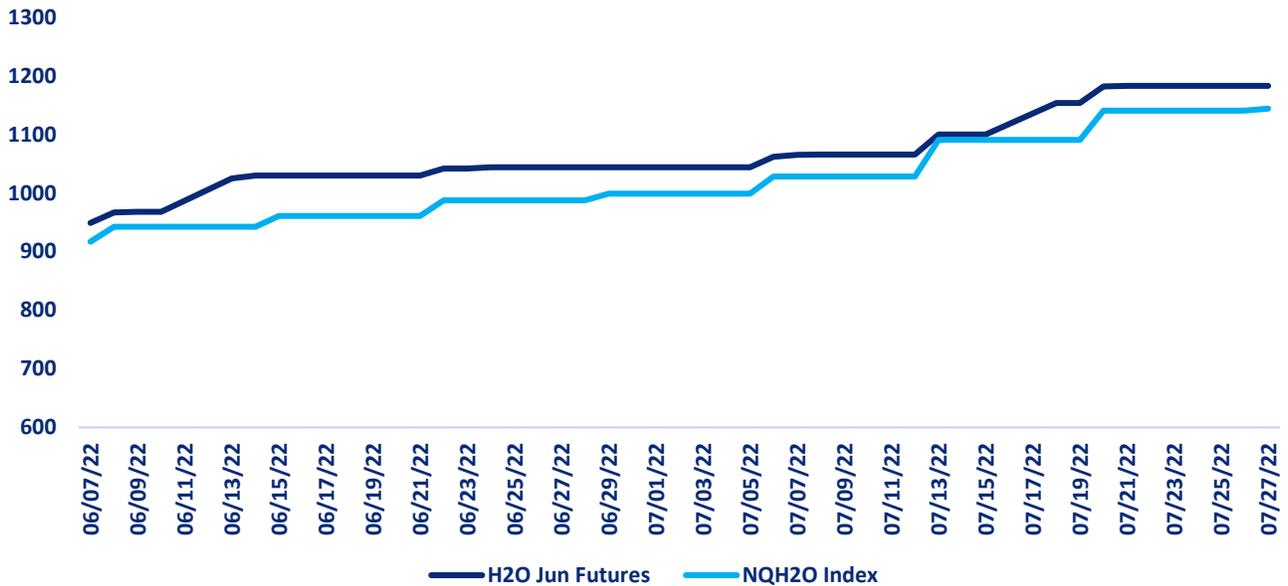
*"A 2 minute technical analysis video of H2O futures"*

<https://vimeo.com/734261732>



NQH2O INDEX PRICE vs H2O FUTURES PRICE

1 Month Price Performance NQH2O Index vs H2O Futures



Price Chart Based upon Daily Close

Daily Range

The new NQH2O index level of \$1144.14 was published on the 27<sup>th</sup> of July, up \$3.15 or 0.28%, which sets another new all-time high for eighth week in a row. The July contract has been at premium of \$38.86 -\$42.01 over the past week.

NQH2O is up 61.97% Year to Date.

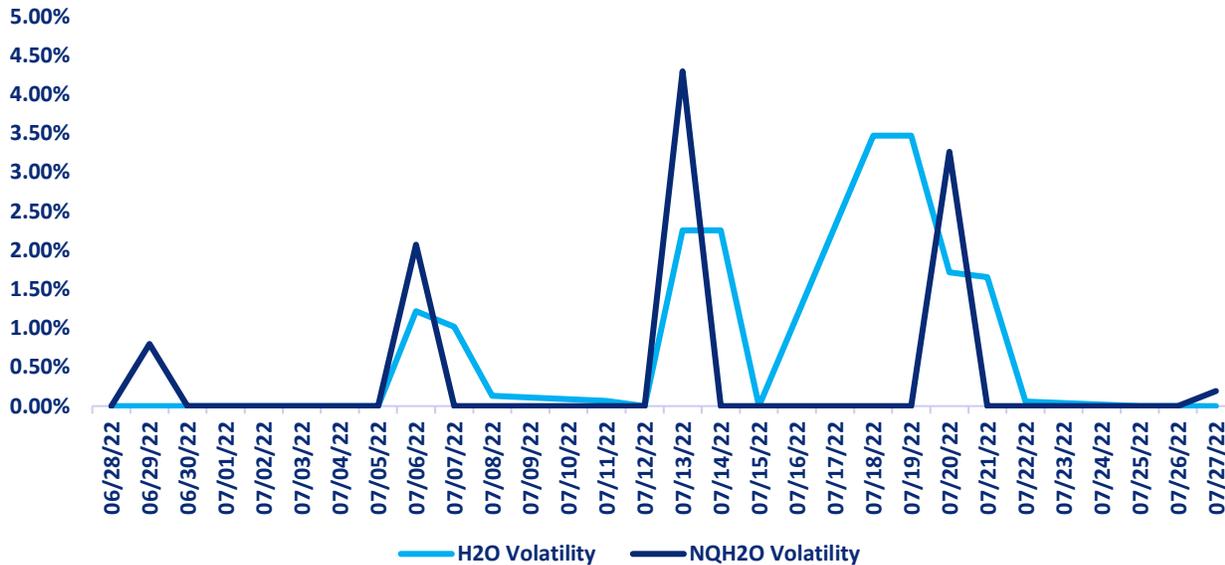
Below are the bid offer prices on different expiries being quoted in the market.

Aug 22	1183@1225
Dec 22	950@1015
Jun 23	1150@1285



## H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

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



#### DAILY VOLATILITY

Over the last week the June daily future volatility high has been 1.16% on July 21<sup>st</sup> and a low of 0 % for rest of the week..

ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	22.79%	6.60%	4.98%	4.338%
H2O FUTURES	N/A	9.40%	6.08%	0.08%

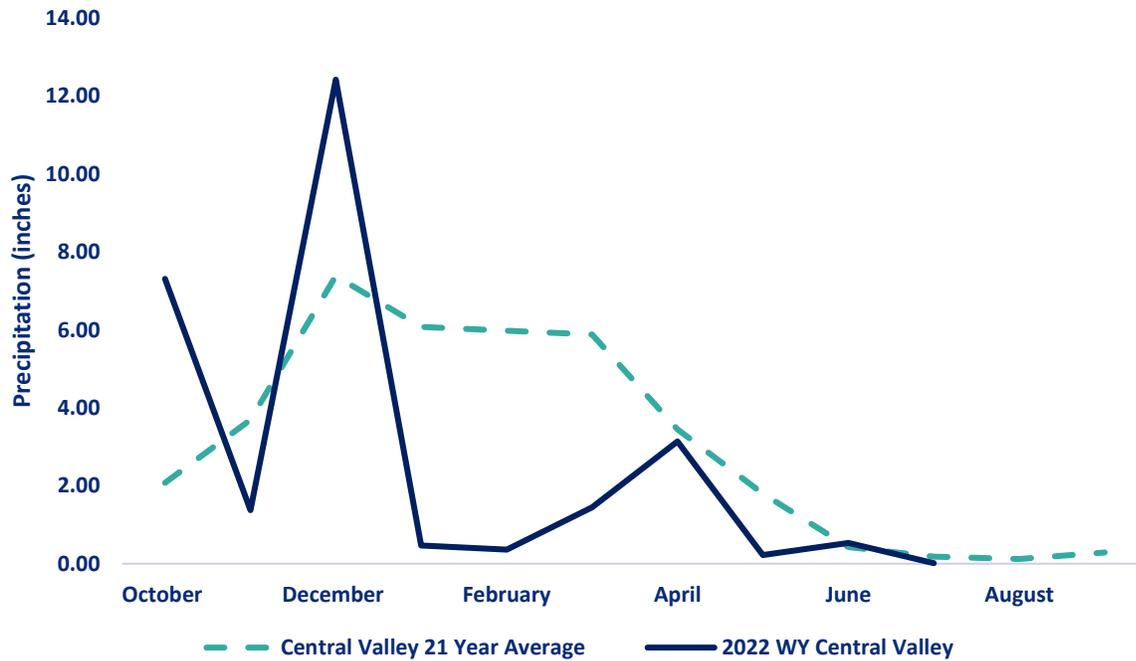
For the week ending on the July 27<sup>th</sup>, there are mixed signals, the two-month futures volatility is at a premium of 2.80% to the index, up 0.03% from the previous week. The one-month futures volatility is at a premium of 1.10% to the index, down 0.68% from last week. The one-week futures volatility is at a discount of 4.25% to the index, a reversal of 7.53% from the previous week.

*Above prices are all **HISTORIC VOLATILITIES** and **IMPLIED VOLATILITIES** will be introduced once an options market has been established. All readings refer to closing prices as quoted by CME.*



# CENTRAL VALLEY PRECIPITATION REPORT

Central Valley Precipitation Index



Central Valley average is calculated using data from 19 weather stations in the Central Valley, California.  
Data as of 27/07/2022

STATION	MTD (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF 20 YEAR AVERAGE MTD	2022 WYTD VS 2021 WYTD %	2022 WY VS 20 YEAR AVERAGE TO DATE %
SAN JOAQUIN 5 STATION (5SI)	0	0.00	0.00	47	62
TULARE 6 STATION (6SI)	0	0.00	0.00	35	58
NORTHERN SIERRA 8 STATION (8SI)	0.04	0.00	34.43	44	79
CENTRAL VALLEY AVERAGE	0.01	0.00	11.48	42	66

## RESERVOIR STORAGE

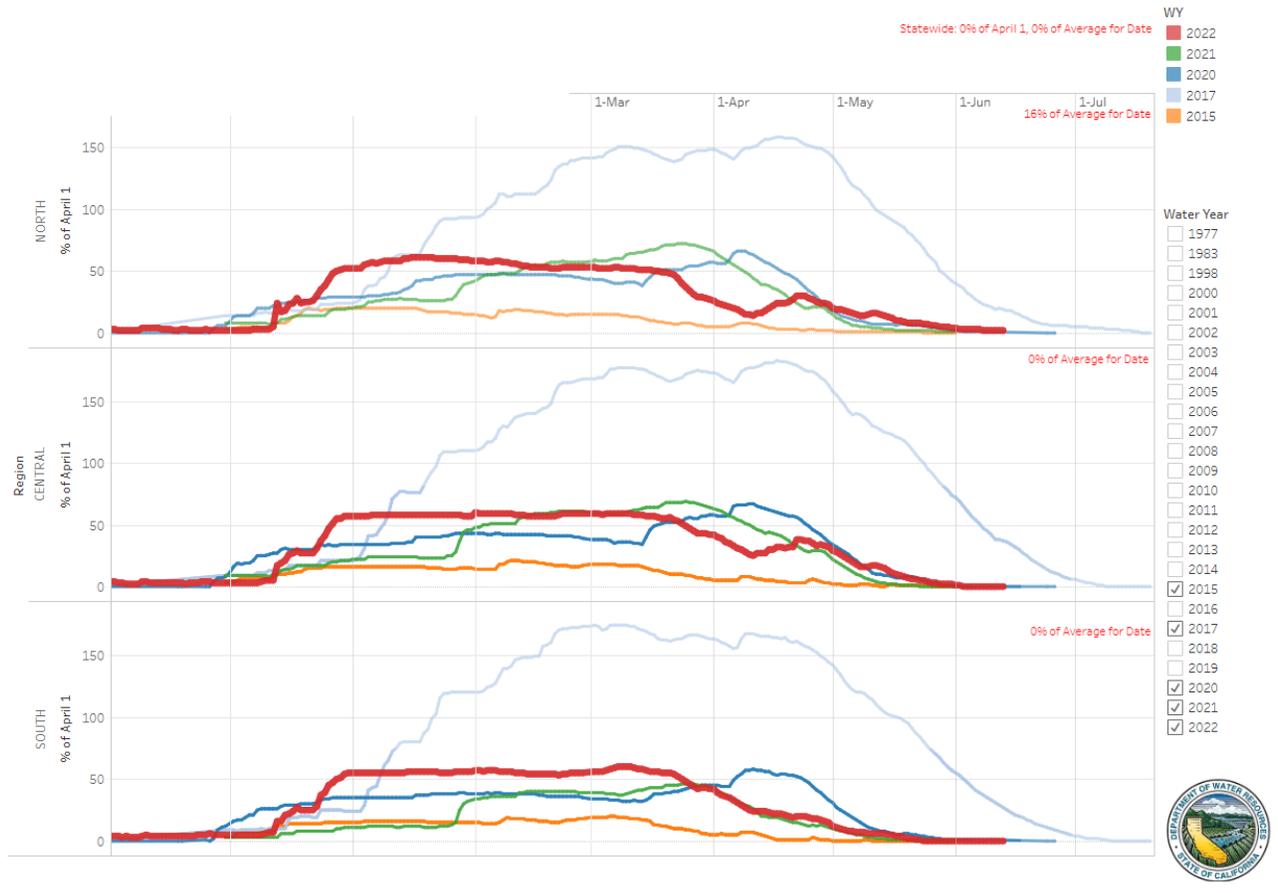
RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	HISTORIC ANNUAL AVERAGE CAPACITY %
TRINITY LAKE	673,671	28	42	38
SHASTA LAKE	1,702,956	37	33	53
LAKE OROVILLE	1,494,458	44	28	62
SAN LUIS RES	670,111	33	23	73

Reference: [California Water Data Exchange](https://www.waterdataexchange.ca.gov/)



# SNOWPACK WATER CONTENT

Snow Water Equivalent Dashboard



REGION	*SNOWPACK WATER EQUIVALENT (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF AVERAGE LAST YEAR	% OF 20 YEAR HISTORICAL AVERAGE	% OF HISTORICAL ** APRIL 1ST BENCHMARK
NORTHERN SIERRA	0.4	0.00	0	16	2
CENTRAL SIERRA	0	0.00	0	0	0
SOUTHERN SIERRA	0	0.00	0	0	0
STATEWIDE	0.1	0.00	0	0	0

\*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.

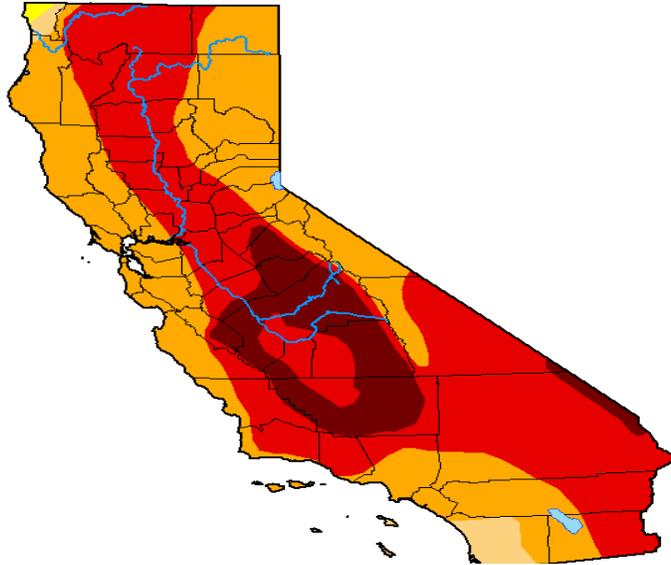
\*\* April 1<sup>st</sup> is used as the benchmark as it when the snowpack in California is generally deepest. It has been used the benchmark date since 1941 by DWR and can be used to predict spring river flow.



DROUGHT MONITOR

U.S. Drought Monitor  
California

July 19, 2022  
(Released Thursday, Jul. 21, 2022)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.78	97.47	59.81	12.74
Last Week 07-12-2022	0.00	100.00	99.80	97.48	59.81	12.74
3 Months Ago 04-19-2022	0.00	100.00	100.00	95.18	40.81	0.00
Start of Calendar Year 01-01-2022	0.00	100.00	99.30	67.62	16.60	0.84
Start of Water Year 09-28-2021	0.00	100.00	100.00	93.93	87.88	45.66
One Year Ago 07-20-2021	0.00	100.00	100.00	94.75	85.75	33.42

**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:**  
Brian Fuchs  
National Drought Mitigation Center



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



July 19, 2022  
compared to  
July 12, 2022

droughtmonitor.unl.edu



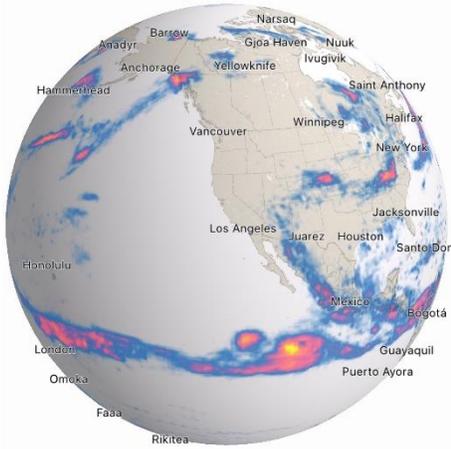
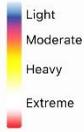
The US Drought Monitor release their statistics with a 1-week lag to this report. Over the past week the has been 0.02% class 1 improvement in D1 drought conditions and a 0.01% class 1 improvement in D2 drought conditions.

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.



# VELES WATER WEEKLY REPORT

## CURRENT SATELLITE IMAGERY



Map: Dark Sky

The current satellite picture shows a very dry western US. Very light storm activity brewing over the Northwestern Pacific. Some weak frontal activity seen along the Alaska Canadian border region.

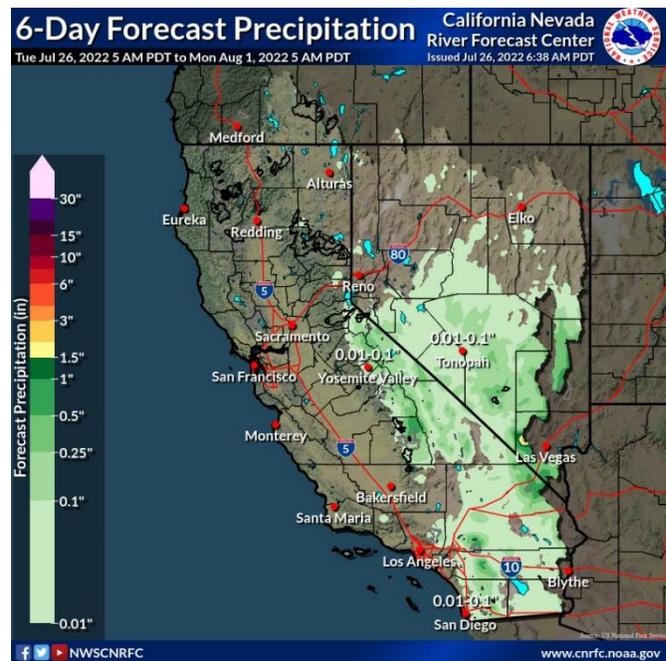
There is a very clear picture of moisture inflow from the Monsoonal effect showing the moisture flow flowing northwards out of Mexico into the Californian border into Arizona and New Mexico. This moisture is then being blown eastwards across the Mid-West and then curling northwards again up to the New York area. This moisture is meeting scattered clouds over the Great Lakes region into Canada.

We expect this Monsoon activity to continue over the next few months.

## 10 Day Outlook

High pressure will build over northeast CA and northwest NV centered rather close to Lake Tahoe for the end of the week. This will bring well above normal temperatures to much of northern/central CA and northern NV with anomalies of 5- to 15-degF over seasonal norms. Also...shower and thunderstorms will retreat to far southern NV and southeast CA.

By the end of the weekend...look for the high pressure cell to begin to shift downstream. Look for southerly flow to once again develop across much of the region with lower latitude moisture drawing northward across CA and NV with elevated PW. Once again...coverage of showers and thunderstorms will spread up the Sierra to near the CA/OR border and far inland across much of NV. Best opportunity of measurable precipitation will be over the Sierra from Lake Tahoe southward...the state of NV south of US-50...and southeast CA as well as the coastal mountains from Los Angeles to San Diego counties.





### WESTERN WEATHER DISCUSSION

Temperatures were warmer than normal over much of Montana and into northern Nevada, southern Idaho, and eastern Wyoming with departures of 6-8 degrees above normal. Temperatures were cooler than normal by 1-2 degrees over the coastal regions of Washington and Oregon. Highly variable and scattered monsoonal moisture continues to impact the region, with some areas with above-normal precipitation for the week in Nevada, Arizona, and southern California as well as into areas of southern Colorado and Utah. Only minimal changes were made this week as the full impact of the recent precipitation is not fully known yet, but improvements are possible depending on how the rest of the monsoon season continues.

Reference:

Brian Fuchs, National Drought Mitigation Center  
Ahira Sanchez-Lugo, NOAA/NCEI



## VELES WATER WEEKLY REPORT

### WATER NEWS

#### CALIFORNIA WATER NEWS

### **CA DWR to Release Draft Environmental Impact Report For Delta Tunnel This Week**

The California Department of Water Resources has announced that it will be releasing their Draft Environmental Impact Report (DEIR) early this week for the Delta Conveyance Project, AKA the embattled Delta Tunnel. Documents for federal review of the project will be released later this fall.

“Modernizing how California moves water supplies across the Sacramento-San Joaquin Delta can’t be done by repeating the past,” DWR said in an update entitled, “Delta Conveyance: A Fresh Look Yields a New Project.” “It requires starting with a fresh look and an open mind. That is what the Delta Conveyance Project (DCP) team did and the result, to be detailed shortly with the release of draft environmental documents, is a proposed project that is different than anything advanced in the last four decades.”

The changes in the plans include changes to the intakes, the tunnel itself, the power lines, the route and the operations, according to DWR. Here are some of the highlights of the proposed changes:

#### The Intakes:

A traditional large water intake, like the one at Freeport, has tall metal vertical screens that stretch along a bend of a river and are visible from a distance. Giant brushes clean them daily, sometimes even hourly. The system that drives these brushes often creates a screeching sound that can annoy neighbors.

With this in mind, the proposed project does not use traditional water intake. Instead, DCP opted for screens wrapped into horizontal cylinders that are shorter in length than the vertical variety. They are located completely below the water surface, including their brush cleaning systems, therefore, the visual impact is minimized and the noise impact eliminated. The DCP team didn’t have to look far to find these screens. They were developed and are sold by a local company based in the Delta.

#### The Tunnel:

Once diverted, the water begins its southbound journey in a single tunnel. The DCP proposes a tunnel capacity of 6,000 cubic feet per second. The previous proposal was 50 percent bigger than that and the so-called “Peripheral Canal” proposal of 1980 was more than three times the capacity.

An independent panel of experts advised that today’s tunnel boring machines can dig twice as far as we thought only a decade ago. That shrunk the number of sites needed to place these boring machines into the ground from six to two. A forebay, which is a human-made reservoir, about half-way along the route once thought to be necessary



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was eliminated as well. These changes alone preserve hundreds of acres of Delta farmland.

### The Power:

Tunnel machines use sizeable amounts of electricity, meaning that new power transmission is required at the two DCP shaft sites. The majority of new power lines will be installed underground or on existing poles. This is particularly helpful for the hundreds of thousands of birds along the Pacific Flyway that use the Delta as their home for part of the year as electric lines can be a collision threat to birds. This route also helps avoid conflicts with Sandhill Cranes flying between lands in the Woodbridge Ecological Reserve and has no footprint in the Stone Lakes National Wildlife Refuge.

### The Route:

The tunnel route stays to the east unlike the previous conveyance route that went through the heart of the Delta. The route largely follows major roads like Interstate 5 which reduces major construction activities in rural landscapes connected only by two-lane roads. This route also ends at a location that no previous conveyance project had contemplated.

Bethany Reservoir, 1.5 miles south of the State Water Project's existing pumping system in the southern Delta, marks the beginning of the California Aqueduct. The proposed tunnel route connects it directly into Bethany Reservoir. This eliminates the need to construct a whole new forebay next to Clifton Court, preserving over 1,000 acres of farmland and nearby wetlands.

### The Operations:

The two new intakes in the northern Delta would only be used when the same water can't be safely captured by the existing system in the winter and spring. This new approach lessens changes to flow patterns in the estuary.

No final decision on any aspect of this proposed project has been made. The upcoming release of the draft environmental impact report creates an important opportunity to listen to the public and look at the project with fresh eyes.

View this fact sheet for additional information on preliminary design and engineering objectives and resulting refinements.

For more information on the delta conveyance project, please visit DWR's Delta Conveyance webpage or subscribe to our mailing list.

However, Barbara Barrigan-Parrilla, Executive Director of Restore the Delta, commented that she wasn't impressed with the changes in the "new" project — and has little faith that their questions and concerns regarding the project will be addressed in the proposed project:

"We hold little faith that the Draft EIR will address any of the questions and concerns we raised repeatedly during our work with the Stakeholder Engagement Committee for the Design Construction Authority during that two-year tunnel planning process. To address our numerous questions around water quality, salinity intrusion, and pollution



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mitigation, DWR would not only have to speak about the sacrifices required by the people of the Delta with frankness, but they would also have to display earnest proposals to resolve these significant pollution impacts resulting from construction and operation of the project. Anything less than that will relegate the people of the region to second-class status in terms of air and water pollution impacts.

“What is even sadder: the State continues to make the same mistake that it has for the last sixteen years in regard to order of operations. We first need an emergency, comprehensive statewide plan for dealing with aridification – the long-term change to our climate we are all witnessing. Second, the State must complete and implement both phases of the Bay-Delta Plan. How can we move forward with a tunnel without updates to flow and water quality standards for the Delta?”

“With significant water shortages on the horizon, it is mind boggling that the Delta Conveyance Project is the first priority of the Department of Water Resources and the Newsom Administration. DWR and the State Water Resources Control Board must find some courage to do the hard work of bringing supply and demand into balance first. We must come to terms with how much industrial agriculture the state can truly support, and we must move forward with a myriad of localized water projects to prepare for our drier climate.”

As I’ve said many times, the Delta Tunnel is a project based on the flawed concept that diverting more water out of the Sacramento River and Delta Estuary will somehow provide for the “coequal goals” of water supply and ecosystem restoration.

Original Article: [Daily Kos by Dan Bacher](#)

## What The Startling Low Water Levels In Lake Mead Mean For LA

NASA recently released startling satellite images of Lake Mead, which the agency notes is now at its lowest since April 1937, when the reservoir was still being filled for the first time.

A measurement taken on July 18 put Lake Mead at just 27% of capacity. That effect you see in the image above — with the lighter color on the cliffs where the water level once was — is known as the “bathtub ring.”

NASA called the images released “a stark illustration of climate change and a long-term drought that may be the worst in the U.S. West in 12 centuries.”

Which made us wonder: What does the reservoir's low level means for L.A.'s water supply?

Lake Mead, which gets its water from the Colorado River, is a very important source of water for Southern California.

So we talked to Nicola Ulibarri, who teaches urban planning at UC Irvine to understand the impact.



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"It'll vary a little bit depending if you're in Los Angeles versus Orange County versus San Diego. But on average, we get about a quarter of our water from the Colorado River," Ulibarri said.

"The main piece is if there's not very much water in Lake Mead, which means there's not very much water in the Colorado River more generally," she said. "There are going to be cutbacks"

Water allocations from the Colorado River are subject to a strict agreement between seven western states.

"California is more or less at the top of the water rights hierarchy," she said.

Original Article: [LAist by Julia Paskin](#)

### **Have a well on your own property in California? Get ready to start paying taxes and fees for using your own water.**

Recently, California's clown of a governor, Gavin Newsom, advertised in the state of Florida, trying to woo residents of that state to the land of fruits and nuts, California.

Seriously who wouldn't want to leave a tax free state such as Florida and move to California, where the only thing they don't tax is the air that you breathe...or at least they have yet to figure out how to do so.

Now we're learning that in addition to everything else they tax, California plans to bill landowners on water they take out of their own wells, on their own land, WND reports. Not, this is not a piece from The Babylon Bee...this is a plan from California lawmakers. It is reported that the bill will cost landowners hundreds of dollars in fees, and a whopping 25% penalty for anyone who doesn't pony up on time.

According to ZeroHedge, a source near San Diego has informed the California Globe about a letter that's been circulated to owners of private water wells.

"California is marching toward a world where those with wells on their own property will be required to put a meter on them and pay the government. Because in their world, the government owns everything and we're just renters," the source said.

The letter was sent this month and signed by Natalie Stork, chief of Groundwater Management Program Unit 1 and was written on letterhead of the California Water Boards, under authority of Newsom and Jared Blumenfield, Secretary for Environmental Protection.

According to the letter:

Landowners whose property is within an unmanaged area and contains an operating ground water extraction well must report the volume of groundwater extracted from the well. The groundwater extraction volume must be reported as a monthly total.

In addition to pumping volumes, reports must include the location of the well and the place and purpose of use of the groundwater. Groundwater extraction reports are due to the state water board until February 1, 2023.



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However, if you are required to report, the report must include pumping volumes for each month between the date of receipt of this letter and September 30, 2022.”

Of course, it wouldn't be a blue state, least of all the People's Republic of California, if it didn't also include more money for the state to waste on dumb stuff.

Each well owner would be required to pay a “base filing fee” of \$300 per well, which all extractors are required to report.

Add on to that an additional fee of \$10 per acre foot with a meter, \$25 per acre foot without. Tardy filers will be slapped with a late fee of 25% per month.

The California Globe reached out to Stork and the SGMA requesting information as to the breadth of distribution the letter received and more importantly, where the State Water Resources Control Board derives the authority to charge well owners for water pumped from their own property.

Neither had responded to the request as of the date this piece was published.

The source who received the letter was livid, noting the program would cost landowners significant sums of money. Moreover, California would do nothing to support the program but collect the money and spend it on outrageous programs such as providing medical insurance to illegals.

“They're sending out letters to property owners saying they must declare [if] they use just two acre feet,” said the source.

“If they use more they must pay an annual fee of \$300 for each well plus they must meter the water, send in a monthly usage report, and pay a fee for water that is pumped starting in Feb 2023. What a great racket! The government provides no service, no support, no product, doesn't even do the billing! That's all on citizens. All [the government does] is cash the check.”

There has not yet been organized resistance to the proposal, according to two individuals who received the letter. However according to one source, as the small fees grow, it is expected to lead to more pushback from residents.

“The fees may seem small today, but they always start small. Then they'll ratchet up. Similarly, while this excludes light domestic users, it won't for long.”

Original Article: [Law Enforcement Today by Jim Patrick](#)

## **South valley groundwater managers to use \$10 million to protect community water and look for ways to retire up to 100,000 acres of farmland**

Three San Joaquin Valley water agencies are gearing up to spend \$10 million each in grant funding from the state Department of Conservation to retire or repurpose farmland.



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Valley agencies that have received grants so far include the Kaweah Delta Water Conservation District, Pixley Irrigation District Groundwater Sustainability Agency (GSA) and Madera County.

SJV Water will look at how each agency plans to use its \$10 million in separate articles. [Click here for our previous article on Madera County.](#)

The Pixley Irrigation District GSA sits within the Tule subbasin in the southern San Joaquin Valley just north of Kern County. For generations, farmers there have overpumped groundwater causing aquifer levels to plummet and the ground to sink. Estimates are that 100,000 acres of farmland will need to be taken out of production if the subbasin is to comply with state law and reach groundwater sustainability, said Reyn Akiona, watershed coordinator for the Tule subbasin.

“There’s sort of a philosophical shift that’s occurring,” said Akiona. “We’re basically looking at prioritization of recharge and prioritization of land retirement around disadvantaged communities.”

The \$10 million grant from the state’s newly created Multibenefit Land Repurposing Program will be spread across the subbasin through a variety of uses in the areas most impacted by overpumping.

The money will help fund the process of creating a plan and accompanying policies to allow groundwater sustainability agencies (GSAs) in the subbasin to retire and repurpose land. The subbasin already charges farmers for overpumping groundwater. But those fees have yet to fund land repurposing.

The state grant will help GSA staff identify where land could be acquired and what land is best for repurposing. That will open the door to adopting policies that allow for the overpumping fees to go toward repurposing, said Akiona.

The money will also help pay for “on-ground implementation work,” said Akiona.

That includes water recharge projects focused around disadvantaged communities, particularly in the area around the small town of Teviston, where residents were out of water last summer when their well stopped working during blistering temperatures.

Some of the grant funding will be set aside for water security projects in disadvantaged communities. The small town of Allensworth which is burdened by arsenic-laden groundwater, will get \$650,000, said Akiona.

UC Merced will also receive some funding to help evaluate the recharge projects around disadvantaged communities. UC Merced will be joined by other partners including the Nature Conservancy and the Tule Basin Land and Conservation Trust to facilitate outreach and create an internship program. The program will bring in high school students from local communities to work in water management.

Like Madera County, the subbasin has already been working on repurposing projects.

The Tule Basin Land and Conservation Trust was formed by groundwater specialists, growers and conservationists to help guide GSAs and facilitate land repurposing.



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One of the trust's first projects was the Capinero Creek Project. At the end of 2021, Pixley Irrigation District GSA purchased a 465-acre dairy which will now be repurposed through the trust. The Bureau of Reclamation is funding the project and the land will be restored to upland habitat.

In the scope of 100,000 acres, the Capinero Creek Project, "sounds pretty small," said Akiona. "But it's a big step culturally."

The land will likely be fully retired within the next two months, he added. And habitat restoration will begin in fall of 2023. Some funding from the \$10 million will go toward that project.

In the meantime, Pixley Irrigation District is trying something new to better protect disadvantaged communities in the area from going dry because of surrounding ag pumping.

Original Article: [SJV Water by Jesse Vad](#)

### **Los Angeles could soon run recycled water directly to the tap**

With the technological advancements in water recycling, however, the water that went down your sink this morning might be back in your tap sooner than you think.

The city of Los Angeles and agencies across Southern California are looking into what's known as "direct potable reuse," which means putting purified recycled water directly back into our drinking water systems.

Water recycling experts shudder at the infamous phrase "toilet to tap, but it is 2022, recurring cycles of devastating drought as well as advancements in science have softened that view.

"Now that we have the technology ... the public, the regulators, the scientific community has much greater confidence in our ability to safely reuse that water supply," said Brad Coffey of the Metropolitan Water District of Southern California.

Their efforts hinge on the State Water Resources Control Board, which has been tasked by legislators to develop a set of uniform regulations on direct potable reuse by Dec. 31, 2023.

The city of Los Angeles is wasting no time in readying projects that can launch once the regulations are passed.

A direct potable reuse demonstration facility near the Headworks reservoir just north of Griffith Park probably will be the state's first approved direct potable reuse project, said Jesus Gonzalez, manager of water recycling policy at the Los Angeles Department of Water and Power.

The Headworks project is scheduled to come online soon after the regulations are in place — tentatively within the next five years, Gonzalez said.

But the Headworks project is just one part of the city's ambitious plan to recycle 100% of its wastewater by 2035 — a pledge Mayor Eric Garcetti made several years ago.



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To accomplish that, the Hyperion Water Reclamation Plant — which currently treats wastewater only to the level necessary for release into Santa Monica Bay — must be converted into an advanced water purification facility that produces water clean enough to drink.

The Department of Water and Power has plans to take the water produced by Hyperion — enough for 2 million people — and put it into vast aquifers under the southern part of Los Angeles County as well as the San Fernando Valley.

There are also plans to implement direct potable reuse at the Los Angeles Aqueduct Filtration Plant in the San Fernando Valley, which currently cleans water siphoned from the Owens Valley and Mono Lake Basin up north.

The city is also working with the Water Replenishment District, which manages groundwater rights in the region, on a master plan to figure out optimal locations for injecting recycled water into aquifers.

This massive undertaking, dubbed Operation Next, has an equally large price tag — upward of \$16 billion for the whole program, which is projected to be completed in 2058.

City officials are scrambling to find funding sources to enable Hyperion 2035 and Operation Next to move forward as intended.

Another advanced water purification project at the Donald C. Tillman water reclamation plant in Van Nuys that will send water to spread into groundwater basins in the San Fernando Valley is anticipated to be completed in December 2026.

As the city pursues its ambitious plans, however, some have questioned its ability to properly maintain its existing water infrastructure.

Just a year ago, the Hyperion plant suffered catastrophic flooding that led to 17 million gallons of untreated sewage being dumped into the ocean. The failure also caused millions of gallons of drinking water to be diverted for uses normally served by recycled water, and residents of El Segundo sued the city over alleged exposure to toxic pollutants in the wake of the spill, according to court documents.

The plant is now back to full operation and normal water quality, Minamide said, and bypasses and backup storage are being built in case of future incidents.

In the meantime, the State Water Board must consider such incidents as it develops new regulations, and consider how the regulations would hold up in a worst-case scenario.

Since real-time monitoring of pathogens and chemicals isn't yet possible, water treatment operators must rely on the concept of "log removals," which measures how many contaminants are removed from the water during each step of the process, rather than how many contaminants remain in the water.

Three log removals are equivalent to removing 99.9% of the contaminant, for example. The state is requiring up to 20 log removals for certain viruses.

"We get accused of that sometimes that we're too conservative, but it's because we have public health at risk," Barnard said.



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The state water board has already shown a draft regulation to an expert panel that has given a preliminary finding that it sufficiently protects public health — a critical milestone in the process. Once they're officially approved, they'll go through an administrative and legal process that will take about a year before being formally adopted.

Once regulations are in place and bigger agencies have projects off the ground, Trussell believes smaller agencies will follow suit.

"I expect by 2040 ... most of the effluent in Southern California will be recycled or well on its way to being recycled," Trussell said.

Original Article: [The LA Times](#)

### **State Water Board delivers \$3.3 billion to California communities to boost drought resilience and increase water supplies**

Seizing a generational opportunity to leverage unprecedented state funding to combat drought and climate change, the State Water Resources Control Board provided an historic \$3.3 billion in financial assistance during the past fiscal year (July 1, 2021 – June 30, 2022) to water systems and communities for projects that bolster water resilience, respond to drought emergencies and expand access to safe drinking water.

The State Water Board's funding to communities this past fiscal year doubled compared to 2020-21, and it is four times the amount of assistance provided just two years ago. The marked increase also comes as a result of last year's \$5.2 billion three-year investment in drought response and water resilience by Governor Newsom and the legislature under the California Comeback Plan, voter-approved Proposition 1 and Proposition 68 funds, and significant federal dollars invested through the state revolving funds.

"The accelerating impacts of climate change have given us all a sense of urgency," said Joaquin Esquivel, chair of the State Water Board. "Bold investments by the administration and legislature, plus \$2 billion in federal Bipartisan Infrastructure Law dollars expected over the next five years, are evidence that California has the kind of leadership and support it needs to respond to climate change and focus our collective attention on securing a common water future. For our part, the board is proud to have its Division of Financial Assistance serve as the engine for that response through efficient and responsible funding."

About 90% of the assistance provided this fiscal year took the form of loans to major water-resilience and drinking water projects. The board provides loans with terms and interest rates that applicants could not receive from a traditional lender, making capital-intensive projects more affordable for communities. This past fiscal year, the board funded 30-year loans at rates between 0.8% and 1.2%.

Almost \$270 million in grants were also distributed for drinking water and wastewater projects in disadvantaged communities. Those grant funds will not have to be repaid.



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The board has launched an online dashboard that breaks down this fiscal year funding across several categories, including county, disadvantaged status, type of project, and assembly or senate district.

### Building sustainable supplies through water recycling

The board prioritized funding for recycled water, which can be generated from wastewater or stormwater and is a sustainable and energy-efficient water source. Direct potable reuse regulations set to come before the board next year expand the potential of recycled wastewater as a source of drinking water, and will help the state reach its goal of increasing recycled water use to 2.5 million acre-feet per year, enough to supply 833,000 three-person households, by 2030.

The board distributed over \$1.2 billion across 15 funding agreements for recycling projects, accounting for nearly 40% of the board's total financial assistance for the fiscal year. Funding recipients include:

- Pure Water San Diego, a phased, multi-year recycled wastewater program, which received \$664 million in low-interest loans from the board as well as about \$734 million from U.S. Environmental Protection Agency's Water Infrastructure and Innovation Act program. The city of San Diego estimates that the Pure Water program will provide more than 40% of San Diego's water supply by the end of 2035.
- The City of Morro Bay, which received over \$45 million to construct a new wastewater facility with advanced treatment, conveyance pipeline and injection wells. The facility will allow the city to replenish the groundwater basin and increase supply reliability.
- Inland Empire Utilities Agency, which received over \$16 million across three projects to increase stormwater and dry-weather runoff to help recharge the Chino, Jurupa, Wineville and Montclair Basins.
- Coachella Valley Water District, which received over \$27 million to increase the use of non-potable, recycled wastewater for irrigation to reduce groundwater overdraft.

Taken together, all 15 projects will produce an additional 75,000 acre-feet of water per year for the state by 2030, or enough to sustain 225,000 households annually.

### Assistance for drought emergencies and drinking water infrastructure

Over the past 12 months, the rapid progression of the state's drought has exposed vulnerabilities in aging drinking water infrastructure and caused nearly 1,400 wells to go dry as water tables dropped. The board responded to numerous communities suffering water outages throughout the state with expert support from Division of Drinking Water staff and over \$26 million for emergency repairs, bottled and hauled water deliveries, and technical assistance.

Drinking water emergencies are often symptoms of systemic problems, especially for failing water systems that frequently serve disadvantaged communities. In the case of



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the city of Needles, a severely disadvantaged community of just over 5,000 residents in eastern San Bernardino County, a burst pipe and lightning strike caused the water system, already contending with contamination issues, to fail completely in 2020. Through its Safe and Affordable Funding for Equity and Resilience (SAFER) drinking water program, the board provided immediate funding for emergency repairs and technical assistance to help the city define its project needs and apply for funding. This past fiscal year, the board approved a grant for over \$13 million in additional funding to construct vital water system infrastructure to address source capacity issues, poor water quality and aging facilities.

“It would have been impossible for us to fix our 80-year-old water system by ourselves,” said Needles city manager Rick Daniels. “Our median household income is only \$40,000 per year, and we cannot raise water rates to pay for improvements. We are 140 miles away from the next California town and temperatures here can hit 120 degrees, so the water outage in 2020 threatened our very existence. The technical and financial assistance the state provided gave our city a future.”

Established in 2019, the SAFER program utilizes a set of tools, funding sources and regulatory authorities to establish sustainable drinking water solutions in collaboration with water systems and communities. In just the first three years of a 10-year program, SAFER has reduced the number of Californians impacted by failing water systems by 40%, or 650,000.

This past fiscal year, the board provided \$984 million, including \$118 million through the SAFER program, to advance access to safe and clean drinking water throughout the state. This support funded construction projects, benefitting nearly 8.6 million people, and technical and planning assistance, benefitting 465,000 people

In addition to the water recycling and drinking water assistance described above, the board also provided over \$1.1 billion to wastewater and stormwater projects during the 2021-2022 fiscal year.

Original Article: [California Ag Today/ California State Water Resources Board](#)



## US WATER NEWS

### **Amarillo city officials look to buy water rights for \$30 million in Roberts County**

Amarillo may be adding to its water supply through buying almost 16,000 acres of water rights for \$30 million.

The city council will vote tomorrow on a proposal to buy the rights in Roberts County.

The city now has about 263,000 acres of rights in six counties that are largely untapped. It also gets water from Lake Meredith and a Roberts County wellfield run by the Canadian River Municipal Water Authority .

Original Article: [News Channel 10 by Kevin Welch](#)

### **Middle Rio Grande pueblos want to quantify water rights**

The six pueblos that share the Middle Rio Grande are in the earliest stages of a legal process that could quantify their water rights, tribal and state officials said Monday.

Sandia Pueblo Gov. Stuart Paisano told state lawmakers at the Water and Natural Resources Committee meeting that "it's time" to determine the specific amount of water that should be allocated to regional pueblos.

"It's going to be a huge task," he said.

Paisano chairs a water coalition of Cochiti, San Felipe, Santo Domingo, Santa Ana, Sandia and Isleta pueblos.

At least twice in the last decade, the coalition requested a federal team from the U.S. Interior Department to assess the feasibility of settling their claims to the river.

Interior Secretary Deb Haaland approved that team earlier this year.

Josh Mann, a water lawyer and former Interior Department attorney, said the agency may be reluctant about a negotiated legal settlement.

The Middle Rio Grande Basin has not been adjudicated.

That means a court has yet to formally outline which entities have water rights in the region.

Adjudicated basins are governed by a court decree, and all entities are legally bound to the water rights defined in that order.

"When you don't have that process, you've got to come up with another way," Mann said. "There is no precedent for this. This has never been done anywhere in the U.S."

The water lawyer said the process will likely demand creative solutions such as federal and state legislation to balance tribal water rights negotiations in the face of diminishing water supply along the river.

Water rights settlements are time-consuming and expensive, said Kelly Brooks Smith, who leads a tribal water law bureau at the Office of the State Engineer.

Then comes the buildout of infrastructure projects that utilize those water rights.



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"It's not just projects, but it's how is everybody going to get along and how are we going to administer going forward," she said.

Federal agencies and regional irrigation districts recognize that the pueblos have the oldest claims to river water rights.

Each year, a certain amount of water is set aside for pueblo use.

Agencies must conserve that "prior and paramount" water even if there is not enough for other irrigators or municipalities.

But Paisano said the water rights are treated with a "use it or lose it" attitude.

Each December, water that the pueblos didn't use is sent downstream to Elephant Butte Reservoir to help New Mexico comply with Rio Grande compact delivery obligations.

The Sandia governor said pueblos need "a seat at the table" and deserve compensation for helping New Mexico meet those deliveries.

"It is very crucial that we continue to work collectively, government to government, ensuring that the future of our water is protected and that we are treating water with the utmost respect," Paisano said.

Original Article: [Yahoo News by Theresa Davis, Albuquerque Journal](#)

## **NASA satellite images show how much Lake Mead has receded since 2000**

New satellite images from NASA show Lake Mead's dramatically shrinking shoreline and how parts of the once-sprawling reservoir have mineralized over the past two decades. Lake Mead, the largest reservoir in the nation, sits at just 27% capacity, its lowest point since April 1937 when it was first being filled, according to NASA.

The lake, on the Nevada-Arizona border, is nearly unrecognizable from how it looked just 22 years ago, according to photos released by NASA Wednesday.

An image taken from space on July 6, 2000, shows the lake full and a deep shade of blue. Another photo, taken July 3, shows a lighter color, meaning areas formerly underwater have mineralized, a phenomenon known as a "bathtub ring" effect.

At the end of July 2000, around the time of the first satellite image, the water elevation at the Hoover Dam was at 1,199.97 feet above sea level. By July 18 this year, around the time of the second image, it dropped to 1,041.30 feet, according to data from the U.S. Bureau of Reclamation.

Another photo from 2021 shows the Virgin River, which connects to the Overton Arm of Lake Mead, mineralized. The year before, the river was completely filled with water.

The lake is drying up due to climate change and severe drought, according to NASA.

"The largest reservoir in the United States supplies water to millions of people across seven states, tribal lands, and northern Mexico. It now also provides a stark illustration of climate change and a long-term drought that may be the worst in the U.S. West in 12 centuries," NASA said.



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The lake has a maximum capacity of 1,220 feet in elevation, a level last approached in 1983 and 1999, according to NASA.

Original Article: [NBC News by Marlene Lenthang](#)

### **Conserve water in southern Nevada during rainy weather**

The Southern Nevada Water Authority (SNWA) is urging people to shut off their water irrigation systems during times of heavy rain.

With monsoon season in effect, now is the time to take advantage of naturally provided water for landscape irrigation. The SNWA said in a press release that by temporarily shutting down irrigation systems, residents and businesses can save upwards of 90 million gallons of water during rainy weather.

Residents and businesses are also reminded to follow the community's mandatory summer watering schedule, which prohibits watering between 11 a.m. and 7 p.m., when water can be lost to winds and high temperatures. This remains in effect until Sept. 1. Sunday watering is prohibited year-round.

Original Article: [8 News Now by David Denk](#)

### **The Colorado River drought is the first climate disaster the U.S. legally has to deal with**

The Colorado River is dying. The water source for 40 million people across seven states and part of Mexico is rapidly drying out, leaving the two biggest reservoirs in the U.S. thirstier and thirstier, and offering up what may be the first climate change impact that the country literally cannot ignore.

"We really don't have a choice to fail on this," said Christopher Kuzdas, a senior water program manager with the Environmental Defense Fund. "We've got to come together and find a way to manage and govern the system differently under climate change or there's going to be catastrophic consequences for the Southwest, and I'm not overstating that."

It's also one of the rare climate disasters that government officials will be legally required to address if current trends continue. The Supreme Court just limited the Environmental Protection Agency's ability to regulate emissions from power plants, and President Joe Biden's legislative climate agenda remains stalled out in an obdurate Congress. But the 1922 agreement that governs use of the Colorado along with more recent legal plans made to address diminishing resources mandate water usage cuts as river flow and lake levels fall.

In 2000, Lakes Mead and Powell, the two huge reservoirs along the Colorado, were about 95 percent full. By the end of this year, Lake Mead is projected to be 27 percent full, with a water level 45 feet lower than it was only two years ago; for Lake Powell, the number is 22 percent, and its surface is 70 feet below the same time in 2020. The so-called Millennium Drought, now in its 23rd year, has reduced precipitation and snow



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runoff into the river and lakes so dramatically that a true water catastrophe now looms for an enormous chunk of the country.

The scale of the disaster is visible along the shores of Lake Mead, where a white “bathtub ring” reveals where water used to be. Minerals deposited when water levels were higher have turned these areas white, in contrast to the otherwise brown rock face. As water levels have dropped, the lake is revealing some morbid secrets — cars that plunged off cliffs and even bodies stuffed into barrels, raising decades-old questions surrounding mob bosses and murders.

The ongoing drought has already led to some drastic water conservation measures, but it isn’t enough: In June, the Bureau of Reclamation’s commissioner instructed the seven states that rely on the Colorado’s water to make a plan to reduce use by between 2 and 4 million acre-feet over the next year — enough to cover all of Connecticut in a foot of water, with almost enough to add Rhode Island as well. And they have until only mid-August to get a deal done before the federal government will step in and dictate the cuts itself.

“Two to four is a big number,” said Jack Schmidt, a professor at Utah State University and director of the Center for Colorado River Studies. “And to come up with a plan in 60 days when you have diverse interests, ranging from Wyoming to California, is a huge challenge, given that the system is so near teetering on the edge at the bottom of the barrel.”

And even stricter cuts may be coming. If water levels at Lake Mead stay below 1,050 feet of elevation, where they are now, that would legally trigger a new level of restrictions in Arizona, Nevada, Mexico and likely California, beginning Jan. 1, 2023.

Over the longer term, the scale of the challenge is still menacing. In a new paper in the journal *Science*, Schmidt and his colleagues modeled out various scenarios for reducing use. They found that the sorts of concessions required in order to stabilize the river and the reservoirs “may seem unthinkable” — but nevertheless, those changes are necessary and must happen soon.

Original Article: [Grid by Dave Levitan](#)

### **Republicans oppose drought, wildfire package**

The House will vote this week on legislation to boost wildfire fighter pay, make federal forests more fire resilient and help communities in the West conserve water in the face of long-term drought.

The package, called the “Wildfire Response and Drought Resiliency Act,” combines 48 previously introduced bills on related issues, a move that sparked Republican complaints that majority Democrats are trying to ram them through with scant consideration and little GOP involvement (E&E Daily, July 21).



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While many of the concepts in the legislation, such as enhanced pay and benefits for wildland firefighters, have bipartisan support, Republicans found little to praise at a House Rules Committee meeting Friday that set the parameters for floor debate.

The Rules Committee blocked most of the several dozen amendments Republicans wanted debated on the floor, including some proposing more ambitious thinning of national forests and softening of environmental review requirements in some cases.

The House will consider an amendment from Minority Leader Kevin McCarthy and Rep. Connie Conway, both California Republicans, to create a grant program to improve water supply reliability in communities experiencing shortages, as well as an amendment by Rep. Kim Schrier (D-Wash.) to expand weather assessments before and after wildfires to identify data gaps.

Supporters, including Rep. Joe Neguse (D-Colo.) said the bill would put several wildfire-response measures into law, including some that have been temporarily advanced by the administration or in last last year's infrastructure bill and other legislation — such as enhanced pay and benefits for firefighters.

Forest Service firefighters have made sharply less than state firefighters in California, for instance, which Forest Service Chief Randy Moore has blamed for employee departures. "They are woefully, woefully undercompensated," said Rep. Joe Neguse (D-Colo.), who has led legislation to close the gap. "While we made some progress in the infrastructure bill, there remains much more to be done."

The bill would also put into law a 10-year wildfire strategy the Forest Service recently adopted and call for it to be revised periodically. That provision, though, brought criticism from Rep. Cliff Bentz (R-Ore.), who said the requirement might override what the agency is already doing — and that putting new requirements on the Forest Service could slow its forest management work.

Bentz — ranking member of the Natural Resources Subcommittee on Water, Oceans and Wildlife — said the firefighter pay parity mandate, at a minimum of about \$20 per hour, could have the unintended effect of causing the federal government to cut firefighter positions if appropriations don't keep up with the requirement over the long term.

And while sponsors said forest management work, such as forest thinning, envisioned in the bill would reduce wildfire risks, Republicans said the proposal falls well short of needs.

"The legislation before us is far from the solution Democrats purport it to be," Bentz said.

Republicans likewise took issue with the bill's eight sections aimed at addressing persistent drought.

Bentz — who noted that the U.S. Drought Monitor currently designates nearly 70 percent of the nation in a drought status — derided the legislative package as "a progressive wish list of pet projects."



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“The vast majority of the provisions in all of these titles have never been marked up by the Natural Resource[s] Committee,” Bentz asserted. “The bill picks winners and losers when it comes to water supplies while ignoring the long-term need for enhanced water storage infrastructure.”

The bill would authorize up to \$500 million for the Interior Department to address “critical low water elevations” in the nation’s largest reservoirs, Lake Powell and Lake Mead. The agency has struggled to maintain water in both storage facilities (Greenwire, May 3).

Instead, Bentz argued the bill should have included funding for projects authorized in the Water Infrastructure Improvements for the Nation, a controversial 2016 bill that addresses water storage, desalination and water recycling and reuse projects (E&E Daily, Dec. 12, 2016).

The Oregon lawmaker also criticized the inclusion of H.R. 7792, the “Water Data Act,” which would create a multiagency initiative to track and standardize information on streamflows, precipitation, groundwater, soil moisture, snow, evaporation, water quality and water use by various sectors.

Bentz asserted the data initiative could be “weaponized” to file federal lawsuits against farmers and ranchers. Republican lawmakers have argued that federal water should favor agriculture and food production rather than aquatic habitat and species (E&E Daily, May 12).

Neguse — chair of the Natural Resources Subcommittee on National Parks, Forests and Public Lands — defended the legislation, arguing that the package needs to move swiftly to address issues currently impacting Western states, including his own.

“We often hear complaints about Democratic inaction — we’ve heard concerns about drought, about fire, about community safety — and yet Democrats here today are looking to pass a thoughtful, forward-looking piece of legislation, and some of our colleagues are encouraging us to slow down,” he said.

Natural Resources Chairman Raúl Grijalva (D-Ariz.) submitted a bill manager’s amendment that includes several additional provisions, such as a study on weather-related losses to agriculture this year, a study on the use of CH-47 Chinook helicopters in wildfire response and a demonstration program to encourage innovative methods of building electric-grid resilience to wildfires.

Original Article: [E&E Daily by Marc Heller Jennifer Yachnin](#)



## GLOBAL WATER NEWS

### **‘We’ve forgotten about the rain.’ Water management project brings relief from flooding in Yaounde, Cameroon’s capital**

Florence Latila remembers the destruction that flooding caused in Yaounde, the Cameroonian capital for over three decades from 1980.

“When it rained, the water could reach my waistline. It was not possible to access the area to work on many days,” Latila said.

About 2.8 million of the country’s 26 million inhabitants reside in Yaoundé. Over 130 floods struck the capital between 1980 and 2014, resulting in deaths and economic damage.

Latila, a 42-year-old warehouse worker, has been working in the Mfoundi Market for over 10 years. In the past, flooding was frequent in this area.

In downtown Yaoundé, Avenue Kennedy and Mfoundi Market were severely affected by flooding in 2018 and 2019, following the exceptionally heavy rains and the clogging of canals by mostly plastics and tyres.

“When water was coming, it would bring all the dirt. We spent a lot of time cleaning after every flood. Access for people, cars and parking was very difficult. Our products and goods were destroyed by the floods. We had to pull out the goods quickly. It greatly impacted our work, revenue and life.”

Since 2005, the Government of Cameroon has been working to limit floods and their impact on socio-economic conditions in the capital, with funding from the African Development Bank, the French Agency for Development and the Global Environment Facility.

The Yaoundé City Sustainable Enhanced Drainage and Sanitation Project and the previous Yaoundé City Sustainable Sanitation Project aimed to enhance rain water management and hygiene and ensure the harmonious integration of infrastructure.

The 17 km of canals built during the first and second phases of the project on the watercourses that drain Yaoundé City have significantly reduced the frequency and impacts of flooding in the targeted part of the city.

“Since the construction of the bridge, no floods have occurred in the area. The water is not submerging us anymore. Everything is good,” Latila said, smiling.

“My feet were constantly in the water. And when the water was gone, it left mud, which attracted mosquitoes. We used to get sick often.”

In the past, the Mfoundi River would overflow every rainy season. The river, which receives approx. 80% of the city's surface water, often burst its banks, spilling onto the surrounding land.

Herve Massa, a 30-year-old employee in a fertilizer shop in Mfoundi Market, said: “The water of the river would reach the shop and we lost plenty of products, creating huge



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economic losses. If it rained in the morning, it meant that we couldn't get any clients that day. There was no access to the road when it rained. We've forgotten about the rain since the works were completed."

Original Article: [African Development Group Bank](#)

### **Water firm accused of treating rivers in national park 'like open sewer'**

Campaigners are demanding immediate action to stop sewage discharges into rivers in the New Forest after data shows hundreds of incidents in recent years.

River Action, a charity that campaigns to stop pollution of the UK's rivers, has written to the chief executive of Southern Water calling for an immediate end to discharges into the major rivers of the New Forest National Park.

The call comes after data published by the Environment Agency, in response to a freedom of information request by the charity, showed that in 2021 raw sewage was discharged into the catchments of the Lymington and Beaulieu rivers on more than 250 occasions, totalling just under 1,900 hours.

Reported discharges by Southern Water sewage treatment plants and sewer overflows have occurred into the two rivers more than 900 times over the past three years, the data showed.

River Action said more than half of the New Forest – voted the number one national park in Europe in TripAdvisor awards in 2022 – was designated for its importance for nature, with its wetlands particularly important for wildlife.

Public funding has been spent on restoration work to improve the wildlife and habitat of rivers, streams, bogs and valley mires in the park.

The figures show the most frequent discharges over the past three years in the park have occurred at Brockenhurst Wastewater Treatment Works on the Lymington River and Lyndhurst Wastewater Treatment Works on the Beaulieu River.

The charity's letter warns that discharges from Lyndhurst wastewater works go straight into the headwaters of the Beaulieu River and its associated flood plain – a protected Site of Special Scientific Interest (SSSI).

River Action founder and chairman Charles Watson said: "As the summer holidays approach and tens of thousands of visitors prepare to enjoy the wonders of the New Forest, it just seems inconceivable that Europe's favourite national park is being treated like an open sewer by Southern Water.

"We urge Southern Water to disclose immediately what measures it plans to take to end this abuse of the country's favourite national park."

Professor Russell Wynn, director of local wildlife group Wild New Forest, said: "The rivers and streams of the New Forest should be some of the cleanest in the country, but they are regularly being flushed with a noxious mix of pollutants expelled from wastewater treatment works.



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“Inadequate monitoring of fauna and flora in and adjacent to the affected rivers means we simply don’t know what impact these regular discharges are having on protected habitats and species, and the extent of the long-term damage being done.

“We alerted the local community and our elected representatives to this issue two years ago, but we are yet to see a firm commitment by Southern Water to prioritise investment in this highly protected landscape.”

Original Article: [The London Economic by Joe Mellor](#)

### **China’s new mega tunnel will send water from the Three Gorges Dam to Beijing**

China has launched a new tunnelling project to send water from the Three Gorges Dam to Beijing as part of a massive infrastructure plan to boost food production and the economy.

The Yinjiangbuan tunnel will drain water from the Three Gorges – the world’s largest dam – to the Han River, a major tributary of the Yangtze River.

Reaching the Danjiangkou reservoir at the lower reaches of the Han, the water will head north as far as Beijing via the middle line of the South-to-North Water Diversion Project, a 1,400km-long (870-mile) open canal.

Original Article: [South China Morning Post by Stephen Chen](#)

### **Rajasthan to get Australian assistance for water sector**

Rajasthan is set to get technical assistance from Australia for groundwater management, water purification and capacity enhancement in the water sector as part of a memorandum of understanding signed between India and Australia. An Australia-India Water Centre has been established under the MoU for long-term collaboration in research and education between the two countries.

South Australia’s water ambassador Karlene Maywald, who is visiting Rajasthan, had met Additional Chief Secretary (Public Health Engineering) Subodh Agarwal here on Wednesday and discussed the scope for using modern technology for water management. Ms. Maywald said the geographical conditions of Rajasthan and South Australia were “somewhat similar”, which could facilitate cooperation between the two States.

Ms. Maywald is accompanied by a delegation comprising technical experts and policy advisers. She said Rajasthan could take advantage of new research and technology by becoming a participant in the water centre, which focused on water and food security, safe drinking water supply, river health, water-energy-food nexus and other related aspects of mutual benefit.

Ms. Maywald, who earlier represented the seat of Chaffey in the South Australian House of Assembly, said the water centre had developed a technology for water purification by



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removal of harmful elements at a low cost without adversely affecting the environment. As many as 17 leading technical institutions of India and nine technical and research bodies of Australia are members of the water centre.

Mr. Agarwal said the Public Health Engineering Department was formulating the drinking water supply schemes keeping in view the State's requirements till 2050. He also apprised the delegation of the steps being taken in the field of water management as well as the techniques adopted for water supply to the geographically difficult regions.

The delegation members later met Rajasthan Foundation's Commissioner Dhiraj Srivastava and deliberated on a proposal to sign a "sister State agreement" between Rajasthan and South Australia. Ms. Maywald said the two States could work together on technological applications to the water and education sectors and run a students' exchange programme between selected universities.

Original Article: [The Hindu](#)

### **Parched England could see drought in August if hot, dry weather persists, Environment Agency has warned**

Swathes of England may face drought as soon as August if the hot and dry weather persists, the Environment Agency has confirmed.

A dry spring and early summer have already withered rivers and reservoirs and watered down water quality in many parts of England, pushing most of the country into "prolonged dry weather" status, the first of four drought categories.

Whether areas will tip into the second "drought" stage hinges on when the rain returns, and whether it adds up to more or less than usual. Chances could be washed away within weeks if it rains, or the risk could remain for months.

Plenty of dry weather is forecast for the next few weeks, with another heatwave on the cards, but chances of rain are increasing during mid-August.

If areas did move into the second "drought" stage, last experienced amid similar conditions in 2018-19 and 2011-12, water companies could limit non-essential domestic and commercial water use, or apply for special permits to extract extra water from the environment.

#### Advertisement

Southern Water last week applied for a drought permit to continue to use the River Test, whose levels are falling, to supply tap water to the region.

Water companies, which can seek to limit demand, may decide for themselves whether to impose hosepipe bans.

The National Drought Group, with members including water companies, the Environment Agency and the National Farmers' Union (NFU), is meeting on Tuesday morning to agree how to protect water resources together.



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The group meets when circumstances demand, last convening in March and before that throughout 2018-2020 as it handled the last drought.

The NFU said the prolonged dry weather was hitting the hardest on farms in central, eastern and southern parts of the country.

"Combines are already rolling in some areas for this year's harvest, but it's still too early to tell about quality and yield," its deputy president Tom Bradshaw said.

The lack of rain has hampered grass growth, which could hit feed supplies for the winter. Farmers have had to irrigate their crops early, and the next two months are expected to be critical for their yields.

Evidence of dry weather is already written into the land in the form of browning grass, lower river flows, dried-up ponds, and surges of bright algae.

Last week's mega heatwave - which unleashed record-breaking temperatures of over 40C, the highest ever nighttime heat, and new records for such large areas of the country - exacerbated the already dry conditions in some areas.

The Environment Agency had to carry out more fish rescues than usual for this time of year, as the animals struggled in higher temperatures and lower oxygenated water.

The East of England is currently particularly dry, as the wet spells last week have so far bypassed the area.

Flooding is expected to become more frequent in the UK due to climate change.

But flood water can be harder to retain in the ground if it runs off quickly into rivers.

Reservoirs can capture floodwater more easily, but the water tends to be of poorer quality, as intense rain flushes away more nutrients.

Original Article: [Sky News by Victoria Seabrook](#)

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