

Veles Water Weekly Report

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March 20th 2025

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VelesWater



WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Joshua Bell

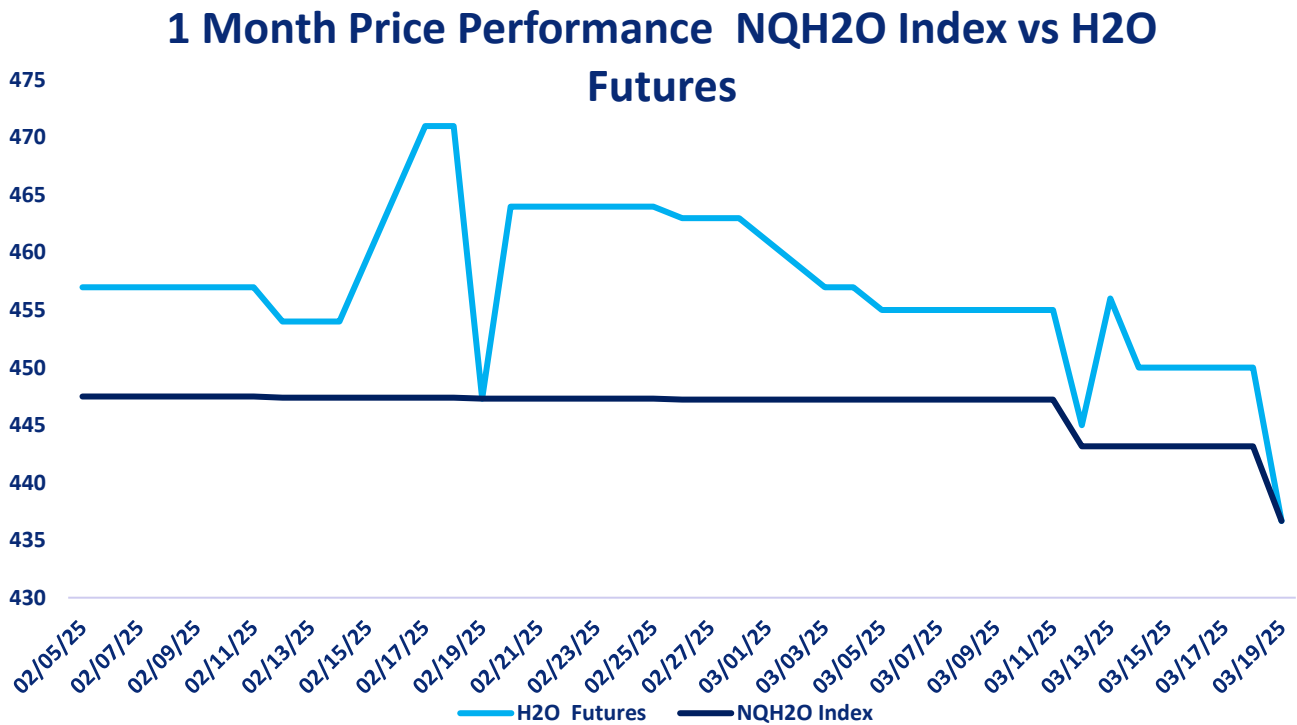
CLICK THE LINK BELOW

“A 2 minute technical analysis video of H2O futures”

<https://vimeo.com/1067645676?share=copy#t=0>



NQH2O INDEX PRICE vs H2O FUTURES PRICE



Price Chart Based upon Daily Close

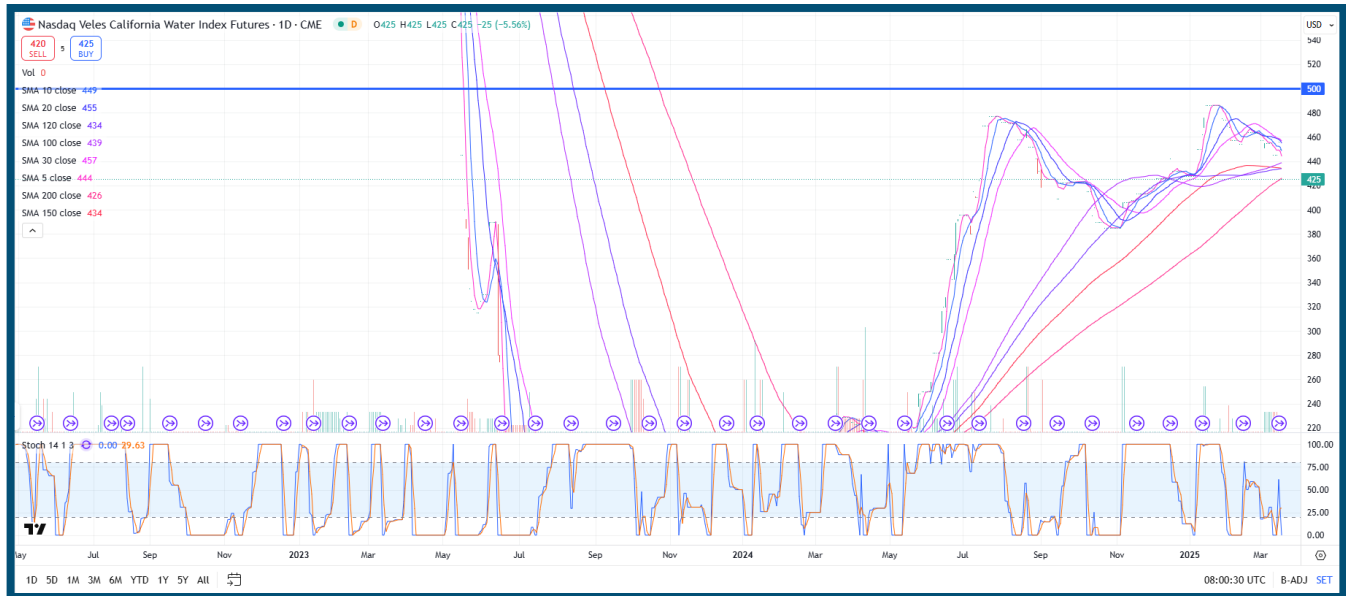
The new NQH2O index level of \$436.67 was published on March 19th, down \$6.50 or 1.47% from the previous week. The March contract settled at the new index level and the April Contract is considered the front month. The futures prices have closed at a premium of \$6.83 to \$12.83 versus the index over the past week.

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

Apr 25	420@445
May 25	450@572
June 25	480@510
June 26	560@620



H2O FUTURES TECHNICAL REPORT



Price Action

Current Price: 425

The price has decreased by 5.56% in this trading session, indicating strong bearish momentum and increased selling pressure.

Moving Averages Analysis

Short-Term Averages:

- **5-day MA:** 444 - The price is well below this level, confirming short-term bearish pressure.
- **10-day MA:** 449 - The price remains below the 10-day MA, reinforcing further downside risks.
- **20-day MA:** 455 - The price is trading under this level, suggesting continued weakness in short-term trends.

Medium-Term Averages:

- **30-day MA:** 457 - The price has dropped below this level, signaling further bearish sentiment in the medium-term.

Long-Term Averages:

- **100-day MA:** 439 - The price is approaching this level, which could act as support.
- **120-day MA:** 434 - The price is nearing this key long-term support zone.



Support & Resistance Levels

Resistance at 500:

- This remains the key breakout level. A move above 500 could signal a strong bullish continuation.

Support at 425:

- **The price is currently testing this level. If broken, the next key support zones are:**
 - **439 (100-day MA) – A significant level to watch.**

Stochastic Oscillator

- **K%: 0.00, D%: 29.63**
- The stochastic oscillator is in oversold territory, suggesting that selling pressure may be overextended. This could lead to a potential short-term rebound if buyers step in at support levels.

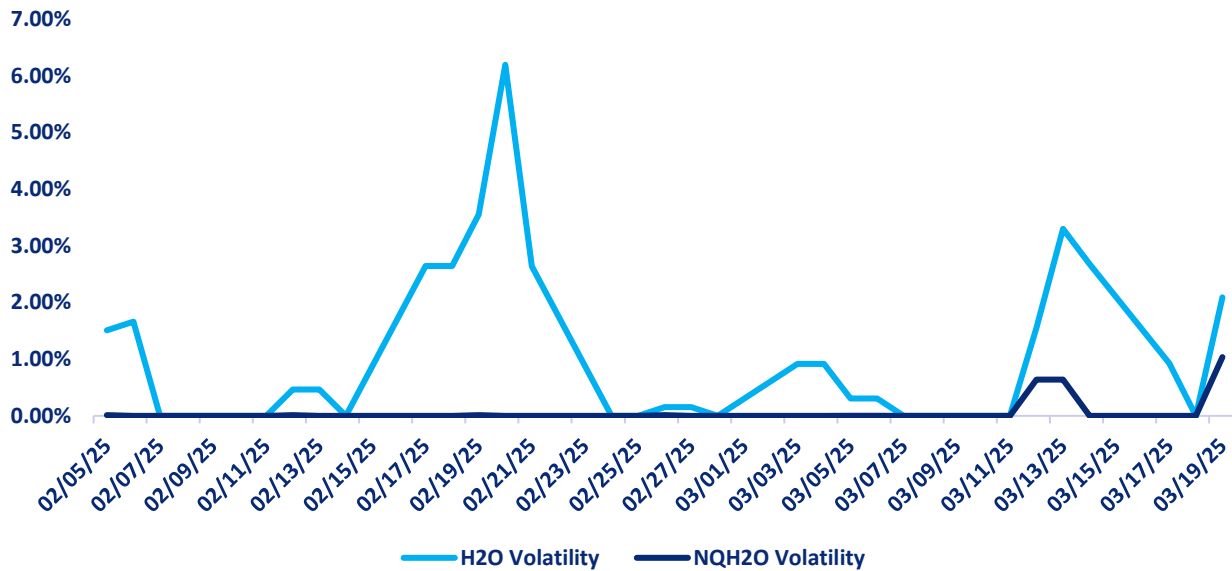
Summary and Key Takeaways

- Short-term momentum is strongly bearish as the price is trading well below key short-term moving averages.
- The long-term trend remains intact, but the price is approaching key support zones around 439.
- The stochastic indicator suggests oversold conditions, meaning that a bounce could occur if buyers emerge at these key levels.



H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



DAILY VOLATILITY

Over the last week the March contract daily future volatility high has been 2.09%.

ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	29.03%	2.03%	1.49%	0.56%
H2O FUTURES	N/A	14.07%	6.25%	4.47%

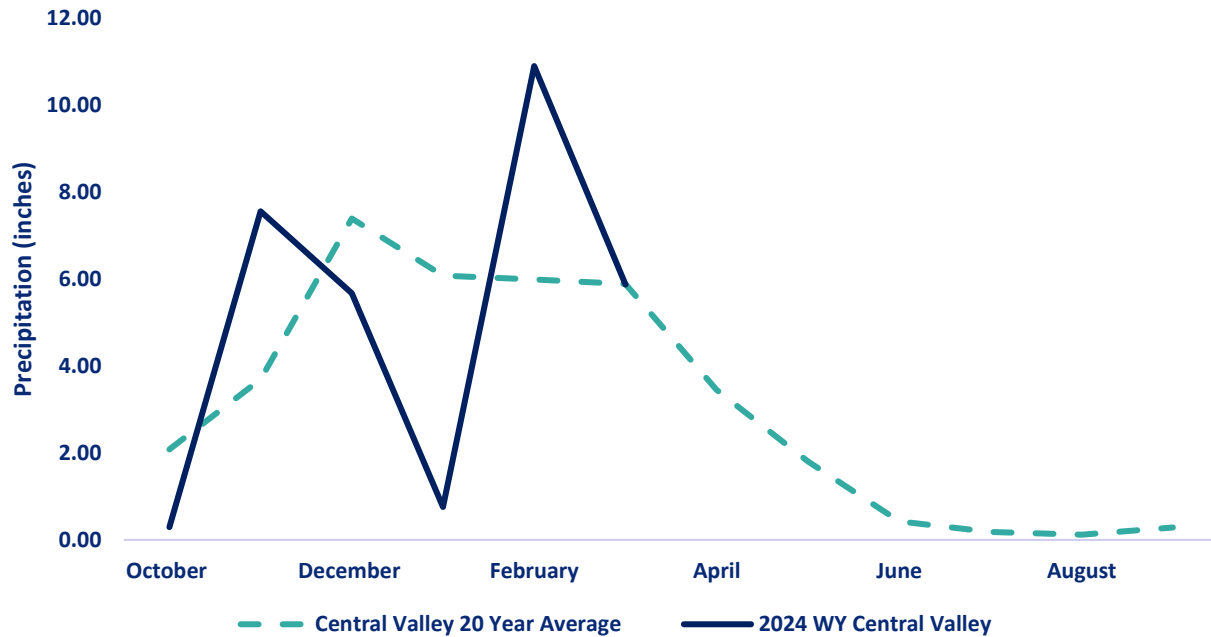
For the week ending on March 19th, the two-month futures volatility is at a premium of 11.03% to the index, up 1.10% from the previous week. The one-month futures volatility is at a premium of 11.84% to the index, down 7.08%. The one-week futures volatility is at a premium of 3.91% to the index, volatility.

*Above prices are all **HISTORIC VOLATILITIES**. 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 19/03/2025

STATION	MTD (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF 20 YEAR AVERAGE MTD	2025 WYTD VS 2024 WYTD %	2025 WY VS 20 YEAR AVERAGE TO DATE %
SAN JOAQUIN 5 STATION (5SI)	5.49	4.1	94.17	81	74
TULARE 6 STATION (6SI)	6.19	3.22	156.67	81	93
NORTHERN SIERRA 8 STATION (8SI)	5.92	4.83	75.30	95	120
CENTRAL VALLEY AVERAGE	5.87	4.05	99.76	86	96

RESERVOIR STORAGE

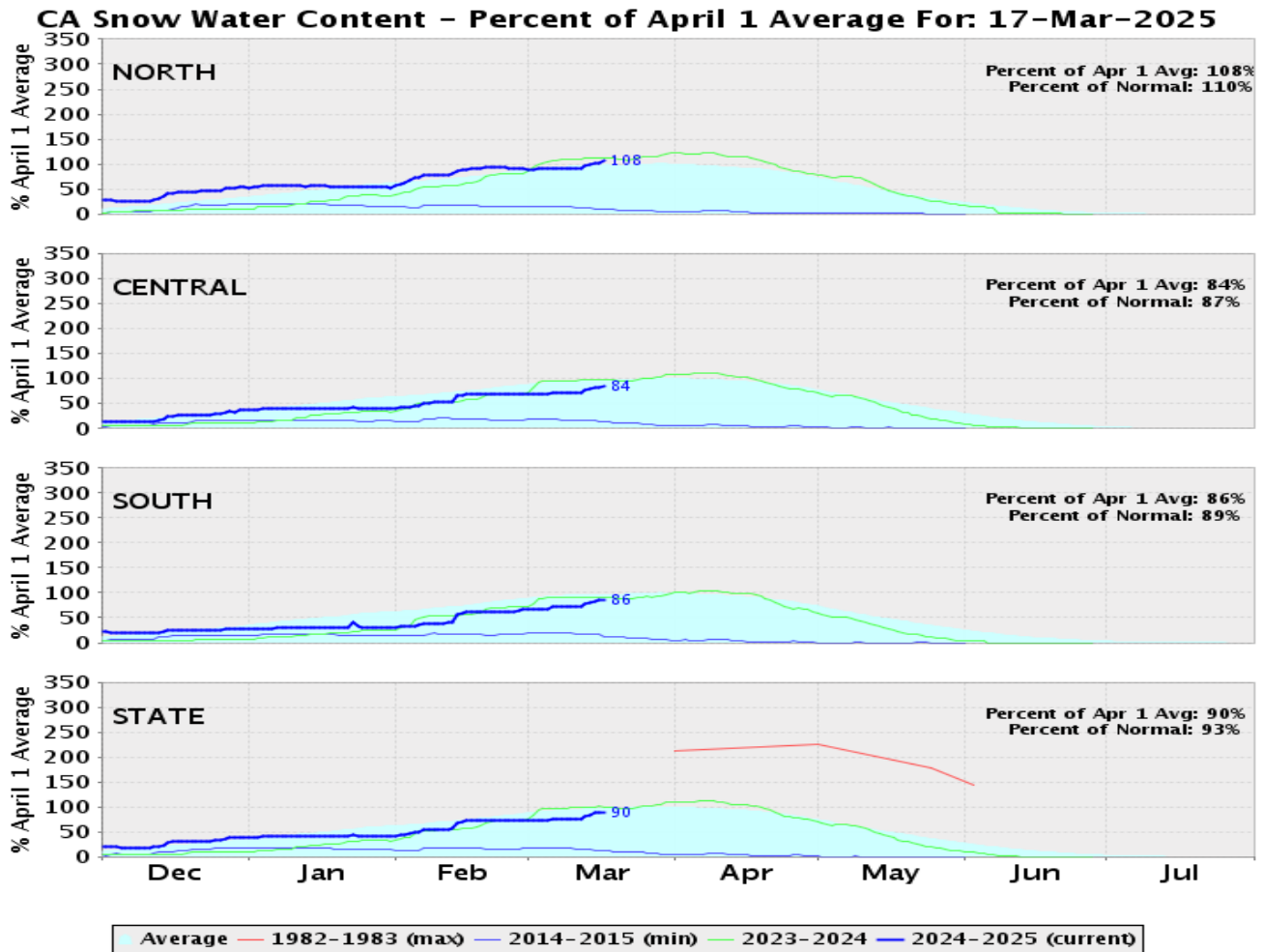
RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	*% HISTORICAL AVERAGE
TRINITY LAKE	2,035,448	83	76	117
SHASTA LAKE	3,868,114	85	86	112
LAKE OROVILLE	2,944,820	86	88	124
SAN LUIS RES	1,774,571	87	73	103

*% Historical Average is based on a daily average that is interpolated from historical monthly averages. The monthly averages are computed using monthly data from water year 1991 to 2024. The monthly averages are updated every 5 years using a sliding 30 year period.

[Reference: California Water Data Exchange](#)



SNOWPACK WATER CONTENT



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	28	4.2	115	110	108
CENTRAL SIERRA	23.3	3.5	101	87	84
SOUTHERN SIERRA	19.4	3.1	94	89	86
STATEWIDE	23.5	3.5	103	93	90

*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 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

California

[Home](#) / California

Map released: Thurs. March 13, 2025

Data valid: March 11, 2025 at 8 a.m. EDT

Intensity

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

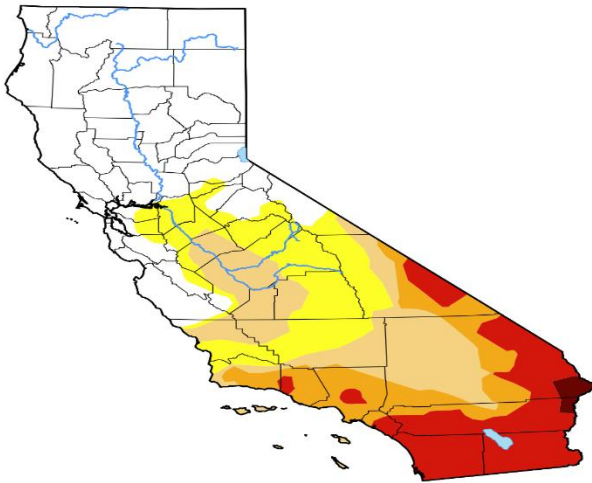
Authors

United States and Puerto Rico Author(s):

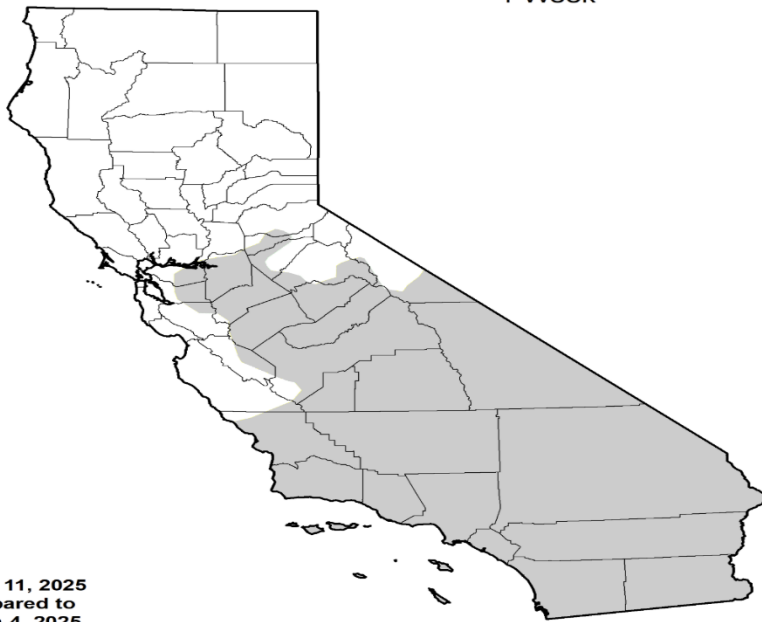
[Richard Tinker](#), NOAA/NWS/NCEP/CPC

Pacific Islands and Virgin Islands Author(s):

[Brad Rippey](#), U.S. Department of Agriculture



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



March 11, 2025
compared to
March 4, 2025

droughtmonitor.unl.edu



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

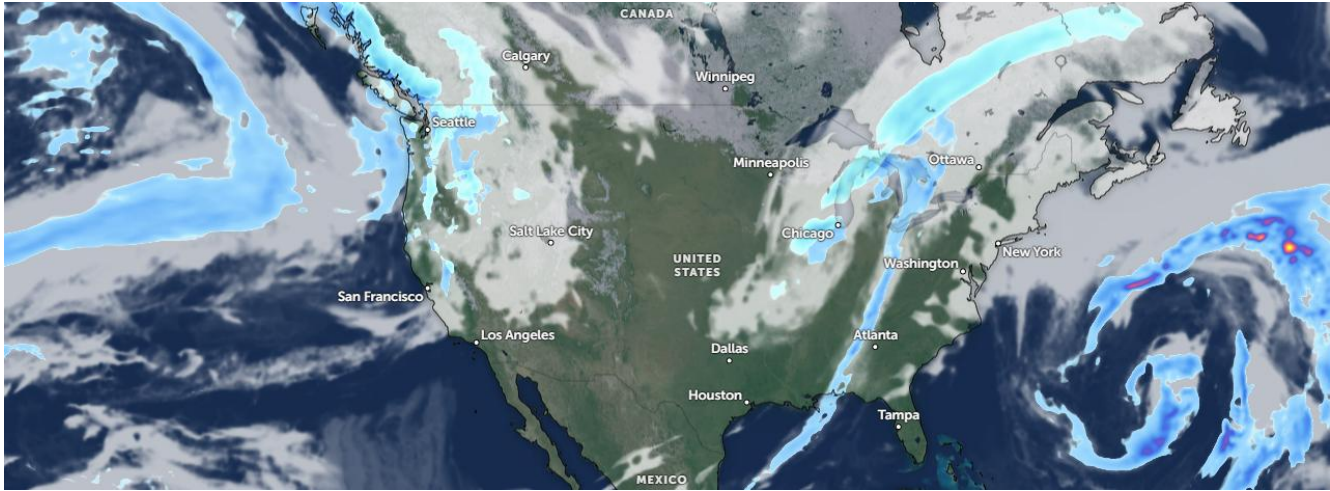
Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2025-03-11	41.78	58.22	41.58	24.83	14.75	0.73	140
Last Week to Current	2025-03-04	41.82	58.18	41.58	24.83	14.75	0.73	140
3 Months Ago to Current	2024-12-10	43.46	56.54	16.72	5.70	1.03	0.00	80
Start of Calendar Year to Current	2024-12-31	40.90	59.10	31.52	5.70	1.06	0.00	97
Start of Water Year to Current	2024-10-01	28.40	71.60	10.67	0.08	0.00	0.00	82
One Year Ago to Current	2024-03-12	95.46	4.54	0.00	0.00	0.00	0.00	5

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

Storm systems off the Pacific coast are combining to bring in precipitation to the western US and extending to the Rockies. The Midwest is now clear with a large powerful storm moving to the eastern US stretching from Dallas to Northeastern Canada. This is joined by another thin line of storms stretching from Mexico to Ottawa moving eastwards.



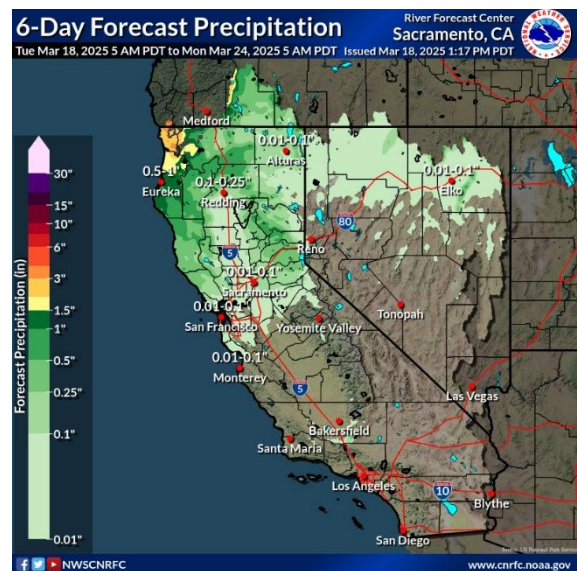
Map Ref: Zoom Earth

10 Day Outlook

Minor changes to the afternoon forecast for Friday and Saturday. Generally a little decrease in precip amounts for Friday except little increase along the coast for the Smith Basin. Increase in amounts for the Smith Basin around 0.1-0.2 inches and around a tenth of an inch for the west slope of the Srn OR Cascades on Saturday. No change to the dry forecast for Sunday.

A cold front and associated shortwave moves into B.C./Pac NW Friday into early Saturday brushing the northern portion of the region bringing a chance of showers, mainly to the NW CA coast and . Srn OR Cascades. Almost an inch PW plume off the Nrn CA coast Friday morning increases and expands to about an inch off the Srn OR/ Nrn CA coast to around the Bay Area Friday night into the day on Saturday then retreats from CA coast Saturday night as high pressure builds in from the Eastern Pacific behind the shortwave. The forecast mainly uses the latest NBM and WPC mixed with some previous forecast for Friday and Saturday (which are generally lower than the GFS).

Precipitation amounts forecast for Friday into Friday night are 0.5-1 inch for the Smith Basin and the west slope of the Srn OR Cascades and 0.25-0.5 for the King Range and





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generally around a tenth of an inch or less for the Shasta Basin and NE CA Plateau and Nrn NV.

These amounts are in general agreement with 2 of the 3 clusters (78% of the ensemble members) in the 24 hr QPF 50th Percentile Clusters ending 12Z Saturday. Although the third cluster, 22% of the ensemble members (Canadian 10%, GFS 57%, EC 6%), dominated by the GFS has higher amounts up to 1.5-2 inches for the Smith Basin and 0.75-1.25 inches for the Srn OR Cascades and precip a little farther south along the Nrn CA coast and not really any precip over Nrn NV.

Reference: National Weather Service / California Nevada RFC / Sacramento CA

WESTERN WEATHER DISCUSSION

Areas of moderate precipitation, with isolated heavy amounts, affected the Sierra Nevada, southwestern California, western Washington, and some of the higher elevations across Arizona, Utah, eastern Nevada, and southern Idaho. Most of the large West Region, however, recorded several tenths of an inch or less. Similar to the situation across central and western Texas, dryness and drought may be intensifying at a fairly quick clip across New Mexico, and a large part of the state deteriorated by one category this week. That includes a larger area of D3 along the southern tier of the state, with a small area of D4 introduced in the state's southwestern interior. Farther west, no intensification was noted this week, but a broad area of D3 and D4 persists across southern California, southern Nevada, and much of Arizona. From central sections of Utah and Nevada southward to the Mexican border and southwestward through southern California, less than half of normal precipitation has fallen since mid-December. The lowest totals (just 2 to 25 percent of normal) extend across the southern Four Corners area. Conditions are considerably better north of Utah and central Nevada, with D3 restricted to a small part of western Montana, and more than half of the area free from dryness and drought.

Reference:

Lindsay Johnson, National Drought Mitigation Center
Richard Tinker, NOAA/NWS/NCEP/CPC



WATER NEWS

CALIFORNIA WATER NEWS

California bill would restore wetlands protections in wake of Supreme Court ruling

California lawmakers are proposing legislation that aims to reestablish safeguards for the state's streams and wetlands in response to a Supreme Court ruling limiting federal clean water regulations.

Supporters say the legislation has taken on heightened urgency as the Trump administration begins to scale back protections for many streams and wetlands, making them vulnerable to pollution and worsening water quality.

"We need clean water to drink, to grow our food, to safely bathe and swim in, to support healthy ecosystems and the environment," said state Sen. Ben Allen (D-Santa Monica), who introduced the bill. "It's about protecting our water supply, and it's a common-sense measure that simply restores the protections that our waterways have always enjoyed since 1948."

Federal standards have since 1948 limited pollution discharges into waterways. Such standards later became a central part of the federal [Clean Water Act](#), adopted in 1972. In [Sackett vs. EPA](#), the Supreme Court [ruled in 2023](#) that Clean Water Act protections don't apply to many wetlands and ephemeral streams, which flow when it rains but otherwise sit dry much of the time. The court ruled that the law's protections for the "waters of the United States" apply only to wetlands and streams that are directly connected to navigable waterways.

The decision was supported by groups representing developers and the agriculture industry, who say the EPA had overstepped its authority by restricting private property owners from developing their land.

California officials and clean water advocates counter that the rollback of protections will jeopardize vital water sources and ecosystems throughout the arid West.

"It should be recognized as not just a threat to water quality but overall quality of life, and frankly, a threat to our state," said Assemblymember Ash Kalra (D-San José), the bill's co-author. Kalra said the court ruling has stripped federal protections "from many of our most precious wetlands and streams, each a crucial linkage in a complex water network that undergirds every animal, every plant, every human being in our state."

The bill, [SB 601](#), would restore previous protections for California's wetlands and streams by requiring permits for pollution discharges from businesses and construction projects. The measure calls for state standards that meet or exceed the regulations previously in place during the Biden administration.

"This was a system that was working well," Allen said. "We've got to step up."



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The legislation, he said, effectively rolls back the clock prior to the court decision to maintain protections, and “enshrines a new framework into state law.” Under the bill, titled the Right to Clean Water Act, the State Water Resources Control Board would be tasked with implementing and enforcing the rules.

“It’s critical that our state protects our waterways in the same way that we have over the last 50 years,” said Sean Bothwell, executive of the group California Coastkeeper Alliance, which is supporting the legislation.

He called the Supreme Court ruling misguided, saying it was biased toward waterways in the wetter East Coast climate, and doesn’t fit California’s reality, where many streams flow only when it rains.

“Our Mediterranean climate doesn’t allow for our rivers and streams, and the creeks that flow into them, to flow permanently,” Bothwell said. “What this bill does is it maintains the protections that Californians have enjoyed.”

While the legislation is being discussed in Sacramento, the federal Environmental Protection Agency has begun to revise the so-called [Waters of the United States](#) rule to bring regulations into line with the Supreme Court ruling.

Announcing [plans for the regulatory rollback](#) last week, the EPA said the agency, acting together with the Army Corps of Engineers, will “move quickly to ensure that a revised definition follows the law, reduces red-tape, cuts overall permitting costs, and lowers the cost of doing business.” The EPA said it will begin its review by seeking input from stakeholders.

“We want clean water for all Americans supported by clear and consistent rules,” EPA Administrator Lee Zeldin said in the announcement. He said the previous version of the regulations “placed unfair burdens on the American people and drove up the cost of doing business.”

The EPA has also announced plans to roll back [more than two dozen other regulations](#), which environmentalists say would severely harm the nation’s progress in addressing air and water pollution.

Bothwell said the EPA’s new rule, once adopted, might go beyond the Supreme Court ruling and make it “more sweeping than it already was.”

Without the state legislation, he said, the combination of the court decision and the Trump administration’s pullback of regulations will leave seasonal streams and many wetlands without Clean Water Act protections.

“We can no longer rely upon the federal government to protect and provide clean and affordable water,” Bothwell said.

State officials and environmental advocates have said because about 90% of California’s wetlands have already been [drained and destroyed](#), strong protections for those that remain are vital.



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Whether protective measures are in place could affect the state's aquatic ecosystems. There are [nearly 4,000 freshwater species](#) in California, and researchers at the Public Policy Institute of California said in a [report](#) last year that there are no protections in place for many species that are threatened.

"Our waters are connected. Our freshwater ecosystems, groundwater aquifers, rivers, wetlands and other waterways are all interconnected," said Ashley Overhouse, a water policy advisor for the nonprofit group Defenders of Wildlife.

She said when pollution flows into wetlands or streams, the effects on threatened species and water quality can be widespread, harming ecosystems that are also suffering from the [effects of climate change](#).

The bill would provide "clarity and efficient protections for the state at a time of regulatory and political uncertainty," Overhouse said.

The ultimate goal, she said, is to ensure "a future where clean, healthy water is guaranteed for all communities and all wildlife."

Original Article: [The LA Times by Ian James](#)

Better Accounting for California's Water

It's no secret that climate change poses significant challenges to water management in California. While most climate models don't predict big changes in total annual precipitation, most do point to increasing water scarcity, more intense droughts, [climate whiplash](#), declining snowpack, and growing flood risk.

The good news is that there are [many ways](#) to adapt to these changes, but they will require significant improvements in water accounting—that is, keeping track of when and where water is being diverted from California's waterways. Water accounting is essential to developing more secure water supplies, restoring ecosystem health, recharging groundwater, conserving water, and reducing flood risk. The state urgently needs a modern system that can track water availability and its use within a watershed in near real-time and provide trusted information to water managers, water users, and the public.

Here are just a few areas where better water accounting could help California:

- **Managing water rights.** The State Water Resources Control Board (SWRCB) faces daunting challenges in administering and protecting thousands of water right and permit holders and making difficult decisions to restrict water use during drought. This is made even more difficult by the lack of near real-time accounting of the location and magnitude of diversions from rivers and water that returns to rivers from irrigated fields. During recent severe droughts—harbingers of our climate future—the state was simply [unable to track](#) millions of acre-feet of water and could not respond to those drought emergencies with the precision needed. SWRCB has since updated its water rights data management system and is



piloting [best practices for collecting and analyzing data from remote sources](#). These investments will grow in value if integrated with near real-time accounting.

- **Groundwater management.** The 2014 Sustainable Groundwater Management Act has spurred long-overdue advances in [groundwater accounting](#). Still, further improvements are needed, especially to better manage surface water and to help incentivize and scale up groundwater recharge—a key ally in the struggle to improve the reliability of California’s water supply. Proper accounting is needed to track recharge volumes, groundwater levels, and water quality, and to fairly credit and manage allocations.
- **Water markets.** Since the 1990s, California has been expanding its [water markets](#) to reduce the costs of increasing water scarcity. These markets will be [an important tool](#) in adapting to the changing climate and can help reduce the economic impacts of sustainably managing groundwater. But fair and effective water markets require reliable measurement, reporting, and verification systems that are [not yet in place](#).
- **Protecting water allocated to the environment.** Today, water is [allocated to the environment](#) through regulations on water use and storage, purchased water that’s left in streams and wetlands, and new infrastructure investments designed to create more water for the environment. Purchases and new infrastructure have strong support from two major bonds ([2014](#) and [2024](#)). Given the current state of monitoring and accounting, it’s difficult to track this water and to determine if it’s meeting its purpose. This lack of tracking also makes it hard to protect [environmental water](#) from diversion for other uses.
- **Focusing on the facts.** California’s water is often the source of great controversy because the stakes are so high and the trade-offs so real. This is why it is vitally important that information about water—specifically how and when it’s used—be accurate, easily accessible, and trusted.

There has been progress on several of these issues since PPIC published its 2016 report [Accounting for California’s Water](#), which outlined how to strengthen water accounting for the state. Agencies, water suppliers, growers, and nonprofits have invested in improving groundwater accounting, estimating crop water use, and using new technology to improve measurements of water flowing through our creeks, streams, and rivers, along with modest increases in the frequency of reporting water use. Many urban water suppliers are already doing state-of-the-art accounting locally, and some groundwater sustainability agencies have been innovating groundwater accounting.

The state also recognized the value of modern water data infrastructure when it passed the Open and Transparent Water Data Act in 2016. In 2019, the [California Water Data](#)



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[Consortium](#) was established as an independent, nonprofit organization to help implement this legislation through public-private partnerships.

While this progress is commendable, it is still not sufficient. With climate change exacerbating water scarcity, a modern system for water accounting is no longer a boring topic we can put off for a few more years. We are taking a hard look at how best to modernize and fund water accounting in California. Modernization will not be cheap or easy, but the economic, social, and environmental costs of not modernizing will likely be much greater.

Original Article: [PPIC by Lettia Grenier and Robyn Grimm](#)

California's snowpack is lagging behind average. Here's why

Snow piled up in the Sierra Nevada this week, with [1 to 2 feet falling](#) at Tahoe ski resorts Wednesday.

The cold storm system notably differed from earlier storms this season.

"This year has been a year of warm temperatures and rain when we should have had snow," said Andrew Schwartz, director of UC Berkeley's Central Sierra Snow Laboratory, located at Donner Pass.

California's statewide snowpack is running below normal, due to the low amount of water stored in the snow that has fallen. Other parts of the western United States are experiencing even larger deficits. Experts say there aren't immediate concerns for California reservoir levels but add that there could be heightened wildfire concerns come summer.

Below-average snowpack in California and the West

As of Thursday, the statewide snowpack is 86% of normal for this time of year, according to the [California Department of Water Resources](#). But the snow hasn't been evenly distributed across the state, with more in the north than the south. [La Niña](#) conditions may have partially influenced the [precipitation difference](#), said Dan McEvoy, a climatologist with the Western Regional Climate Center at the Desert Research Institute. The northeastern corner of California, including Siskiyou and Modoc counties, tallied above-average snowfall over recent months. This includes Weed (Siskiyou County), which experienced blizzard conditions in November 2024, causing a [shutdown of Interstate 5](#).

Locations on the Oregon border logged more than double the amount of typical snowfall this season. The numbers are based on the National Weather Service's [National Gridded Snowfall Analysis](#), which estimates snowfall based on calculations involving direct observations and forecasts.

But the central and southern Sierra have experienced below-average snow this season, especially at lower elevations. Areas around Lake Tahoe have accumulated one-half to

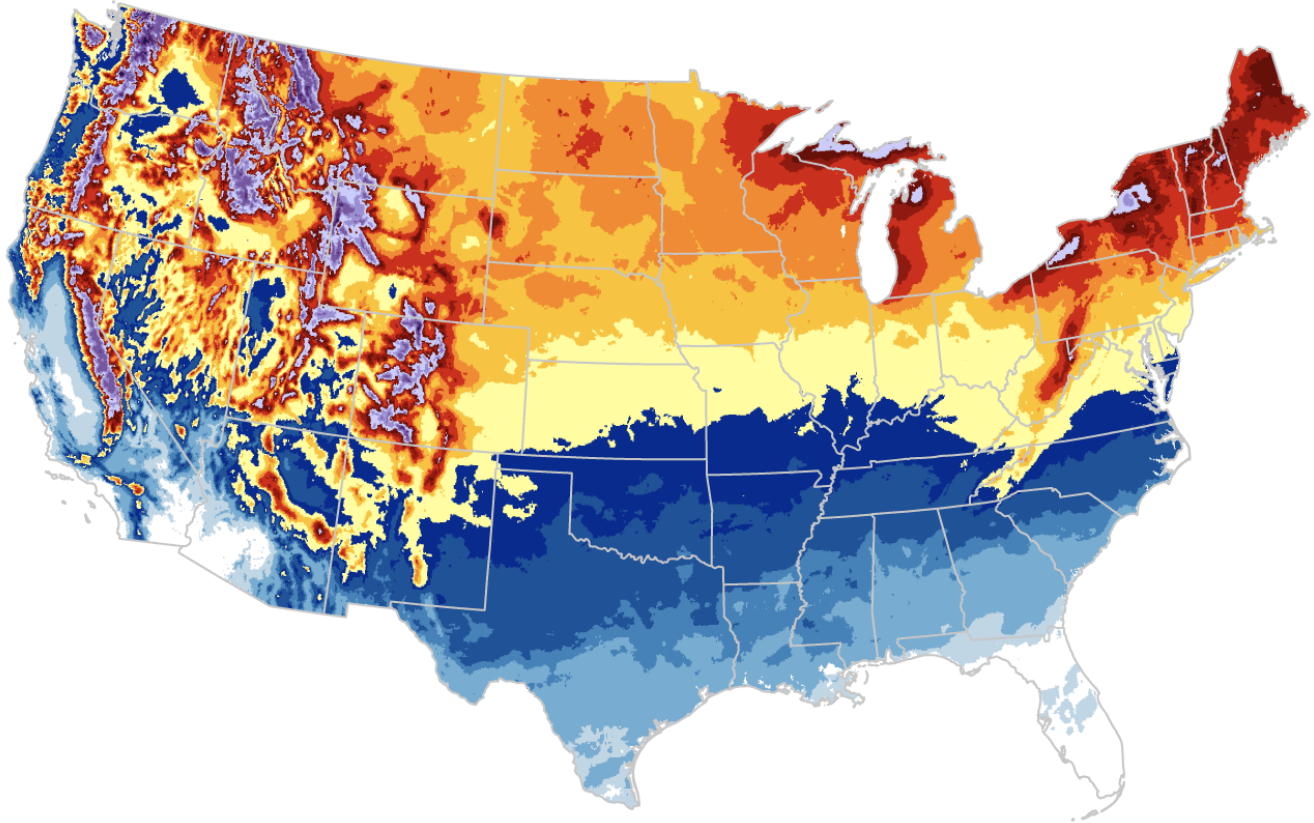


three-quarters of their typical seasonal snowfall, as of Thursday. That includes Palisades Tahoe and Heavenly ski resorts.

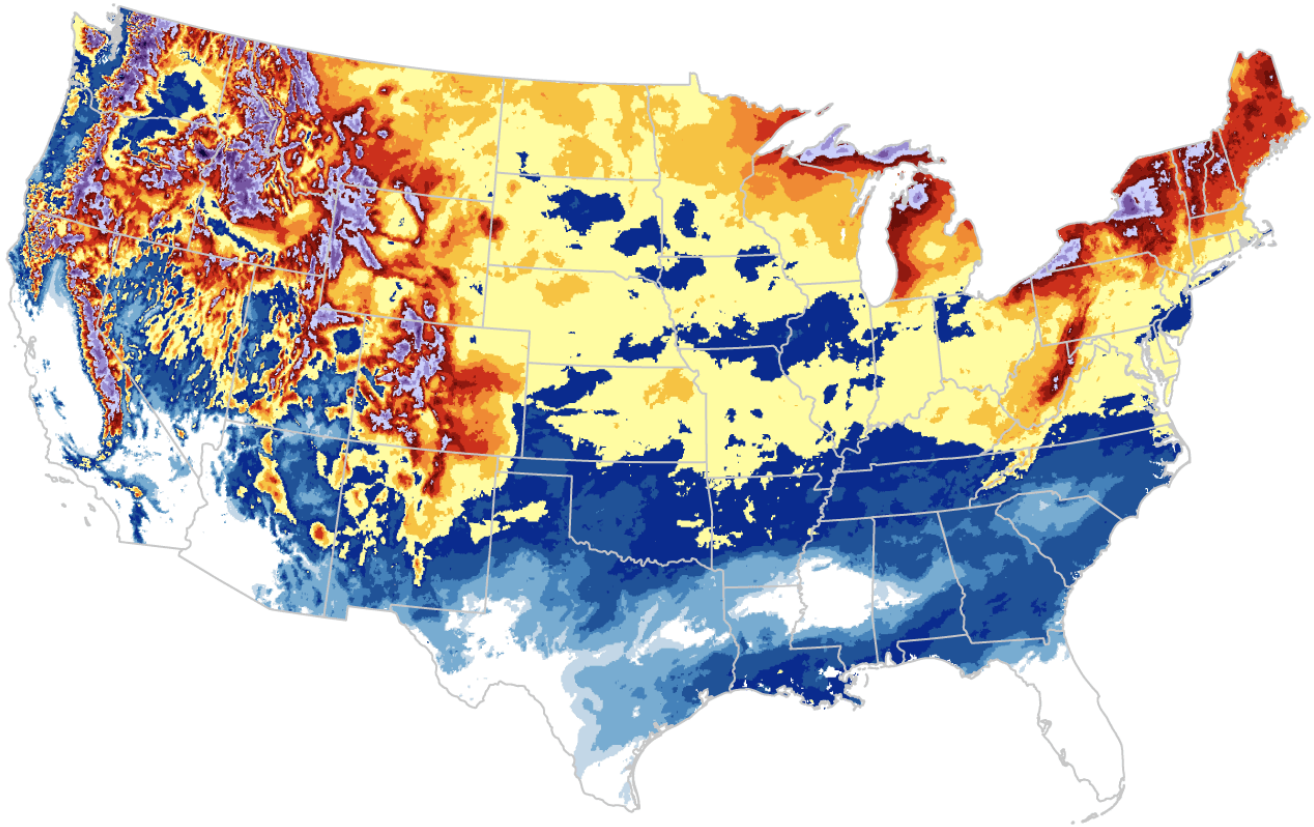
Still, California's snowpack is outperforming that of [other parts of the western United States](#), which are experiencing [snow drought](#).

How does this water year so far compare with previous water years?

Average snowfall, 2009-2024 water years



Snowfall for 2025 water year



Data from Sept. 30 to March 13.

Source: Greg Fall/NOAA Office of Water Prediction

“For the West as a whole, the one thing that really stands out is the exceptionally low snowpack in a lot of the Colorado River basin,” McEvoy said. The Colorado River basin stretches from Wyoming to Arizona and New Mexico, providing water for [seven states](#), including California.

Original Article: [SF Chronicle by Jack Lee and Viven Ngo](#)

DWR releases reports for implementation of Forecast-Informed Reservoir Operations at Lake Oroville and New Bullards Bar

The California Department of Water Resources Thursday released a report that shows a change to reservoir operations at both Lake Oroville and New Bullards Bar Reservoir can further reduce flood risks for communities along the Feather River and Yuba River during extreme atmospheric storm events and potentially benefit water supply during drier periods.

The DWR says that this approach, known as the Forecast-Informed Reservoir Operations, or FIRO for short, uses improved monitoring, weather, and runoff projections.

Officials say in the largest FIRO assessment to date, the Department of Water Resources and the Yuba Water Agency have partnered with the Center for Western Weather and



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Water Extremes (CW3RE) at the University of San Diego's Scripps Institution of Oceanography and the United States Army Corps of Engineers' (USACE) Engineering Research and Development Center to evaluate if FIRO could be implemented at both reservoirs to reduce downstream flood risks without negatively impacting water supplies.

Operations at Lake Oroville is managed by the California Department of Water Resources and operations at New Bullards Bar is handled by Yuba Water.

Using historical forecasts, reservoir storage and river flow data, scientists found that FIRO, when combined with a planned second spillway at New Bullards Bar, could provide additional food storage capacity in the Yuba-Feather system and reduce downstream peak flows during prolonged storms like the 1986 and 1997 floods that devastated Yuba County.

"California's reservoirs play a critical role in safeguarding our communities from floods and maintaining our state's water supply, especially as we continue to see extreme weather events in the form of larger, wetter, and more frequent storms and longer, more severe periods of drought," said Dr. Michael Anderson, the State Climatologist for the DWR. "The Yuba-Feather FIRO Viability Assessment is an important step toward improving flood protection to communities downstream while managing California's valuable water resources for decades to come."

The Yuba River and Feather River originate in the Sierra Nevada and joins at Marysville and Yuba City before flowing into the Sacramento River. With significant watershed runoff making both rivers prone to flooding, Lake Oroville and New Bullards Bar both play a critical role in managing river flows, especially as the state sees more intense atmospheric river storms.

"Through the partnerships between research, forecasting, and reservoir operations organizations, the Yuba-Feather FIRO Viability Assessment has helped advance the integration of atmospheric river forecasting that enables FIRO to be viable at Oroville and New Bullards Bar," said F. Martin Ralph, the founding director for the Center for Western Weather and Water Extremes at UC San Diego Scripps Institution of Oceanography. "CW3E's state-of-the-art weather model is tailored to atmospheric river forecasting and aided by extra weather observations offshore using aircraft and ocean observations as part of the Atmospheric River Reconnaissance."

Officials say that while reducing flood risks is the top priority, FIRO can also improve the state of California's ability to provide a reliable water supply for communities and agriculture.

"This is a critical step towards making more floodwaters available for groundwater recharge when we see extremely wet storms," said Karla Nemeth, the Director of the DWR. "FIRO drives tighter coordination between reservoir operators and water districts



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downstream, creating opportunities to use reservoir releases to build up our groundwater reserves for dry years."

The DWR says that to fully realize the benefits of FIRO, Yuba Water Agency is planning operational changes, continued atmospheric river monitoring, and the construction of a new Atmospheric River Control (ARC) Spillway at New Bullards Bar.

Officials say that the second spillway will have gates 31.5 feet lower than the dam's existing spillway gates, allowing the agency to release water before large, threatening storms hit, when there is enough downstream channel capacity to handle the flows.

"The ARC Spillway will help realize the full benefits of FIRO in our region by reducing peak flows downstream and decreasing stress on our levee system during large atmospheric river events," said Yuba Water District's Director of Resource Planning John James. "With both FIRO and the ARC Spillway, we're essentially gaining the amount of flood storage that would historically only be created through building additional infrastructure. In this case, we're enhancing existing infrastructure and using the latest in science and technology to modernize flood operations and improve public safety."

The DWR says that the ARC Spillway Project is currently at 100 percent design with Yuba Water actively pursuing state and federal grant funding. Yuba Water anticipates that construction on the new spillway could begin as soon as 2027. Officials say that the existing spillway capacity at the Oroville Dam is already adequate to fully realize the benefits of FIRO.

According to the DWR, FIRO is being implemented successfully at Lake Mendocino in the Russian River watershed in Northern California and will soon be integrated into the operations of Prado Dam in the Santa Ana River watershed in Southern California. As the largest and most complex FIRO assessment to date and the first with a primary goal of reducing flood risk, the Yuba-Feather FIRO Program continues to establish FIRO's benefit in California as an important part of a comprehensive water management and resilience strategy.

Original Article: [Action News Now by Will Anderson](#)



US WATER NEWS

NASA, USGS, Industry Explore Off-World Resource Development

NASA and the U.S. Geological Survey (USGS) welcomed a community of government, industry, and international partners to explore current technology needs around natural resources – both on Earth and “off world.” During a workshop held in February at NASA’s Ames Research Center in California’s Silicon Valley, participants discussed technologies that will improve the ability to detect, assess, and develop resources, such as critical minerals and water ice to be found on our Moon, other planets and their moons, and asteroids.

More than 300 attendees, taking part in person and virtually, worked to define the elements needed to find and map resources beyond Earth to support the growing space economy. These include sensors to image the subsurface of planetary bodies, new platforms for cost-effective operations, and technologies that enable new concepts of operation for these systems.

Scientific studies and measurements of off-world sites will be key to detecting and characterizing resources of interest, creating an important synergy with technology goals and helping to answer fundamental science questions as well.

The workshop was the third in a series called Planetary Subsurface Exploration for Science and Resources. By leveraging the expertise gained from decades of resource exploration on this planet and that of the space technology and space mission communities, NASA and USGS aim to spark collaboration across industry, government, and academia to develop new concepts and technologies.

Original Article: [NASA](#)

Push to close dam safety center spurs backlash

An engineering center that employs some of the most coveted and experienced dam safety experts in the U.S. could close this year, if the Trump administration and Elon Musk’s Department of Government Efficiency have their way.

The administration is considering terminating the lease on the Army Corps of Engineers’ Risk Management Center, which current and former employees say is integral to oversight of hundreds of dams and thousands of miles of levees nationwide.

Canceling the lease for the center in Lakewood, Colorado, would save the government a total of \$972,661, DOGE [says on its website](#). Critics say the costs would far outweigh alleged savings.

Advertisement

“You’ll have a public that’s less safe and at greater social and environmental risk,” said Eric Halpin, a retired dam and levee safety official at the Army Corps who helped set up



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the center in the 2000s. “[Managing dams] is going to be more expensive, and there will be an increased risk of some catastrophe happening.”

The situation highlights the potential long-term consequences of the Trump administration’s indiscriminate slashing of government. In a twist of irony, the center was created to promote efficiency within the Army Corps.

The uncertain future facing the Risk Management Center comes as the Trump administration has fired employees at other agencies — like the Bureau of Reclamation and National Oceanic and Atmospheric Administration — also integral to dam safety. Now, some dam safety experts worry the public will be at greater risk of flooding and other potentially life-threatening situations given the current trajectory.

The Risk Management Center aims to reduce risks at federal dams and levees “in the most efficient manner possible,” the Army Corps states on its website.

Engineers and scientists who work there conduct assessments on Army Corps dams deemed to be high risk in order to prioritize repairs, said Karl Dise, a former senior analyst at the center who is now retired. The idea is to minimize threats to life and property, account for a range of risks — from earthquakes to precipitation trends — and make the best use of finite federal dollars, Dise said.

Experts at the center have an unparalleled view on the risks facing dams and levees and specific actions that could help protect them, he added.

“This is a national security issue, as opposed to just a plain public safety issue,” Dise said. The General Services Administration informed staff in late February that the center’s current lease had been terminated, according to a senior Army Corps official with knowledge of the situation.

It’s not clear where the center’s employees would work if they have to move after the lease ends in late September, the senior official said. Many staffers have put down roots in Colorado and do not want to move, said the agency official, who was granted anonymity because they were not authorized to speak to the media.

In the past few weeks, two people working at the center have left, and several others are talking to prospective employers, they said. The center normally employs about 130 people, but it had over a dozen vacant positions at the start of the year, they added.

“Loss of manpower is a big concern,” the senior official said. “[We] have staff looking at job opportunities in Australia and Europe. If that happens, they’re gone from the U.S. market.”

Lease terminations — which have [hit other agencies as well](#) — are part of GSA’s plan to support in-person work and increase public-private partnerships to manage “the workforce of the future,” GSA spokesperson Will Powell said in a statement. The Trump administration is reviewing all options to make better use of federal real estate and “actively manage” leases, added Jeff White, another GSA spokesperson.



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While GSA sent a notice of termination to the owner of the building housing the Risk Management Center, that notice could still be rescinded, White said. The termination notice means that GSA could end the lease so long as it provides 120 days of notice, he added.

“We’re 100 percent open to hearing feedback from our tenant agencies and having agencies demonstrate or tell us the criticality of a specific lease or place where they work,” White said.

‘These impacts are less than ideal’

Housed within the Department of Defense, the Army Corps manages a portfolio of dams, levees, reservoirs and other water projects. The average age of dams is about 60 years old, so maintenance and risk evaluations are critical.

The uncertainty over the Risk Management Center is just one of the new challenges facing the agency right now, according to three agency employees.

At the behest of DOGE, the Defense Department has [instituted a \\$1 credit limit](#) on government travel purchase cards. While there are exemptions for travel to avoid “imminent” threats to life and property, the policy has made it challenging for Army Corps staff to inspect dams and levees, according to two people working on dam oversight at the agency.

Last week, the Risk Management Center postponed two dam assessments because of the restrictions, said the senior Army Corps official familiar with knowledge of the center.

“Most of [the] staff is involved in or leading higher-level studies, which require additional investigations in the field, so you can actually assess the state of the concrete and look at the foundation,” they said. “All of these impacts are less than ideal so far.”

The Trump administration has also fired staff at the Bureau of Reclamation, which oversees dams and water projects in the West. A judge [ordered federal agencies](#) last week to rehire previously terminated employees, but agencies are planning an even more extensive round of layoffs in the coming weeks.

Similar firings at NOAA could also compromise dam safety, some experts warned. The agency is responsible for collecting data on precipitation to evaluate the likelihood of a reservoir flooding or a dam overtopping.

NOAA has been leading a [sweeping federal effort](#) to update rainfall estimates to better account for climate change in dam management. Climate change is causing more extreme rainfall, and state and federal precipitation data is out of date, said Bill McCormick, a manager at the engineering firm Black & Veatch who is involved in the effort.

While the project to update precipitation data is important for dam safety, its future is in doubt because of the Trump administration’s firings and budget cuts, McCormick said. The project’s funding comes from the Infrastructure Investment and Jobs Act, which



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President Donald Trump opposed, and some NOAA staffers who'd been working on it have been fired or left, he said.

"It's really disappointing, after a decade of working on this," said McCormick, who previously was the chief of the dam safety program in Colorado. "It's going to impact the safety of dams if we can't continue the work."

NOAA spokesperson Theo Stein would not confirm how many people at the agency were working on the project or whether it had been affected by recent funding and personnel changes. The team is currently determining next steps and [evaluating a report](#) issued to kick-start the project, he said.

"Per our long-standing practice, we are not discussing internal personnel and management matters, nor do we do speculative interviews," Stein said in an email.

'It's not about efficiency'

The Army Corps has a large number of regional districts, each with its own projects and quirks, according to those familiar with the agency's workings.

To that end, the Risk Management Center was established in 2009 because dam and levee safety within the agency was not standardized, said Mark Sudol, who held various positions at the Corps for 20 years.

Staff at the center help other Army Corps offices through trainings and inspections of high-risk dams, said Sudol, who is now a senior adviser at Dawson and Associates. Terminating the lease on the office, without giving staff time to prepare or information about where they will work, would inevitably cause "chaos," Sudol said.

"You lose about two months of productivity at least, not counting the loss of personnel," he said.

GSA is trying to "match" staff at the Risk Management Center to other office spaces within the federal real estate portfolio, according to an email sent to the senior agency official and viewed by POLITICO's E&E News. However, the current demand for space "far exceeds the available supply," the email said.

Ultimately, closing the center will bring the Army Corps back to a time when the agency was less efficient, projects were more susceptible to political interference and regional offices competed for funding, said Dise, the former senior analyst at the center.

Notably, GSA has [walked back](#) some lease terminations announced earlier this month — but not for the Risk Management Center. While the agency initially planned to cancel the lease on Army Corps regional offices in Chicago and Jacksonville, Florida, those termination notices have been rescinded, according to the agency.

Halpin, the retired Army Corps official who now works as a dam and levee consultant, worries that DOGE is not just targeting the building where dam safety experts work.

By terminating the lease on the Risk Management Center, employees could be deemed remote workers and become easier targets for firings down the road, he said. The Trump



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administration has [established a policy](#) of taking “all necessary steps to terminate remote work.”

“It’s not about efficiency at all,” Halpin said. “They’re creating room in the federal budget. What are they creating room for? It looks like it’s for tax cuts.”

Original Article: [E&E News by Miranda Willson](#)

Utah approves plan to pay farmers to leave water in the Colorado River

Utah is launching a plan to pay farmers to leave some of their irrigation water in the Colorado River system.

The [Colorado River Authority of Utah](#) board has approved the first round of applicants for the state’s new [Demand Management Pilot Program](#). It includes more than a dozen projects along Colorado River tributaries in eastern and southeastern Utah.

The program will use up to \$4.2 million of state money to compensate farmers who temporarily forgo using some of their water in 2025 and 2026. The practice of leaving a field unplanted and unwatered is known as [fallowing](#). This allows water that would have normally been sprayed on crops to flow downstream instead. Utah leaders hope quantifying the water those projects save will help the state avoid mandatory cutbacks as it looks toward a [renegotiated Colorado River agreement](#) in 2026.

The benefit for farmers, Authority engineer Lily Bosworth said, is they retain their water rights and they will be paid the agreed price even if an especially dry year results in less actual water than expected.

“We are accepting that risk, essentially, for the participants,” she said. “So, we will compensate the participants for taking the actions that they committed to, and we’ll get the water that we get for that year.”

The potential upside for Utah could make it worth the risk, though.

The Authority estimates the approved projects will save more than 22,000 acre-feet of water for the river by the end of next year. One acre-foot is enough water to cover an acre of ground a foot deep in water, and roughly enough to supply two households for a year.

The pilot project is the first in the river’s Upper Basin to [incentivize and track water conservation](#) in this way. That means one big outcome will be testing how tracking saved water works in practice, Bosworth said. For example, she hopes it will help the state find out how much [water is lost to evaporation](#) and other factors as it travels across the southern Utah desert to [Lake Powell](#), the nation’s second-largest reservoir.

“There are some gain and loss studies in the Colorado River Basin in Utah, but this is something that we have to collect data to really understand.”

Her team is working with the U.S. Geological Survey to place temporary stream gauges along the route of the river to better understand how to ensure that water makes it to its destination.



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The projects were already required to submit paperwork with the [Utah Division of Water Rights](#) to flag a portion of their water rights as conservation, a necessary step to document the saved water as it moves downstream and for Utah to get credit for that conservation. But that process can take months.

The delay means at least some of the water saved in 2025 won't be tracked in the same way it will be in 2026, Bosworth said, "but we hope to measure as best we can and learn how to use measurement during this first year of the pilot program."

If any projects don't have that paperwork — called a change application — finalized by next year, then their participation will be terminated going forward.

Still, the fact that all the paperwork and measurement devices aren't finalized yet concerned board member Zach Renstrom, who manages the [Washington County Water Conservancy District](#).

"I have a fundamental belief that before we paid out the money, the change applications should have been completed," he said. "Because right now, if they don't use the water, then it just goes to the next water right holder."

The lone no vote at the March 13 meeting, Renstrom said he understands the logic of those who voted to move forward with the program before everything is in place since it's a pilot. With a price tag in the millions, however, he would have liked to see the launch delayed until the program could track the saved water as it intended.

"Some people are interpreting this as I'm against the program. I'm not. I just thought it was a little bit premature."

The plan the board approved leaves more than \$700,000 in the program's budget, which allows Utah to potentially add new applicants in 2026 that aren't part of the pilot this year.

Original Article: [Kuer by David Condos](#)

Texas lawmakers will debate saving the state's water supply after key legislation is introduced

Texas is one record-breaking drought away from a water crisis, and state leaders want to avoid such a catastrophe with a big investment.

Debate on how much to finance and how to spend that money can begin in earnest at the Legislature after [state Sen. Charles Perry](#), R-Lubbock, introduced [Senate Bill 7](#) Thursday. The legislation — [which has been anticipated by Texas' water community all year](#) — addresses a wide range of issues and includes the building of infrastructure that would transport water across the state.

"Water scarcity is no longer a distant threat — it's here, and it's already disrupting the lives of Texans across the state," Perry said in a statement. "The bottom line: We are out of time. Texas must act now to secure a reliable water supply for today and for future generations."



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Perry's bill is part of a mix of legislation that would help the state fix aging pipes, expand water supplies, mitigate floods and bolster projects that focus on creating new water supply.

Earlier this session, [state Rep. Cody Harris](#), R-Palestine, introduced [House Bill 16](#), another sweeping piece of legislation that covers similar topics.

"If we don't dig in and do the hard work of figuring out how to solve this problem for future generations of Texans, then we have done a huge disservice to the people who elected us," Harris said earlier this month at an event focused on water at the Capitol.

Both men have also filed proposals to funnel up to \$1 billion a year to the [Texas Water Fund](#), a special account created in 2023 to help pay for water projects. There is a strong likelihood voters will be asked to approve the spending. Earlier this year, Gov. Greg Abbott called for a "Texas-sized" investment in water.

Texans have proven they're willing to pay for water. Voters overwhelmingly approved spending \$1 billion to improve water infrastructure in 2023.

There are differences in what the two chambers want Texans to vote on later this year, however.

First, Harris' proposal would last for up to 10 years, while Perry's seeks to go on for 16 years beginning in 2027. Funding for the amendment also varies. The Senate resolution would take money from state sales and insurance premium taxes, while the House resolution takes money from just sales tax.

The primary dispute is over how that money would be spent: Perry's [Senate Joint Resolution 66](#) calls for a large allocation to projects that create new water supply — such as [desalination](#). Harris' bill — [House Joint Resolution 7](#) — does not specify.

Perry has spent months gathering support to direct the bulk of the funding to new water sources. House lawmakers, certain water experts and advocacy groups argue for a more balanced approach.

"It represents two different approaches, and they're going to have to work through the differences on them effectively," said Perry Fowler, executive director of the Texas Water Infrastructure Network. "Good policy is a result of compromise and negotiation and we are confident that everyone shares the same goal to secure our water future."

The two chambers will also have to adjudicate differences between Senate Bill 7 and House Bill 16, which have similar aims but many differences in details.

For example, [Senate Bill 7](#) would establish the Texas Water Fund Advisory Committee for oversight and the Office of Water Supply Conveyance Coordination to improve regional and statewide water infrastructure connectivity. Meanwhile, the House bill would create the Texas Water Fund Advisory Committee to oversee operations on each fund and report to the Texas Water Development Board.



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The legislation packages are meant to secure the state's water supply, which is under threat from the state's expansive growth, climate change and outdated infrastructure that loses billions of gallons of water each year.

Texas is booming, with its population projected to swell 73% by 2070. About half of this growth will be concentrated in the Dallas-Fort Worth and Houston metro areas. But while the so-called "Texas Miracle" charges ahead, the state's water supply is falling behind. According to the state's 2022 water plan, water availability is expected to decline by 18%, with groundwater seeing the steepest drop.

If water supply can't keep pace with demand, one estimate suggests the state's [municipal supply could face a water catastrophe by 2030](#) if there's a record-breaking drought and certain changes aren't made now. A [Texas 2036 report](#) estimated that the state needs nearly \$154 billion by 2050 for water infrastructure, including \$59 billion for water supply projects, \$74 billion for leaky pipes and infrastructure maintenance, and \$21 billion to fix broken wastewater systems.

Original Article: [KERA Public Radio by Alejandra Martinez](#)

Hurd working 'behind the scenes' to unfreeze funds for critical water rights purchase

Western Slope water leaders hope bipartisan support can thaw \$40 million in frozen federal money aimed at securing some of the Colorado River's oldest water rights.

The Colorado River District is spearheading an [effort](#) to purchase senior rights from Xcel Energy used at the Shoshone hydroelectric plant in Glenwood Canyon. The [water](#) allocated by the rights passes through the facility and back into the river, making them "nonconsumptive" rights, but by purchasing them for \$99 million Western Slope leaders hope to ensure that water can continue to flow downstream and avoid the possibility it could be rerouted to Front Range users. The effort to buy the rights raised more than \$50 million between the state of Colorado, the River District and more than two dozen entities on the Western Slope.

In January, the federal government [announced](#) \$40 million worth of support to the project. Just days later, the Trump administration took over, and that money was put on hold.

"I think that has been frozen," Republican Congressman Jeff Hurd, who represents Colorado's 3rd Congressional District, said in response to a question about the grant during a tele-town hall event on March 11. "Just know that we are working hard behind the scenes to see what we can do to make sure that that funding is allocated and completed."

Andy Mueller, general manager for the Colorado River District, said the group anticipated delays in the funding from the start on account of the changing



administrations. But, because the group has been working on pooling the money in advance, they're not being left high-and-dry by the funding freeze just yet.

"We're one of the fortunate grantees, if you will, in that situation. I know there are a lot of grantees who were actually engaged in digging dirt and had hired staff in anticipation of grants," Mueller said. He noted the deal is still pending a water court change case, giving the Shoshone purchase deal extra runway to haggle over the federal contribution. "We anticipate being done sometime by the end of 2026, maybe midway through 2027. And so we actually have some time and some breathing room. And maybe that's why we're a little bit more relaxed about swings in Washington right now. And I think we're hopeful that, again, that when the dust settles this program, this effort will remain funded," Mueller said, adding that Colorado's U.S. Senators, Michael Bennet and John Hickenlooper, have also been working to re-secure the grant funds along with Hurd.

The funding came through President Joe Biden's Inflation Reduction Act and was halted during the Trump Administration's [sweeping](#) pause on previously allocated spending.

Hurd, who was elected to his first term in Congress this November, is from Grand Junction where multiple entities have contributed to the pool of money to purchase the water rights. The city of Grand Junction and [Mesa County](#) each contributed [\\$1 million](#) for the effort, while Colorado Mesa University poured in another [\\$500,000](#).

Hurd said during the town hall the local support demonstrated the importance of the mission.

"It means a lot to me that it's not just the federal government putting up the money, but there's state and local partners that are doing it as well. That means a lot to me as your federal legislator, is that you all have some skin in the game as well. Know that that will be a top priority for me in this Congress, making sure that we secure that funding so we can get that water right and make sure that we protect that most precious asset in Western Colorado."

Original Article: [CPR News by Tom Hesse](#)

Arizona lawmakers seek do-over for \$5B tribal water settlement after failed 2024 effort

Arizona lawmakers are taking another shot at a \$5.1 billion water rights settlement between the state and three tribal nations after the measure failed to come up for a vote before Congress adjourned at the end of 2024.

The settlement act would secure safe, reliable water for thousands of Navajo, Hopi and San Juan Southern Paiute tribal members in northeastern Arizona. It would give the San Juan Southern Paiute Tribe a reservation. It would resolve water rights disputes, and potentially set up new funding streams for tribes. The [bill was reintroduced](#) Tuesday.

In the first go-round, state and tribal leaders [could not resolve concerns](#) raised by officials in the Upper Colorado River Basin — Colorado, New Mexico, Utah and Wyoming



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— before time ran out. Now, proponents are tasked with gaining seven-state support and passing a bill with a hefty price tag through Congress at a time when the federal government is taking unprecedented steps to cut its budget.

Tom Buschatzke, director of the Arizona Department of Water Resources, pointed to the bill's bipartisan support as a good sign in [a news release Thursday](#).

“Finalizing this crucial agreement, following decades of negotiation in some cases, constitutes a monumental ‘win’ for both the State of Arizona and the tribes,” Buschatzke, Arizona’s top Colorado River negotiator, said in the news release. “So, it is extremely gratifying to see our representatives from both sides of the political divide uniting behind this legislation.”

Arizona Sens. Mark Kelly and Ruben Gallego, both Democrats, [announced the bill’s reintroduction Tuesday](#), alongside Republican Reps. Juan Ciscomani and David Schweikert, and Democratic Reps. Greg Stanton, Raúl Grijalva and Yassamin Ansari. (Grijalva [died Thursday](#) from complications of cancer.)

If the bill passes, the [Northeastern Arizona Indian Water Rights Settlement](#) would resolve water rights claims to the Colorado River, Little Colorado River and groundwater resources in Arizona for the three tribes.

The Navajo Nation [would have quantified rights](#) to over 48,300 acre-feet of water per year; the Hopi Tribe, about 8,228 acre-feet; and the San Juan Southern Paiute Tribe, about 350 acre-feet.

One acre-foot roughly equals the annual use of two to three homes. About 30% of the homes on the Navajo Nation reservation do not have access to safe and reliable drinking water.

The San Juan Southern Paiute Tribe would also get a 5,400-acre reservation located within the Navajo Nation out of the settlement. It is the only federally recognized tribe without a land base.

Original Article: [Colorado Sun by Shannon Mullane](#)

GLOBAL WATER NEWS

The future of groundwater is digital

Water is the lifeblood of our economies, societies, and ecosystems. Yet, for decades, we’ve undervalued and mismanaged it. Today, the stakes couldn’t be higher. The Global Commission on the Economics of Water (GCEW) has sounded the alarm: water scarcity, climate change, and biodiversity loss are destabilising the hydrological cycle that



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sustains life on Earth. At the same time, the European Union is doubling down on water resilience as a cornerstone of its sustainability agenda.

The question isn't whether we need to act — it's how quickly we can scale solutions that work. And here's the good news: water isn't just a challenge; it's also an opportunity. With billions of dollars flowing into water-related projects globally, there's a growing market for innovative solutions — particularly in the digital area — that can transform how we manage this critical resource.

A massive funding gap — and a chance to close it

Let's start with the numbers. Achieving Sustainable Development Goal 6 (clean water and sanitation for all) will require an [additional \\$500 billion](#) annually in investments in low- and middle-income countries alone. That's just the tip of the iceberg. To stabilise the global water cycle — blue water (rivers and lakes) and green water (soil moisture) — we'll need even more. The World Bank has estimated that up to 80% of climate adaptation costs are related to water.

In Europe, the EU Recovery and Resilience Facility (RRF) has already [committed €12.92 billion to water-related projects across 15 Member States](#). Spain and Italy are leading the charge, investing heavily in reducing leakage, improving wastewater treatment, and modernizing infrastructure. These efforts aren't just about compliance — they're about building resilience in a world where water risks are becoming increasingly unpredictable. For decision-makers like you, this significant funding gap represents a call to action — and an enormous opportunity to lead.

Digital can make waves

Technology is rewriting the rules of water management. From real-time monitoring to predictive analytics, digital approaches are enabling smarter more timely decisions and more efficient operations across industries and sectors. Here are three areas where digital is already making a difference — and where investment opportunities are ripe:

1. Digital water management

Imagine being able to monitor an entire city's water network in real time — detecting leaks before they happen or optimising distribution based on demand patterns. That's not science fiction; it's happening now at utilities like Evides, Agea and Sabesp.

Why it matters: In some cities, up to 40% of water is lost due to leaks. Fixing this isn't just about saving water — it's about saving money.

Who's investing: Venture capital firms and corporate players like Bentley Systems are pouring millions into startups that specialise in IoT-enabled sensors, AI-driven analytics, and smart water platforms.

EU spotlight: The European Commission put forward a political mandate to digitalise water management and water utilities in its 2024-29 mission letter to Commissioner Jessika Roswall, and continues to fund R&D programs like Horizon Europe, which supports cutting-edge research projects in the sector.



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2. Wastewater treatment and reuse

In a world where freshwater is becoming scarcer by the day, wastewater isn't waste — it's a resource waiting to be tapped.

Why it matters: [Treating wastewater could reclaim about 8% of global freshwater withdrawals](#), equivalent to all municipal water use worldwide.

Who's investing: Startups like Gradiant have raised over \$392 million to scale advanced treatment technologies that recover nutrients and energy from wastewater.

EU spotlight: Under its circular economy agenda, the EU is investing heavily in wastewater reuse systems that reduce pollution while creating economic value.

3. Agricultural water efficiency

Agriculture accounts for 70% of global freshwater withdrawals—and much of it is wasted due to inefficient irrigation systems.

Why it matters: Scaling precision irrigation could save up to 25% of irrigated water consumption by 2050 while boosting crop yields.

Who's investing: Agri-tech startups like Kilimo are using SaaS platforms to optimize irrigation schedules and verify water savings that can be monetized as offset credits.

EU spotlight: The EU supports regenerative farming practices through its Common Agricultural Policy (CAP), creating fertile ground for innovation in agricultural efficiency. The EU's leadership on water resilience

Europe has positioned itself as a leader in addressing global water challenges. The European Commission's focus on water resilience underscores its commitment to aligning climate action with economic development. Through frameworks like the RRF, and Cohesion Policy, the EU is not only funding infrastructure upgrades but also looking more closely at how to foster innovation to make these systems smarter and more efficient. But what is in place now is not enough when one considers the urgency of the problems and the funding gap. Therefore, policymakers and business leaders alike should work together, as this presents a unique opportunity to solve a strategic European problem while tapping into one of the fastest-growing markets in sustainability.

Who's funding this revolution?

The funding landscape for water solutions is diverse — and growing:

Private venture capital:

Firms like Westly Group are betting big on early-stage startups developing game-changing technologies. Corporate venture capital initiatives are targeting scalable solutions for utilities and industries. Venture capital investments are expected to nearly double in 2025 compared to 2024.

Development Finance Institutions (DFIs):

Many organisations like the European Investment Bank; the European Bank for Reconstruction and Development; World Bank and African Development Bank are



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providing concessional loans to de-risk investments in emerging markets. DFIs are increasingly backing Just Water Partnerships to mobilise private capital for underserved regions.

Public-Private Partnerships (PPPs):

Governments are teaming up with private entities to modernize infrastructure through performance-based contracts. Examples include leak detection systems funded by municipal utilities in Sub-Saharan Africa and South Asia.

Multilateral initiatives:

Programs like the UN System-wide Strategy for Water and Sanitation aim to accelerate progress toward SDG 6 by fostering innovation at scale.

What does this mean for you?

The intersection of technology, funding, and policy presents an unprecedented opportunity to transform how we manage water — a resource that underpins everything from food security to climate resilience. For decision-makers in government or business, this isn't just about solving problems; it's about seizing opportunities.

By investing in digitally-driven solutions — whether it's digital monitoring platforms for utilities, advanced wastewater treatment technologies for industries, or precision agriculture tools — you can drive measurable impact while unlocking long-term economic value.

Given the massive funding gap and the strategic nature of these challenges, now is the time to lead boldly. Together, we can reshape Europe — and ensure that water security becomes a cornerstone of sustainable development worldwide.

Original Article: [Smart Water Magazine by Thomas D. Krom](#)

Groundwater recharge at 800-year low in Western Australia, posing risks

Someone is listening very carefully for the quiet sound of a drip from deep underground. Stacey Priestley is a Research Scientist in our Water Security Program, studying how decreasing rainfall affects [groundwater](#). As part of our Drought Resilience work, she's on a mission to improve our understanding of how groundwater recharges.

Groundwater fills the spaces between sand, soil, and rock below the [water table](#). It accounts for 17% of Australia's accessible water resources, and it's more than 30% of our total water use. Across this great continent, groundwater is vital for both humans and our ecosystems. For parts of the country, including cities such as Perth, groundwater is the only reliable water supply available to support communities, industries, and the environment.

But how much water makes it underground when it rains?

That's the question Priestley is working on with researchers from UNSW, Flinders University, and Deakin University through the National Groundwater Recharge Observing System.



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Understanding how groundwater recharges is essential info for sustainably managing Australia's water resources. Together, the researchers are gathering underground data from caves, tunnels, and mines from across the continent. The observing system spans Australia's boundless plains. It measures how different places, each with different soil and rock types and weather patterns, affect how much water goes into the ground.

Research shows water can soak in quickly after rain, but exactly how much rain you need depends on where in the country you are. In a world-first study in 2023, Priestley and her co-researchers showed groundwater replenishment in Western Australia is at an [800-year low](#).

The authors suggest that the reliability of the region's groundwater recharge in the region may be in danger.

Australia's drying regions

In 2020, some Australian towns were only months away from running dry. Regional communities, including Scotdesco in South Australia and Stanthorpe in Queensland, [ran out of water](#).

Then there is Elliston, which depends on groundwater from a freshwater aquifer known as the Bramfield Lens. Priestley points out that groundwater levels in the area are declining, in part due to decreasing rainfall. Scientists need to accurately determine the rate of decline, as this information informs decisions on the long-term management of water resources.

"Sustainable groundwater resources management requires a sound understanding of when and under what conditions groundwater recharge occurs," Priestley says.

"However, recharge varies in space and time, and it's difficult to measure directly."

The South Australian Department of Environment and Water (DEW) has engaged us to investigate. We're analyzing aquifer recharge trends over time and what this means for a diminishing resource in a changing climate.

Global declines in groundwater

The 2024 State of the Climate [report](#) shows cool season rainfall has declined 16% in Australia's south-west since 1970. The south-east has witnessed similar shifts, with a decrease of about 9% in April to October rainfall since 1994. More rain in these areas now falls in heavy, short-lived rainfall events.

The report also projects a continued decrease, on average, in cool season rainfall across much of southern and eastern Australia. This, it says, will likely lead to more time in drought for affected regions. Because Ellison is isolated from the regional water distribution network, it depends on groundwater in a changing climate. With demand increasing, Priestley says the town (and surrounding users) face a heightened risk of water shortages.



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Unreliable rainfall threatens long-term water security for people and the communities who depend on it for their lives and livelihoods. For places like Elliston, where agriculture relies on groundwater for irrigation, reduced water availability increases water costs for farmers and growers.

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Going deeper underground

Along with Priestley, the team are Andy Baker, Martin Andersen, Marilu Melo (UNSW), Margaret Shanafield (Flinders University) and Wendy Timms (Deakin University).

With her fellow researchers, Priestley and the team have already placed 100 sensors in more than a dozen sites across Australia's southeast. Now, they're expanding into sites around the country.

Priestley explains that the sensor's lid is essentially a microphone, and it gets "pinged" whenever drips fall from the ceiling. By counting the drips, the sensors—called hydrological loggers—help researchers precisely determine when recharge occurs. Knowing the event, month, or season, and the climate conditions, researchers can quantify the rainfall needed to recharge groundwater.

The team spent three days around Elliston, visiting caves with vertical entrances, locally called sinkholes. Together, they installed 54 loggers in 13 sinkholes and visited another 10.

To access the caves safely, they had help from caving specialist Steve Milner, of Ancient Land Tours.

"All the other caves I've been in you can walk into easily, so this was an interesting experience," Priestley says.

"Usually, the opening was big enough to use a ladder and we had a harness for safety.

"Where a couple were much tighter, we had to use a small wire ladder and that was more challenging," she says.

Australia is dependent on limited groundwater resources that are under stress from a changing climate, as well as expanding agricultural and mining developments. Real-time monitoring of [groundwater recharge](#) variability will help researchers better understand how droughts and other extreme weather events affect groundwater.

Priestley says the initial results from installed loggers already [show a large variation](#) across Australia.

"I'm looking forward to getting out to Elliston again after it rains and downloading the loggers," Priestley says.

Original Article: [Phys.org by James Chesters, CSIRO](#)



Thames Water's £3bn rescue deal cleared by court

A £3bn rescue loan for Thames Water is set to go ahead after an appeal against the deal was dismissed.

The troubled firm [secured the rescue loan in February](#), to stave off the prospect of the debt-laden company coming under government control.

But a small group of lenders had argued against the terms of the deal, while Liberal Democrat MP Charlie Maynard had argued that extra lending was not in the public interest.

This extra funding allows the UK's largest water company to continue operating for at least another 12 months giving it time to restructure its nearly £20bn in debt and try to attract new investment.

Thames Water serves about a quarter of the UK's population, mostly across London and parts of southern England, and employs 8,000 people.

The Court of Appeal said it would issue written reasons for its decision to dismiss the appeal "in due course".

Thames Water chief executive Chris Weston said he was pleased with the decision.

"We remain focused on putting Thames Water onto a more stable financial foundation as we seek a long-term solution to our financial resilience," he said, adding that the firm's "turnaround plan" can continue.

He added the initial tranche of £1.5bn would be provided in instalments over the coming months.

Opponents of the rescue plan, including Mr Maynard, argued it mainly served the interests of Thames's current lenders who stood to lose more of their money in an administration than they would if they could keep the company running.

They argued the public interest would best served by putting Thames under government control through a Special Administration Regime, which was the same mechanism employed when energy company Bulb went bust.

Critics of the deal also argued the 9.75% interest rate attached to the new debt made it too expensive an option for Thames.

Responding to the Court of Appeal's decision, Mr Maynard said: "Thames Water remains a cash cow for its lenders, while its 16 million customers are left to foot the bill for the company's ludicrously expensive interest charges and advisory fees.

"It is in the government's power to end this now for the benefit of the British public and seek to put the company into special administration."

The BBC understands Mr Maynard is still considering whether to appeal against the latest ruling to the Supreme Court.

A spokesperson for the group of Thames Water's creditors who opposed the plan said they "disappointed" with the Court of Appeal's dismissal.



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"We will continue to explore all available avenues, including seeking leave to appeal to the Supreme Court, to ensure that customers and the broader public are not forced to bear the costs of a deeply flawed restructuring process."

Why did Thames Water need a rescue loan?

Thames Water was set to run out of cash by the end of March and without the loan it was likely to have been placed into temporary nationalisation to keep services running. Many UK water companies have large debts, but Thames Water's problems are the worst, with debts of about £19bn.

It has faced heavy criticism over its performance in recent years following a series of sewage discharges and leaks, and needs to spend billions on upgrading the water network.

The company had insisted that if the rescue deal was blocked, a government rescue would have cost taxpayers billions, as well as setting back the timetable to fix the business.

Thames Water customers are facing [a 31% increase in their bills from April](#), and Monday's ruling will not affect this.

Original Article: [BBC by Simon Jack and Faarea Masud](#)

Thames Water data reveals raw sewage discharges in rivers rose 50% in 2024

A record 50% more raw sewage was discharged into rivers in England by [Thames Water](#) last year compared with the previous 12 months, data seen by the Guardian reveals.

Thames, the largest of the privatised water companies, which is teetering on the verge of collapse with debts of £19bn, was responsible for almost 300,000 hours of raw sewage pouring into waterways in 2024 from its ageing sewage works, according to the data. This compares with 196,414 hours of raw effluent dumped in 2023.

The data, obtained by the analyst Peter Hammond in answer to an environmental information request to the company, comes after [Thames Water won approval](#) from the court of appeal for a £3bn emergency debt bailout to avoid collapse.

Original Article: [The Guardian by Sandra Laville](#)

Indra Water: Creating a circular economy for India's wastewater

It all started in a small apartment in University Village, Seattle, in 2014, where a conversation between roommates sparked an idea. Though as students of mechanical engineering at the University of Washington both Krunal Patel and Amrit Om Nayak were working on different projects—Nayak on energy systems for spacecraft and Patel on underwater tidal turbines—what caught their attention was Seattle's stormwater and its treatment.



“Seattle gets rain nine months of the year and though Seattle has wastewater treatment plants, we found that the stormwater mostly drains off and there was no cost-effective way to recover it,” says Nayak. Stormwater, he explains, is a distributed resource flowing in small streams and building a single centralised facility to clean that water is difficult and expensive.

It got them thinking about finding a decentralised solution, their goal being to create a modular, easily scalable technology for treating and recycling water. Early success got them thinking about a larger problem—wastewater from industrial and non-industrial establishments. “We soon shifted our attention to wastewater treatment, adapting our reactors to handle more complex pollutants,” adds Nayak.

they built their first prototypes, they pondered their next move: Should they pursue their vision in the US or back home in India, where the need was greater? Reflecting on their roots and the potential impact, they decided to return to India where clean water remains scarce.

“For instance, in southern India, many businesses and factories operate only three to four days a week due to severe water scarcity. This results in a loss of revenue,” says Nayak, who grew up in Chennai. “The lack of groundwater reserves exacerbates the issue, leaving them without a reliable backup source.” Despite being home to 18 percent of the world’s population, India has access to only 4 percent of the world’s water resources, and many areas have to deal with water scarcity.

Original Article: [Forbes India by Naadika Tripathi](#)

How to future-proof water systems in an era of extreme weather

From my home in Los Angeles, I witnessed the devastation of wildfires earlier this year and how they underscored the rising urgency to modernize water infrastructure. A slew of [dangerous chemicals were released](#) into Los Angeles’ drinking water and stormwater systems during the wildfires, leaving many communities concerned about whether their water was safe to drink.

These wildfires shone a light on whether our water systems are equipped to handle disasters. As wildfires grow more frequent and intense, it becomes even more urgent to adapt our water infrastructure to meet this new reality. Much of the nation’s water infrastructure is nearing the end of its lifespan. And yet, modernizing drinking and wastewater systems could [exceed \\$744 billion](#) in costs over the next 20 years.

Between the urgent need to upgrade decades-old systems and the rising impacts of climate-driven weather extremes, the vast networks of pipes, treatment plants, and drainage systems across the U.S. are under immense strain.

Uncertainty around legislation and funding

Federal and state legislation and funding could put a significant dent in addressing critical water infrastructure needed to support economic growth and communities. The



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Bipartisan Infrastructure Law, for example, earmarks \$50 billion for water, wastewater, and stormwater infrastructure upgrades. As of November, about [\\$41 billion](#) had been awarded for the measure, which garnered [broad business support](#).

States, meanwhile, also have pushed for water infrastructure improvements. Last year, California voters authorized [\\$10 billion in spending](#) on environmental projects, with nearly \$4 billion for projects dedicated to improving water quality and protecting the state from floods and droughts and restoring rivers and lakes.

But there is rising uncertainty surrounding such funding due to the dynamic situation in Washington. As this plays out, it's crucial for companies and investors to take advantage of private sector opportunities to drive innovation, partnerships and investments in climate-resilient water infrastructure.

This work strengthens water supplies for businesses and fuels economic activity: investments in new and improved water systems could annually contribute [more than \\$220 billion](#) to the U.S. economy and create about 1.3 million new jobs.

Private sector opportunities

For many decades, municipal bonds have been a critical tool for shoring up water infrastructure. Today, green bonds can offer investors a powerful opportunity to finance water and wastewater management projects that promote climate adaptation and resiliency. Certification frameworks such as the Climate Bonds Initiative provide criteria ensuring these investments go toward [water infrastructure projects](#) aligned with environmental goals.

Companies — from data centers to agriculture — that need clean water to operate also have a role to play in ensuring the water systems they depend on are reliable and built to endure weather extremes. This shared interest in resilient water infrastructure presents an opportunity for businesses to work with peers, governments and other stakeholders on projects that prevent water service disruptions and higher costs to businesses and communities.

Moving past traditional approaches

As we work to strengthen our water infrastructure system to meet a new climate reality, we must also think beyond traditional approaches. Nature-based water systems and solutions can play a critical role in managing water and restoring and protecting ecosystems within watersheds that help filter and transport clean water. Holistic approaches such as wetland protection and restoration help strengthen water systems against the growing pressures of extreme weather.

Some companies are leveraging partnerships to accelerate and broaden the impact of these solutions. Olam, a food ingredients and agri-business company, [has partnered](#) with the USDA Forest Service, National Forest Foundation, and Knorr (a Unilever Brand) on restoration projects to improve resilience, including potential impacts of severe wildfire, in California's Pine Flats watershed.



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Through the [California Water Resilience Initiative](#), companies such as Ecolab and General Mills are working with the Pacific Institute to build corporate support for projects and policies addressing strained water resources in the state, including efforts to restore ecosystems.

Companies can also support federal policies that help modernize water infrastructure. Global water technology company Xylem, for example, lobbied for the 2016 passage and implementation of the [Water Infrastructure Improvements for the Nation Act](#) (WIIN Act), which provides grants to improve infrastructure resiliency in disadvantaged communities.

The Los Angeles fires are just the latest example of how climate disasters are pushing America's aging water systems to the brink. We need an all hands-on deck approach, with innovative solutions and funding, to upgrade and replace the nation's network of water infrastructure at the pace and scale that ensures the long-term health and safety of communities and the economy.

Original Article: [Trellis by Kristen James](#)

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