

Veles Water Weekly Report

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VelesWater



WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Joshua Bell

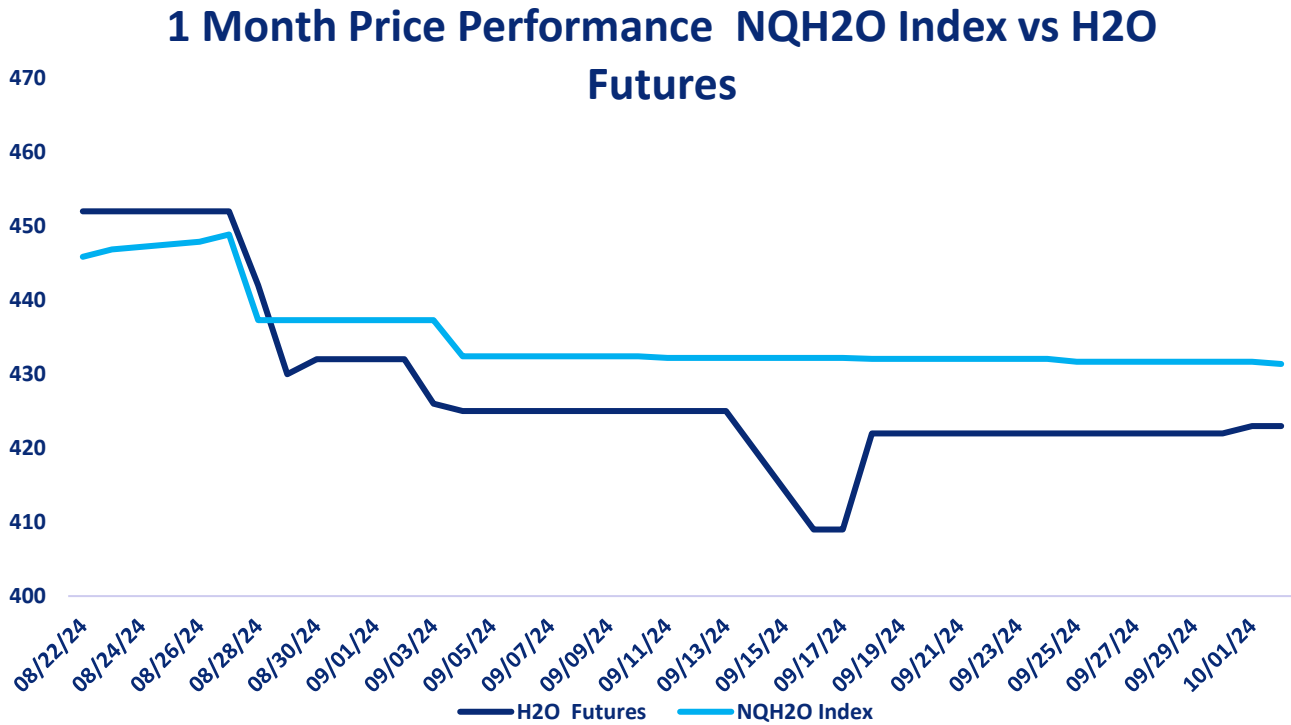
CLICK THE LINK BELOW

“A 2 minute technical analysis video of H2O futures”

<https://vimeo.com/1015573297?share=copy#t=0>



NQH2O INDEX PRICE vs H2O FUTURES PRICE



Price Chart Based upon Daily Close

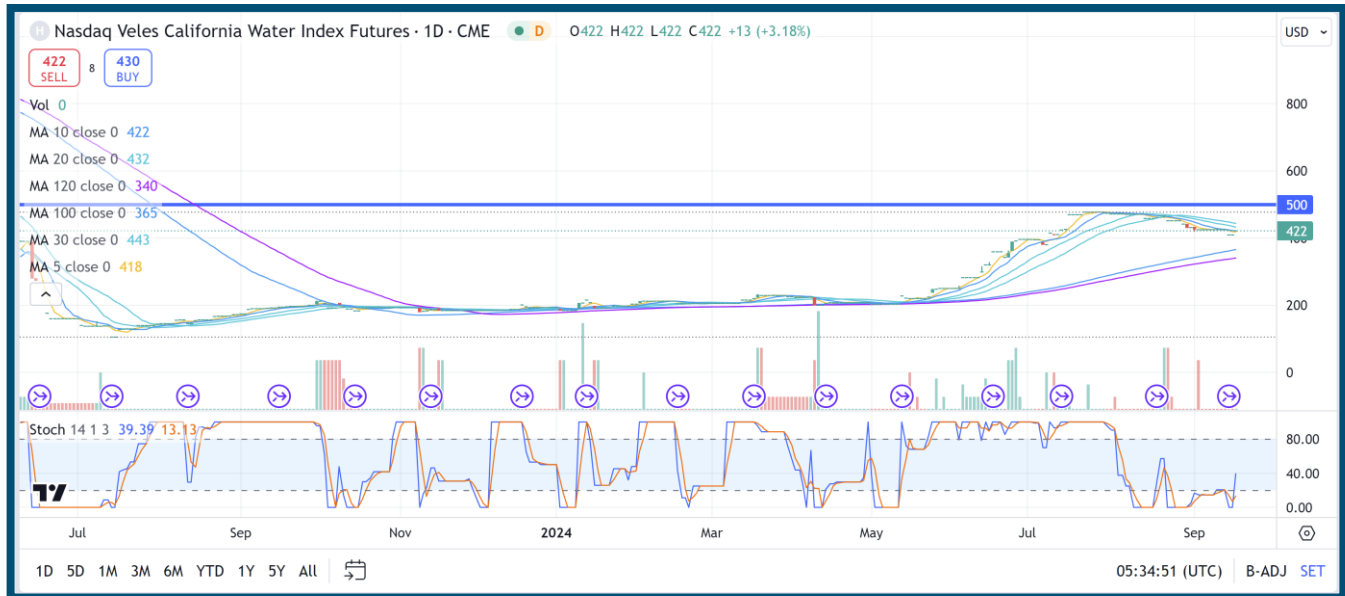
The new NQH2O index level of \$431.37 was published on October 2nd down \$0.32 or 0.07% from the previous week. The October contract is considered the front month. The futures prices have closed at a discount of \$8.37 to \$9.69 versus the index over the past week.

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

Oct 24	422@430
Nov 24	422@430
Dec 24	415@455
Mar 25	425@500
June 25	485@530
June 26	545@665



H2O FUTURES TECHNICAL REPORT



Price Action

- **Current Price: 423**
- The price has remained flat in this trading session, indicating no change in momentum.

Moving Averages (MA) Analysis

- **MA 5 (5-day Moving Average): 423**
 - The current price is sitting exactly on the MA 5, indicating short-term neutrality.
- **MA 10 (10-day Moving Average): 423**
 - The price is also sitting directly on the MA 10, suggesting further neutrality in the short-term trend.
- **MA 20 (20-day Moving Average): 422**
 - The price is slightly above the MA 20, which suggests mild short-term bullish momentum.
- **MA 30 (30-day Moving Average): 429**
 - The price is likely above the 30-day MA (based on context), which would indicate medium-term bullish momentum.
- **MA 100 (100-day Moving Average): 387**
 - The price is well above the MA 100, confirming that the long-term trend remains bullish.
- **MA 120 (120-day Moving Average): 357**
 - The price is significantly above the MA 120, further confirming the bullish long-term trend.



Support and Resistance

- **Immediate Resistance: 500**
 - This level has been tested several times and remains a key resistance point for a breakout.
- **Immediate Support: 423 (current price level)**
 - The current price may act as support. If it breaks below this level, the next significant support would be around the MA 100 at 387.

Stochastic Oscillator

- **Stochastic (K%: 87.50, D%: 87.50)**
 - The stochastic indicator is currently in slightly overbought territory, with both K% and D% at 87.50. This suggests that the market could be facing short-term downward pressure or consolidation.

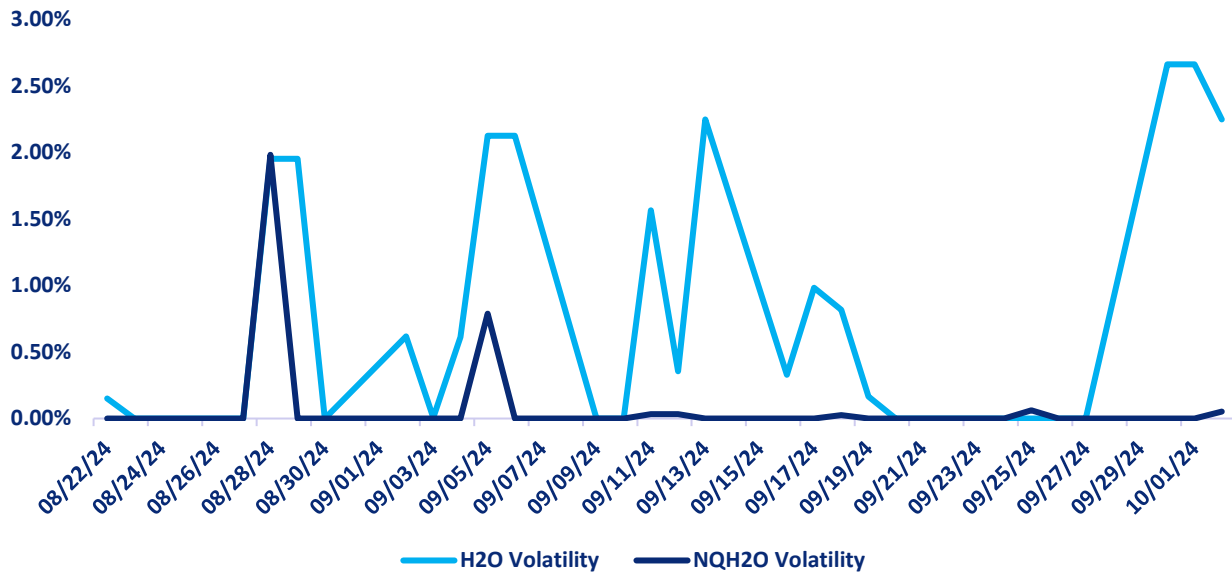
Summary

- The price is currently neutral, sitting on the MA 5 and MA 10, while slightly above the MA 20, which signals mild bullish momentum in the short term.
- The long-term trend remains positive, as the price is well above the MA 100 and MA 120.
- The stochastic indicator suggests potential overbought conditions, signaling the possibility of a short-term pullback or consolidation.
- Key levels to watch: Immediate support at 423 and resistance at 500. If the price breaks lower, support around the MA 100 at 387 should be monitored closely.



H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



DAILY VOLATILITY

Over the last week the October contract daily future volatility has been 0.17%.

ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	28.30%	4.00%	0.05%	0.01%
H2O FUTURES	N/A	7.46%	5.06%	0.24%

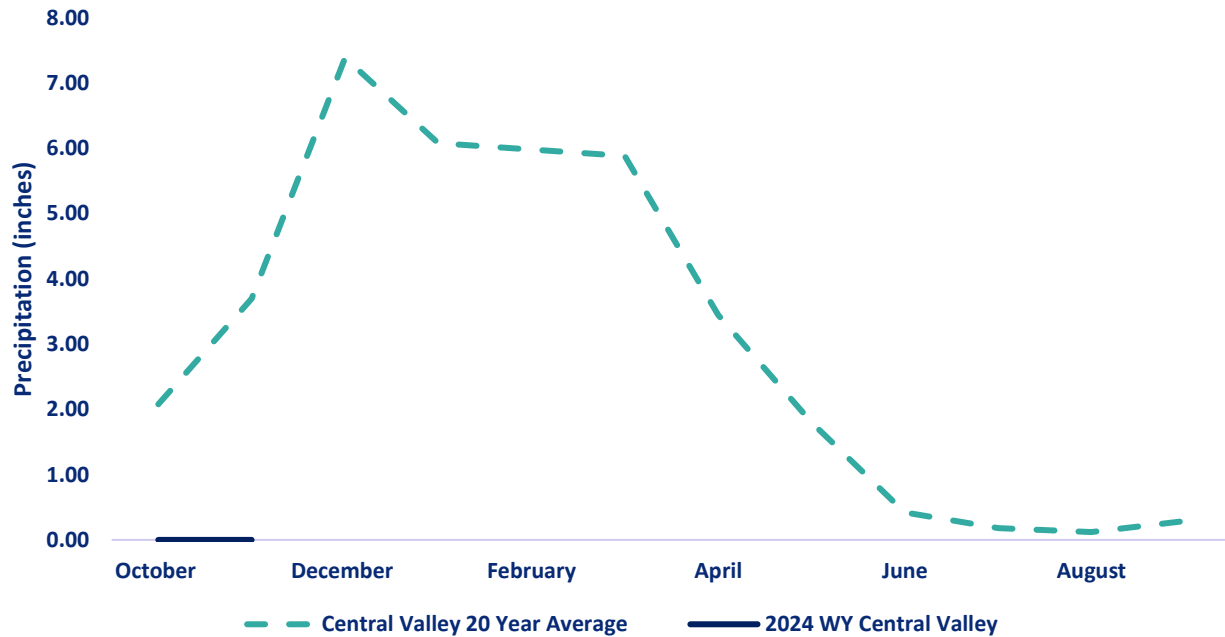
For the week ending on October 2nd, the two-month futures volatility is at a premium of 3.09% to the index, up 0.27% from the previous week. The one-month futures volatility is at a premium of 5.83% to the index, down 0.82%. The one-week futures volatility is at a premium of 0.23% to the index, volatility.

*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 02/10/2024

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)	0	0.00	0.00%	0	0
TULARE 6 STATION (6SI)	0	0.00	0.00%	0	0
NORTHERN SIERRA 8 STATION (8SI)	0	0.11	0.00%	0	0
CENTRAL VALLEY AVERAGE	0.00	0.04	0.00%	0	0

RESERVOIR STORAGE

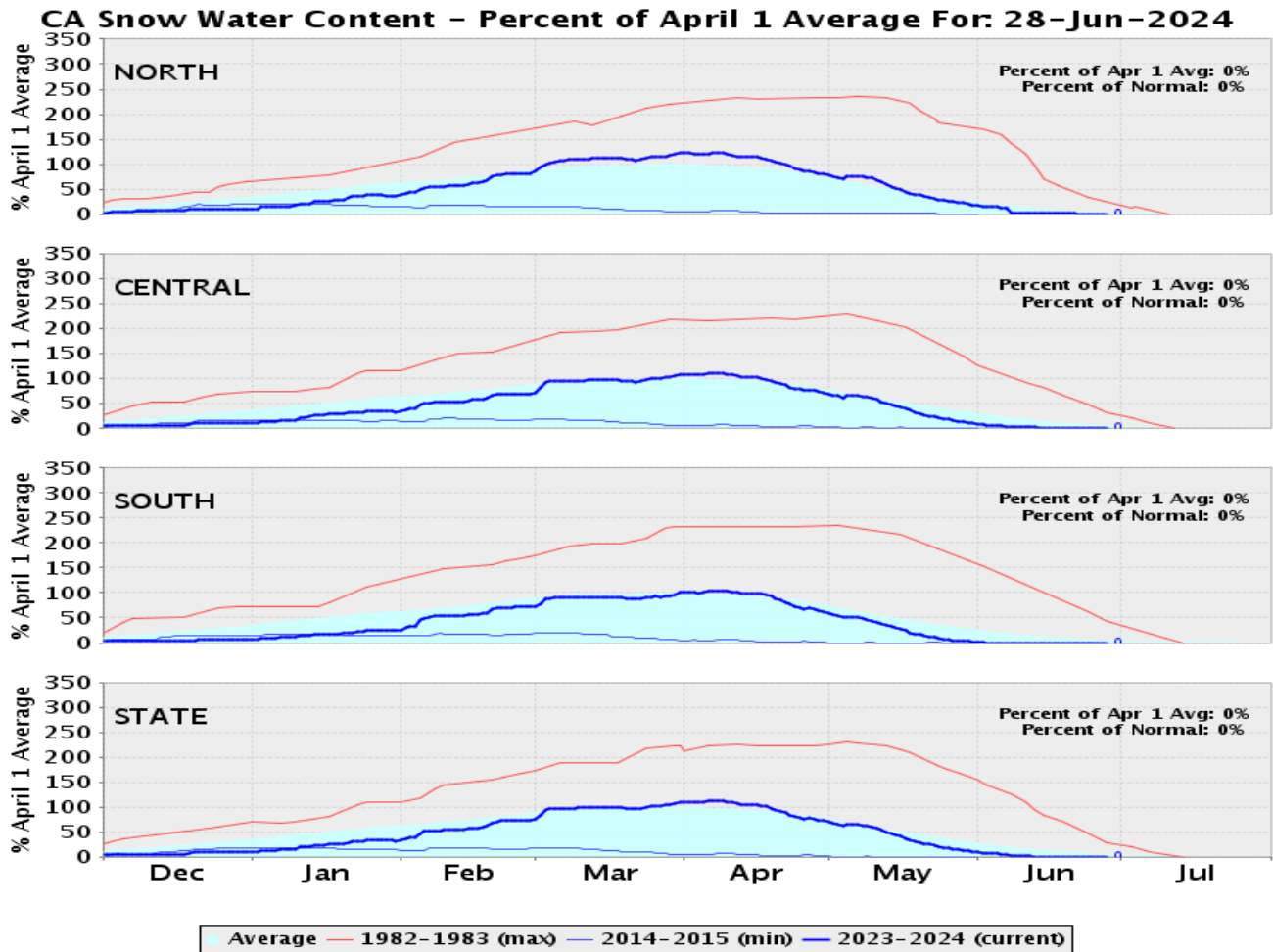
RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	*% HISTORICAL AVERAGE
TRINITY LAKE	1,719,960	70	52	115
SHASTA LAKE	2,766,120	61	73	109
LAKE OROVILLE	1,888,115	53	73	99
SAN LUIS RES	1,011,194	50	81	116

*% 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 2020. 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	0	0	0	0	0
CENTRAL SIERRA	0	0	0	0	0
SOUTHERN SIERRA	0	0	0	0	0
STATEWIDE	0	0	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 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.



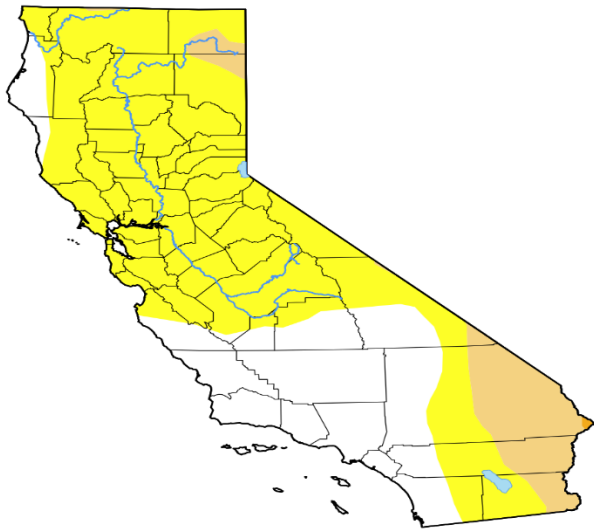
DROUGHT MONITOR

California

[Home](#) / California

Map released: Thurs. September 26, 2024

Data valid: September 24, 2024 at 8 a.m. EDT



Intensity

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

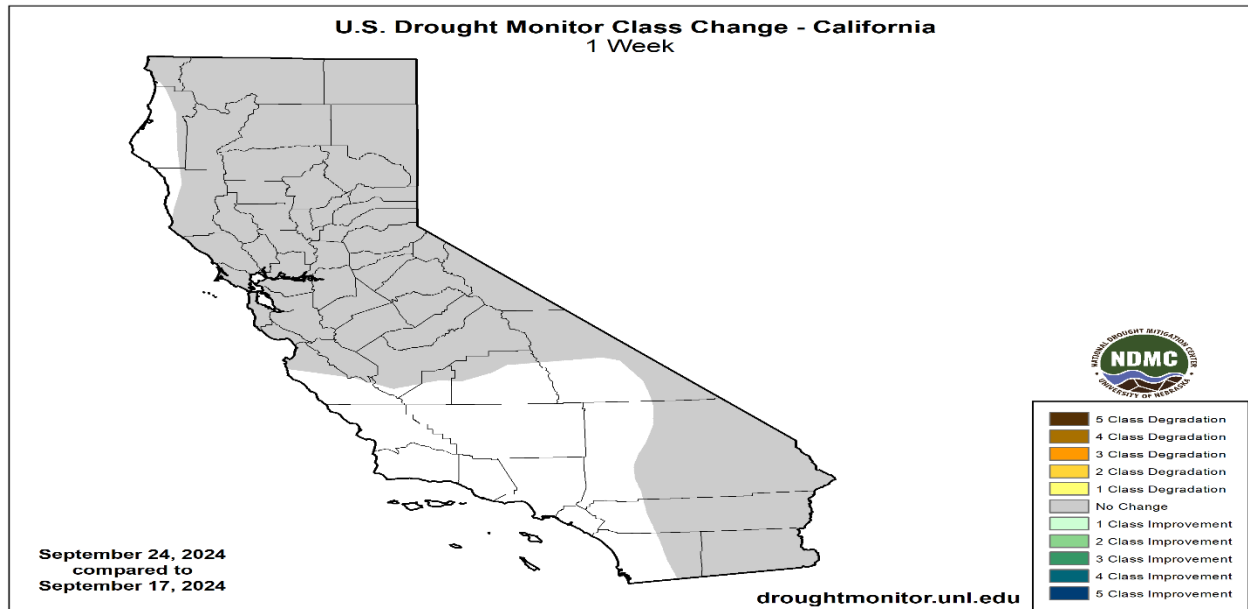
Authors

United States and Puerto Rico Author(s):

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

Pacific Islands and Virgin Islands Author(s):

[Rocky Bilotta](#), NOAA/NCEI



Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2024-09-24	28.59	71.41	10.67	0.08	0.00	0.00	82
Last Week to Current	2024-09-17	28.59	71.41	10.67	0.08	0.00	0.00	82
3 Months Ago to Current	2024-06-25	97.18	2.82	0.00	0.00	0.00	0.00	3
Start of Calendar Year to Current	2023-12-26	96.65	3.35	0.00	0.00	0.00	0.00	3
Start of Water Year to Current	2023-09-26	94.01	5.99	0.07	0.00	0.00	0.00	6
One Year Ago to Current	2023-09-26	94.01	5.99	0.07	0.00	0.00	0.00	6

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

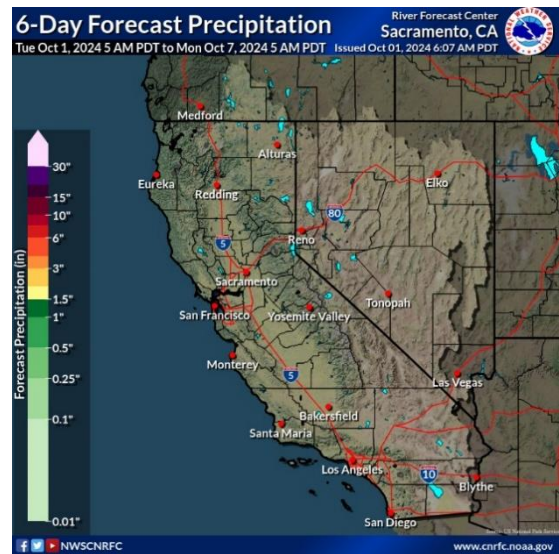
The satellite picture shows a mostly clear continental US. Some activity in the Gulf of Mexico may affect coastal regions plus the possibility of light rain in Seattle area. Other than that a relatively glorious day.



10 Day Outlook

A large area of high pressure is stretched across much of the Pacific and over CA/NV this morning. This high pressure will continue to influence the region the rest of the week while gradually shifting eastward. The center of the ridge will settle over the Four Corners on Friday remaining in place through the coming weekend. This will steer any troughs well to our north keeping dry conditions across CA/NV. High pressure is also expected to bring well above normal temperatures, particularly today through Thursday where afternoon highs are expected to be 10 to 20 deg F above normal. The shifting of the ridge Friday may bring some slight lowering of temperatures for nrn CA/NV, but widespread above normal conditions of at least 5 to 15 deg F are still expected. 500 mb cluster analysis suggests the potential for some relief around October 11th as 60% of ensemble members show some degree of troughing offshore of the PacNW and nrn CA.

Map Ref: Zoom Earth



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



WESTERN WEATHER DISCUSSION

There were only minor changes in the Western drought depiction, aside from improvement due to heavy precipitation in parts of Montana. Dry conditions remained a concern in many areas, with statewide topsoil moisture rated very short to short on September 22 as high as 84% in Montana and 74% in Oregon. Northwestern rangeland and pastures remained largely in terrible shape, following a hot, dry summer, and by September 22 were rated more than 60% very poor to poor in Montana, Oregon, Washington, and Wyoming. Dry conditions also favored winter wheat seeding, with Washington leading the nation on September 22 with 54% of its intended acreage planted.

Reference:

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



WATER NEWS

CALIFORNIA WATER NEWS

California Department of Water Resources (DWR) Announces State Officials Prepare for Extreme Weather Swings as New Water Year Approaches

The Department of Water Resources (DWR) last Thursday previewed the new Water Year which starts on October 1 by highlighting preparations for more extreme weather events this season following a record hot summer across much of California and a looming La Niña pattern.

Over the past decade, climate extremes have posed significant challenges to water managers, especially the extreme hot and dry conditions that frequently persist well past summer months and into the fall. California is seeing that right now with above-average temperatures forecast into October and no rain in the current forecast. At the same time, the water that California does receive will arrive from more powerful storms, and hotter temperatures will mean less winter precipitation falls as snow and more will arrive as rain, increasing flood risk.

“California has experienced the full range of climate challenges in recent years from extreme drought to severe flooding and we will be seeing more of that in the future,” said DWR Director Karla Nemeth. “To meet these dramatic challenges, California is starting this water year with more accurate forecasting and additional investments in flood protection and groundwater recharge.”

DWR and partner agencies are making California more climate resilient, taking actions to protect and boost California’s water supplies by taking an all-of-the-above approach to creating a resilient water supply in the face of a changing climate.

Investments in Forecast Informed Reservoir Operations and improved data collection on hydrological conditions across the state through DWR’s \$7 million California Stream Gage Improvement Program (CalSIP) will allow California to incorporate the best available science and data into its water management decisions.

California is also investing in protecting Californians from extreme weather events. Floodplain restoration and flood infrastructure projects such as the Lookout Slough Tidal Habitat Restoration and Flood Improvement Project and the Lower Elkhorn Basin Levee Setback Project will work with nature to improve wildlife habitat while reducing flood risk to hundreds of thousands of Californians.

California is also starting this water year with significant progress in bringing groundwater basins across the state closer to long-term sustainability, protecting drinking water supplies against the impacts of climate change. Last winter, DWR launched the Flood Diversion and Recharge Enhancement Initiative, which supports



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local groundwater recharge efforts that increase the volume of flood flows diverted from local waterways to recharge areas and expand local capacity to divert and receive future flood flows. DWR has invested over \$100 million in groundwater recharge projects since the Sustainable Groundwater Management Act was signed into law in 2014.

While Lake Oroville, the State Water Project's largest reservoir, is currently 101 percent of average for this date, the latest outlook from NOAA's Climate Prediction Center shows a 71 percent chance of La Niña conditions emerging this fall. While seven of the 10 La Niña events this century resulted in dry years, research also suggests that even as the climate grows hotter and drier overall, the precipitation that California does receive will arrive in stronger storms, increasing the risk from flooding.

"California experienced record heat and dry conditions this summer, drying out the landscape and putting our hydrology behind before the water year even starts," said State Climatologist Dr. Michael Anderson. "While there is still a lot of uncertainty around how La Niña could impact the state this year, we know we can count on it to include extreme conditions."

The record dry conditions this summer broke multiple records across the state for consecutive days of triple digit temperatures. In the critically important Sierra Nevada watersheds, precipitation this fall will be vitally important to ensure the winter snowpack can translate into runoff that fills our reservoirs, which provides a third of the water used in California.

In addition to today's preview of the new Water Year, DWR will also release the 2024 Annual Water Supply and Demand Assessment Summary Report on Monday, September 30. The summary report, which includes water shortage information at the supplier level, as well as regional and statewide analyses of water supply conditions, finds that all suppliers have assessed that they will have adequate supplies to meet demand in the coming year.

Original Article: [Sierra Sun Times](#)

California's water tunnel to cost \$20 billion. State officials say the benefits are worth it

California Gov. Gavin Newsom's administration said Thursday it will now cost more than \$20 billion to build a giant tunnel aimed at catching more water when it rains and storing it to better prepare for longer droughts caused by climate change.

State regulators have been trying to build some version of a water tunnel system for decades. The latest form championed by the Democratic governor is a single giant tunnel, down from two tunnels proposed by his predecessor, Jerry Brown. Newsom's administration says the state can capture more water from the Sacramento River during major storms and send it south for storage.



State officials note the project now includes \$200 million for grants to fund local projects in areas impacted by construction.

Beyond environmental concerns, the project has become a political landmine throughout the Central Valley's farming communities, where it is seen as yet another attempt by Southern California to steal their water. While most of California's population lives in the southern part of the state, most of the state's water comes from the north. In the state Legislature, lawmakers have blocked any effort to benefit or speed up the tunnel's construction.

Original Article: [MSN.com by Adam Beam](#)

California Drought Crisis Deepens As Water Scarcity Threatens State

California faces one of the worst droughts ever seen due to extended dry weather and increasing heat levels that challenge the state's water supply. The current crisis affects agriculture and wildlife as well as urban water supplies while urging officials to adopt tough conservation methods and seek creative solutions for the increasing water shortage.

Having emerged in 2020 and intensified by climate change the current drought closely matches the 2011-2017 low rainfall cycle deemed the most arid in California history. Fast alternating dry spells have created limited time for water reserves to recover and have tremendously increased pressure on the state's water management infrastructure.

Snowpack levels in the Sierra Nevada range have fallen sharply because of the drought. About 30% of California's water supply comes from snowpack which acts as an organic reservoir that slowly releases water throughout the spring and summer. As temperatures rise significantly in winter months the snowfall decreases and melting begins earlier.

The reservoirs such as Lake Shasta and Lake Oroville find themselves at exceedingly low counts. By September 2024 numerous reservoirs stand at less than 50% of their typical values for this period. Water managers have been compelled to make tough allocation decisions due to this scarcity as they cut back on deliveries for farmers and some city residents.

California's agricultural sector, which produces over a third of the country's vegetables and two-thirds of its fruits and nuts, has been hit particularly hard by the drought. Due to the drought conditions many farmers have been compelled to leave farmland fallow resulting in job cuts and financial challenges for communities far away. As a result of California's important agricultural product role in the national food system food prices have increased nationally.

The consequences for the environment due to the drought are equally strong. Shortened water movements in waterways have produced hotter water and less oxygen endangering fish biodiversity and endangered species such as Chinook salmon. Wetland



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environments have contracted reducing vital habitats for migratory birds and other animals.

State and local authorities have taken various steps to save water and boost supply in reaction to the crisis. Governor Gavin Newsom urges a 15% cut in water usage across the state as several local water authorities implement strict water reduction rules outside. Cities in some regions have made advancements by encouraging residents to exchange thirsty turf for low-water needs gardening.

The state is speeding up initiatives to upgrade its water system. Restoration efforts for deteriorating aqueducts and canals are in progress to enhance both water efficiency and minimise leakage. There is an increasing emphasis on enhancing the utilisation of recycled water and nurturing groundwater practises for achieving more sustainable sources of local water.

Several coastal communities are investigating or putting into practise projects aimed at turning seawater into drinking water using the technique of desalination. Desalination may provide a sure water supply during a drought but is still debated over its high energy expenses and the risks to marine habitats.

As a result of the drought a new wave of focus has appeared on water markets and our systems help to better manage the allocation of water resources. Backers believe these methods improve the efficient use of water during periods of need. etheless, Vegetation aficionados are anxious about speculation and its effect on farming and rural communities.

California's drought is now felt more in other states. A severe drought affects the Colorado River serving crucial water needs for seven Western states including California. This has resulted in unusual cuts to water supplies from the river, reinforcing California's water difficulties and requiring improved collaboration from Western states to handle common water resources.

The continuing drought emphasises the relationship between energy and water systems. California has increased its dependence on natural gas and other sources of energy as hydroelectric generation decreases.

Experts predict that droughts similar to the ongoing one might occur with increased frequency and intensity owing to climate change. This grim situation has inspired a need for fundamental changes in water management practises in California that focus on developing lasting resilience instead of just reacting to specific droughts.

Actions are being initiated to refine drought forecasting and the early warning systems that allow water managers and users to prepare and respond to dry times more effectively. Acknowledgement of the demand to advance climate change scenarios into enduring water resource and infrastructure decisions is on the rise.

The drought has fueled fresh discussions regarding water rights and allocation decisions in California. As officials look for better approaches to water management during



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shortages the existing water rights system from the 19th century has received critical review.

In response to this lengthy drought California reflects on the instability of its water supplies due to a shifting environment. The way California and other states in the West respond to this challenge will probably define future approaches to water management. Innovations have emerged from the drought by motivating examinations of drought-resistant plants and cutting-edge irrigation solutions as well as techniques for gathering and preserving water. These changes will be vital for California and other regions internationally confronting comparable water obstacles.

With drought in its fifth year, Californians start to cope with less plentiful water resources. To combat the water dilemma effectively measures and innovations are uniting with personal habits and pursuits. Although the hurdles appear overwhelming, the combined actions against this significant drought might lead to a healthier water landscape in California.

Original Article: [The Voice California](#)

US WATER NEWS

Arizona tribes' long fight for share of Colorado River water nears resolution in Congress

Seven states that rely on the Colorado River each got a cut of its water under a deal struck over a century ago – a deal that excluded the Hopi, the Navajo and other tribal nations.

After years of pressure and negotiation, Congress is moving to rectify what the tribes have long seen as an injustice that has caused enormous hardship.

“We’re closer than we’ve ever been before in reaching a final settlement,” Bryan Newland, assistant secretary for Indian Affairs with the Department of the Interior, told a Senate hearing on Wednesday.



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Representatives from four Arizona tribes – the Yavapai-Apache Nation, Hopi, San Juan Southern Paiute and the Navajo Nation – said the settlements, once approved by Congress, will secure their long-standing claims and provide more accessible water for their people.

Almost a third of members of the Hopi, Navajo and other tribes have no running water, and leaders say the water currently available isn't sufficient for growing populations.

"Congress must act to end the water crisis on the Navajo Nation," said Navajo Nation President Buu Nygren, who recalled that he didn't have running water until he went off to college at Arizona State University.

The water insecurity crisis has been felt for generations, he said.

Navajo people sometimes have to haul water for over 30 miles, a costly and time-consuming exercise.

The Yavapai-Apache Nation Water Rights Settlement Act of 2024 and the Northeastern Arizona Indian Water Rights Settlement Act of 2024 would provide funds for pipelines and other infrastructure. The bills would also impose pumping restrictions to ensure that groundwater is not depleted.

The process has been slow. The Gila River Adjudication process started over 50 years ago.

Disputes over the Colorado River stem from a 1922 compact between Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming.

"Without the settlement, a cloud of uncertainty will remain over tribal water claims in the Colorado River basin and tens of thousands of tribal members will continue to struggle to meet their basic needs," said Sen. Mark Kelly, a Democrat who introduced the settlement bills with fellow Arizona Sen. Kyrsten Sinema, an independent.

The Northeastern Arizona Indian Water Rights Settlement Act of 2024 would address claims to water from major stems of the Colorado River and Colorado River basin, providing running water to many Navajo and Hopi people.

It also sets aside 5,100 acres near Tuba City and another 300 acres in Utah to create a reservation for the San Juan Southern Paiute Tribe.

"The mental-emotional impact of being a landless, homeless tribe is something I wouldn't wish upon anyone," said Johnny Lehi Jr., the tribe's vice president.

The infrastructure funding "would provide the water we need to make our nation a true homeland."

The other Arizona bill ensures access to the Verde River in the Verde Valley for the Yavapai-Apache people. The bill would also provide over \$1 billion for water infrastructure, pipelines and filtration systems.

Tanya Lewis, chairwoman of the Yavapai-Apache, said the upgrades are overdue, as are the federal efforts to ensure access to water.



“The legislation will finally grant us what the United States promised us in the 1852 Apache treaty,” she said, referring to a pact in which the United States assured tribal sovereignty, including protection of water rights, while requiring the Apache to end their incursions into Mexico.

According to Lewis, the tribe’s water rights were never explicitly taken away. Instead, she said, the reservation was opened to other settlers whose water usage left too little for the rest of the residents.

“The state of Arizona prospered while my people suffered,” she said.

Original Article: [Prescott eNews](#)

Gila River Indian Community receives \$107 million for Colorado River conservation projects

The Gila River Indian Community has been a leader in Colorado River conservation efforts in Arizona, and their efforts are growing as funding from the Inflation Reduction Act will help the tribe launch new water conservation projects in October.

“Each one of these projects will allow us to use our water more efficiently on our farms, with annual savings in water of over 7,400 acre-feet per year,” Gila River Indian Community Gov. Stephen Roe Lewis said in a statement.

The Gila River Indian Community received funding from the Bureau of Reclamation for three separate critical water infrastructure projects totaling nearly \$107 million.

Lewis said the Gila River Indian Community is excited about the funding for the three major infrastructure improvements because they will have significant benefits — not only for the tribe, but for the entire region.

“We are the largest entitlement holder of Colorado River water delivered through the CAP canal; our savings can readily translate into major reductions in our use of Colorado River water, which will add to the one million acre-feet of our water that we have already left in Lake Mead for the benefit of the system,” he said.

The agreements with the Gila River Indian Community are the first long-term pacts to be signed, and according to the Bureau of Reclamation, they can potentially create system conservation of over 73,000 acre-feet within the next 10 years.

The money is split among the three projects: \$64 million to replace and upgrade irrigation systems on Gila River Farms, \$26 million to concrete line more than 7.5 miles of earthen canals in the Blackwater area and \$17 million to construct a regulating reservoir to capture flows that are currently being spilled from the Santan Canal when too much water is accidentally ordered or delivered into the system.

Lewis said the projects are ready to go: Two will begin construction in early October, and the third will get underway in November.

“All the projects will be completed prior to the Post-2026 guidelines, which will undoubtedly hit the state of Arizona very hard,” Lewis added, referring to scheduled cuts



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to Arizona's Colorado River allotment. "These savings will help us all weather those anticipated cuts and also put us in a position of ensuring we use every drop of our water most efficiently."

The guidelines and strategies established to protect the stability and sustainability of the Colorado River, which supplies more than one-third of the Phoenix area's water, will expire at the end of 2026.

The Colorado River is experiencing the longest and worst drought on record, driven by hotter temperatures due to climate change.

The Colorado River Basin provides water for more than 40 million people and fuels hydropower resources in seven U.S. states. It is a crucial resource for 30 tribal nations, as well as two states in Mexico.

U.S. Rep. Ruben Gallego, D-Phoenix, said Arizona's tribes are critical partners in securing our water future and boasted that he helped secure the funding to support the Gila River Indian Community and conserve Colorado River water.

Lewis said that the Gila River Indian Community appreciates Gallego and the Arizona delegation's role in ensuring drought and water conservation funding were included in the Bipartisan Infrastructure Law and the Inflation Reduction Act. The state's Democratic members of Congress, as well as independent Sen. Kyrsten Sinema, all supported those measures; the Republicans all voted against them.

"We are proud to announce these agreements that will support the long-term health of the Colorado River System by shoring up (water levels)," Bureau of Reclamation Commissioner Camille Calimlim Touton said in a statement.

"The new agreements with the Gila River Indian Community are the beginning of our long-term investments that will improve the sustainability of our river for generations to come," Touton said.

Original Article: [Source NM by Shondiin Silversmith, AZ Mirror](#)

Water policy is on the minds of voters as drought continues

A vast majority of Arizona voters support securing long-term water supplies and enacting stronger groundwater protections, but have little faith in Arizona's current water policies' ability to sew long term sustainability, according to the latest survey from the Center for the Future of Arizona.

Voters' recognition of water as a key issue facing the state is not new, but has crept closer to the forefront of voters' consciousness given prolonged drought conditions, lack of oversight of groundwater supply and general anxiety over the state's water future.

"The interest in water, the concern around water and the desire to make sure we have sustainable practices around water and protect future water resources isn't a new issue," Sybil Frances, president and CEO of the Center for the Future of Arizona said.

"Certainly, going into this election, there's great understanding and concern among the



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public that this is an important issue, but going back quite a ways in our public opinion survey research, we found that Arizona voters understand the centrality of water.”

The Arizona Voters Agenda, a survey aimed at identifying issues with broad swaths of voter support transcending party lines and demographics, found 93% of voters agreed “groundwater is essential for communities, farming, industry, and Arizona’s way of life,” and agreed there was a need to do more to protect groundwater and secure long-term water supplies.

“There’s amazing agreement among all stripes that protecting our water is important, including and especially groundwater,” Frances said. “People have gotten the message that there’s threats to our groundwater in Arizona.”

Frances said voter agreement on water as a priority goes back within Center for the Future of Arizona’s gauging of public policy. In a 2020 survey with Gallup, voters identified protecting rural water supplies as a key action item for the state to achieve in the next 10 years.

In the 2022 Arizona Voters’ Agenda, 95% of voters supported securing Arizona’s water future and addressing the long-term drought and 73% feared the state did not have enough water supply for the next 100 years.

“Water is not the kind of thing that goes up and down politically,” Frances said, noting the 2020 and 2022 survey results still yield relevance today. “People have understood for a long time how important water is.”

Heading into the 2024 election, only 33% believed Arizona’s current water policies are sufficient to ensure long-term water sustainability.

Paul Bentz, senior vice president of research and strategy at HighGround Public Affairs, conducted the poll in conjunction with the Center for the Future of Arizona.

He noted a string of headlines continue to float water to the top of voters’ minds – Saudi Arabia’s unfettered pumping of groundwater for exported alfalfa, Rio Verde’s monthslong fight for a water supply and rural Arizona wells running dry

“The concerns haven’t really waned,” Bentz said. “In the past five years, it’s crept into the top 5 issues facing the state. I don’t think it’s going away.”

Despite its stature as a top concern for voters, Bentz noted, water is often absent from political dialogue.

Bentz said he believes “you can win talking about water,” but notes there might be barriers for candidates.

“Part of the challenge is that candidates try to appeal to their primary electorate,” Bentz said. “Hot button issues take center stage for the candidate, while the general electorate are not necessarily feeling like the issues they care most about are being addressed.”

Bentz noted, too, candidates may feel they lack the expertise, but again stressed water to be a mainstay among voters.



“It’s complicated, that’s why candidates stay away from it. It doesn’t lend itself to a bumper sticker or a catchphrase,” Bentz said. “But there is a strong appetite for candidates who understand water issues and want to take action on them.”

Original Article: [AZ Capitol Times by Kiera Riley](#)

Governor Hochul Announces Nearly \$90 Million to Replace Lead Service Lines and Protect Drinking Water Across New York

Governor Kathy Hochul announced on September 27th, nearly \$90 million in State grants awarded to communities across New York State to improve their drinking water infrastructure by identifying and replacing lead service lines. This funding demonstrates the State’s ongoing commitment to protecting public health and drinking water for New Yorkers.

“When it comes to New York’s water infrastructure, we’re getting the lead out,” Governor Hochul said. “Keeping New Yorkers safe is my top priority – and by giving communities the support needed to replace lead service lines, we’re helping to safeguard public drinking water for generations to come.”

Syracuse Mayor Ben Walsh said, “With New York State’s help, Syracuse is proactively completing lead water service replacements at an aggressive pace. We will replace lead services at about 1,000 properties this year. With this additional \$12.7 million and projects we already have planned for next year, we will be able to eliminate lead services at more than 3,000 additional homes in the city. I thank Governor Hochul for prioritizing drinking water quality and responding to the call to help Syracuse increase the number of lead services we are replacing.”

Lead is harmful to human health and can enter drinking water when plumbing materials that contain lead corrode, especially where the water has high acidity or low mineral content that corrodes pipes and fixtures. The most common sources of lead in drinking water are lead pipes, faucets, and fixtures. In homes with lead pipes that connect the home to the water main, also known as lead services lines, these pipes are typically the most significant source of lead in the water. Lead pipes are more likely to be found in older cities and homes built before 1986.

The State funding awarded today will be used by municipalities to help cover the costs of lead service line replacement projects that received financing through the federal Bipartisan Infrastructure Law (BIL) but whose costs were not fully covered by BIL grants. This funding comes in addition to the funding already allocated through the BIL and the State’s Water Infrastructure grant program. This unprecedented move takes the fiscal pressure off communities, allowing them to replace more lead service lines without incurring additional costs. The State’s comprehensive approach continues to provide communities with the resources they need to improve their water infrastructure.

Original Article: [Urban CNY](#)



Water Mission Responding to Hurricane Helene

Water Mission, a Christian engineering nonprofit, is responding to the ongoing destruction from Hurricane Helene after it unleashed destruction across Florida, Georgia, Tennessee, and the Carolinas. The storm claimed dozens of lives and caused up to \$35 billion in estimated damage, leaving communities reeling from the devastation. Nearly three million people are without power, and many are experiencing drinking water shortages. North Carolina was particularly hard hit, setting a record for the worst flooding in the state's recorded history. In response, the Water Mission Disaster Assistance Response Team is bringing aid to the hardest-hit areas in Western North Carolina, starting in Boone. The team is actively working to provide much-needed assistance, bringing nearly 30 generators, supplies, and water treatment systems as they actively seek opportunities to provide safe water. Power is often necessary to supply safe water, especially in emergency situations.

“Water Mission has responded to more than 60 disasters around the world, including select instances within the U.S.,” said Water Mission CEO and President George C. Greene IV, PE. “Our Disaster Assistance Response Team is well versed in quickly mobilizing and collaborating with partners on the ground to provide emergency assistance as quickly as possible where it is needed most. The historic flooding caused by Hurricane Helene has resulted in immeasurable suffering and loss for so many Americans. This is one of those unique times where we can show the love of Christ by serving our fellow citizens in Western North Carolina.”

Original Article: [Markets Insider](#)



GLOBAL WATER NEWS

AI-driven water forecasting: enhancing hydropower resilience

The World Economic Forum's Risks Report 2023 ranks failure to mitigate and adapt to the climate crisis within its top two priorities globally, for both the near and long term. As climatic change leads to a rise in erratic weather patterns, the increase in storm intensity and unpredictable surges have become a significant challenge for global hydropower infrastructure. Surges cause severe damage to turbines, spillways, and ancillary infrastructure, and increased difficulty in accurately predicting these events leaves operations teams unprepared to respond effectively, leading to severe infrastructure damage and compromised energy production.

In 2017, California's Department of Water Resources issued a mandatory evacuation order for 188,000 residents living below the Oroville Dam, fearing catastrophic failure. A series of unseasonable storms had caused Oroville Lake to rise rapidly, exposing maintenance vulnerabilities in the dam's spillway and severe structural problems.

A recent response to the climate crisis comes from Statkraft, Europe's largest renewable energy producer, which has announced a capital investment programme amounting to €700 million to shore up its hydropower assets against the impact of increasing storm surges. Large scale capital investment programmes like these demonstrate the industry's ongoing commitment to building resilience in ageing infrastructure against the climate threat.

But, at present, tens of thousands of dams worldwide are ageing, and ill-equipped to withstand the increased frequency and intensity of near-full or spillover events and overtopping caused by climate volatility. According to the Association of Dam Safety Officials, overtopping accounts for 34% of all dam failures. As reservoirs approach capacity, their structural integrity is threatened, straining spillways and surrounding structures.

Meteorological forecasting

Hydropower generation depends on accurate water forecasting for capacities and flows to inform both the design and construction of dams, as well as long term operations. But rapidly changing meteorological conditions mean that traditional models of water forecasting can no longer accurately account for an increase in volatility in heavy rainfall patterns. Subsequent inaccurate predictions, therefore, may lead to poor construction design, which has been shown to increase costs, and present potential safety hazards over time, as well putting operational decision making under pressure and leaving current dam safety procedures wanting.

Set against the emerging challenges in forecasting, nevertheless, are the responsibilities that dam owners have to human life, property and the environment in their operations.



VELES WATER WEEKLY REPORT

Regulatory requirements for hydropower operators demand the mitigation of spillover events to ensure safety and compliance. The safety breach at the Oroville Dam triggered an extensive review of dam safety practices across the US, with the Federal Energy Regulatory Commission (FERC) driving significant changes to safety standards and regulations. Balancing energy production and regulatory compliance has always presented a significant burden on the operator, and emerging gaps in water forecasting present further challenges to operators looking to refine the decision making between when to produce power, while balancing compliance with social, ecological and environmental regulation.

To protect third-party property, operators must conduct regular inspections, maintenance, and safety evaluations to mitigate the risk of flooding that can damage private properties downstream. Compliance requires maintaining specific stream flows to preserve local ecosystems. Erratic water releases can disrupt habitats, endanger species, and degrade water quality. Recreational activities, which rely on stable predictable water levels, such as fishing, may also be impacted. Regulatory frameworks mean that operational needs must be balanced with consideration for activities in the area and accurate water forecasting plays a key role in achieving this.

The bridge to a smarter future

AI learning tools have already demonstrated their capability in comparable meteorological contexts where they have outperformed the accuracy of established forecasting models more than 90% of the time, using smaller, more widely available hardware.

AI models provide high-resolution forecasting, which works by collecting weather from different sources to simulate atmospheric conditions at a fine scale. These targeted forecasts offer the opportunity for more efficient resource allocation and water management. Precedents for translating this performance exist and show clear benefits as well as the rapid return on AI investment available for the hydropower industry.

AI forecasts are starting to see uptake amongst the major traditional forecasting organisations – such as the European Centre for Medium-Range Weather Forecasts (ECMWF) – as the pre-eminent technology firms unveil their own proprietary technology.

Managing flood and storm events

While the adoption of AI for weather forecasting is still embryonic, hydropower operators are embracing the technology for the management of flood and storm events. This advanced water forecasting provides insights which enable operators to implement proactive measures that reduce infrastructure damage and downstream flooding. AI can generate forecasts at the basin watershed or plant level, providing targeted insights for precise water management that understand local hydrological dynamics and inform accurate predictions. To date, AI has already been used to manage water resources in



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complex watersheds with diverse climatic conditions, resulting in significant reduction in operational risks related to water variability, achieving improvements in forecast precision and decision-making.

Protecting construction and O&M

Alongside the management of storm surge events, operators are continually working to safeguard their ongoing construction projects, as well as routine operations and maintenance (O&M), from unexpected water level changes. Confidence in the reliability and accuracy of AI-based predictions enables the scheduling of works to occur during safer periods, which reduces risk and enhances safety. AI water forecasting applied in the Pacific northwest region has demonstrated the ability to optimise reservoir management and improve energy production and carries the additional benefit of enhanced environmental compliance. In Europe, where reservoirs have smaller capacities, the windows to act on insights related to changeable water volumes are compressed, and AI's real-time processing improves decision making capabilities.

AI has also been used successfully in the identification of suitable locations for dam construction by analysing environmental, geographical, and social data. The Nature Conservancy, along with computer scientists, has used AI to evaluate hundreds of existing and proposed hydropower sites across the entire Amazon basin, to find sites with minimal ecological disruption and eliminating the expense of moving or cancelling operations.

Operators must comply with regulations like those set by FERC, which require maintaining specific reservoir levels. AI-based tools help by simulating different meteorological models and predicting water level changes using Machine Learning algorithms. These methods allow operators to manage water flows and quality effectively, ensuring compliance.

A sustainable future

In its 2024 World Hydropower Outlook, the International Hydropower Association advocates for harnessing data analytics, machine learning, and predictive maintenance algorithms. Adopting these tools gives “operators deeper insights into plant performance, water management, and condition monitoring.” AI-based water forecasting and modelling are leveraging advanced machine learning algorithms, real-time data processing, and climate adaptation models, to provide precise and actionable insights that support efficient, safe, and sustainable hydropower management. These technologies support water level predictions, scheduling optimisation, and safeguard regulatory compliance for the hydropower industry, ensuring a route to a sustainable future for hydropower.

Original Article: [Water Power Magazine](#)



Thames Water's financial woes summarised in annual report

Proactive Investors - Thames Water Utilities' annual report for the year ending 31 March has provided a clear snapshot of the immense financial woes facing Britain's largest water supplier.

The company reported a pre-tax loss of £4.39 billion, up from £218.7 million the previous year, reflecting surging impairment charges on its investments and rising debt expenses. Thames Water's financial situation resulted in credit rating downgrades by both Moody's and S&P Global in recent months.

Moody's lowered its rating to Ba2 with a negative outlook, while S&P downgraded Thames Water's class A debt to CCC+ and its class B debt to CCC-.

These downgrades were influenced by concerns over Thames Water's ability to extend its liquidity runway and its reliance on creditor support to manage upcoming debt maturities.

Thames Water's liquidity position could be critical by the end of 2024, depending on creditor decisions regarding the release of reserved cash and the company's ability to secure necessary funding.

Its future funding needs are tied to the upcoming 'PR24' regulatory review, which is expected to set investment and pricing parameters for the 2025-2030 period.

Discussions with creditors are ongoing as the company seeks to extend its liquidity runway to support these investments.

Thames Water has more than £17 billion of debt on the books, with the prospect of a begrudging nationalisation on the cards if a market-based solution cannot be found.

Original Article: [Investing.com/ Proactive Investors](https://www.investing.com/news/uk-stocks/Thames-Water-annual-report-2024)

Carlyle Approached About Thames Water Investment, Sky News Says

Carlyle Group has been approached about a potential investment in Thames Water, Sky News reported on Saturday.

The US investment firm is among the prospective equity investors contacted by Thames Water's financial adviser Rothschild & Co, Sky News said, citing unidentified people close to the process.

Other potential investors that have been sounded out include Brookfield and Global Infrastructure Partners, the Sky News report said.

Thames is seeking a new equity injection from an infrastructure fund to provide some or all of the £3.3 billion (\$4.4 billion) it needs to fix chronic leaks, sewage spills, cope with a growing population and climate change. The utility has already started pre-marketing for the equity raising.

The company, which needs fresh funds to avoid a collapse, has said it has liquidity to last through to the end of May next year. It's been in talks with its creditors about releasing some cash reserves and to explore other options to boost its liquidity.



VELES WATER WEEKLY REPORT

In parallel, the creditor group holding about £10 billion of the firm's debt is drawing up their own rescue package that could involve injecting equity, but needs more time to work out a restructuring plan, Bloomberg reported earlier this month. The group is advised by Jefferies Financial Group Inc. and Akin Gump Strauss Hauer & Feld.

On Wednesday, S&P Global Ratings and Moody's Ratings further downgraded Thames Water amid concern the company faces a liquidity crunch that may come sooner than expected.

Original Article: [BNN Bloomberg by Giulia Morpurgo](#)

UAE to invest \$30m to support Ghana's biodiversity and climate goals

Dubai- UAE: The United Arab Emirates and the Republic of Ghana today announced a USD 30 million partnership for nature-based community development and climate solutions, outlining initial investment areas.

H.E. Dr Amna Al Dahak, UAE Minister of Climate Change and the Environment and H.E. Samuel A. Jinapor, Ghana's Minister of Lands and Natural Resources, signed a letter of intent in the presence of H.E. Razan Khalifa Al Mubarak, UN Climate Change High-Level Champion for COP28 and President of the International Union for Conservation of Nature (IUCN), who led the COP's nature workstream, and H.E. Abdulla Balalaa, the UAE Ministry of Foreign Affairs' Assistant Minister for Energy and Sustainability Affairs.

The framework document sets out six investment areas – from biodiversity corridors to reforestation and agroecology – that deliver simultaneous climate, biodiversity, and community development benefits, with a cross-cutting focus on gender equality and youth. Falling under Ghana's Resilient Ghana nature-climate strategy, the document also outlines metrics for measurement, reporting, and verification, utilizing Ghana's pioneering REDD+ process.

Commenting on the partnership, HE Dr Amna Al Dahak said: "Our partnership with Ghana is a testament to the UAE's focus on global biodiversity, climate, and development goals. It underscores our commitment to the UAE Consensus which calls for the ending and reversal of deforestation by 2030 and highlights the importance of protection and preservation of biodiversity. Our investment in Ghana will not only bolster the country's afforestation efforts but will also create a broader positive impact on local communities. By backing a comprehensive set of initiatives aimed at forest protection and enhancement, we aim to strengthen local livelihoods and foster greater community engagement."

"Any effort to solve deforestation is both human and capital intensive. Even though Ghana is receiving carbon payments, there exist critical implementation gaps that need to be filled with other financial instruments to generate more emission reductions, said H.E. Samuel A. Jinapor, "This is what our partnership with the UAE represents; particularly, it will deliver critical support for livelihoods enhancement and ecosystem



protection. We are grateful to the UAE government for walking the talk, and we also assure them that these resources will be used to generate the best value for Forests, Climate and People, towards a 1.5 degrees Celsius world.”

The framework document sets out six investment areas – from biodiversity corridors to reforestation and agroecology – that deliver simultaneous climate, biodiversity, and community development benefits, with a cross-cutting focus on gender equality and youth. Falling under Ghana’s Resilient Ghana nature-climate strategy, the document also outlines metrics for measurement, reporting, and verification, tilizing Ghana’s pioneering REDD+ process.

“COP28 set a new precedent for coordinating action on nature and climate, as well as for anchoring investment in plans developed by nature-rich countries themselves,” said Ms. Al Mubarak. “The UAE-Ghana partnership is a great example of the approach that will help to keep the target of 1.5 degrees within reach, while delivering on the SDGs and protecting biodiversity.”

As part of the UAE Consensus signed at COP28, governments universally adopted a goal to halt and reverse deforestation by 2030, as well as align their climate strategies with the Kunming-Montreal Global Biodiversity Framework. The UAE and partners mobilized over USD 2 billion of finance for nature-climate projects and programs, including a broader investment package for Ghana's Resilient Ghana strategy. Both Ghana and the UAE are also members of the Forest and Climate Leaders Partnership, a public-private investment coordination mechanism.

The UAE and Ghana will detail some of the initial projects under their bilateral partnership at COP29 in Baku in November and subsequently at COP30 next year.

Original Article: [Zawya](#)

AI is everywhere now — and it’s sucking up a lot of water

Artificial intelligence has become a part of everyday life, but there’s little regulation thus far of its deployment and use. Currently, there’s no law on the books in the U.S that requires AI companies to disclose their environmental impact in terms of energy and water use. Concerned researchers rely on voluntary data from companies like Apple, Meta and Microsoft.

But research is showing that AI generation may be even more resource-intensive than originally thought. Imagine that you want to ask an AI program to write up a 100-word email for you. You get an almost instant response, but what you don’t see are the intensive computing resources that went into creating that email. At the AI data center, generating just two of those emails could use as much energy as a full charge on the latest iPhone. And according to a Pew Research Center study, that 100-word email could use up a whole bottle of water for the cooling that’s needed at data centers.

Original Article: [AZ Sun Daily by Aynsley O’Neill Living on Earth](#)



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