Veles Water Weekly Report

September 11th 2025

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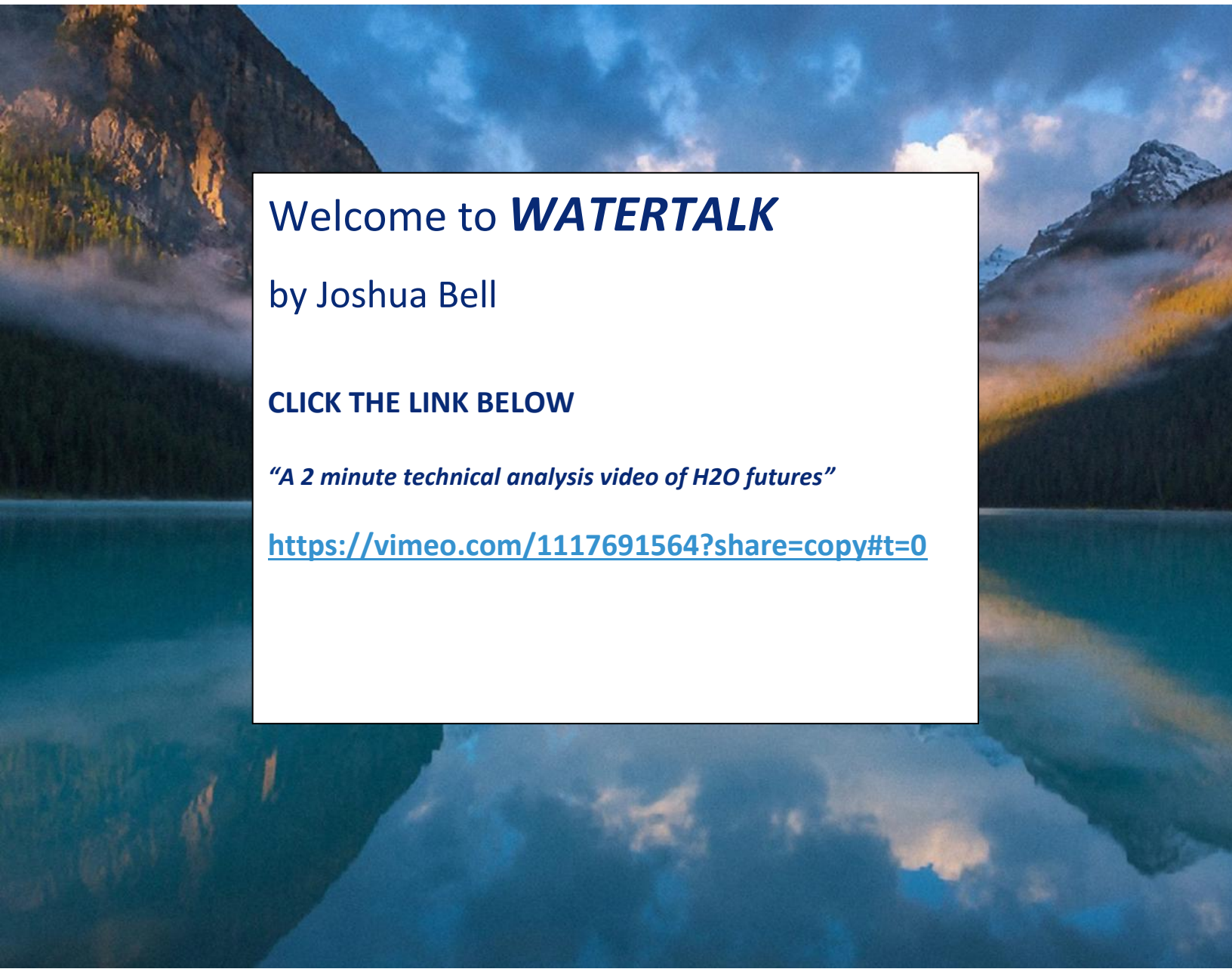
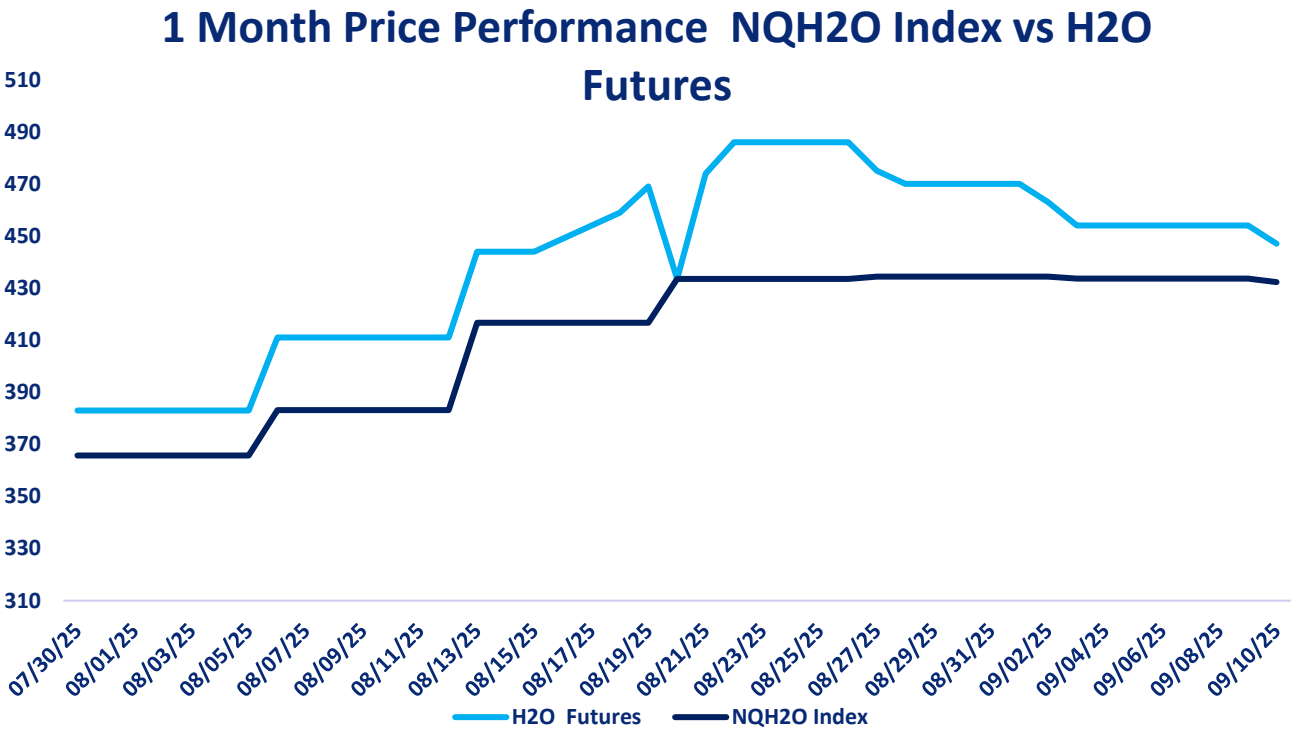
Veles Water

WATER FUTURES MARKET ANALYSIS



NQH2O INDEX PRICE vs H2O FUTURES PRICE



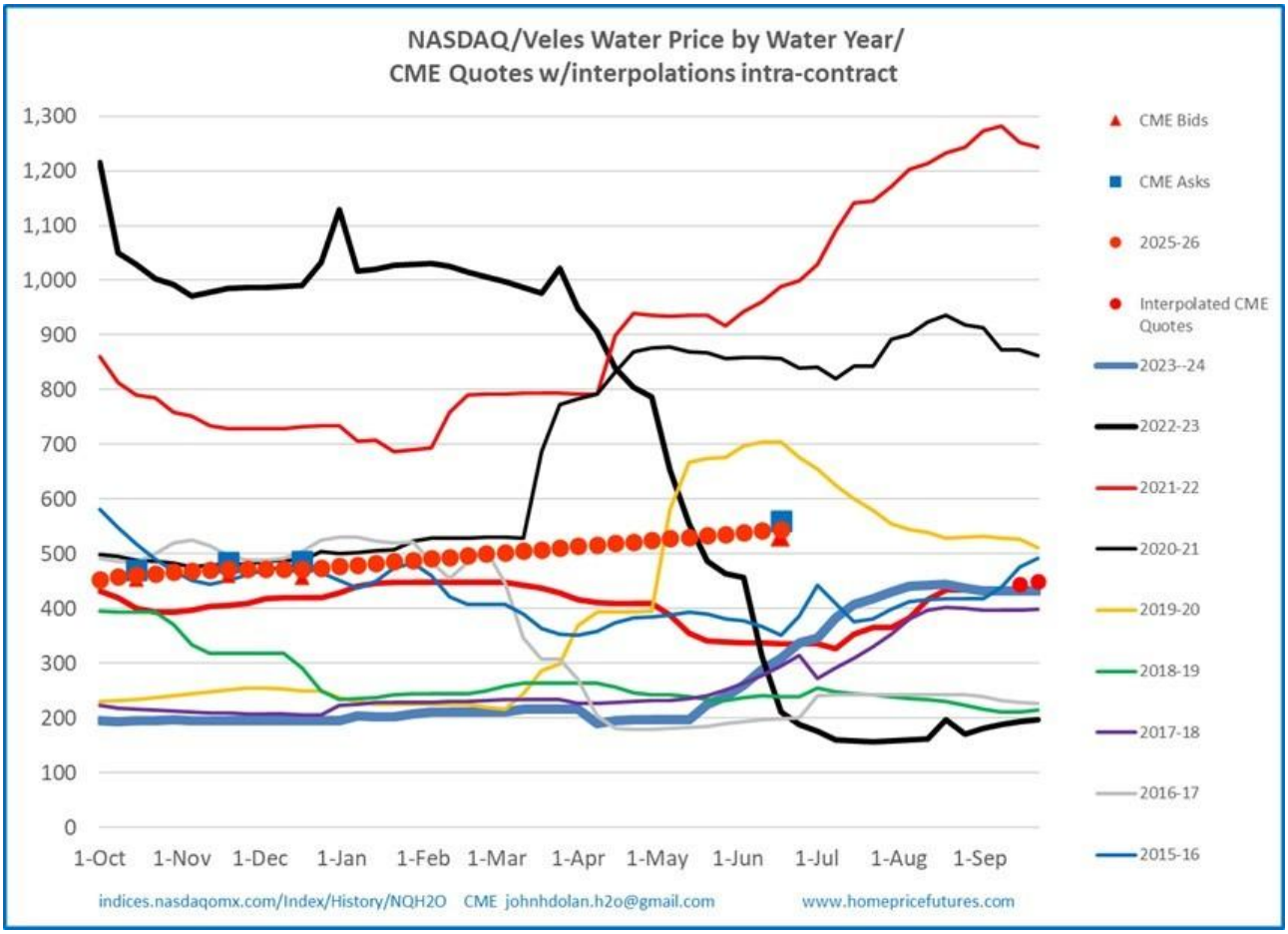
Price Chart Based upon Daily Close

The new NQH2O index level of $432.31 was published on September 10th, down $1.34 or 0.31% from the previous week. The September contract is considered the front month. The futures prices closed at a premium of $14.69 to $20.35 versus the index over the past week.

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

Sept 25	442@447
Oct 25	454@471
Nov 25	460@485
Dec 25	457@487
June 26	530@560

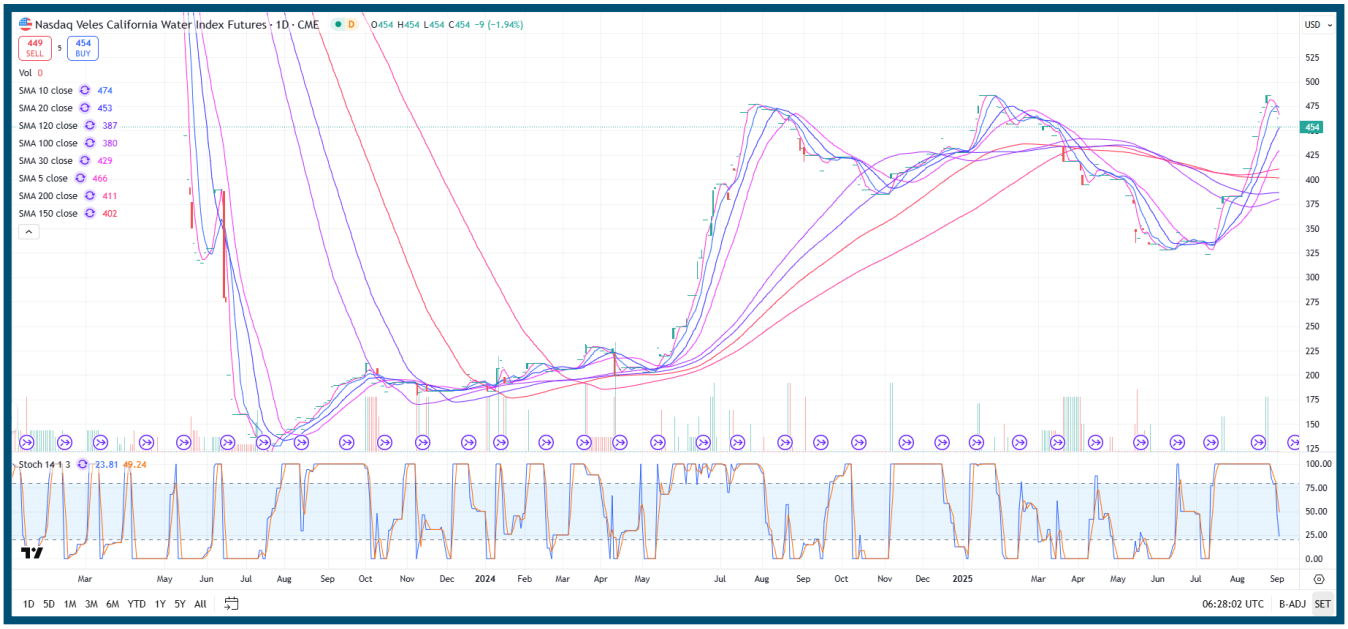
NQH2O INDEX HISTORY



The graph above shows the CME water contracts for September 2025, October 2025, November 2025, December 2025 and June 2026 superimposed over historical NASDAQ Veles water indices. A red dotted line has been added to interpolate between the June-June contracts for the 2024-2025 water year.

(John H Dolan, CME Market Maker)

H2O FUTURES TECHNICAL REPORT



Trend Overview

- **Current Price:** 447 (-1.54%)
- **Recent Rally:** The index surged from a base near 320 to a recent peak of 475, marking a **+48% rally** before this week's pullback.
- **Momentum:** Momentum has cooled off following the steep rise. Price has now pulled back below the 5- and 10-day SMAs, suggesting a **pause in the short-term uptrend**.

Moving Averages

Short-Term (SMA 5–30):

- **SMA 5 (453)** and **SMA 10 (460)** are both now **flattening or beginning to turn down**, rather than sloping up, reflecting the recent price retreat.
- The **price (447)** has fallen **below the 5- and 10-day SMAs**, indicating **short-term weakness** or a retracement phase.
- **SMA 20 (463)** and **SMA 30 (441)** remain **sloping upward** and may act as dynamic support zones in the near term.

Long-Term (SMA 100–200):

- **SMA 100 (382)**, **SMA 120 (387)**, and **SMA 150 (401)** are all **now trending higher**, confirming an ongoing **medium-term bullish trend**.
- **SMA 200 (412)** is **curling up**, reinforcing the **emergence of a long-term uptrend**.

- Price is trading well above all long-term moving averages, which supports **long-term bullish structure** despite near-term consolidation.

Stochastic Oscillator (Bottom Panel)

- **%K = 0.00**, **%D = 0.00**
- The stochastic oscillator has dropped sharply into **oversold territory** after previously being pinned in overbought for several weeks.
- This may suggest a **short-term washout or momentum reset**:
  - Possibility for **sideways consolidation** or **a bounce from support** in coming sessions.
  - However, no bullish crossover signal is evident yet.

Resistance & Support

Immediate Resistance:

- **475** - The recent local high remains the **primary upside hurdle**.
- **500** - A **major psychological and historical resistance** level.

Support Zones:

- **453–441** - Zone between the **SMA 5/20/30 cluster**: key to hold for shallow pullbacks.
- **412** - SMA 200 and long-term support; would be a **critical level for bulls to defend**.
- **400** - Round number support with confluence near **SMA 150** (401).

Summary

The Nasdaq Veles California Water Index Futures have completed an explosive rally from 320 to 475, but the current structure shows the **early stages of a correction or consolidation**. Short-term moving averages are **no longer sloping up**, indicating a potential cooling period, while **longer-term averages continue to strengthen**, confirming the **bigger picture uptrend**.

The **stochastic oscillator is fully reset**, creating the **technical conditions for a possible base formation or relief rally**-though confirmation is still needed.

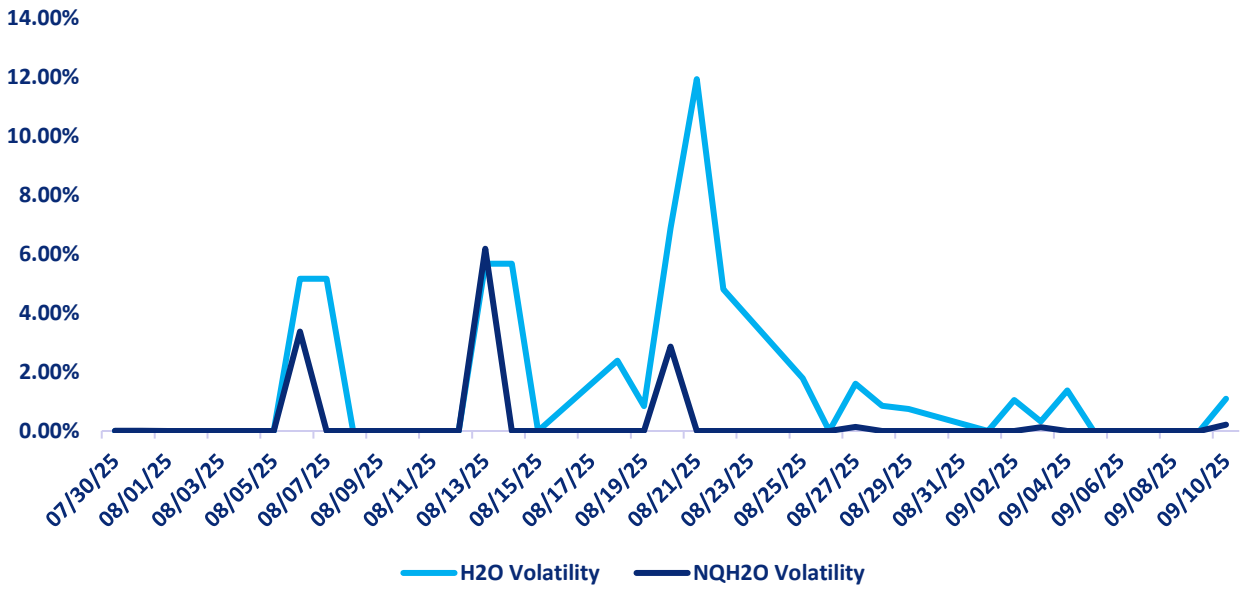
Key levels to watch:

- **Support:** 453-441 zone short term; 412 long-term.
- **Resistance:** 475 and 500.

As long as price remains above **412**, the long-term trend remains intact despite near-term noise.

H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



DAILY VOLATILITY

Over the last week the September contract daily future volatility has been 1.09%.

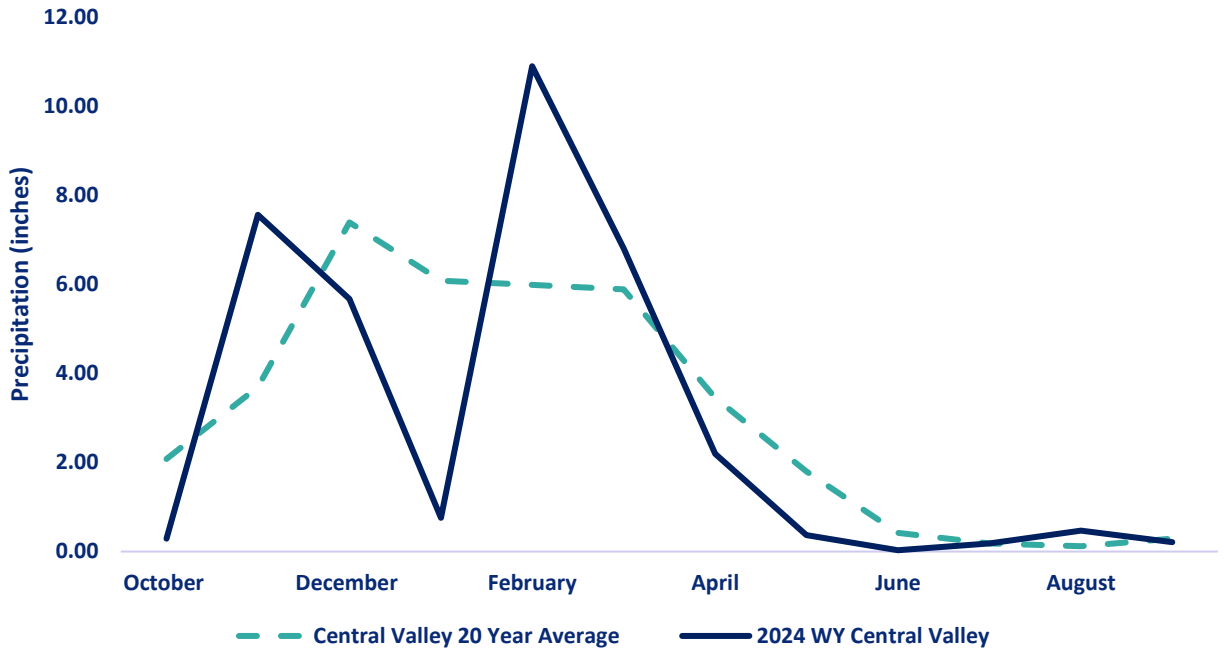
ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	**19.53%**	**10.73%**	**0.52%**	**0.14%**
H2O FUTURES	N/A	**14.07%**	**13.81%**	**1.54%**

For the week ending on September 10th, the two-month futures volatility is at a premium of 3.32% to the index, down 0.45% from the previous week. The one-month futures volatility is at a premium of 13.29% to the index, up 5.21%. The one-week futures volatility is at a premium of 1.41% to the index volatility.

*The 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 Central Valley, California.
Data as of 10/09/2025

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)	0.09	0.09	35.73	83	80
TULARE 6 STATION (6SI)	0.16	0.16	145.45	80	83
NORTHERN SIERRA 8 STATION (8SI)	0.39	0.39	78.00	91	106
CENTRAL VALLEY AVERAGE	0.21	0.21	74.25	85	90

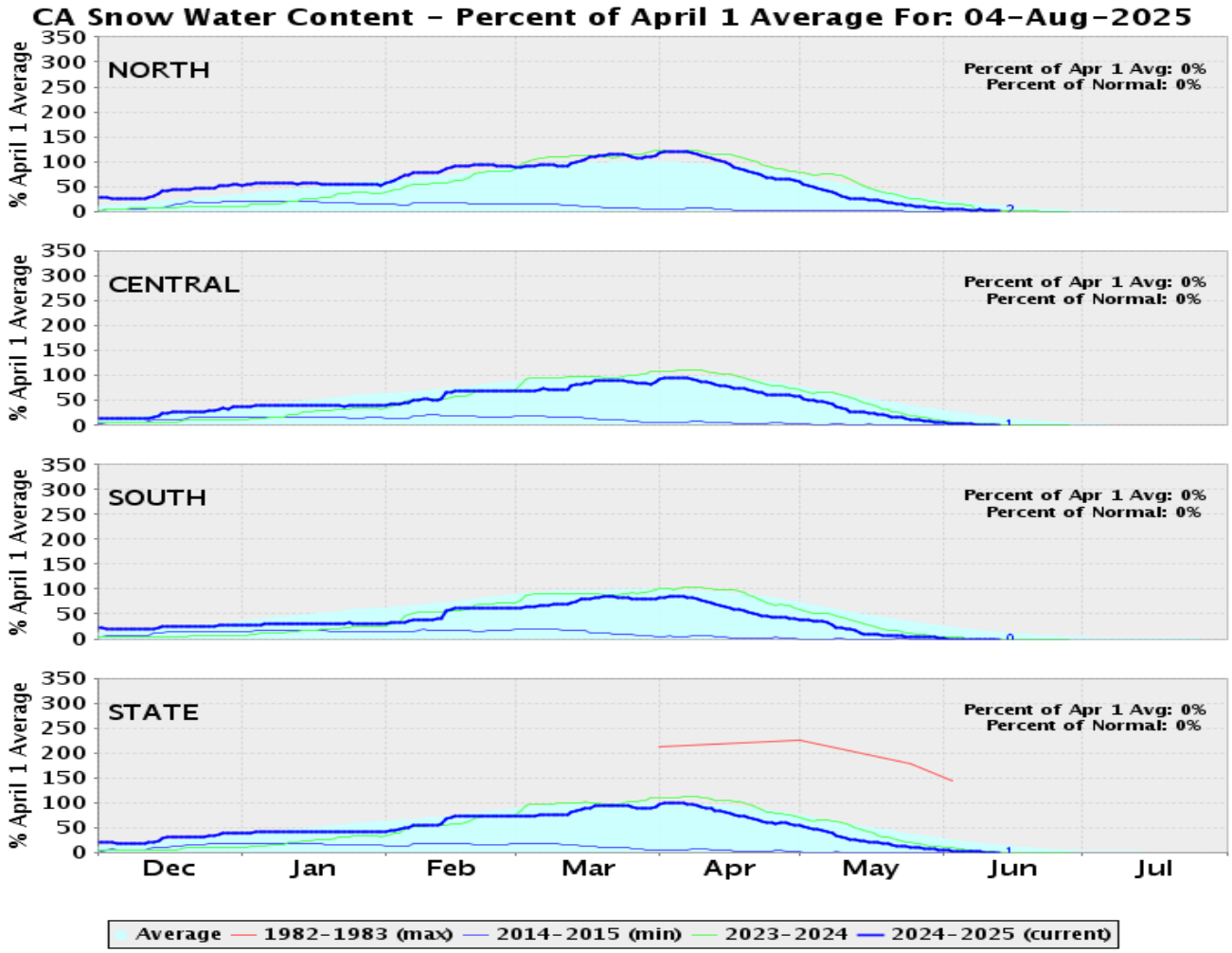
RESERVOIR STORAGE

RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	*% HISTORICAL AVERAGE
TRINITY LAKE	1,911,406	78	73	121
SHASTA LAKE	2,793,011	61	64	104
LAKE OROVILLE	2,243,482	66	64	111
SAN LUIS RES	903,214	44	47	112

*% 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	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

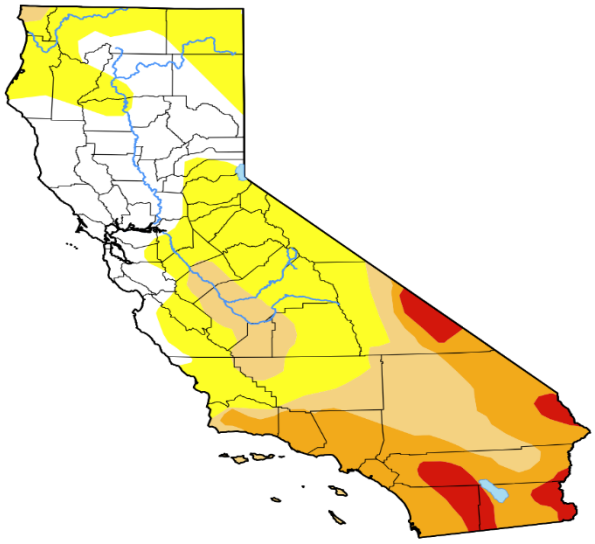
Snow Water Equivalent*, **or SWE**, is a commonly used measurement used by hydrologists and water managers to gauge the amount of liquid water contained within the snowpack. In other words, it is the amount of water that will be released from the snowpack when it melts. SWE has regional variance.**

**** 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 4, 2025

Data valid: September 2, 2025 at 8 a.m. EDT

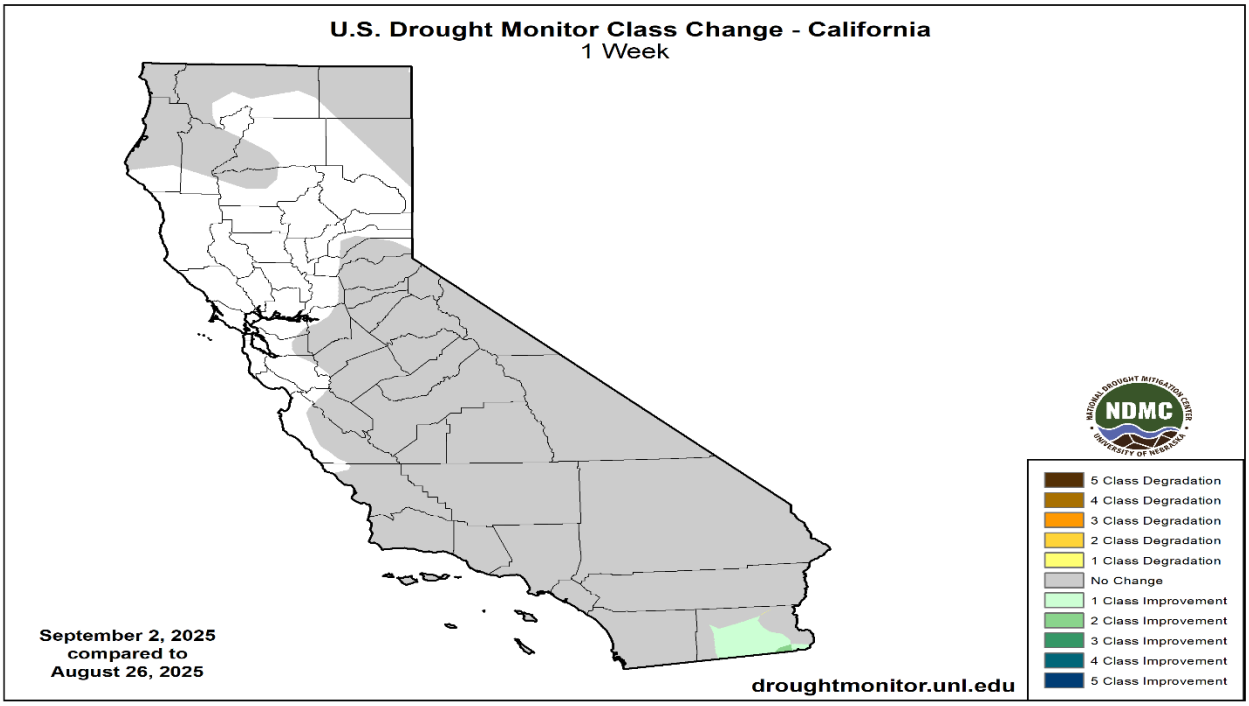
Intensity

- 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):
David Simeral, Western Regional Climate Center

Pacific Islands and Virgin Islands Author(s):
Anthony Artusa, NOAA/NWS/NCEP/CPC

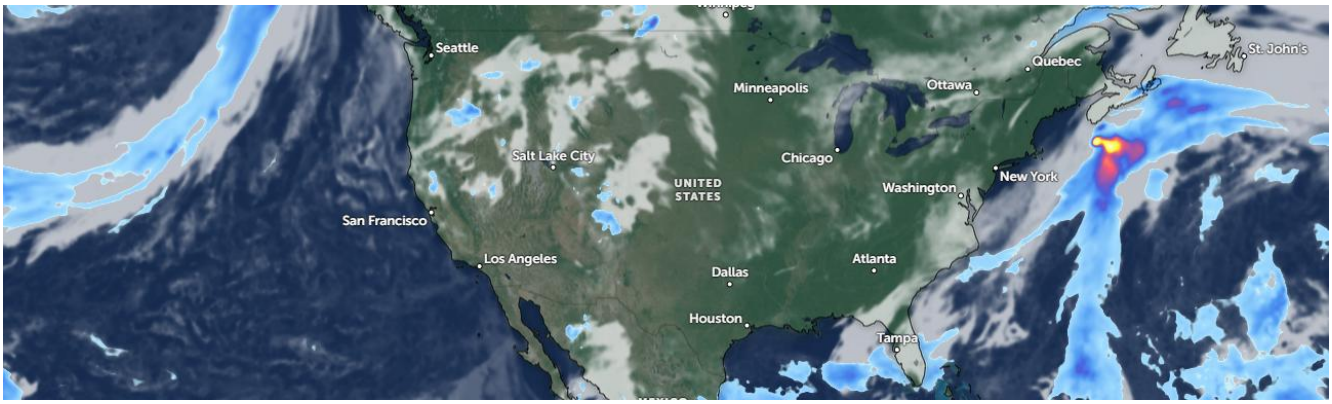


Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2025-09-02	23.99	76.01	39.56	23.01	4.70	0.00	143
Last Week to Current	2025-08-26	23.99	76.01	39.56	23.01	5.90	0.10	145
3 Months Ago to Current	2025-06-03	39.01	60.99	39.81	24.73	7.11	0.10	133
Start of Calendar Year to Current	2024-12-31	40.90	59.10	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	2024-09-03	45.59	54.41	8.36	0.00	0.00	0.00	63

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.

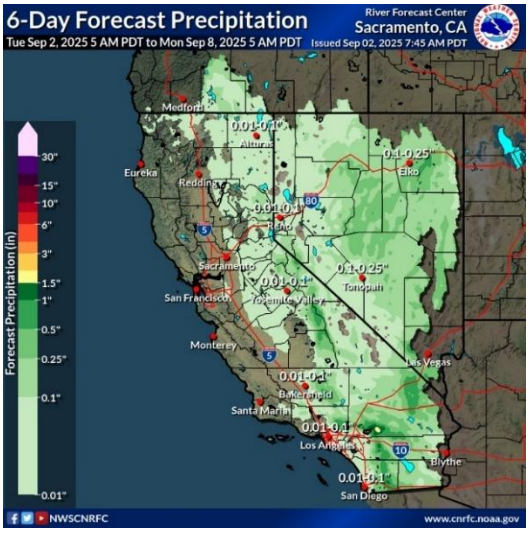
CURRENT SATELLITE IMAGERY

A Pacific storm is lurking to the west with some low cloud and foggy conditions ahead of it with cloudy conditions over San Francisco. Moisture is flowing inland south of this bringing cloud cover over the Rockies. Scattered cloud with some small embedded storms stretching from Salt Lake City to south west of Chicago. The eastern and southern US is clear.



Map Ref: Zoom Earth

10 Day Outlook



In between these lows offshore, high pressure will build and shift towards the coast the rest of the work week as the southwest low hovers near Baja. By Friday afternoon, the ridge will be firmly overhead with 500 mb heights exceeding 590 dm. This will keep dry conditions over the region and bring well above normal (+10 to +20 deg F) afternoon temperatures. Overnight lows will also be well above normal by similar amounts through Saturday. Many locations across CA are already under heat related products (please see local WFO pages for heat risk/alert information). Into Sunday, a trough will move through the PacNW as the ridge shifts further inland. Troughing will dig into nrn CA/NV as well while the low offshore of Baja finally begins to move inland. This will provide some relief across the region with coastal areas back to near/below normal and afternoon temperature anomalies inland down to about +5 to +15 deg F.Next week, models have a trough digging into the PacnW from western Canada and closing off into an upper low before potentially heading into CA/NV into Tuesday.
Reference: National Weather Service / California Nevada RFC / Sacramento CA

WESTERN WEATHER DISCUSSION

Out West, some isolated monsoon shower activity was observed across areas of the Desert Southwest, Sierra Nevada, and Great Basin as well as areas of the central and northern Rockies. Improvements were made on the map in Colorado, western Montana, southern Idaho, northern Utah, and southeastern California, while some degradations were made in north-central Arizona where monsoon-season precipitation has been below normal. According to the National Weather Service in Tucson, 2025 monsoon rainfall has been below normal across much of the state including Flagstaff, Phoenix, and Tucson. Conversely, a more active monsoon season has affected areas of New Mexico including southern and eastern portions of the state. For the week, average temperatures were below normal across areas of eastern California, central Great Basin, and areas of the Intermountain West including Utah, Colorado, and southern Wyoming where temperatures were 5 to 10 degrees below normal. In the Pacific Northwest, temperatures were above normal with anomalies ranging from 2 to 15 degrees F and the greatest departures observed in eastern Washington, Idaho Panhandle, and northwestern Montana.

Reference:

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

WATER NEWS

CALIFORNIA WATER NEWS

Federal Satellites Gather Critical Data for Managing California's Water

California relies on federal satellites to understand and manage its water resources every day. Data from these satellites are used to estimate irrigation use, manage groundwater, predict storms, assess flooding, and track water quality, among many other applications. And as the changing climate brings weather whiplash and warmer temperatures to California, these data are becoming increasingly key for adaptation efforts across the state.

One of the most important sources of images has been the federal Landsat program, which has sent a series of satellites into space to observe the Earth continuously for over 50 years through a partnership between the National Aeronautics and Space Administration (NASA) and the US Geological Survey (USGS). Some readers might know Landsat from the beautiful images it has captured of the Earth: there's even a delightful website that allows you to spell your name with them. What may not be as well known is that Landsat—along with other federal satellites—also plays a key role in California water management.

While it would take too much time to catalogue all the ways California uses federal satellite data to manage our water resources, a few examples illustrate the importance of these data.

Tracking agricultural water and groundwater use

California's growers rely on data from federal satellites to estimate water consumption, plan for irrigation, and track water quality. For example, OpenET provides farmers and water managers with estimates of water use based on data from federal satellites, particularly Landsat. Farmers in the Sacramento–San Joaquin Delta can use OpenET to measure and report their water use to comply with California State Water Resources Control Board requirements. Some of the state's groundwater sustainability agencies (GSAs), including the Mid-Kaweah GSA in the San Joaquin Valley, use other products derived from Landsat data, such as Land IQ, to track water budgets and fine-tune irrigation to optimize yields. The California Department of Water Resources uses data from the GRACE follow-on satellite mission (a partnership between NASA and a German center) for its semi-annual updates on groundwater conditions, as well as data from a European satellite to estimate changes in specific basins.

Increasing flexibility in reservoir management

Federal satellite data are used in forecast informed reservoir operations or FIRO, a tool that gives reservoir operators more flexibility. As weather and atmospheric river forecasting have improved in recent years, dam operators can use satellite-informed

forecasts to decide whether to retain or release water before a big storm, thereby increasing flexibility to balance multiple objectives such as maximizing water storage while mitigating downstream flood risks. FIRO relies on weather predictions from satellites including the GOES-16 satellite, operated by the National Oceanic and Atmospheric Administration (NOAA). Current FIRO pilot projects are taking place across the state at Oroville Dam on the Feather River, at Lake Mendicino and Lake Sonoma on the Russian River, and at the Prado and Seven Oaks dams on the Santa Ana River.

Federal satellite data provide the state—and the world—with profound economic benefits. The economic value of the federal Landsat program alone was estimated to be over $25 billion during the year 2023. Yet federal funding, which supports the launch of new satellites as others reach the end of their lifespans, is currently in question.

Landsat 7, for instance, provided its last images of the earth a few months ago. NASA and USGS have been planning for the launch of a new Landsat satellite, Landsat Next, to replace the aging Landsat 8 and 9 and to better meet resource management needs with improved and more frequent observations. The plans are currently being reviewed to better meet the president's 2026 budget request, which proposed to cut the NASA earth science budget by about 50%. In contrast, the House bill proposes a cut of about 40%, while the Senate only proposes a 1.3% cut. Funding for ground-based observations, which are needed to calibrate and validate Landsat and other federal satellite data, is also at risk.

Freely provided federal earth science satellite data advance transparency and shared understanding of California's water, as well as the state's land, vegetation, and even dust. While new technologies like artificial intelligence and machine learning show promise for capturing current and emerging trends, these methods rely on robust amounts of high-quality data. Continuous federal satellite data documenting the Earth play a pivotal role in informing evidence-based water and natural resources policies and management.

Original Article: PPIC by Annalise Blum

California legislature approves water management bill, sends SB 72 to Governor

The California Legislature has approved SB 72, a bill aimed at reshaping the state's approach to **water management.** The measure, authored by Senator Anna Caballero, passed the Assembly and now awaits consideration by Governor Gavin Newsom.

The legislation seeks to address California's long-term water supply challenges through several provisions. It would set statewide water supply targets, update the California Water Plan to account for regional needs, and require collaboration and reporting among state agencies, water managers, and other stakeholders.

“I’m proud of my colleagues' support on SB 72 in both houses. This bill represents a clear opportunity for the Governor to reaffirm his climate leadership and embrace new and bold strategies to address water supply challenges,” said Senator Caballero. “The Department of Water Resources’ new State Water Project Adaptation Strategy underscores the urgency of this bill, which is a necessary next step to secure California’s water future in the face of intensifying climate threats.”

The bill is supported by a coalition of water, environmental, business, agricultural, and public safety organizations. Co-sponsors include the California Municipal Utilities Association (CMUA), the California State Association of Counties (CSAC), and the California Council for Environmental and Economic Balance (CCEEB).

If enacted, SB 72 would:

- Establish statewide water supply targets to support all uses.
- Require collaboration among the state, water managers, and stakeholders to develop long-term solutions.
- Expand the California Water Plan to improve drought preparedness.
- Align with Governor Newsom’s Water Supply Strategy while ensuring planning efforts extend beyond one administration.

"Water managers across the state agree, SB 72 is the next step we need to turn a scarcity mindset into a coordinated, climate-resilient strategy,” said Craig Miller, General Manager of Western Water. “It sets real goals and planning requirements to ensure water reliability for all - communities, farms, ecosystems - no matter what the climate throws at us.”

Danielle Blacet-Hyden, Executive Director of CMUA, said, “As a proud co-sponsor of SB 72, we are encouraged by the overwhelming legislative support of the bill and are hopeful that Governor Newsom will also recognize the critical value and sense of urgency of signing this bill into law. SB 72 will advance Governor Newsom’s climate and water resource objectives for California to deliver a drought-resilient, equitable water system. SB 72 codifies his vision into lasting law.”

Graham Knaus, CEO of CSAC, added, “Our counties are the first responders when our communities run out of water, and we can’t plan for housing growth without it. But the state's current strategy dates back to the 1960s and lacks any clear, measurable goals. It’s time for California’s water policy to join the 21st century. Sen. Caballero’s common-sense, bipartisan bill gets it done.”

“On behalf of our coalition of business, labor and public leaders statewide, CCEEB has been proud to co-sponsor and partner with Senator Caballero and many organizations statewide to pass such transformative water legislation,” said Tim Carmichael, President of CCEEB. “The passage of SB 72 is a critical step towards ensuring comprehensive, coordinated, and resilient water supply planning and development for California.”

Original Article: Smart Water Magazine

California's land subsidence challenge: A look at DWR's draft BMP

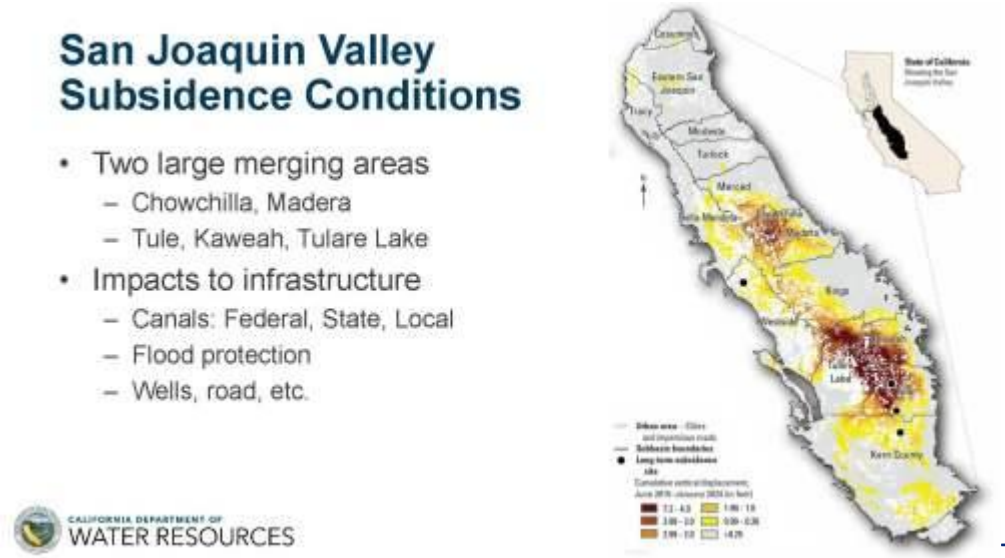
Subsidence from groundwater pumping has severely impacted land surfaces and infrastructure in parts of California. Rates of subsidence and its associated impacts have increased in some areas of California due to unsustainable groundwater pumping and practices and increasing climate aridification. The effects are costing Californians hundreds of millions of dollars annually in damage repairs, reducing water supply reliability, and jeopardizing public safety.

The August meeting of the California Water Commission featured an in-depth presentation on the Department of Water Resources' (DWR) draft Best Management Practices for addressing land subsidence in California. These practices are designed to help local groundwater sustainability agencies better understand the causes of subsidence, how to monitor it effectively, and strategies for managing its impacts. The presentation was led by Paul Gosselin, DWR's Deputy Director for Sustainable Water Management, and Shane Edmunds, leader of the Groundwater Sustainability Plan Review Section.

Subsidence is one of the six sustainability indicators required to be managed under SGMA. The Subsidence BMP does not supersede or replace any existing local, state, or federal regulations. Rather, it is meant to help Groundwater Sustainability Agencies and the public better understand land subsidence and how it can be managed.

As mandated by the Sustainable Groundwater Management Act (SGMA), DWR is required to present updates to the Water Commission and host three public workshops across the state to engage stakeholders.

Land subsidence in California

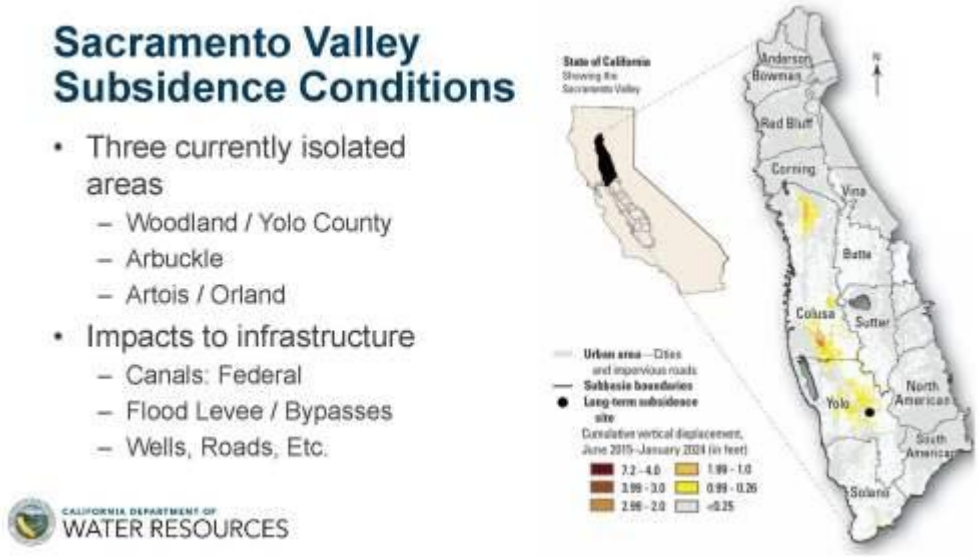


The development of SGMA in 2014 was a response to the severe impacts of the drought, which led farmers to rely more heavily on groundwater to offset reduced surface water deliveries. This

increased pumping led to thousands of dry wells and rapidly accelerating rates of subsidence.

The graphic on the slide illustrates the extent of subsidence in the San Joaquin Valley since SGMA's enactment in 2015. In some areas, subsidence has reached as much as seven feet over the past decade. Two primary areas of concern, or "bowls" of subsidence, have been identified: one near the Chowchilla and Madera region, and another spanning the Tulare Lake, Kaweah, and Tule sub-basins.

Subsidence poses significant challenges for critical infrastructure. Key systems tied to the State Water Project and Central Valley Project are being affected, along with flood protection levees, wells, roads, and buildings. These impacts highlight the importance of addressing subsidence as part of sustainable groundwater management efforts.



The Sacramento Valley is becoming an emerging area of concern for subsidence, a phenomenon not historically observed in this region. Since 2015, subsidence has been detected in three key areas: near Woodland, Yolo (close to the city of Arbuckle), and the Artois-Orland region.

While the extent of subsidence here is less severe than in the San Joaquin Valley—measuring around two to three feet—it still poses significant challenges. This subsidence is impacting critical flood infrastructure, as well as wells, roads, and other essential systems.

Original Article: Mavens Notebook

Pandemic prompts update on water-project bond funds

Responding to concerns about the COVID-19 pandemic's impact on public-agency resources, the California Water Commission has adopted an emergency regulation, allowing applicants that were conditionally awarded money for water projects from the Proposition 1 water bond to apply for early funding.

California Water Commission public information officer Paul Cambra said the emergency regulation, adopted in August, came in response to a letter signed by backers of six of the eight water-storage projects awarded money from the bond, requesting funding flexibility due to long-term economic concerns resulting from the pandemic.

In the May 11 letter to commissioners, the applicants requested the commission consider making "emergency and temporary modifications on a project-by-project basis" in funding from the water bond's Water Storage Investment Program, or WSIP, "due to the COVID natural disaster."

"Across our state, residents are struggling to meet their financial obligations, including paying their water bills," the agencies said. "Business closures have resulted in lost revenue to water and wastewater agencies. These are some of the direct impacts of the disaster today."

More concerning and uncertain, the agencies said, "are the longer-term impacts which are sure to negatively affect public agency finances. All of us are in strong financial positions today, but none of us could have ever expected or planned for what we are facing now and in our future because of the COVID pandemic."

The groups added that only $78.6 million of the $135 million has been encumbered to applicants that requested early funding.

Cambra said early funding represents no more than 5% of the commission's maximum conditional funding determination for a project. The emergency regulation adds provisions to provide additional opportunity for applicants to the WSIP to obtain funding for the completion of necessary permits and environmental documents.

With the exception of the early funding, Cambra said, the commission cannot make a final funding award "until a project is shovel-ready."

The commission has awarded early funding to three projects: the Sites Reservoir project in the Sacramento Valley and expansion of Los Vaqueros Reservoir in Contra Costa County and of Pacheco Reservoir in San Benito County.

Projects in the program that may ask for early funding, Cambra said, include the Chino Basin Conjunctive Use Environmental Water Storage/Exchange Program, Harvest Water Program in Sacramento County, Kern Fan Groundwater Storage Project, Temperance Flat Reservoir Project on the San Joaquin River and Willow Springs Water Bank Conjunctive Use Project in southern Kern County.

For the Harvest Water Program project, the Sacramento Regional County Sanitation District plans to construct a $2 billion treatment plant upgrade to deliver recycled water to irrigation systems in southern Sacramento County.

Program Manager Terrie Mitchell said Regional San is "definitely interested in exploring early funding for some of the activities we have already completed and other efforts that are underway."

Because the WSIP application proved "quite an undertaking," Mitchell said, the agency "simply did not have the time to develop the information needed to request early funding" during the application process.

"Since receiving the WSIP conditional award of $280.5 million, Regional San has spent its money diligently to move the program forward," she said, "making progress in finalizing our environmental documents, completing our engineering feasibility study, refining our ecological plan, securing our water rights, working with the California Department of Fish and Wildlife and the State Water Resources Control Board on potential elements of public benefit contracts, and laying the groundwork for the design and construction."

Temperance Flat Reservoir Authority spokesman Tal Eslick said the commission has asked project proponents to give a progress report at the October commission meeting, adding that the authority does not anticipate making a request for early funding at this time.

The commission's Cambra said the emergency regulations "place the next step on interested applicants," who must request to be added to a commission agenda to ask for early funding.

Original Article: AgAlert by Christine Souza

San Bernardino Valley, Fontana Water Company and Cadiz Sign Agreement for Perchlorate Treatment in Cactus Basins

SAN BERNARDINO, Calif. - San Bernardino Valley Municipal Water District Fontana Water Company (FWC), and Cadiz Inc. announced today an innovative partnership to address perchlorate contamination in the Rialto - Colton Groundwater Basin. The agreement launches a bold effort to support San Bernardino Valley's proposed Cactus Basins Recharge Program as part of a regional effort to expand groundwater replenishment, improve water quality, and support long - term water supply reliability in San Bernardino County.

Under the agreement, Cadiz will provide specialized water filtration systems to FWC for the treatment of perchlorates to be located at FWC's facilities. These systems are designed to mitigate any potential migration of perchlorate contamination that may occur when San Bernardino Valley commences operation of the Cactus Basins Recharge Program. Cadiz will provide the treatment through the company's wholly-owned subsidiary, ATEC Water Systems, as part of a 200,000 acre-foot water supply agreement between FWC and Cadiz signed in 2024.

'The Cactus Basins Recharge Program is a critical part of our plan to enhance water supply reliability for San Bernardino Valley,' said Heather Dyer, CEO/ General Manager for San Bernardino Valley. 'We are looking forward to exploring potential opportunities offered through this unique public-private partnership that could address legacy

perchlorate contamination while also providing critical groundwater supply benefits to the communities depending on the Rialto-Colton Groundwater Basin.'

'One of the most exciting aspects of this partnership for Cadiz is that by deploying cost-effective advanced treatment technology, we can unlock low-cost water supplies for the whole region,' remarked Susan Kennedy, CEO of Cadiz. 'San Bernardino Valley's leadership on this is a blueprint for a collaborative approach to sustainable groundwater management across Southern California.'

'To maintain affordability for our customers, we have to work together to solve water resource issues cost-effectively at a regional level,' FWC Vice President, Marty Zvirbulis said. 'This creative approach to addressing water quality in the Rialto-Colton Groundwater Basin opens the door to cost-effective integration of water supply resources and groundwater banks across the whole region.'

San Bernardino County faces a growing threat to its long-term water security due to physical and climate-related risks and variability in State Water Project (SWP) deliveries combined with significant challenges related to sustainable replenishment of groundwater resources. To address these challenges, the County is supporting local efforts to develop a coordinated approach to water infrastructure investment in the region to maximize local water reuse, recharge groundwater basins, clean up impaired groundwater and reduce reliance on imported water from the Sacramento-San Joaquin Delta in any given year.

San Bernardino Valley has been investing in local water supply infrastructure including storage and recharge projects as part of a unified, integrated strategy to improve drought resilience, maximize value of imported water during dry years through storage of wet year water, and support sustainable and equitable access to clean water across all parts of its service area.

The Cactus Basins Recharge Program would spread imported State Water Project (SWP) water at the existing Cactus Basins for recharge of the Rialto - Colton groundwater subbasin. Groundwater would then be withdrawn via existing wells to augment potable water supplies in the San Bernardino Valley service area. However, planning to utilize Cactus Basins for groundwater recharge has been delayed due to concerns over the potential for water contaminant migration to FWC existing wells.

Original Article: Market Screener

The hunt for water: A 45-mile tunnel, retired farmland and desalination all loom

In the more than four decades since I started at the L.A. Times, we've never had a reporter cover water with the depth and persistence of Ian James. California's story is often the story of water — who's got it, who doesn't and who will find our next acre-foot. Ian is a former foreign correspondent who has written about everything from novel

water solutions like reclaiming sewage, to the intersection of H2O with wildlife and farms. Essential Cal talked to Ian about his work.

Q: How long do you shower?

A: I don't use a timer, but I'm frugal and conscious of how much water I'm using. Water-saving toilets and appliances also make a difference. Every little bit of water-saving helps.

Q: You've written compelling stories about the challenges of bringing water to our parched metropolis. What are some of the solutions that most people don't know about?

A: One is the potential for Southern California to reduce reliance on faraway water sources by harnessing more local sources. Our region's water agencies can invest in projects including capturing more stormwater, recycling wastewater and cleaning up contaminated groundwater. And there are nature-based solutions, such as restoring local watersheds by removing concrete and asphalt. This can reactivate natural floodplains to help capture runoff and allow water to percolate underground to replenish aquifers. Still, many experts have told me they expect Southern California will need to continue relying on imported water from the Colorado River and the Sierra Nevada for a substantial portion of our supplies.

Q: Gov. Gavin Newsom and many water managers want to build a 45-mile-long tunnel, costing a minimum $20 billion, under the Sacramento-San Joaquin River Delta to deliver water south. What's the latest on where that plan stands?

A: Gov. Newsom has called the Delta Conveyance Project essential for the state's future. State officials say building the tunnel would be the most effective way to ensure enough water as global warming erodes the reliability of the State Water Project. Representatives of water agencies and business groups support the project. Among the opponents are environmentalists and local leaders in the Delta, who argue that building the tunnel would be devastating to local farms, the ecosystem and the Delta's fish. The project's costs are also generating debate. The latest state estimate was $20 billion, but another analysis touted by tunnel opponents estimated the costs could be three times that or more.

Q: Agriculture uses a lot of water. I'm thinking of California's major crops, including almonds, pistachios, wine grapes and hay to feed cattle. Are you hearing people talk about a need for farms to use less water?

A: Yes. In Southern California, for example, farmers in the Imperial Valley have been leaving some hay fields dry for part of the year in exchange for payments as part of a federally funded voluntary program. The goal is to help address water shortages on the Colorado River. In the Central Valley, local groundwater agencies are in charge of curbing overpumping over the next 15 years. It's widely expected that the restrictions

will eventually require permanently retiring parts of the valley's farmland and converting those lands to other uses, such as solar farms or habitat restoration areas.

Q: Some communities, like Orange County, already treat sewage so thoroughly it's safe to use as drinking water. It's stored underground until it's pumped out and delivered to taps. Is this something we're likely to see more of?

A: Yes. L.A., San Diego and the Metropolitan Water District all have plans for large water recycling projects. I recently wrote about a report by UCLA researchers that found California is recycling 22% of its treated wastewater, which is a lot less than drier states like Nevada or Arizona. They said California should take steps to treat and reuse more wastewater.

Q: During California's last big drought in 2022, people in Ventura County had to limit watering their yards to one day a week. Are more restrictions likely on the horizon in Southern California?

A: Another major drought is always possible. But managers of water agencies say they are taking various steps to prevent a recurrence of shortages. One of the fixes involves re-engineering pipelines and adding new pump stations to more easily move water. Some of the area's water agencies are also supporting testing of new technology to desalinate seawater. As for the current situation, the last three wet winters have given the water supply a boost. The Metropolitan Water District of Southern California, which delivers water for 19 million people, has a record amount of water banked in reservoirs as well as underground storage areas.

Original Article: The LA Times by James Rainey

SoCal businesses and public institutions can get $7 per square foot to ditch their lawns

The days of huge, unused swaths of public and commercial lawns appear to be numbered in California and the Metropolitan Water District is offering an incentive to hasten their demise, at least in Southern California: A whopping $7-per-square-foot rebate to businesses, schools and other public institutions that replace their thirsty lawns with sustainable landscapes containing native and/or drought-tolerant plants.

The offer, which went into effect Sept. 1, is the largest rebate ever offered by the agency and more than double the $3-per-square-foot rebate it previously offered to commercial and public customers, thanks to a $30-million grant from California's Department of Water Resources and $96 million from the federal Bureau of Reclamation's Lower Colorado Basin System Conservation and Efficiency Program.

Rebates for residential lawns are still at $3 per square foot, said Krista Guerrero, a senior resource specialist for the water district who manages the agency's turf replacement program and specializes in outdoor water efficiency.

Essentially, Guerrero said, the Metropolitan Water District is trying to prepare some of the state's biggest water users for a new state law, AB 1572, that goes into effect Jan. 1, 2027, prohibiting public entities including schools and municipalities from using potable, i.e. drinkable, water to irrigate nonfunctional lawns. The same requirements will go into effect for business owners in 2028 and HOAs and other common-interest properties starting in 2029.

Functional turf is defined as lawn used for recreational and community gatherings — even areas where children and pets can run and play such as outside homes or on schoolyards.

"But walking across a lawn to get to the entrance of a building is not considered functional," Guerrero said. "Having grass around a parking lot is not considered functional. If you're only standing on it to mow it, that generally means it's nonfunctional."

The agency believes commercial and public entities control about 20,000 acres of nonfunctional lawns in Southern California, Guerrero said, which could be a lot of ugly brown terrain in a few years if they all just stop watering that turf.

"The bill only requires that they stop irrigating [nonfunctional lawns], so we're hoping to motivate them to beautify their property instead of just turning off their irrigation," Guerrero said. "We're not just looking at water savings. We're focusing on biodiversity and environmental benefits too."

For instance, to be eligible for the rebate, applicants need an approved plan to retain stormwater such as installing bioswales or dry stream beds that collect and store rainwater in the ground instead of allowing it to run off into the street. The new landscape must also include at least three water-efficient plants per 100 square feet, Guerrero said, "which depending on the plants they chose will cover 50% to 70% of the project area at full maturity."

Original Article: The LA Times by Jeanette Marantos

US WATER NEWS

Colorado River negotiations tense ahead of deadline

Continued disagreement over which states must absorb the pain of future cuts to water supplies drawn from the drought-stricken Colorado River could upend negotiations just two months before a federal deadline, key state officials are warning.

Top Arizona water officials are demanding that the four Upper Basin states — Colorado, New Mexico, Utah and Wyoming — commit to future reductions in their own water use in any agreement on a new long-term operating plan for the river.

The divisive warnings come in the wake of some progress this summer, in which all seven states coalesced around a plan known as "natural flow," or sharing water supplies based on recent water records — rather than historical figures that require significantly more water than now exists in the river.
The proposal was centered, in part, on ending the need to negotiate future cuts across the entire seven-state region — a major sticking point in past discussions.
Original Article: E&E News by Jennifer Yachnin

9th Circuit: Lawsuit would make agricultural runoff exemption "dead letter"

A federal appeals court has rejected a legal argument that it has determined would render an agricultural exemption to the Clean Water Act a "dead letter." The 9th U.S. Circuit Court of Appeals has upheld the dismissal of a lawsuit that challenged the lack of a Clean Water Act permit for an agricultural drainage project in California. Agricultural organizations feared that if the lawsuit's interpretation of the Clean Water Act prevailed, irrigated agriculture across the West would face a tremendous new regulatory burden. Originally filed 14 years ago by fishing and environmental organizations, the complaint alleged the Grassland Bypass Project has violated the Clean Water Act because it discharges non-agricultural pollutants into a wetland along with runoff from irrigated farmland. The 9th Circuit has now ruled the plaintiffs' legal theory would make the Clean Water Act's exemption for "return flows" from crop irrigation a "dead letter," or meaningless, since it's "a scientific impossibility" to prevent dust or stormwater from mingling with agricultural runoff. "We cannot adopt a statutory reading which we know will sap the interpreted provision of all practical significance," the 9th Circuit said. Fishing and environmental groups allege the project is one of the "most pernicious sources of contamination" in Northern California waterways, with a "witch's brew" of various pollutants seeping into its massive drainage system from sediment and groundwater. Selenium, boron, chromium, radon, mercury, arsenic and salts from non-agricultural sources are thus discharged through the project's channel, making it a "point source" of pollution that requires a "national pollutant discharge elimination" permit, or NPDES, under the Clean Water Act, the plaintiffs claimed. These arguments were opposed by the U.S. Bureau of Reclamation and affected California irrigation districts, who argued the plaintiffs' legal theory would eviscerate the Clean Water Act's exemption for agricultural runoff. The Grassland Water District, which helps operate the project, argued that "short of hermetically sealing every agricultural drain or canal, it leaves no way for farmers who irrigate to avoid NPDES permit requirements." A coalition of 13 agricultural groups also weighed in on the broader implications of the lawsuit, claiming it went against Congressional intent and threatened irrigated agriculture across the West, which depends on drainage systems to support crop

production. "Subjecting such projects and discharges to the CWA's NPDES permitting process and requirements would result in increased regulatory burdens, legal liability, civil and criminal penalties, and legal costs imposed on those responsible for a large percentage of our nation's food supplies," the agricultural coalition said. The 9th Circuit has now agreed with these arguments, rejecting the "contention that the commingling of any amount of nonpoint source pollution from a non-agricultural source forecloses the exemption," as this "position would contravene the text, purpose and structure of the Clean Water Act." The exemption for agricultural runoff was specifically created by Congress several years after the Clean Water Act was enacted due to the logistical difficulty of "disentangling" nonpoint sources of pollution — such as dust and stormwater — from agricultural drainage, the ruling said.
Original Article: Capital Press by Mateusz Peerkowski

U.S. water systems need $1 trillion in upgrades. Some Mountain West states are making progress

Many Western states use outdated methods to measure their water system needs according to an analysis by Pew Charitable Trusts, a nonpartisan research group. Some states don't even have inventories of basic assets, like aging pipes, or where lead service lines still exist.
Aleena Oberthur, a project director at Pew and report co-author, said good data drives smart spending.
"It's really important for policymakers and for states to understand what is the scope of their infrastructure need," Oberthur said. "Because that helps them kind of make the best decisions about allocating funds."
Nationwide, the Environmental Protection Agency estimates water and wastewater systems will need more than a trillion dollars in upgrades over the next 20 years.
But some states are making progress. In New Mexico, regional water managers helped shape the latest statewide water plan in 2018, flagging more than $4 billion dollars in needed upgrades. In Utah, lawmakers set up a Water Infrastructure Fund, ordered funding studies, and created a unified plan to rank and prioritize projects.
Elsewhere in the Mountain West, Idaho and Montana devoted more than half of their federal recovery funds to water infrastructure investments, according to Pew.
Oberthur said efforts like these are key if Western states want water systems strong enough to withstand a hotter, drier future.
Original Article: KJZZ Pheonix by Kaleb Roedel

$400M water fund could unlock Laredo projects, ease strain on Rio Grande

As drought tightens its grip on the border region, Laredo could be one of the cities to benefit from a $400 million water investment announced during the NADBank Summit ’25 in San Antonio.

Cornyn, who led a congressional push for the fund last year, called it a crucial investment for South Texas and the agriculture industry.

For Laredo — a city about 50 miles from Zapata that sits flush against the river — conservation groups say the funding could jumpstart long-stalled projects.

“This new $400 million Water Resilience Fund represents a deeply needed financial commitment to our border region and fast-growing cities like Laredo to work on innovative water projects to prolong the life and well-being of the Rio Grande ecosystem and meet our community needs,” said Tricia Cortez, executive director of the Rio Grande International Study Center, which attended the summit.

RGISC Watershed Science Director Martin Castro said the funding aligns with a wastewater feasibility study the group is launching in partnership with the city and NADBank. It is expected to finish by 2026.

Original Article: LMT Online by Maria Ruiz

University of New Mexico researchers plan to get better watershed data with $7 million NSF grant

New Mexico's watersheds are getting a checkup from University of New Mexico researchers, who plan to use a $7 million National Science Foundation grant to better understand how watersheds throughout the state are functioning and the long-term impact of different management decisions.

New Mexico landscapes play a role in drinking water access, biodiversity and capturing carbon from the atmosphere. With more extreme drought and variable rainfall predicted in the state's future, UNM's Accelerating Resilience Innovations in Drylands Institute wants to get hard data about watershed health into the hands of people making water management decisions.

"We're going to increase our understanding of these watersheds, and we're going to get more of a high-resolution picture of what the actual landscape looks like," said Marcy Litvak, a UNM biology professor leading the study.

Original Article: Yahoo news by Cathy Cook

GLOBAL WATER NEWS

Water firms Anglian and South West fined combined £87m for sewage failures

Two water companies have been fined a combined £86.8m over sewage-related failures.

Industry watchdog Ofwat - itself set to be scrapped as part of a shake-up of oversight in the sector - said Anglian Water and its shareholders faced a redress package of £62.8m. The penalty for South West Water stood at £24m.

The pair are the latest firms to face financial consequences for breaching obligations in the operation of their wastewater treatment works and networks.

ARTICLE CONTINUES BELOW THIS ADVERT

Ofwat said that both failed to operate, maintain and upgrade their wastewater assets adequately to ensure they could cope with flows of sewage and wastewater.

The reports also criticised the processes and management at the companies, including board level oversight.

The regulator said its five wastewater investigations to have concluded this year had resulted in enforcement action worth more than £240m.

Much of the cash goes towards storm drain improvements and local projects aimed at restoring river eco systems.

Lynn Parker, senior director for enforcement at Ofwat, said: "Our investigations found failures in how Anglian Water and South West Water have operated and maintained their sewage works and networks, which has resulted in excessive spills from storm overflows.

UK's 'radical' water reforms explained

"These are serious breaches and are unacceptable.

"We understand that the public wants to see transformative change.

"That is why we are prioritising this sector-wide investigation, which is holding wastewater companies to account for identified failures.

"We are pleased both companies have accepted that they got things wrong and are now focusing on putting that right, and taking action to come back into compliance."

Household bills are on the rise, at inflation-busting rates, over the next five years as the industry - including cash-strapped Thames - scrambles to make the necessary improvements to its infrastructure.

The major creditors at Thames are currently trying to convince the government and Ofwat of their operational and ownership plans to take control of the business through a new vehicle called London & Valley Water.

Firms are also under pressure to save more water, through leak prevention and improved storage capacity, as climate change presents challenges in terms of extremes.

While storm drains have been unable to cope with vast volumes associated with heavier storms, rainfall has been scarce since spring with the UK seeing its **hottest summer on record**.
Reservoir stocks are below average levels for this time of year widely and hosepipe bans remain in force across many areas of England, especially in the East.
Original Article: Sky News by James Sillars

A Global Dataset of Aquifer Typologies and Groundwater Resources : The Hidden Wealth of Nations - The Economics of Groundwater in Times of Climate Change

This note details the rationale and methodological steps taken to assemble a global dataset of aquifer typologies and resource availability. Such a global dataset can be used to answer high-level but fundamental questions related to the economic accessibility or potential of groundwater in a region and the implications for the best policy, financial, and other interventions. This is particularly important from a development perspective in relation to poverty reduction, resilient growth and climate adaptation. The new dataset builds on available global datasets and adopts a sustainable development perspective on the possible uses of groundwater resources. For this reason, it distinguishes between aquifers where individual groundwater use is possible compared to those cases where institutional intervention can be required due to technical requirements and high investment costs. Such a dataset is also important to capture the buffering role groundwater may play to cope with seasonal rainfall variability and climate shocks, which depends on the aquifer type. Section 1 of this note (Introduction) reflects the rationale for this approach and existing data. Section 2 (A typology of aquifers) details the methodology, steps, and validation for the new global dataset of aquifer typologies. Section 3 (Spatial distribution of groundwater resources) details the methodology and steps taken to produce a new global groundwater availability dataset.
Original Article: World Bank.
A Global Dataset of Aquifer Typologies and Groundwater Resources : The Hidden Wealth of Nations - The Economics of Groundwater in Times of Climate Change : Background Paper (English). Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/099090825042039644

Ethiopia's mega dam has taken 14 years to build: what it means for the Nile's 11 river states and why it's so controversial

What are the simmering tensions around the official launch of the dam?

The dispute over the allocation and use of the Nile waters has been going on for many years. This has been exacerbated by climate change, and increased demand for food and water from growing populations.

The 11 countries that share the waters of the Nile have competing development priorities too. These states include Ethiopia, Egypt, Sudan, Rwanda, Tanzania and Kenya. Egypt and Sudan lie downstream. They receive the river's waters only after it has passed through the nine upstream states.

Initially, the downstream states, particularly Egypt, opposed the construction of the dam, arguing that it was a threat to their water rights.

However, Ethiopia powered ahead with construction. Egypt and Sudan then shifted negotiations to securing an agreement for filling and operating the dam.

The two downstream states had suggested that filling the dam should take about 12 to 21 years in order to protect their water supply. For domestic and political reasons, Addis Ababa prefered a shorter filling period. In addition, Egypt and Sudan argued that filling the reservoir without a legally binding agreement would disregard their interests and rights.

But with the dam now fully filled and due to be officially inaugurated on 9 September 2025, the issue of a binding agreement for filling the dam's reservoir is moot.

Egypt and Sudan's political and diplomatic efforts highlight what they say is the illegality of unilaterally operating the dam without a binding agreement. Despite the intervention of the African Union and the US government, as well as appeals by Egypt to the UN Security Council, the three countries haven't been able to secure a deal.

The location of the Grand Ethiopian Renaissance Dam. Created with Datawrapper

Part of the reason is that Egypt has insisted that any negotiations on water allocation begin with the rights granted to it under its 1959 Nile Waters Treaty with Sudan.

Under this agreement, Egypt was granted 66% of the Nile's estimated average annual water flow of 84 billion cubic metres. Sudan got 22%. The treaty ignores upstream countries' legal claims to Nile waters, since 10 billion cubic metres were reserved for seepage and evaporation. Ethiopia's highlands, for instance, supply more than 86% of the water that flows into the Nile River.

Egypt continues to argue that Ethiopia's dam is a threat to its water security and that, if necessary, it will take measures to protect what it refers to as its "historical rights" to Nile waters.

Egypt relies on the Nile for more than 90% of its fresh water supplies. The country's water needs have risen as its population has grown and its economy has expanded significantly.

However, Egypt and Sudan's insistence on keeping their historical water shares cannot be considered equitable and reasonable. Additionally, Cairo doesn't appear to be prioritising a water-use approach that acknowledges the legal claims of upstream states to the Nile's waters.

Instead of improving and updating its water infrastructure, minimising wasteful irrigation practices and generally improving water use, Egypt has focused on grandiose mega projects that are putting significant stress on the region's scarce water resources.

Sudan, which has been battling a devastating civil war since 2023, has raised concerns about Ethiopia's dam affecting the operations of its own dams. This would make it more difficult to manage Khartoum's development plans.

What makes agreement on the Nile so elusive?

The legal framework regulating the allocation of the Nile's waters has been dominated by colonial-era agreements. These have been embraced by the two downstream states, Sudan and Egypt, but contested by the nine upstream ones.

Two of the most important of these agreements are the 1929 Anglo-Egyptian Treaty and the 1959 Egypt-Sudan treaty.

The 1959 treaty augmented the water allocations granted to Egypt and Sudan by the 1929 Anglo-Egyptian Treaty. These treaties also granted Egypt veto power over any construction projects on the Nile or its tributaries.

The terms of these treaties, however, are only possible if the nine upstream riparian states don't access or utilise any water from the Nile and its tributaries.

Most importantly, they make the water rights of the other Nile countries dependent on Egypt and Sudan's goodwill.

Ethiopia and other upstream states have long argued that they were not parties to the colonial-era treaties and are, therefore, not bound by them.

Original Article: The Conversation by John Mukm Mbaku

Limestone Coast is a food bowl and forestry powerhouse, but its water supply is under threat

South Australia's Limestone Coast has a reputation for its abundant, lush terrain in Australia's driest state.

But below the surface, the groundwater which fills the world-famous Ewens and Piccaninnie Ponds and supports the local agriculture industry, is slowly in decline.

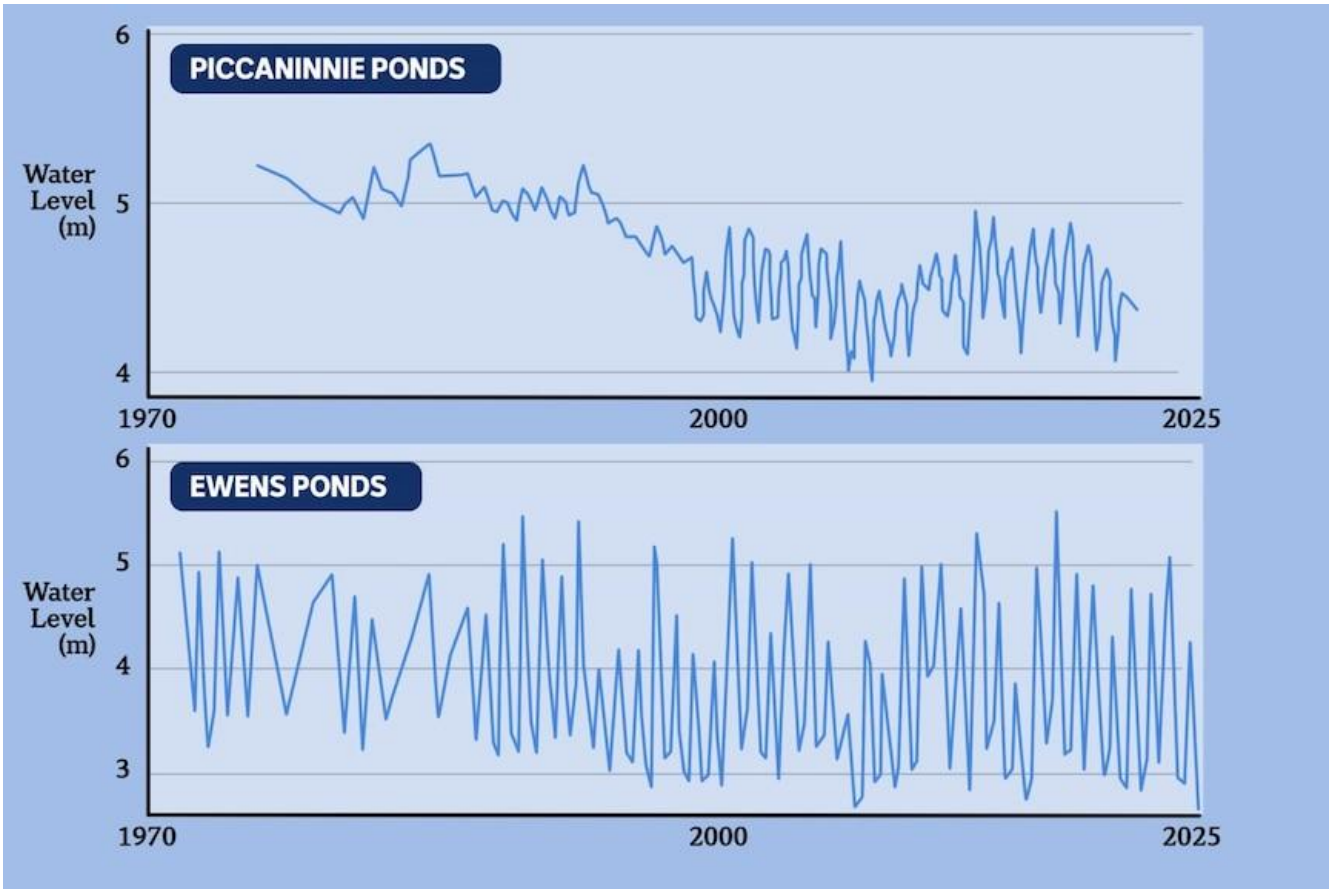
Morgan Feast is a fifth-generation cattle and sheep farmer in Wye, south of Mount Gambier, and is not allowed a water licence due to the property's proximity to Piccaninnie Ponds.

Instead, the farm relies on water from karst rising springs.

The flow of freshwater from the springs is also important in stopping seawater intrusion on farmland.

But Mr Feast said, for the first time since it was dug 80 years ago, the drain on the property was running dry.

"There's just not as much water laying around as there used to be," he said.



Long-term water levels at Piccaninnie and Ewens ponds. *(ABC News)*

Certain areas over-allocated

While water is building up on the property over winter, it is not flowing with enough force to drain into the sea.

Mr Feast said the situation had become "pretty worrying".
"I hope it doesn't get any worse, which is hard to see," he said.
A 2022/2023 report by the Limestone Coast Landscape Board (LCLB) found current allocation levels would not be sustainable moving forward, with 82 per cent of observation wells showing a declining trend.
"This is an area where there are certainly [management] areas of over-allocation and that is something that we're looking to understand and address," said Dr Liz Perkins, the LCLB's manager for planning and engagement.
She said while a cut to allocations was "within scope", no decisions had been made yet.
"Any change to allocation is a massive impact to individuals, businesses and industries,"
she said.
"The board is going to be incredibly considered around making those decisions."
Concerns for food and wood fibre
While some, like Mr Feast, are concerned for the future of the aquifer, others are calling for calm.
Eight Mile Creek dairy farmer Louise Paltridge said irrigation was key to the viability of her farm.
"Without water, we can't grow grass, so being able to have the underground water that we do here allows us to maximise our production," she said.
"For dairy farmers, growing grass is one of the most efficient ways to feed our cows."
For many farmers, the drought has only exacerbated the need for those systems.
"Without the irrigation we would not have been able to grow the grass that we did and continue to milk our cows," Ms Paltridge said.
"Anywhere outside of a pivot circle looked basically like a piece of concrete."
Ms Paltridge believed there should not be a cut to allocations for food producers.
"The talk that's been around of potential cuts has created a fair bit of uncertainty within the region," she said.
"If there's uncertainty about what we can produce and how much we can produce, people are a bit weary about future investments and planning for the future."
Forestry was also a key industry for the Limestone Coast that could be impacted by amendments to the plan.
South Australian Forest Products Association CEO Nathan Paine said a balance was needed between long-term management of water, and continuing to "grow the food and fibre" to feed and house future generations.
He said the talk of potential cuts was also hurting investment in forestry.
"If we end up not having investment for five-plus years, it's going to really hurt the economy in the region,"
he said.

"What we do know is if producers like forest growers do suffer cuts, those cuts mean less jobs in a mill, that's a job that someone in a regional town doesn't have, and we'll see a hollowing out of our regional communities."

An environment under stress

One person who does believe change is needed is cave diver Dr Richard Harris, who is known by most for his role in the2018 Thai cave rescue.

A regular visitor to the region's sinkholes and caves, he is concerned by what he has seen underground and at the ponds.

"We go into a cave from winter to summer to spring, year after year after year, and you get used to seeing the normal cycle of the water coming up and down," he said.

"But over the past four, five, six years it has been apparent that it is continuously dropping.

"The water levels we're seeing in most of the caves now is the lowest I've seen them."

Dr Harris said groundwater-dependent ecosystems were "under threat".

"It makes me feel very sad and very worried for the future of the whole south-east in terms of the water table down there," he said.

"When people start to get thirsty, I think that's when they'll really start to take notice that we've got a problem."

For Boandik elder Uncle Ken Jones the site is a place of both environmental and cultural importance.

He recalled being told stories as a child about a bunyip living in the reeds and rushes around the ponds.

But he too is concerned about what will be left for future generations.

"We've already done enough damage, and the true indicator is our birds, our fish, they are our messengers they are telling us already this underground water is over-extracted," he said.

"If this water was to stop or be further polluted it would be abandoning our duty of care.

"We must maintain that this is well looked after at all costs."

Original Article: ABC News by Josh Brine, Sam Bradbrook and Elsie Adamo

Brazil's Paraná state, World Bank advance US$263mn water program

The Brazilian Paraná state government and the World Bank have made progress in structuring a water security program that provides for the allocation of US$263mn in resources.

The objective of the initiative is to increase water availability in the state in light of the effects of climate change, guaranteeing supply and enabling the expansion of agricultural areas.

"The Water Security Program (PSH) is critical and requires intense work from the Planning Secretariat and other stakeholders. This week, together with the World Bank,

work focused on detailing and planning the PSH, and we are making progress toward ensuring the necessary actions, works, and studies," said state planning secretary Ulisses Maia in a statement.

Of the estimated amount, US$186 million will be financed by the World Bank and US$77 million by the government of Paraná.

The program is being structured against a backdrop of increasing frequency of extreme weather events in Brazil, with periods of severe drought interspersed with episodes of intense rainfall.

These conditions reinforce the demand for initiatives that reduce associated risks and increase water resilience in the states.

Original Article: bnamericas

Water management through technological solutions

Conlog presented their iDM. HYDRA, a patented valve designed for harsh environments, at Enlit Africa earlier this year, a technological tool ideal for demand management.

Theuns Tait, Product Manager for Conlog's water metering solutions, explained how the valve is useful for water demand management as well as managing pre- and post-payment modalities.

"It works with either volumetric meter or a dual ultrasonic meter, " he explains.

Water management is becoming an important theme for African countries as they struggle to maintain water services, which impacts utilities and municipalities. Technology to protect systems is available though, to end users and service providers.

Original Article: ESI Africa

Singapore secures $655m to fund green, sustainable projects in South-east and South Asia

Singapore's national climate finance initiative has secured US$510 million (S$655.7 million) as at Sept 8 to fund green and sustainable infrastructure in South-east and South Asia.

Such infrastructure projects could include renewable energy plants and storage, electric vehicles, sustainable transport, and water and waste management projects, among sectors critical to the regions' energy transition, the Monetary Authority of Singapore (MAS) said.

Many of these projects are not readily supported by commercial lenders because of investors' lack of familiarity.

To address this, MAS launched the national initiative, Financing Asia's Transition Partnership (Fast-P), in 2023.

The aim of Fast-P, a blended finance initiative, is to bring together public, private and philanthropic capital to help finance Asia's green transition, with the aim of eventually raising up to US$5 billion from these sources.
Fast-P comprises three funding pillars: green investments, accelerating energy transition and industrial transformation, which will focus on emissions-intensive sectors such as cement and steel and on carbon removal technologies.
The Green Investments Partnership is the first fund under the Fast-P initiative to achieve first close on Sept 8, with US$510 million coming from global and regional private, public and philanthropic institutions such as Temasek and HSBC, and the Australian and European governments.
Original Article: The Staits Times by Shabana Begum

Drought Hit Over Half Of Europe In Mid-August: EU Data

More than half of Europe and the Mediterranean basin was hit by drought in mid-August, according to an AFP analysis of data from the European Union's climate monitor.
Original Article: Barrons/ AFP

Resilient Business Models in Drought-Stricken Economies: Unlocking Value in Climate-Adaptive Infrastructure and Agriculture

In a world where climate stress is reshaping economic landscapes, the survival of industries hinges on adaptability. North America, with its sprawling agricultural heartlands and forested regions, is at the forefront of this transformation. As droughts intensify and regulatory frameworks evolve, firms that integrate water efficiency, sustainable forestry, and reforestation into their core operations are not just surviving—they're thriving. For investors, the question is no longer whether to act, but *how* to position capital in companies poised to outperform in a warming climate.

The Climate-Driven Shift in Agriculture and Forestry

The agricultural sector, long reliant on predictable weather patterns, is now under siege from erratic rainfall, soil degradation, and water scarcity. In 2025,
North American farmland values are projected to rise by 7.2% year-over-year, driven by technological adoption and institutional investment in climate-resilient practices. Yet, this growth is uneven: while large agribusinesses secure capital for precision tools, smallholders and traditional operators face existential risks. The same dynamic applies to forestry, where deforestation and wildfires have eroded ecosystem resilience, creating a vacuum for firms that prioritize regenerative strategies.
Original Article: AInvest

How FAB's $50m Blue Bond Will Support UAE’s Net Zero Aim

FAB, backed by Crédit Agricole CIB, issues Gulf's first US$50m Blue Bond, setting new regional sustainability standards and supporting UAE's net zero goals

The UAE, committed to achieving net zero by 2050 as part of the Paris Agreement, sees First Abu Dhabi Bank (FAB) stepping forward with a significant initiative.

FAB, with support from Crédit Agricole Corporate and Investment Bank, has issued a US$50m five-year Blue Bond, marking the bank as the first in the Gulf region to do so.

This strategic move highlights FAB's leading role in sustainable finance, a sentiment underscored by Shargiil Bashir, Chief Sustainability Officer at FAB, who says: “This Blue Bond issuance is a defining milestone for FAB and a first for any financial institution in the Gulf.”

With the issuance of the Blue Bond, FAB is aligning it with its Sustainable Finance Framework and the International Capital Market Association Green Bond Principles, through a private placement anchored by an Article 9 investor.

This investment will support the UAE Water Agenda 2036, aimed at fostering innovation and sustainable infrastructure in critical marine ecosystems and aligns with the nation's broader environmental objectives, preparing for significant upcoming international conservation events in Abu Dhabi in the coming years.

The role of blue bonds in sustainable finance

Blue Bonds, such as those issued by FAB, are instrumental in supporting water-related environmental goals, akin to green bonds which fund projects that align with marine and ocean sustainable development goals.

As described by the International Finance Corporation, these bonds invest in water and waste management, reduce ocean plastic pollution, restore marine ecosystems and support sustainable shipping and tourism, as well as renewable energy projects.

Given the historical underfunding of this critical sustainability sector, FAB's move sets a new standard in the region, as emphasised by Tanguy Claquin of Crédit Agricole CIB, who adds: “First Abu Dhabi Bank continues to set an ambitious standard and pace for sustainability in the Middle East and this transaction reflects the growing appetite from global asset managers to direct capital towards new frontiers in sustainable finance, such as the blue economy, nature and biodiversity.”

FAB’s broader sustainable initiatives

Apart from the Blue Bond, FAB is channeling efforts into various initiatives to advance the UAE's net zero target by 2050, consistent with the Paris Agreement.

The bank has joined the Net-Zero Banking Alliance, aiming to guide clients toward a climate-neutral economy through financing and advisory services.

By the end of the decade, FAB intends to lend and invest US$75bn for sustainable business ventures, coupled with US$10bn earmarked for sustainable activities by 2026.

FAB's commitment extends to reducing its operational carbon footprint, focusing on Scope 1 and 2 emissions by employing energy efficiency, renewable energy, use of electric vehicles and carbon offsetting.
As Shargiil says: "As the largest bank in the UAE, FAB has taken decisive steps as a regional pacesetter in the financial industry to bind both ambition and action together to accelerate the pace of positive environmental change."
Original Article: Procurement Magazine by Aaron McMillan

The role of groundwater connectivity in sustaining European lake water systems

This study investigates the potential connectivity of groundwater with lakes (groundwater-lake connectivity), using the groundwater table depth to maximum lake depth ratio (GW/L) as an indicator. Results from 189 European lakes show that those that are disconnected or have low connectivity (GW/L > 0.5), typically at higher altitudes (>1000 m a.s.l.) in catchments with less-permeable geological formations (e.g., crystalline rocks), exhibit a higher sensitivity to evaporation (evaporation to inflow rate, E/I > 0.40) compared to lakes more highly connected to groundwater (GW/L < 0.1, E/I < 0.20). Lakes with higher groundwater-lake connectivity are also more resilient to climatic changes, with groundwater contributions correlating positively with catchment characteristics (e.g., land use and precipitation). While most lakes are primarily recharged by warm precipitation (>80 % of the rainfall contribution in lake waters), particularly in disconnected lakes, cold precipitation (snow and rain from November to April) contributes <20 % to the total recharge in the warmer months (May–October). Nevertheless, cold precipitation plays a crucial role in maintaining groundwater-lake connectivity by recharging groundwater and stabilizing lake water levels. Nitrate contamination is strongly associated with urban and agricultural land use, with concentrations increasing with groundwater input. Lakes with higher groundwater-lake connectivity tend to exhibit elevated nitrate levels, contributing to eutrophication. Overall, the GW/L indicator shows strong potential for future studies and application in hydrological assessments. These findings emphasize the importance of incorporating groundwater–lake connectivity into climate change vulnerability assessments, especially in relation to water balance, nutrient cycling, and ecosystem health.
Original Article: Ma. Cristina Paule-Mercado, Rubén Rabaneda-Bueno, Petr Porcal, Marek Kopacek, Ioannis Matiatos, Frederic Huneau, Yuliya Vystavna,
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Note the attachment is not an inducement to trade and Veles Water does not give advice on investments.