Veles Water Weekly Report

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May 2nd 2024

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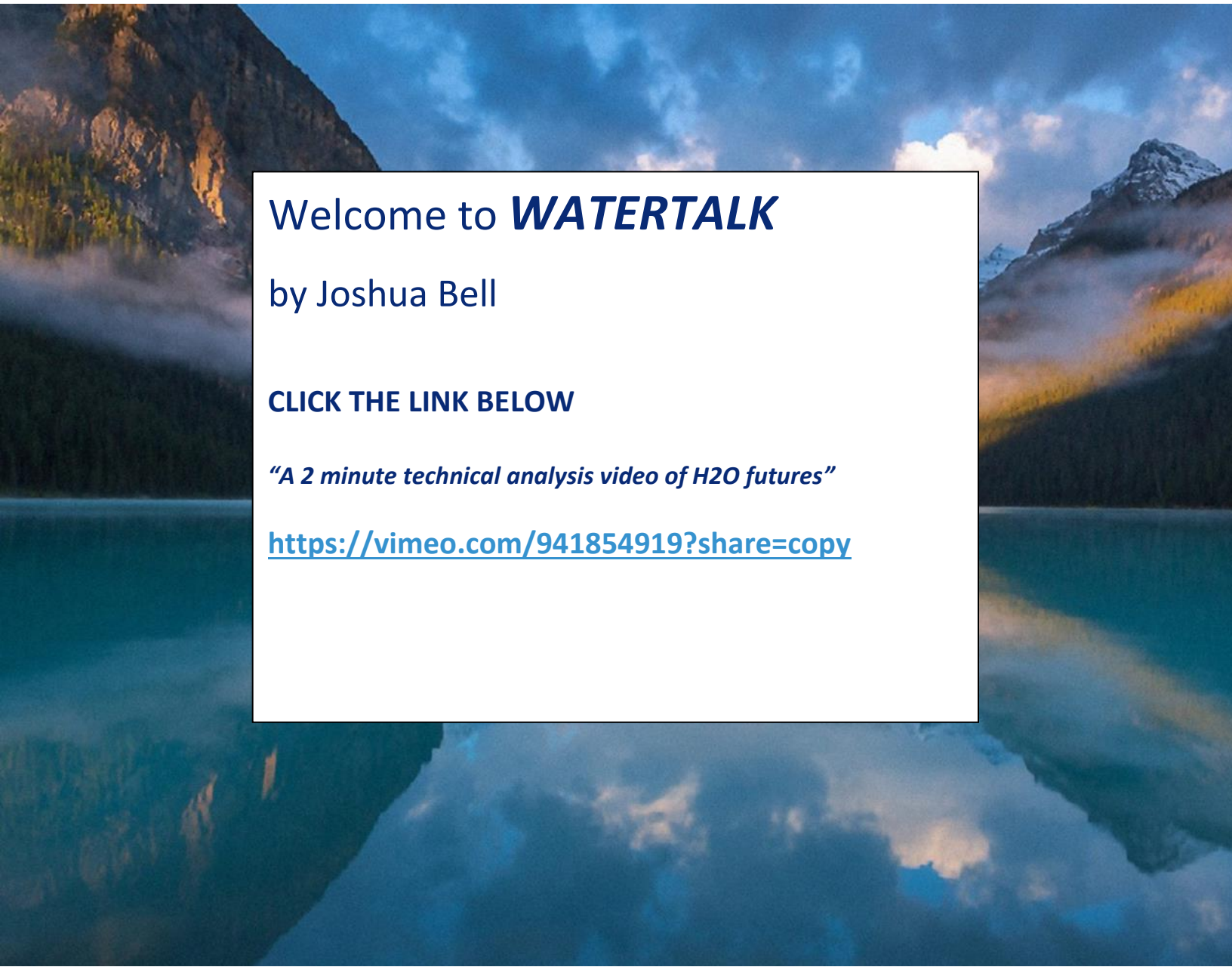
Veles Water

WATER FUTURES MARKET ANALYSIS



Welcome to ***WATERTALK***

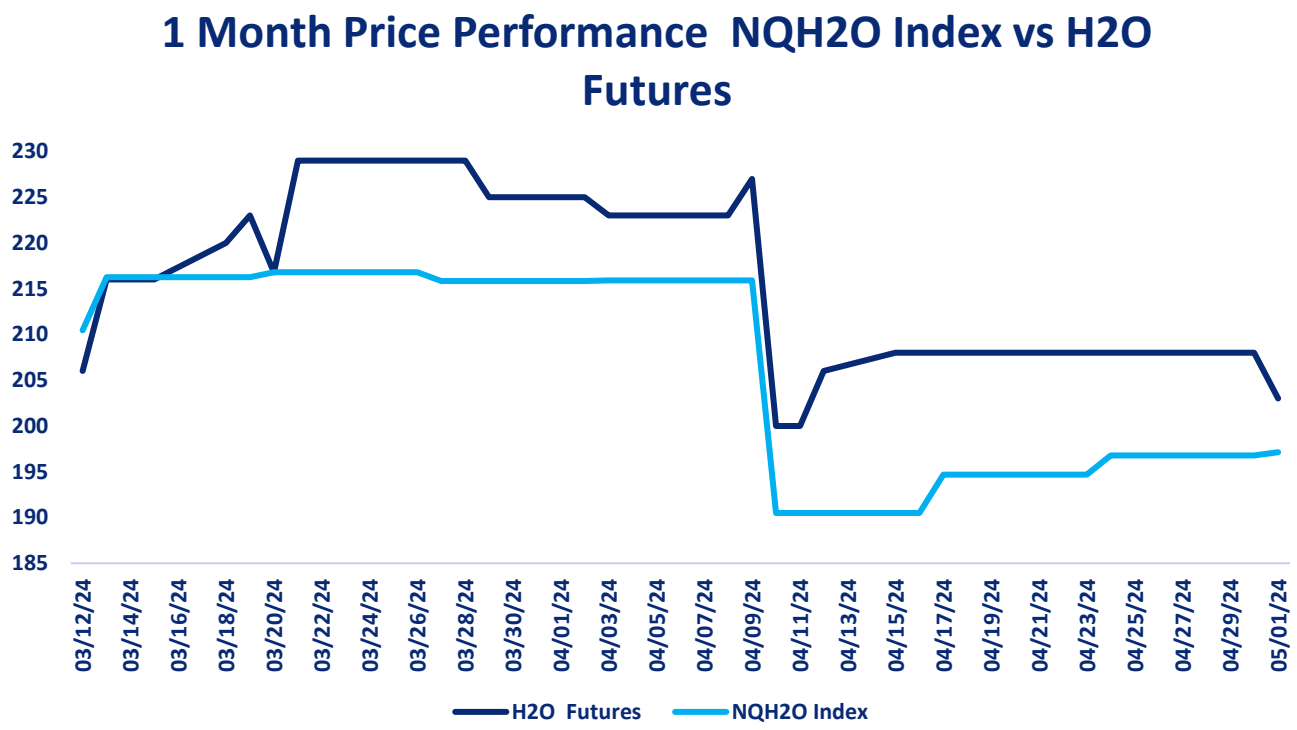
by Joshua Bell

CLICK THE LINK BELOW

"A 2 minute technical analysis video of H2O futures"

https://vimeo.com/941854919?share=copy

NQH2O INDEX PRICE vs H2O FUTURES PRICE



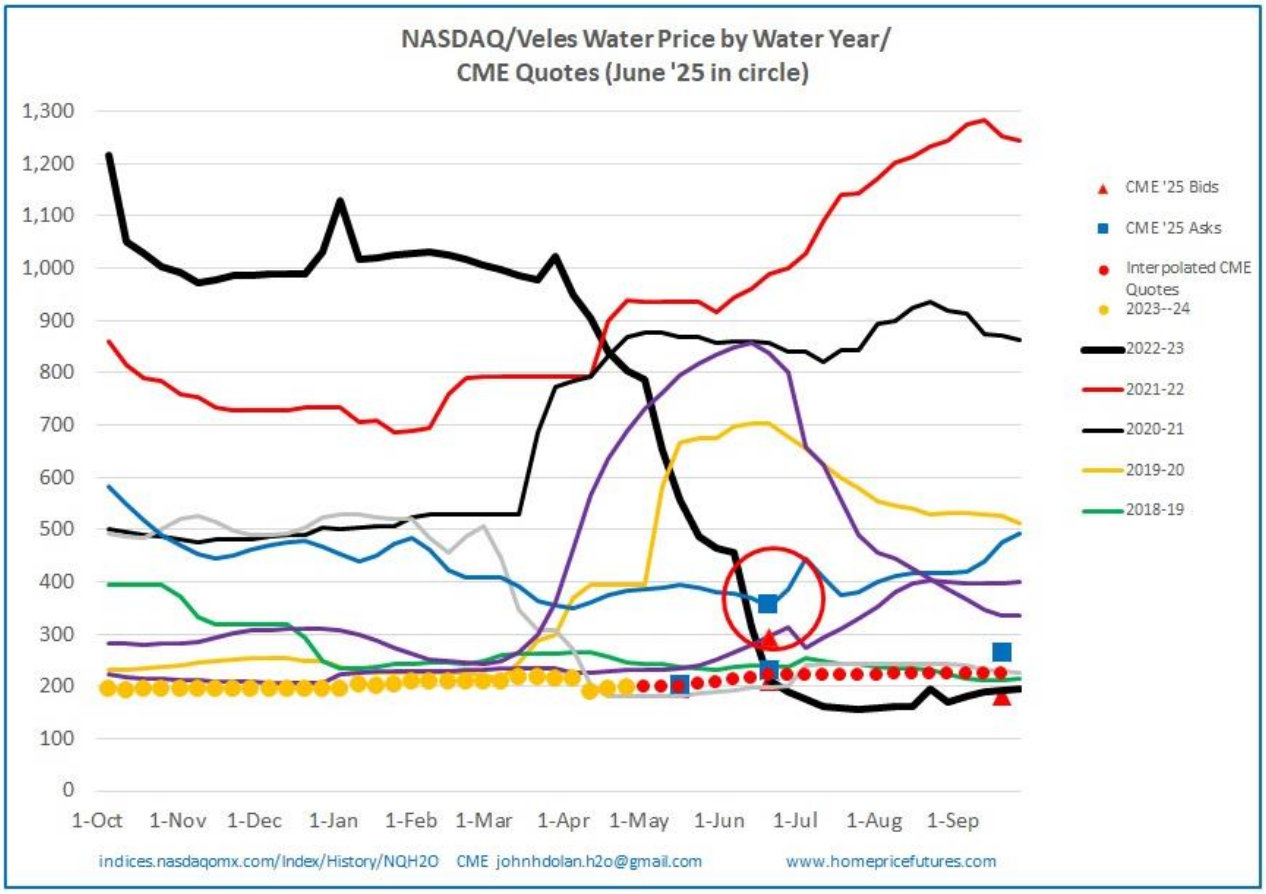
Price Chart Based upon Daily Close

The new NQH2O index level of $197.14 was published on May 1st up $0.35 or 0.18% from the previous week. The May contract is considered the front month. The futures have been closing at a premium of $5.86 to $11.21 versus the index over the past week.

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

May 24	195@203
Jun 24	210@231
Sept 24	180@266
Dec 24	170@261
Jun 25	294@355

NQH2O INDEX HISTORY

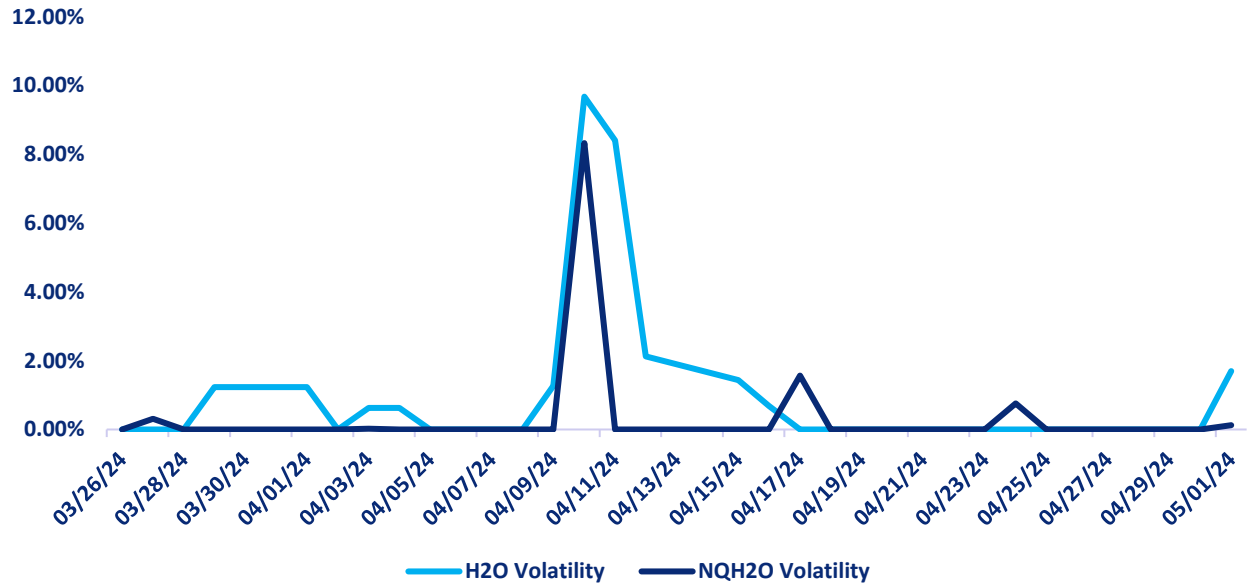


The graph above shows the CME water contracts for April, May and June 2024 (and June 2025) superimposed over historical NASDAQ Veles water indices. A red dotted line has been added to interpolate between the April-June contracts for the 2023-2024 water year.

(John H Dolan, CME Market Maker)

H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



DAILY VOLATILITY

Over the last week the May contract daily future volatility has been 1.70%

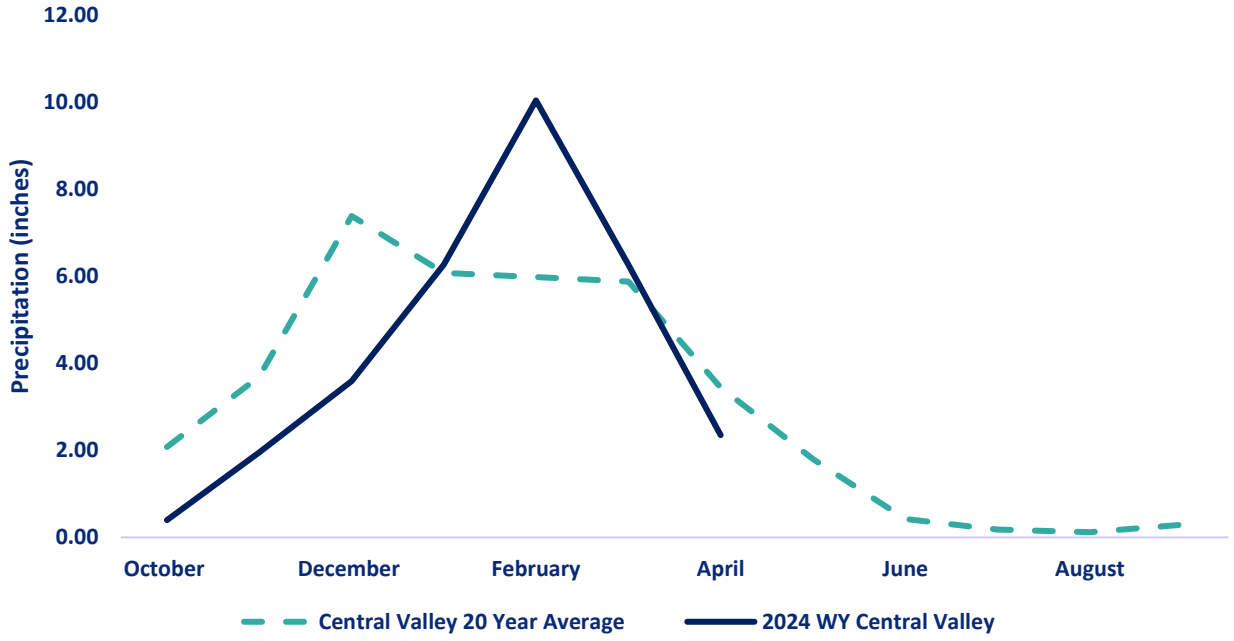
ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	**54.54%**	**11.53%**	**2.04%**	**0.90%**
H2O FUTURES	N/A	**15.44%**	**12.85%**	**2.40%**

For the week ending on May 1st, the two-month futures volatility is at a premium of 3.73% to the index, up 0.19% from the previous week. The one-month futures volatility is at a premium of 10.81% to the index, a reversal of 12.66% The one-week futures volatility is at a premium 1.51% to the index, a reversal of 11.44% from the previous week.

*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 02/05/2024

STATION	MTD (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF 20 YEAR AVERAGE MTD	2024 WYTD VS 2023 WYTD %	2024 WY VS 20 YEAR AVERAGE TO DATE %
SAN JOAQUIN 5 STATION (5SI)	3.08	0.24	86.44	168	86
TULARE 6 STATION (6SI)	1.93	0.29	75.11	195	84
NORTHERN SIERRA 8 STATION (8SI)	2.04	0.72	48.43	126	93
CENTRAL VALLEY AVERAGE	2.35	0.42	68.15	163	88

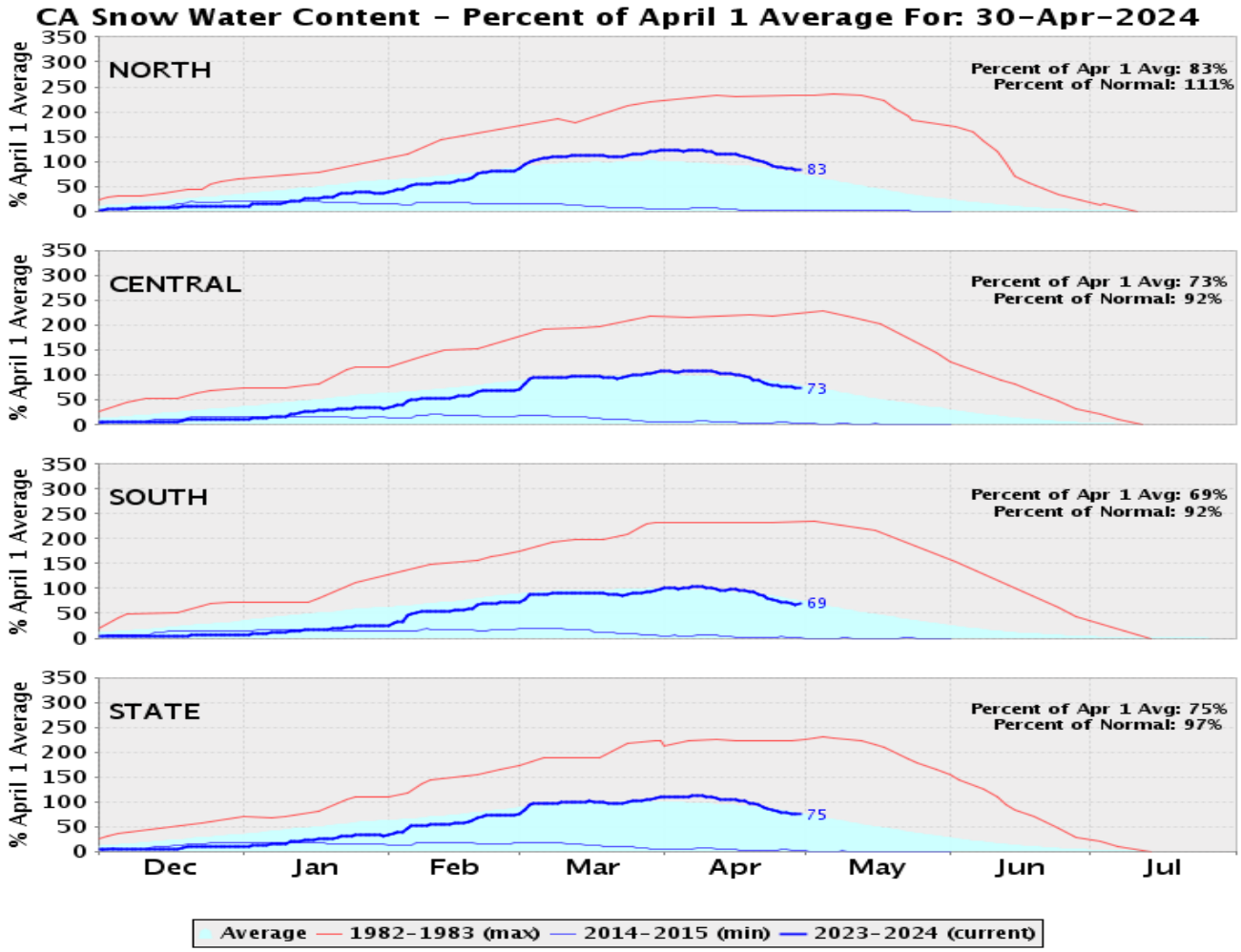
RESERVOIR STORAGE

RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	*% HISTORICAL AVERAGE
TRINITY LAKE	2,074,629	84	36	109
SHASTA LAKE	4,360,898	96	97	114
LAKE OROVILLE	3,444,579	97	91	126
SAN LUIS RES	1,434,686	70	99	85

*% 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	24.2	-3.1	217	111	83
CENTRAL SIERRA	21	-0.9	248	92	73
SOUTHERN SIERRA	15.4	-2.2	300	92	69
STATEWIDE	20.3	-1.9	279	97	75

Snow Water Equivalent*, **or SWE**, is a commonly used measurement used by hydrologists and water managers to guage 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. April 25, 2024
Data valid: April 23, 2024 at 8 a.m. EDT

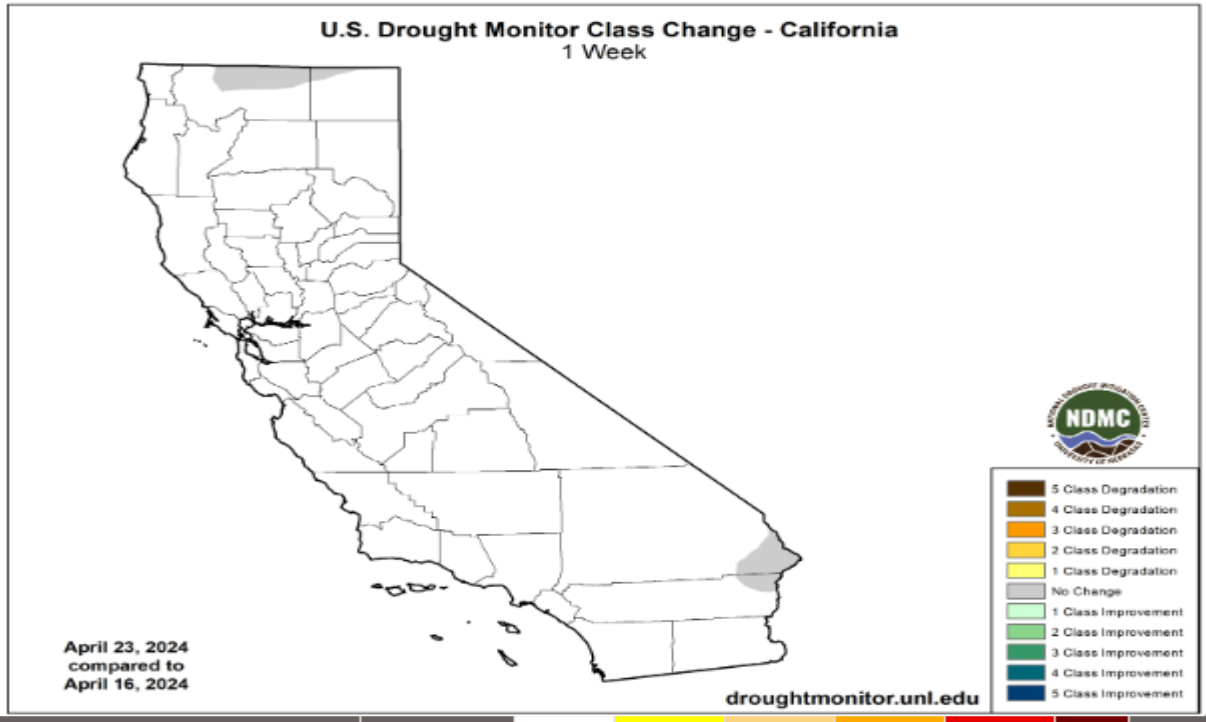
Intensity

- 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):
David Simeral, Western Regional Climate Center

Pacific Islands and Virgin Islands Author(s):
Tsegaye Tadesse, National Drought Mitigation Center

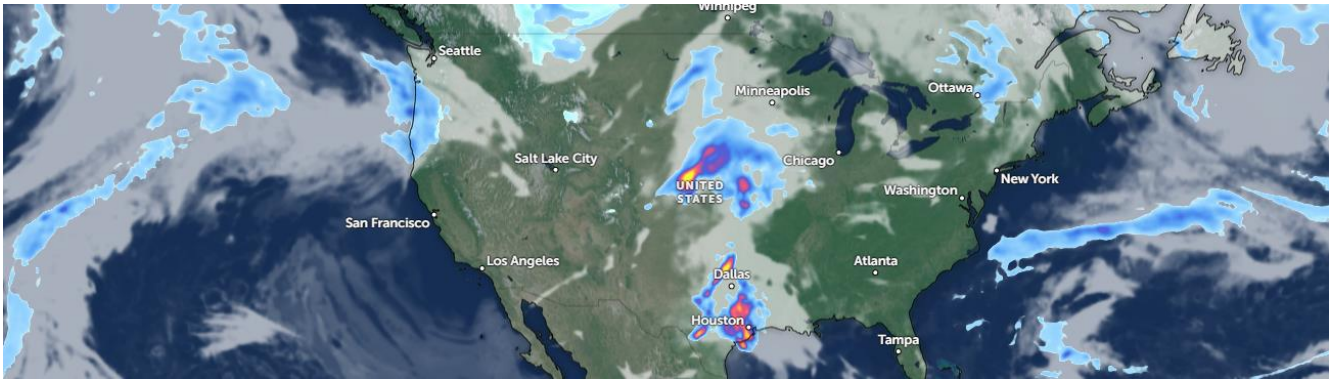


Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2024-04-23	97.32	2.68	0.00	0.00	0.00	0.00	3
Last Week to Current	2024-04-16	97.32	2.68	0.00	0.00	0.00	0.00	3
3 Months Ago to Current	2024-01-23	96.55	3.45	0.00	0.00	0.00	0.00	3
Start of Calendar Year to Current	2023-12-26	96.65	3.35	0.00	0.00	0.00	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	2023-04-25	68.04	31.96	7.98	0.00	0.00	0.00	40

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.

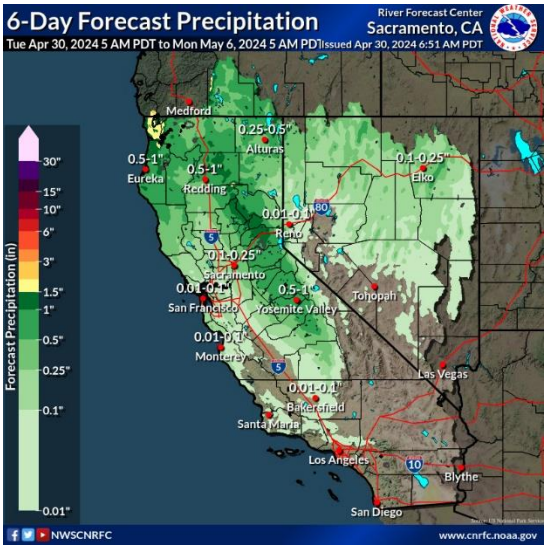
CURRENT SATELLITE IMAGERY

The satellite picture shows a light Pacific frontal system moving onto the western Canadian coastline stretching southwards to just north of San Francisco. There is a large collection of storms over the Midwest. The east coast from Maine to Florida is clear.



10 Day Outlook

Map Ref: Zoom Earth



Weak ridging over the region early Friday in between systems as the trough over Nrn Great Basin shifts to the east and an upper level low pressure system approaches the NW Coast. There is model and ensemble member variability with the timing track and strength of this system for lower confidence in precipitation amounts and areas (especially the southern extent of precipitation) and timing for late Friday into the weekend. The det 06Z GFS is farther south with the low off the Nrn CA coast Saturday morning and moving through Central CA and into Srn NV Sunday. The det 00z EC has the low off the Pac NW coast Saturday morning and brings it inland through the Pac NW and Nrn CA Saturday afternoon into Sunday.

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

WESTERN WEATHER DISCUSSION

On the map, improvements were made across areas of central and southeastern Arizona and in southern New Mexico in response to a re-assessment of overall conditions looking at numerous drought metrics at various time scales. Since January 1, much of Arizona as well as western and northern portions of New Mexico have observed precipitation levels ranging from normal to well above normal. In contrast, below-normal precipitation has prevailed across much of eastern New Mexico. Looking at SWE levels (April 1) from the NRCS SNOTEL network, all basins (6-digit HUC) within Arizona and New Mexico were above normal. Elsewhere in the region, areas of Abnormally Dry (D0) were introduced in western Oregon and Washington in response to short-term dry conditions and very low streamflow levels that have significantly dipped in recent weeks. In Montana, poor snowpack conditions led to further degradations on the map.

Reference:

Rocky Bilotta, NOAA/NCEI
Ahira Sanchez-Lugo, NOAA/NCEI

WATER NEWS

CALIFORNIA WATER NEWS

Study says California's 2023 snowy rescue from megadrought was a freak event. Don't get used to it

Last year's snow deluge in California, which quickly erased a two decade long megadrought, was essentially a once-in-a-lifetime rescue from above, a new study found.

Don't get used to it because with climate change the 2023 California snow bonanza —a record for snow on the ground on April 1 — will be less likely in the future, said the study in Monday's journal Proceedings of the National Academy of Sciences.

The study authors coined the term "snow deluge" for one-in-20-year heavy snowfalls, when it's cold and wet enough to maintain a deep snowpack through April 1. But even among these rare snow deluges, last year's stood out as the snowiest, edging out 1922 in snow water equivalent, said study lead author Adrienne Marshall, a hydrologist at the Colorado School of Mines.

It's timing couldn't be better. Last year's snow came after a megadrought that started around the turn of the century and was one of the worst in more than 1,000 years. That drought is gone now.

"We shouldn't count on these big snow years coming every couple of years to bail us out," Marshall said.

Sean de Guzman, right, snow survey manager for the Department of Water Resources, measures the snow with the help of DWR engineer Jacob Kollen for the final snow survey of the season at Phillips Station on April 3, 2023. (Hector Amezcua/The Sacramento Bee via AP)

Looking at different scenarios of emissions of heat-trapping gases in the future, she said it would be "increasingly rare" for most people alive now to see snow like this in California in the future. Her team's calculations show that these 1-in-20 year deluges will be 58% smaller by the end of this century compared to recent decades, with even just moderate climate change.

Original Article: AP news by Brittany Peterson and Seth Borenstein

California water managers advise multipronged approach in face of climate change

State water management officials must work more closely with local agencies to properly prepare California for the effects of climate change, water scientists say.

Golden State officials said in the newly revised California Water Plan that as the nation's most populous state, California is too diverse and complex for a singular approach to

manage a vast water network. On Monday, they recommended expanding the work to better manage the state's precious water resources — including building better partnerships with communities most at risk during extreme drought and floods and improving critical infrastructure for water storage, treatment and distribution among different regions and watersheds.

"In the five-year period since the publication of California Water Plan Update 2018, climate change has put unprecedented stress on natural and human systems," experts say in the plan, which is updated every five years.

"During that time, Californians experienced increased wildfires, rising sea levels, and highly variable precipitation and runoff patterns that manifested as historic droughts and floods — all of which increased socioeconomic uncertainty. Although climate change certainly is not the only water-related challenge disrupting natural and human systems, all water sectors are vulnerable to its interrelated impacts. Moreover, California's frontline communities, those most vulnerable to climate-driven impacts, are anticipated to face them earlier and more severely."

Lewis Moeller, project manager at the state Department of Water Resources, said in a webinar Monday that California's many regions are uniquely challenging to manage with a unified approach.

"We found that most responses to challenges are conducted at a local level," he said.

Eric Tsai, acting manager at the department's planning division, said the Newsom administration focuses on handling weather whiplash from extreme drought to historic floods, sometimes within the span of a year. The water plan is a critical piece of the approach to those extremes. He presented the Watershed Resilience Pilot Program as a new way to improve the statewide watershed network, which supplies more than 30 million people and millions of acres of agricultural land.

The watersheds and the State Water Project are staring down the inevitable effects of climate change, which include increasing precipitation variability and swings between severe drought and floods, senior water resources engineer Romain Maendly said.

That instability makes resources across every part of the water system vulnerable, and keeps it difficult to prepare for climate disasters and preserve vital resources like quality water, Maendly said. Water managers face significant pressure to quickly adapt existing infrastructure to handle fluctuating levels of water, as snow runoff disappears in dry years and then reappears in extreme amounts during wet periods. For example, projections show that by 2070 the San Joaquin Valley expects a 96% increase in dependence on groundwater and in unmet demand for urban water.

Lucian Filler, the department's planning program manager, said that the state must improve existing infrastructure to manage the fluctuating amounts of water entering 515 groundwater basins, which in total can store up to about 1 billion acre-feet of water.

"(They) must be modernized to adapt to climate change and continue to provide the necessary levels of service," Filler said.

Officials track that water supply using California's “simplified water budget” to make future management decisions, according to Jennifer Stricklin, senior engineer of water resources. This helps inform the state’s comprehensive water budget, accounting for all groundwater and surface water flowing in and out of basins, she said.
Agriculture uses 40% of California’s water, compared to urban water use at just 11% of the total water budget. Budget expert Abdul Khan said water agencies use this information to make new decisions, accounting for “every drop of water,” in visual datasets available online.
This approach also helps track which communities are most at risk of losing access to the water they need, particularly historically marginalized communities, according to environmental scientist Jordi Vasquez. Communities on the “front line," such as those with a long history of flooding, are more likely to struggle to adapt to fluctuating resources and thus need more attention and funding.
Vasquez and senior environmental scientist Emily Alejandrino recommended stronger partnerships with communities of color and tribal members, to learn about what these people need and respect for their ecological practices and methods of water management. Alejandrino said the state must do better to include Native leaders and ensure that their historic practices are part of new ecological management decisions.
The experts said in the plan that California officials can think ahead to prepare for "the cascading consequences of global climate change" with water resource planning that expands on lessons learned and past successes.
However, the experts cannot mandate the changes they recommend in the plan, Moeller said. State officials must authorize programs, and any needed funding, to set future changes in motion.
Original Article: Courthouse News by Natalie Hanson

State water managers see improved delivery forecasts, but demand still outpacing supply

Managers of California’s two main water storage and delivery systems are announcing increases to forecasted water allocations for millions of people and vast tracts of farmland.
The state Department of Water Resources, which runs the State Water Project, said Friday its anticipated water deliveries are now 30 percent of the amounts requested from the 29 public agencies that rely on its water.
Those agencies serve 27 million people and supply water to 750,000 acres of farmland, mostly south of the Sacramento-San Joaquin River Delta.
That 30 percent delivery estimate is double what DWR estimated in February, an increase attributable to the late winter snow and rainfall totals that have accumulated across the state.

Water users north of the Delta fared a bit better in this forecast, with 50 percent of requested supplies allocated to water contractors in that region and 100 percent of allocations granted to Feather River Settlement Contractors.

Things are better up north

Also on Friday, the U.S. Bureau of Reclamation, which operates the Central Valley Project, announced increases to its delivery estimates, as well.

For contractors north of the Delta, the Bureau announced an increase of deliveries from 75 percent of requested supplies to 100 percent, and for farmers south of the Delta the agency increased estimated water deliveries from 65 percent to 75 percent of historical use, or for the amount needed to ensure public health and safety, whichever is more.

"(A) number of factors, particularly anticipated regulatory constraints throughout the spring, continue to limit the water supply allocation for south-of-Delta agriculture."

Karl Stock, Bureau of Reclamation regional director

For cities south of the Delta, the Bureau set deliveries at 75 percent of what they typically use, or for the amount needed to ensure public health and safety, whichever is more.

The Central Valley Project delivers water to wholesalers and retailers in 29 of the state's 58 counties, including 5 million acre-feet to farms and 600,000 acre-feet — a year's supply for roughly 2.5 million people — to cities and towns.

"Thanks to the improved hydrology, we are pleased to announce a bump in water supply allocations for the Central Valley Project," said Bureau of Reclamation regional director Karl Stock. "While the series of storms in Northern California improved the water supply outlook, a number of factors, particularly anticipated regulatory constraints throughout the spring, continue to limit the water supply allocation for south-of-Delta agriculture."

Original Article: MSN by Local News Matters

Lawsuit demands that Water Board take action on outdated DWR water rights before Delta Tunnel can be approved

As salmon, steelhead and other fish species move closer to extinction – and the Delta smelt is now functionally extinct in the wild – a coalition of environmental groups and the Central Delta Water Agency are demanding that the State Water Board take action on outdated DWR water rights before the approval of the embattled Delta Tunnel is even considered.

DWR is the state Department of Water Resources.

After waiting 14 years, water rights protestants to a 2009 proceeding have filed a complaint against the State Water Resources Control Board alleging that it has given preferential treatment to DWR regarding what they call "antiquated water rights claims."

They also claim the board "failed to implement state laws requiring the reasonable and equitable development of water diversions and the protection of water resources in the state."

"DWR is still relying on water rights permits for the development of the controversial Delta Conveyance Project that were issued in 1955 and 1972, despite dramatic changes in the population size of California and in the hydrological cycle due to climate change," said a statement from the Central Delta Water Agency, the California Water Impact Network, AquAlliance and the California Sportfishing Protection Alliance.

The legal complaint also alleges that DWR has "failed to comply with state water rights law requiring water rights be timely put to full beneficial use; the purpose of this requirement is to safeguard the public interest."

The key issues in this new lawsuit are:

"DWR's Petition for Extension of Time has unreasonably delayed following development timelines dating back to 1955 and 1972 that required construction by 1980 and use by 1990; then construction by 2000, and use by 2009.

DWR is trying to resurrect these "expired" rights to serve the Delta Tunnel without having perfected them according to the State Water Board's ordered development schedule.

The Water Board is giving preferential treatment to another state agency by ignoring these protests and allowing DWR to flout its permit requirements while holding other applicants responsible for meeting the water development timelines in their permits.

Since the millions of acre-feet of water DWR claims it has rights to divert into the Delta Tunnel have never been applied to full beneficial use and cannot be reliably delivered, it is courts have sometimes termed 'paper water' which exists as an accounting tool but is 'worth little more than a wish and a prayer.'"

The complaint, filed with a Fresno County judge, alleges that the Water Board normally cancels the rights of other water rights applicants that don't use water or "put water to beneficial use" within the development period in their permit.

Critics of the Tunnel emphasize that failure to follow this 'diligence' requirement would result in massive social and environmental impacts on the Sacramento River and the Delta, and existing legal uses and users of water.

The lawsuit explains that the State Water Board is charged with the orderly development of water supplies in the state, which are increasingly scarce with the demands from 39 million people. Notably, when DWR's water rights were filed in 1955 and 1972, the state's population was 13 million and 20.5 million, respectively.

"The state has changed dramatically in that period, requiring a fresh look at the availability of water for projects like the Delta Tunnel that would remove significant amounts of water from the Sacramento River and Delta," the litigants contend. "Alarmingly, the water DWR proposes to divert water from the Sacramento River into

the Tunnel under its antiquated permits that may no longer be available due to climate change and other events over the last 50 plus years."

The complaint also alleges that "instead of returning DWR's petitions for lack of diligence and referring the permits to the licensing section to license amounts actually put to beneficial use during the permits' valid development period, the [water board] continues to issue notices of changes to DWR's expired permits, most recently on February 29, 2024 when it commenced the Delta Conveyance proceedings."

"With the recreational and commercial salmon season canceled for the second year in a row, the State Board needs to implement due diligence requirements evenhandedly," stressed attorney Osha Meserve, representing the Central Delta Water Agency. "Here, the State Board has given DWR preferential treatment and is letting DWR cut in line ahead of thousands of other water rights holders as well as water uses necessary to keep the California Delta, its communities and its fisheries healthy."

Roger Moore, attorney for the California Water Impact Network, noted that "during the 14 years these protests have been unlawfully allowed to languish, authoritative reports, including the State Water Board's own, have confirmed the Delta watershed is heavily oversubscribed. Enabling DWR's addiction to 'paper water' is a bet against our future that will shortchange California's fisheries, economy and environment."

Original Article: Sacramento Review by Dan Bacher

California's oldest water rights exist only on paper. A new project aims to change that

College students in California have begun scanning 2 million pages of water rights records on paper to make them more easily available in digital form to the public as part of a $60 million project.

The idea is to make it easier to determine who has the right to use water in the state, and from what stream and when, especially in times of drought.

Original Article: Kosu by NPR

Another Increase to the State Water Project Allocation

The Department of Water Resources (DWR) has announced another increase to the State Water Project allocation. Last month, DWR updated the allocation to 30 percent of requested supplies. The latest announcement has increased the allocation to 40 percent. DWR reports that the update is based on an 800,000 acre-foot increase in storage at Lake Oroville and the expectation for above-average snow runoff this spring. Currently, the statewide snowpack is approximately 99 percent of the historical average. The updated State Water Project allocation forecast anticipates delivery of 40 percent of requested supplies to contractors south of the Delta, 65 percent to contractors north of the Delta, and 100 percent for Feather River Settlement Contractors. Snowpack,

rainfall, and runoff information will continue to be assessed and taken into account for additional updates to water allocations.

Original Article: AG Net West by Brian German

US WATER NEWS

Six Upper Basin tribes gain permanent foothold in Colorado River discussions at key interstate commission

Six tribes in the Upper Colorado River Basin, including two in Colorado, have gained long-awaited access to discussions about the basin's water issues — talks that were formerly limited to states and the federal government

Under an agreement finalized this month, the tribes will meet every two months to discuss Colorado River issues with an interstate water policy commission, the Upper Colorado River Commission, or UCRC. It's the first time in the commission's 76-year history that tribes have been formally included, and the timing is key as negotiations about the river's future intensify.

"The tribes' participation in the UCRC really didn't start until a couple of years ago," said Peter Ortego, general counsel for the Ute Mountain Ute Indian Tribe. "But Ute Mountain has always been in favor of having a robust tribal role in the UCRC, so we were glad to see the (agreement) come about."

The Upper Colorado River Commission, established in 1948 by Congress, has permanent seats for a federal representative and commissioners for the four Upper Basin states — Colorado, New Mexico, Utah and Wyoming.

In recent years, Upper Colorado River commissioners' discussions have focused on key issues, like how to spend federal dollars and respond to a prolonged drought that is threatening the future water security of 40 million people across the West.

The commission has also become a key forum for sharing updates on the negotiations that will decide how the basin's water storage reservoirs will be managed after the current rules expire in 2026. The four state commissioners are also the top negotiators for each Upper Basin state.

The six Upper Basin tribes have long asked for a seat at that table and in other forums where Colorado River decisions are made.

The 30 federally recognized tribes, including the six in the Upper Basin, have rights to about 26% of the river's average flow. A century ago, state and federal leaders did not include tribes in foundational water-sharing agreements despite federal recognition of tribal water rights in years prior. As recently as 2007 and 2019, state and federal partners developed new rules for managing the river in response to prolonged drought, but again, tribes were not included.

The new agreement, signed by tribal officials April 22, aims to correct that exclusion.

Both federally recognized tribes with reservation land in Colorado, the Southern Ute Indian Tribe and the Ute Mountain Ute Indian Tribe, joined the agreement. The agreement also includes the Jicarilla Apache Nation, the Navajo Nation, the Ute Indian Tribe and the Paiute Indian Tribe of Utah. The commission approved the agreement in early March.

The river commission has no authority in the Lower Basin, which includes Arizona, California, Nevada and more than 20 tribal nations, and does not have a similar, centralized commission.

The six Upper Basin tribes and commissioners have been meeting regularly since August 2022. Under the agreement, those meetings will continue permanently, giving tribes a long-awaited voice in the discussions but no vote in the commission's decisions. That change would require Congressional approval.

"We have safeguarded these lands and waters since before there was a state, and our responsibility continues to this day," Southern Ute Indian Tribe vice chair Lorelei Cloud said in a prepared statement. The memorandum of understanding, she wrote, "stands as a powerful symbol of our enduring connection to this sacred resource."

Original Article: Colorado Sun by Shannon Mullane

Western lawmakers ask USDA to bolster drought response

A group of Western lawmakers pressed the Biden administration Monday to ramp up water conservation, especially in national forests that provide nearly half the region's surface water.

"Reliable and sustainable water availability is absolutely critical to any agricultural commodity production in the American West, and swiftly deploying funds to producers and watersheds in our States and Districts is crucial to help them respond to more frequent and severe droughts," wrote the lawmakers, including Sens. Michael Bennet (D-Colo.) and Martin Heinrich (D-N.M.), in a letter to Agriculture Secretary Tom Vilsack.

The 31 members of the Senate and House, all Democrats except for Sen. Kyrsten Sinema (I-Ariz.), credited the administration for several efforts related to water conservation, including promoting irrigation efficiency as a climate-smart practice eligible for certain USDA funding through the Inflation Reduction Act.

Any additional assistance, however, should also recognize the importance of water conservation far upstream from farms, they said.

Original Article: E&E News by Marc Heller

Nevada Residents Concerned About Water as Levels Drop

Nevada voters revealed that they were highly concerned about water access in their state, according to a recent Rasmussen Reports poll.

Nevada is the driest state in America, and concern has spiked regarding water access in the last few years given how Lake Mead reached concerningly low water levels in the summer of 2022.

The lake has since started to recover, but years-long drought and overuse has depleted the Colorado River and local reservoirs of substantial amounts of water. In addition to climate change and drought, Nevada has a rapidly growing population that continues to pull more water from the state's reserves, and voters revealed their concerns in the poll.

Rasmussen polled 869 likely voters from April 2 to 12. Of the respondents, 426 were men and 443 were women. They spanned various ages and ethnicities. Poll questions revealed that a startling number of voters were very concerned about Nevada's water situation.

Original Article: Newsweek by Anna Skinner

El Paso Water service in new neighborhoods could cost $1 billion over 10 years. Who should shoulder the cost?

On May 7, the El Paso City Council is expected to answer a complicated, fraught question: should developers – and, in essence, new homebuyers – pay for the cost of new growth?

As developments stretch out into the desert along the periphery of the city, El Paso Water ratepayers are increasingly shouldering the cost of extending water and sewer lines out to new neighborhoods.

Every home and business in the city already pays a couple of extra dollars on their monthly water bill to cover the cost of providing water and sewer service to new housing developments, such as Campo Del Sol in the far Northeast or Enchanted Hills in the Northwest.

Last week, the council by a margin of 4 to 3 advanced an increase in impact fees that would require homebuilders to pay the water utility thousands of dollars more per home they build to offset those costs. The council will cast a final vote next week.

The debate centers on whether homebuilders should pay more for the new infrastructure, a cost they may pass on to new homebuyers in some neighborhoods. Increasing developers' fees may also reduce urban sprawl by encouraging them to build closer to the city's urban core, some argue.

Others see the fees as a tool to keep down costs paid by El Paso Water customers – though utility officials say bills may still increase to renovate aging systems in existing neighborhoods. Spreading smaller increases among all customers and not only the developers could fuel expansion in El Paso, some argue.

“We get called all the time, and we get calls about ‘Why do my water rates keep going up? I can’t afford to pay for my water and wastewater services. Why am I paying for development in a new area and subsidizing that?’” Jeff Tepsick, El Paso Water’s assistant finance chief, said to a group of Northeast residents at a recent community meeting. “Every dollar that we raise in impact fees is one less dollar that we have to charge to our ratepayers.”

City Rep. Isabel Salcido was absent for the vote last week, so the likely outcome of the next vote is not clear. Mayor Oscar Leeser, who could cast the tie-breaking vote, has openly said he doesn’t want to increase the fees.

Original Article: El Paso Matters by Diego Mendoza Moyers

How many atmospheric rivers drenched the West Coast this winter? Hint: It's a big number

Emergency and cleanup crews were hard at work in California this winter as record rainfall battered the state, causing landslides, flooded homes, and cars rushing away in the water. Crops throughout the central valley of California were submerged in water, and traffic delays in central and northern parts of the state grew due to heavy flooding. Southern California was hit especially hard, with a state of emergency declared in San Diego. Many areas of Nevada endured ice and snow, leading cars to slide out of control and off the road.

Parts of Washington and Oregon experienced flooding and landslides. At least two bodies were found in a swollen waterway in Oregon after extreme rains let loose on the state.

So, what caused these torrential downpours and extreme winter conditions on the West Coast this winter?

Atmospheric rivers. More than 50, it turns out, drenching the West Coast like buckets in a fire brigade.

What are atmospheric rivers?

Atmospheric rivers are long regions of water vapor in the atmosphere, much like a river in the sky. According to scientists at NASA, atmospheric rivers can move more water than the Amazon River holds — twice over.

These airspace rivers vary in size and strength, and like hurricanes, are sorted in categories based on the severity of the storm. The amount of water vapor carried in these rivers can produce extreme rain and snowfall, as it did for the West Coast.

Atmospheric rivers:Here's how they affect Arizona's weather

Data from the Center for Western Weather and Water Extremes shows that water year 2024 (October through March) brought an astounding 51 atmospheric rivers to the West Coast. California's first three months started slow, with 18 (12 weak, 6 moderate), but storms from January through March pummeled the northern part of the state with 25 (14 weak, 9 moderate, 2 strong).

The strongest such system to hit the Golden State was Feb. 4-6. Downtown Los Angeles recorded 8.51 inches of rain, that brought intense flooding, mud and landslides, and left behind downed power lines, trees and devastation in its wake.

Do atmospheric rivers flow through Arizona?

Although weather systems frequently move from California to Arizona, desert dwellers can typically expect less rain and overall weaker systems.

Phoenix doesn't get the same storms and rain totals as much of Southern California simply because of the topography, according to Matt Salerno, a meteorologist at the National Weather Service in Phoenix.

"Just due to the fact that we have mountainous terrain around the city, and we are in a low spot of the Valley, the clouds and rain tend to form around us," Salerno told The Republic in February. "As the winds start blowing from the south, those clouds and precipitation move away from the Valley up towards the mountains."

Atmospheric rivers are not all bad news: While they can bring flood risks and landslides, they can also provide drought relief and much-needed water supply.

Scientists at the National Oceanic and Atmospheric Administration say atmospheric rivers are a key factor in the global water cycle and are intimately linked to both water supply and flood risks, particularly in the Western U.S.

Original Article: AZ Central by Caralin Nunes

Colorado River tribes, Haaland sign historic agreement granting right to lease water off-reservation

A historic water rights agreement was signed between the U.S. Department of the Interior, the state of Arizona and the Colorado River Indian Tribes, or CRIT, along the banks of the Colorado River at the BlueWater Resort and Casino on Friday.

Congress passed the Colorado River Indian Tribes Water Resiliency Act in 2022, authorizing CRIT to lease, exchange, store or conserve portions of its decreed water entitlements in Arizona for off-reservation users.

Now, two years later, a historic, trilateral agreement has been established between the state, tribe and federal government, with three signatories: Arizona Gov. Katie Hobbs, CRIT Chairwoman Amelia Flores and Interior Secretary Deb Haaland.

"The celebration today is the beginning of a new chapter for tribal sovereignty and self-determination," said Hobbs. "Tribal leaders have the freedom to manage their resources and by extension their futures."

“This river flows through us and so on this special sacred day, we recognize the strengthening of our sovereignty and step forward to further protect and enhance our wellbeing and that of future generations to come,” said Flores. “We celebrate the empowerment of our rights to make our own decisions, with who, when and how our water resources may be used.”

“We know this simple truth: Water is sacred,” said Haaland. “And if you doubt the ancestors are guiding our work, all you have to do is go out there and you will feel it.”

U.S. Sen. Mark Kelly, Assistant Secretary for Indian Affairs Bryan Newland and Bureau of Reclamation Commissioner Camille Touton were also in attendance.

Founded in 1865, the sprawling CRIT Reservation spans across 300,000 acres of land between Arizona and California, including 90 miles of river shoreline, and holds onto senior water rights to divert roughly 719,000 acre-feet annually.

Original Article: KJZZ by Gabreil Pietrozario

GLOBAL WATER NEWS

Is swapping debt to protect nature the key to solving Africa's climate woes?

In Kenya, the impacts of a changing climate cut through every layer of its economy. From its expansive agricultural lands and its crucial water bodies to the diverse ecosystem driving its tourism industry, the toll is undeniable. With a population of 54 million standing on the front lines of global warming, the economic impact is both real and relentless, as climate-induced calamities could strip away more than 5% of Kenya’s gross domestic product annually by 2050.

The need for adaptation strategies is urgent. And yet, funding remains a significant barrier. In response, Kenya and other African pioneers are exploring alternative financing mechanisms such as green bonds and debt-for-nature swaps. Despite these efforts, systemic challenges hinder progress, underscoring the complex interplay between sustainability, finance and international cooperation in addressing climate change.

Indeed, the climate dilemma in Africa is amplified by contradiction: the continent is responsible for just 4% of global carbon emissions, yet it experiences a significantly higher degree of climate change's negative effects. Data compiled by the International Energy Agency in 2010 illustrated the global carbon-footprint imbalance with a striking image: at the time, a single American refrigerator consumed three times more energy than the average African used in a year. Africa's struggle is compounded by its limited ability to access climate finance. As President Macky Sall of Senegal has put it, Africa faces a "double penalty," not only susceptible to the impacts of climate change but also confronting hurdles in accessing financing desperately needed for adaptation and mitigation.

The African Development Bank estimates that Africa incurs annual losses of between $7 and $15 billion (all dollar figures are U.S.) because of climate change, a figure expected to escalate to $50 billion by 2030. But the continent garners a mere 3% of global climate finance. Africa made up less than 1% of the $2.2 trillion in community green bonds in 2022, according to the African Development Bank Group. Europe alone issued more than $100 billion in green bonds that year. This investment gap significantly curtails African nations' capacity to tackle their unique climate challenges.

The situation is exacerbated by high levels of debt from international loans and bonds, placing 21 African countries in or at high risk of debt distress. The intersection of climate vulnerability and unsustainable debt stalls economic development and exacerbates poverty. The burden of debt servicing constrains these nations' ability to attract investments for crucial climate adaptation and mitigation measures, such as transitioning to cleaner energy sources, adopting sustainable agriculture practices and enhancing infrastructure resilience.

Debt-for-nature swaps, alongside the broader concept of debt-for-climate swaps, are transformative strategies that can address these challenges. By converting a portion of a country's debt into funds dedicated to environmental conservation, these mechanisms promise financial relief and a pathway to sustainable development for African nations.

This has the potential to alleviate a country's debt burden and ensures that crucial funds are directed toward combatting deforestation, protecting endangered species and supporting community-based conservation initiatives that provide sustainable livelihoods. The success of these projects hinges on transparent and equitable management, ensuring that the benefits reach the local communities most affected by climate change and biodiversity loss.

In this context, debt-for-nature swaps surface as potent tools to bridge the climate finance gap. Kenya, with its rich natural resources and acute climate vulnerabilities, serves as a prime example of how such mechanisms can be leveraged for sustainable development.

Original Article: Corporate Knights by Shilpa Tiwari

Study provides new global accounting of Earth's rivers

A study led by NASA researchers provides new estimates of how much water courses through Earth's rivers, the rates at which it's flowing into the ocean, and how much both of those figures have fluctuated over time—crucial information for understanding the planet's water cycle and managing its freshwater supplies.

The results also highlight regions depleted by heavy water use, including the Colorado River basin in the United States, the Amazon basin in South America, and the Orange River basin in southern Africa.

For the study, which was recently published in *Nature Geoscience*, researchers at NASA's Jet Propulsion Laboratory in Southern California used a novel methodology that combines stream-gauge measurements with computer models of about 3 million river segments around the world.

The scientists estimate that the total volume of water in Earth's rivers on average from 1980 to 2009 was 539 cubic miles (2,246 cubic kilometers). That's equivalent to half of Lake Michigan's water and about 0.006% of all fresh water, which itself is 2.5% of the global volume. Despite their small proportion of all the planet's water, rivers have been vital to humans since the earliest civilizations.

Although researchers have made numerous estimates over the years of how much water flows from rivers into the ocean, estimates of the volume of water rivers collectively hold—known as storage—have been few and more uncertain, said JPL's Cédric David, a co-author of the study.

He likened the situation to spending from a checking account without knowing the balance. "We don't know how much water is in the account, and population growth and climate change are further complicating matters," David said.

"There are many things we can do to manage how we're using it and make sure there is enough water for everyone, but the first question is: How much water is there? That's fundamental to everything else."

Estimates in the paper could eventually be compared with data from the international Surface Water and Ocean Topography (SWOT) satellite to improve measurements of human impacts on Earth's water cycle. Launched in December 2022, SWOT is mapping the elevation of water around the globe, and changes in river height offer a way to quantify storage and discharge.

'Fingerprints' of water use

The study identified the Amazon basin as the region with the most river storage, holding about 204 cubic miles (850 cubic kilometers) of water—roughly 38% of the global estimate. The same basin also discharges the most water to the ocean: 1,629 cubic miles (6,789 cubic kilometers) per year. That's 18% of the global discharge to the ocean, which averaged 8,975 cubic miles (37,411 cubic kilometers) per year from 1980 to 2009.

Although it's not possible for a river to have negative discharge—the study's approach doesn't allow for upstream flow—for the sake of accounting, it is possible for less water

to come out of some river segments than went in. That's what the researchers found for parts of the Colorado, Amazon, and Orange river basins, as well as the Murray-Darling basin in southeastern Australia. These negative flows mostly indicate intense human water use.

"These are locations where we're seeing fingerprints of water management," said lead author Elyssa Collins, who conducted the analysis as a JPL intern and doctoral student at North Carolina State University in Raleigh.

A new way to quantify rivers

For decades, most estimates of Earth's total river water were refinements of a 1974 United Nations figure, and no study has illustrated how the amount has varied with time. Better estimates have been hard to come by, David said, due to a lack of observations of the world's rivers, particularly those far from human populations.

Another issue has been that there are many more stream gauges monitoring the levels and flow of large rivers than there are of small ones. There's also broad uncertainty in estimates of land runoff—the rainwater and snowmelt that flow into rivers.

The new study started from the premise that runoff flowing into and through a river system should roughly equal the amount that gauges measure downstream. Where the researchers found inconsistencies between simulated runoff from three land surface models and gauge measurements taken from approximately 1,000 locations, they used the gauge measurements to correct the simulated runoff numbers.

Then they modeled the runoff through rivers on a high-resolution global map developed using land-elevation data and imagery from space, including from NASA's Shuttle Radar Topography Mission. This approach yielded discharge rates, which were used to estimate average and monthly storage for individual rivers and the planet's rivers in total.

Using a consistent methodology enables comparisons in flow and human drawdown between different regions.

"That way we can see where in the world the most amount of river water is stored, or where the most amount of water is being emptied into oceans from rivers," said Collins, now a postdoctoral researcher at the University of North Carolina at Chapel Hill.

Original Article: Phys.org by Nasa

€41m investment to safeguard water supply

Within days, Uisce Éireann will begin work on a vitally important project for the people of Navan.

The €41m Duleek to Navan water trunk main project will safeguard the water supply for homes and businesses in the community.

The project is one of a number of strategically important projects underway to increase the security and resilience of drinking water supply across County Meath.

This new 16km regional trunk water main and pumping station will create a strategic link between the Staleen Water Treatment Plant Network, at a point just south of Duleek, and the Proudstown and Carn Hill Reservoirs which provide treated water storage for Navan. This new water main will not only maintain a water supply to Navan if there is any planned or unplanned disruption at Navan's Liscarton Water Treatment Plant, but it will also support social and economic growth.

Uisce Éireann's Programme Manager William McKnight said he can't overstate the importance of this project for the local community.

"*We're looking forward to beginning construction of this critical project for the people of Navan. When complete, this new infrastructure will ensure a reliable and sustainable water supply, while the increased capacity will support future growth and development of the town which has seen unprecedented growth in recent years*."

Coffey Construction Ltd will deliver the project on behalf of Uisce Éireann with a completion date in late 2025.

To allow for the safe delivery of the works, road closures will be necessary. Meath County Council has granted a road closure on the L1610 between Bolies Little and N2 at Balrath from 1 May to August 21, 2024. Hours of work will be 7am – 7pm Monday to Friday. Local signposted diversions will be in place and local and emergency access will be maintained at all times.

Two other phased road closure applications will be submitted shortly for the R153 between Kentstown and Navan and the R153 between Kentstown and N2.

In order to keep the community up to date on the works, Uisce Éireann's local project management team, led by Pat Wickham, has held briefings for the local community and elected representatives.

Meanwhile, a dedicated Community Liaison Officer (CLO) will be working on the ground, and we will continue to engage with the local community to keep locals up to date on traffic management systems.

Original Article: Water.ie by Navan News

Risks of Thames Water crisis contagion look overdone

The contagion merchants are out in force at Thames Water. If the country's biggest water company goes under, runs the argument from assorted bondholders and City bankers, we will all pay a price. Other water companies will pay more for their capital, shoving the cost on to our bills eventually, and the burned bondholders will exact revenge when they're asked to finance everything from electricity pylons to nuclear power stations. Should we be scared?

Before everybody works themselves into a panic, it would be better to wait until 12 June, the day when the water regulator, Ofwat, gives its first view on the business plans of English and Welsh companies for the next five-year period, and says what level of bill

increases it will accept and what assumptions it has made about the cost of capital. That is the first point at which the "contagion" noise can be properly assessed.

This column's bet is that Ofwat's proposals, for the whole industry, will be soft. In other words, the companies will be given terms that are seen as generous (to them) by historical standards. Why? Well, every five-year price review involves a trade-off between competing objectives, notably the desire to keep consumers' bills down and the need to ensure investment in infrastructure happens. This time, the priority is obviously to accelerate investment to clean up the polluted waterways. Bills are going up significantly, the question is the degree.

Since Ofwat does not live in a bubble (whatever Thames's shareholders might believe), it is probably also fair to assume it has noticed that interest rates have risen and there is international competition for capital these days. That's another reason to expect a soft-ish settlement.

If that is how things turn out on 12 June, don't expect water company bosses to jump with glee – they always roll around in agony and claim the regulator has been uniquely harsh. But, when the numbers have been digested, a perfectly plausible scenario might see eight or nine of the 10 big firms declare they can live with Ofwat's proposals and will be able access capital at reasonable rates on the back of it.

A likely outlier would be Thames, of course, since its shareholders have already said they think Ofwat has made the firm "uninvestable". But if most of Thames's peers are simultaneously saying the regulator's numbers add up, where is the contagion risk meant to lie? Thames would be seen as an isolated case: a company that borrowed far too much, managed its operations badly, got caught out by the rise in interest rates and then couldn't keep up with the rest of the industry.

Nobody pretends that recapitalising Thames would be straightforward, but the basic principles aren't complicated. Shareholders get wiped out, and then bondholders take the pain until the debt is reduced to a point at which newly arriving lenders can see a credible proposition. It's anybody's guess today where that point lies until Ofwat speaks. But would an overall 20% haircut, say, for lenders who have advanced £15bn to the regulated entity really cause an earthquake in the rest of UK infrastructure-land? Probably not if the rest of the UK water sector was getting on with raising capital.

The picture, admittedly, would look different if Ofwat's five-year terms in June are regarded as genuinely tough. In that case, the contagion crew may have a point. But it is not today's position.

The share prices of the publicly listed United Utilities and Severn Trent have drifted slightly during the Thames kerfuffle, but not by much. In the wings, the US hedge fund Elliott Management was reported by the FT to be buying Thames debt at a discount to face value on the expectation that losses for bondholders won't be severe. That development sounds like a sign that, far from believing the end is nigh for all UK

infrastructure, financial markets are treating Thames like a special case and assessing how a much-needed financial reconstruction would work.
Original Article: The Guardian by Nils Pratley

EBRD and Switzerland improve water supply in Tajikistan

The European Bank for Reconstruction and Development (EBRD) and the Swiss government are helping to address pressing water treatment and environmental issues in Tajikistan by contributing additional funds towards the completion of upgrades to water and wastewater infrastructure in the city of Fayzobod and 14 neighbouring communities.
The EBRD is organising a financial package of up to € 2.7 million for a local utility, Khojagii Manziliyu Kommunali, which will be supplying water to more than 30,000 residents of the Fayzobod region, a large, 900 km2, administrative district in the Rasht Valley. It consists of the Bank's sovereign loan of up to €1.35 million and a capital grant of €1.35 million anticipated from the Swiss government through the State Secretariat for Economic Affairs (SECO).
The funds will complement an original investment made in 2022. The project will help address issues in critical drinking water and wastewater infrastructure and will promote the sustainable use of water by minimising water losses.
EBRD President Odile Renaud-Basso said: "Our Bank is pledging more resources to strengthen Tajikistan's resilience to climate change and to reduce water consumption by upgrading water networks and associated infrastructure. Once the project has been completed, the local population will benefit from rehabilitated networks and better sanitation."
SECO will additionally provide € 200,000 to support the procurement and construction supervision.
To date, the EBRD has invested €947 million through 168 projects in Tajikistan.
Original Article: European Bank by Anton Usov

Cook Government piping $80 million into WA's water networks

The Cook Government is investing in the future reliability of Western Australia's water and wastewater networks with a $79.9 million investment to be funded in the 2024-25 State Budget.
Under Water Corporation's five-year pipeline renewals program, priority sections of water and wastewater mains will be replaced to mitigate any risk of future blockages, leaks and bursts, and support population and economic growth.
A total of $39.5 million is being provided to reline wastewater pipes in the Perth metropolitan area and regional WA using trenchless technology where possible, to minimise the impact on communities by reducing the need for extensive excavation. The technology works by winding a plastic spiral inside the existing pipe to reline it.

The remaining $40.4 million will be used to renew priority sections of water pipes in some of Western Australia's older suburbs, many of which have been in service for the last century.

Perth's sandy soil profile means some leaks may not be immediately visible on the surface. Replacing ageing sections of piping helps save valuable water and reduces disruption to the community.

Leaks can be caused by numerous factors including the location and age of the asset, pipe material, soil conditions, tree roots or nearby construction.

Water Corporation supplies water to more than 2.6 million customers via 52,000 kilometres of pipeline right across the State, including 15,000 kilometres of water main in the Perth metropolitan area.

Comments attributed to Water Minister Simone McGurk:

"The Cook Government is continuing to provide significant investment for essential maintenance, such as relining or replacing ageing pipes, to prevent leaks and bursts.

"We are committed to reliable essential services for Perth and WA's regions, and are pumping $39.5 million into relining wastewater pipes using trenchless technology to minimise disruption for communities.

"Many of the water pipes in the older suburbs of Perth are close to 100 years old and were designed to carry water in a very different time when there were far fewer people living in WA.

"People often don't think about this sort of infrastructure because it's out of sight. However, these investments are critical to ensure the State's water supply reliability for the future."

Original Article: WA.Gov.au

Bengaluru's water crisis is why Indian cities need 'water urbanism'

India is one of the most water-stressed countries in the world according to a report by the NITI Aayog. The country is home to nearly a fifth of the world's population, but it has only 4% of global water resources. Add to this the rapid depletion of freshwater resources and increasing urbanisation, and you have a country whose urban centres are perennially fighting water crises today. Bengaluru has become a cautionary tale in that regard for most Indian cities.

Data from the Ministry of Jal Shakti reveals that since Independence, the annual per capita availability of water in India has fallen by 75%, from 6,042 cubic metre in 1947 to 1,486 cubic metre in 2021. Any area that has a per capita availability of less than 1,700 cubic metres is considered 'water-stressed'.

The overall availability of water in the reservoirs and river basins in the country has also dropped severely. According to data released by the Central Water Commission (CWC) on April 18, key reservoirs in India were at their lowest in March compared to the level

around the same time in the last five years. The reason for this massive shortfall was attributed to an El Nino-induced bad monsoon last year, the worst since 2018. The season brought one of the driest Augusts for the country.

A multi-front battle

Climate change and population growth exacerbate the challenge. Growing temperatures, depleting surface and groundwater reserves, and fluctuating rain patterns that mark unpredictable monsoons – causing floods in some areas and droughts in others – have complicated the battle against water-related issues. A UN report released in March last year warned that India is expected to be the most severely affected country as the global urban population facing water scarcity grows from 933 million in 2016 to 1.7-2.4 billion people in 2050.

Experts cite several reasons for the crisis. Given that water is a state subject, there are often political tussles over sharing the resource. The Mahadayi Water Dispute between Goa and Karnataka and the Cauvery row between Karnataka and Tamil Nadu are only a few cases in point.

Groundwater makes up for 48% of the urban water supply in India, according to a report by the Centre for Science and Environment. But in seven of the country's 10 most populated cities, groundwater tables have fallen drastically over the past two decades. In rural areas too, groundwater is one of the most important sources for domestic supply and farm irrigation, but overexploitation due to unchecked borewell or tubewell usage has led to rapid depletion of this resource. In many cities, groundwater levels have declined at rates much faster than the annual limit of 20 cm a year, being pushed to depths as low as 20 m in some areas.

Around 35% of India's population lives in cities, but one in three people residing in informal settlements in urban areas still don't have access to piped or tap water. Overall, 40% of people in urban areas in India don't get tap water, according to the Multiple Indicator Survey in 2020-21 published by the National Sample Survey Office. Continuous piped water supply remains a dream for most urban Indians. In addition to this, urban water bodies like rivers, lakes and ponds are usually heavily polluted.

Experts feel that the prime reason for water crises in urban areas is the absence of 'water urbanism', a concept that posits that water must be understood within the context of the urban ecosystem. Rainfall, water retention, rainwater harvesting, industry and agriculture use, recycling and sewage are all seen as part of an urbanised ecology that calls for the involvement of major stakeholders: civic authorities, citizens, public policy experts, etc.

Bengaluru becomes a cautionary tale

Citing the case of Bengaluru, Dr. T.V. Ramachandra, coordinator of the Centre for Ecological Sciences at the city's Indian Institute of Science, says, "Bengaluru's landscape has witnessed a 1,078% increase in paved surfaces (concrete area) with the loss of

porous surfaces (loss of 88% of vegetation cover and 79% of water bodies) in the five decades between 1973 and 2023, thanks to unplanned urbanisation due to lack of coordinated good governance or fragmented governance with too many inefficient and corrupt para-state agencies." He further adds, "Converting porous landscapes to paved surfaces has led to a lack of groundwater recharge, coupled with a simultaneous overexploitation of groundwater due to the mushrooming of high-rise buildings throughout the city." And not just metros, even smaller cities like Lucknow, Bathinda, Jaipur and Patna are now facing water shortages due to reasons not very different from the ones mentioned above.

India has all kinds of good remedies, but so far, they have existed only on paper. Urban planning, compulsory green spaces in cities, rainwater harvesting, better water management are measures that find mention in most civic plans. But the execution of these ideas in letter and spirit is the key to solving India's deepening water problems.

Original Article: Nagaland Post by Bharti Mishra Nath

Mexico water wars: Farmers take over avocado orchards that need too much water

As a drought in Mexico drags on, angry subsistence farmers have begun taking direct action on thirsty avocado orchards and berry fields of commercial farms that are drying up streams in the mountains west of Mexico City.

Rivers and even whole lakes are disappearing in the once green and lush state of Michoacán, as the drought combines with a surge in the use of water for the country's lucrative export crops, led by avocados.

In recent days, subsistence farmers and activists from the Michoacán town of Villa Madero organized teams to go into the mountains and rip out illegal water pumps and breach unlicensed irrigation holding ponds.

A potential conflict looms with avocado growers—who are often sponsored by, or pay protection money to, drug cartels.

Last week, dozens of residents, farmworkers and small-scale farmers from Villa Madero hiked up into the hills to tear out irrigation equipment using mountain springs to water avocado orchards carved out of the pine-covered hills.

The week before, another group went up with picks and shovels and breached the walls of an illegal containment pond that sucked up water from a spring that had supplied local residents for hundreds of years.

"In the last 10 years, the streams, the springs, the rivers have been drying up and the water has been captured, mainly to be used for avocados and berries," said local activist Julio Santoyo, one of the organizers of the effort. "There are hamlets in the lower part of the township that no longer have water."

Santoyo estimated that about 850 of the plastic-lined, earthen containment ponds have sprung up in the hills around Villa Madero, usually soon after planters have illegally logged or burned the native pine forest. Pines help the soil retain water, while avocado trees deplete it.

Francisco Gómez Cortés said residents of his hamlet, El Sauz, had been asking the landowner for 15 years to allow the spring to flow downhill to their community.

After a year in which Mexico received only about half its normal rainfall, residents became desperate, and last week they worked up the courage to hike up the hill and rip out pumps and hoses for the avocado orchard.

“We don’t have enough water for human consumption,” Gómez Cortés said.

“It’s sad. It’s sad to walk down these trails that are now dry, when they once had trees and springs,” he said. “They haven’t even left any water for the (forest) animals that nest along the banks.”

In a sign of how seriously the local government is taking the potential threat, the group was accompanied by the mayor of Villa Madero, who blamed outsiders for the problem.

“There are people who aren’t from this town, who come to our township and are invading us,” Mayor Froylan Alcauter Ibarra said. “They are taking water away from the people who live downhill, and they don’t realize these are the poorest people.”

Residents say they don’t want to deny water entirely to the orchards and have proposed an agreement to give landowners 20% of the water from local streams, if they allow the remaining 80% to keep flowing. They say they haven’t gotten any response yet.

Original Article: Fast Company by Associated Press

Risky debt investors flood into Thames Water debt as regulator plots carve-up

American debt investors renowned for taking risky bets on ailing companies’ survival have been buying Thames Water bonds in a punt that London’s water provider will have a better-than-expected turnaround.

Anchorage Capital, which made $2bn (£1.6bn) from buying up swathes of Metro-Goldwyn-Mayer (MGM) debt at a discount when the production company was close to bankruptcy, and King Street, which bought Wework debt when it was in $18bn (£14.2bn) of arrears, have both started picking up Thames Water’s bonds, according to reports.

Thames Water is currently buckling under a £15bn debt pile, and the price of its bonds has collapsed over fears it might go into administration. Last week, some Thames Water bonds changed hands for just 63p on the pound, meaning that a pound’s worth of company debt is worth 37 per cent less than its original price.

Four other funds—Sculptor, Casterbridge, Polus and Sona—are also said to be doing the same after US investment giant Elliot Management emerged as the first firm to gamble on the water company’s survival.

Thames Water's hopes of recovery continue to be stymied by growing debts, which totalled less than £5bn in 2008. The annual interest bill alone is expected to reach £3bn by 2030.

All six investment firms were approached for comment.

Ofwat plans for break-up of Thames Water

The investors' positions come as Ofwat, the water regulator, was revealed to be working on rescue plans for Thames Water that include breaking up the supplier's multiple operations and selling them off to rivals.

The rationale behind the major carve-up is to encourage competition in a bidding process that would maximise value. Rival firms, which include the like of Severn Trent, Southern Water and Wessex Water, are, according to The Sunday Telegraph, interested in putting bids together.

The plans, dubbed Project Telford, is seen to be a favourable outcome among government officials because it would allow the Government to avoid having to take temporary ownership. Doing so would land the taxpayer with a bill that could tip into billions of pounds.

Thames Water declined to comment on the break-up plans. A spokesman for Ofwat said: "Safeguards are in place to ensure that services to customers are protected regardless of issues faced by shareholders of Thames Water."

Thames Water customers have paid over £500m to fund Super Sewer

Last week, it was also revealed that Thames Water customers will together have paid more than £500m on top of their water bills to fund the new "Super Sewer" set to open next year.

The £4.5bn sewer has been partly funded thanks to a surcharge on the water company's bills, currently £26 a year for each household. Customers have already paid £430m in the eight years since ground was broken on the project, which will rise to over £540m when it opened in March 2025.

Original Article: City AM

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