

Veles Water Weekly Report

1. **WATERTALK**
TECHNICAL ANALYSIS BY JOSHUA BELL
2. NQH2O INDEX VS H2O FUTURES PRICE PERFORMANCE
3. NQH2O INDEX HISTORY
4. H2O FUTURES TECHNICAL REPORT
5. NQH2O INDEX AND H2O FUTURES VOLATILITY ANALYSIS
6. CENTRAL VALLEY PRECIPITATION REPORT
7. RESERVOIR STORAGE
8. SNOWPACK WATER CONTENT
9. CALIFORNIA DROUGHT MONITOR
10. CLIMATE FORECAST
11. WESTERN WEATHER DISCUSSION
12. WATER NEWS
 - I. CA WATER NEWS
 - II. US WATER NEWS
 - III. GLOBAL WATER NEWS

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VelesWater



WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Joshua Bell

CLICK THE LINK BELOW

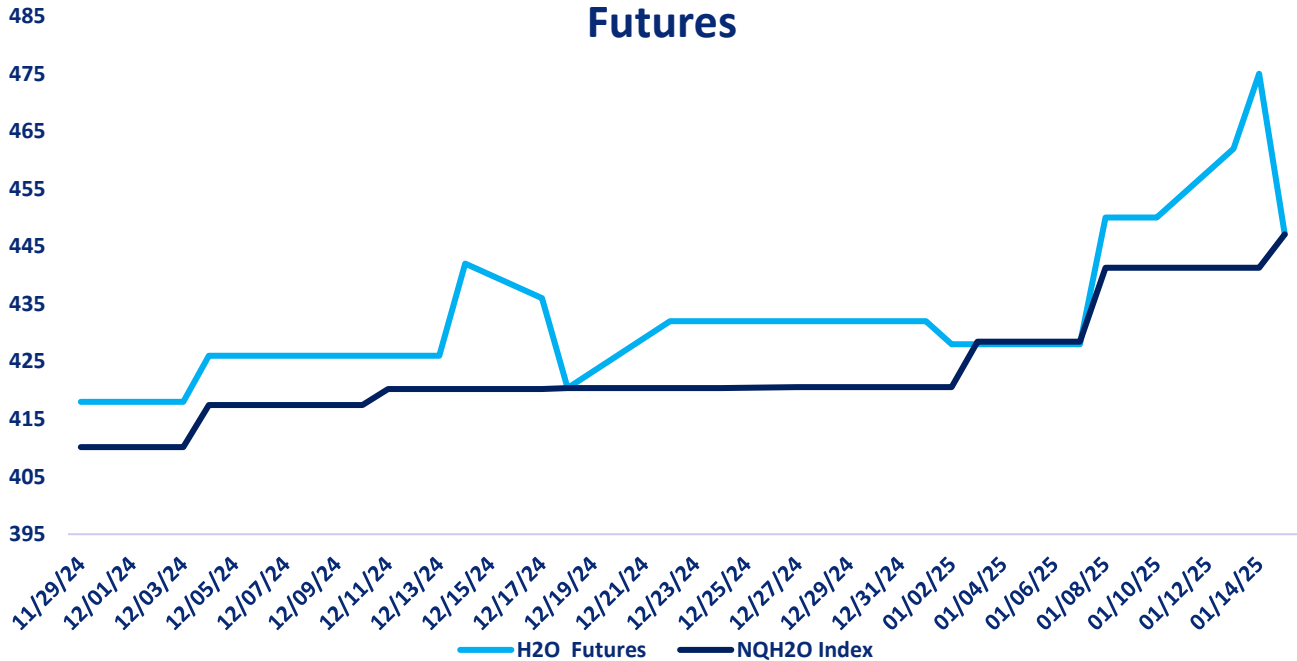
“A 2 minute technical analysis video of H2O futures”

<https://vimeo.com/1047396452?share=copy#t=0>



NQH2O INDEX PRICE vs H2O FUTURES PRICE

1 Month Price Performance NQH2O Index vs H2O Futures



Price Chart Based upon Daily Close

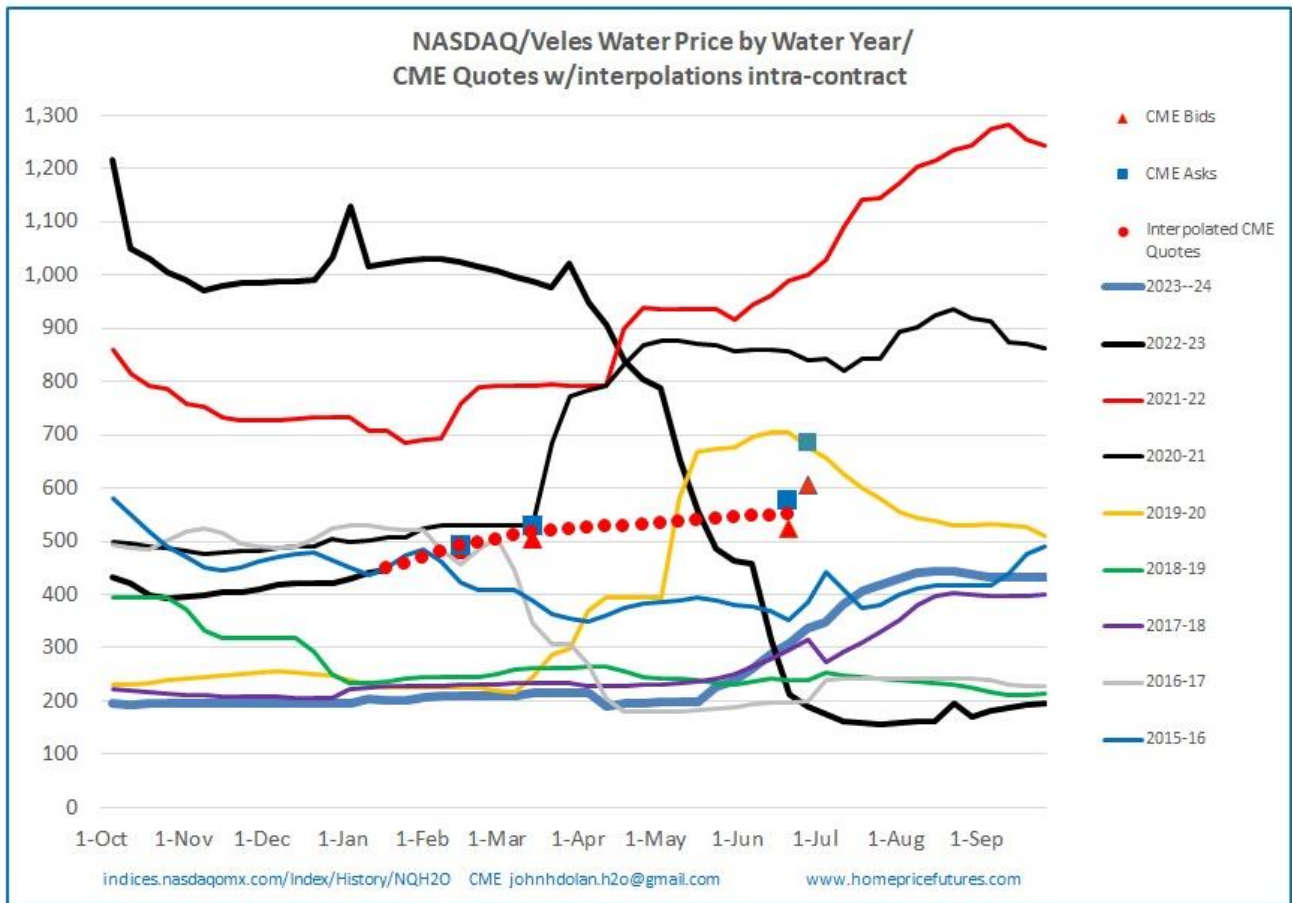
The new NQH2O index level of \$447.10 was published on January 15th, up \$5.82 or 1.32% from the previous week. The January settled at the new index level and the February contract is considered the front month. The futures prices have closed at a premium of \$8.72 to \$33.72 versus the index over the past week.

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

Feb 25	485@493
Mar 25	503@529
June 25	525@575
June 26	605@685



NQH20 INDEX HISTORY

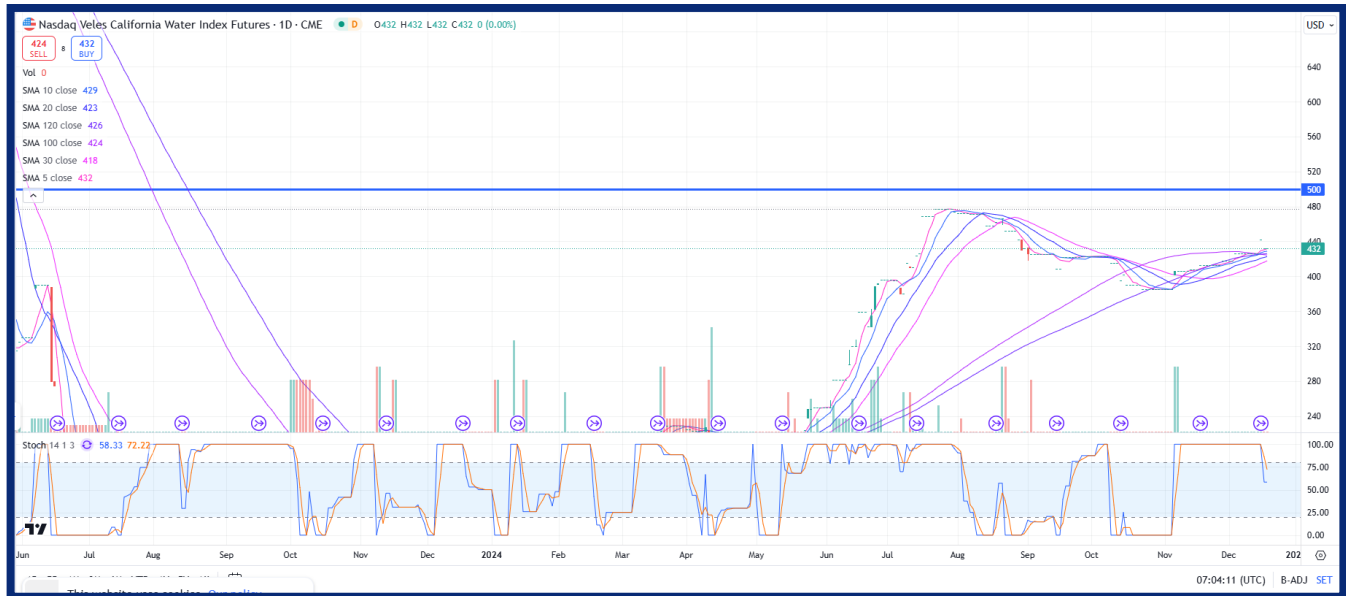


The graph above shows the CME water contracts for February 2025, March 2025, June 2025 and June 2026 superimposed over historical NASDAQ Veles water indices. The interpolated curves for 2024-25 and 2025-26 (to include June 2026 contract) are shown in red dots.

(John H Dolan, CME Market Maker)



H2O FUTURES TECHNICAL REPORT



Price Action

- **Current Price: 486**
- The price has increased by 2.32% in this trading session, signalling continued bullish momentum.

Moving Averages (MA) Analysis

- **MA 5 (5-day Moving Average): 465**
The current price is above the MA 5, indicating strong short-term bullish momentum.
- **MA 10 (10-day Moving Average): 449**
The price is significantly above the MA 10, reinforcing continued short-term bullish strength.
- **MA 20 (20-day Moving Average): 439**
The price is well above the MA 20, signalling robust bullish momentum in the short term.
- **MA 30 (30-day Moving Average): 435**
The price is above the MA 30, confirming medium-term bullish momentum.
- **MA 100 (100-day Moving Average): 419**
The price is above the MA 100, indicating a strengthening long-term trend.
- **MA 120 (120-day Moving Average): 428**
The price is above the MA 120, confirming a strong long-term bullish trend.



Support and Resistance

- **Immediate Resistance: 500**
This level remains a critical barrier and has been tested multiple times. A breakout above this level would likely confirm further upward movement.
- **Immediate Support: 486 (current price level)**
If the price falls, the next significant support would be around the MA 100 at 419.

Stochastic Oscillator

- **Stochastic (K%: 100, D%: 99.31)**
The stochastic indicator shows that the market is in overbought territory, signalling strong bullish momentum. However, this also suggests the potential for short-term consolidation or a pullback.

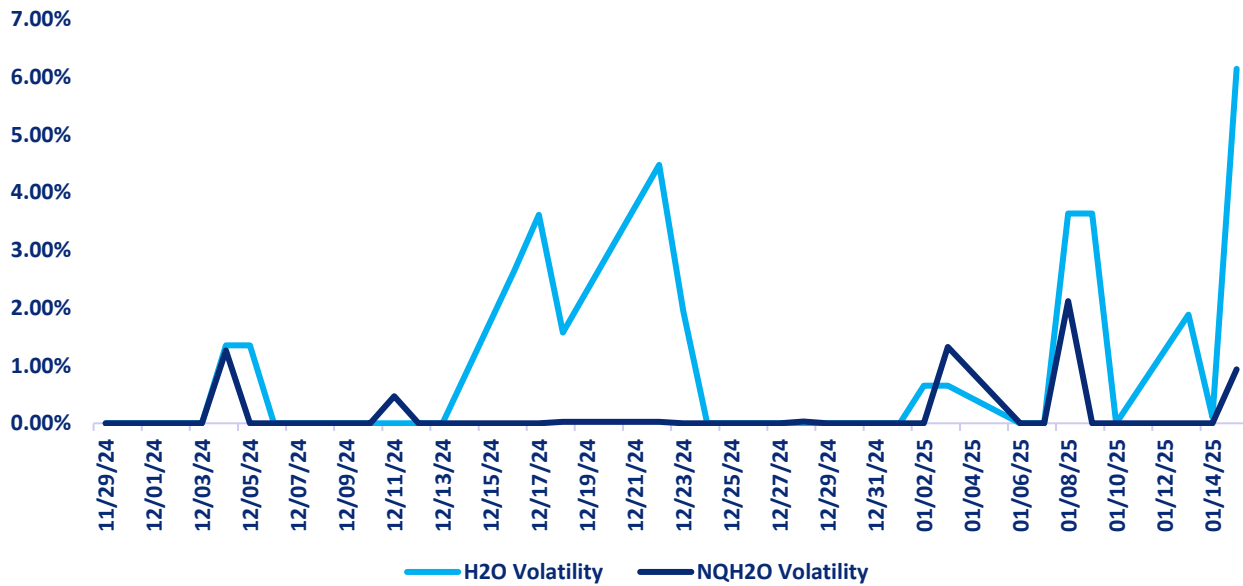
Summary

- The futures are experiencing strong bullish momentum across all timeframes, with the price above all major moving averages, including the long-term MA 100 and MA 120.
- The stochastic indicator signals that the market is overbought, which could result in short-term consolidation or a minor pullback.
- **Key Levels to Watch:**
 - Resistance at 500: A breakout here could trigger further upside.
 - Support at 486, with additional support around 419 (MA 100).



H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



DAILY VOLATILITY

Over the last week the January contract daily future volatility high has been 3.63%.

ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	28.85%	2.58%	1.71%	1.68%
H2O FUTURES	N/A	11.28%	10.84%	7.87%

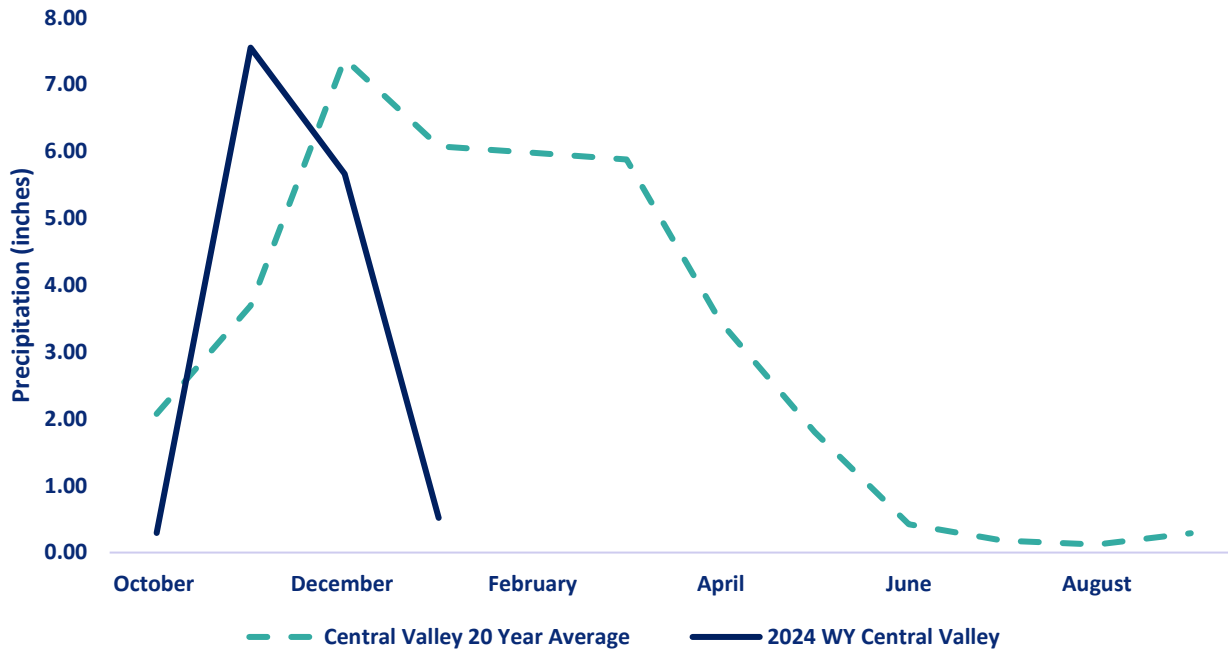
For the week ending on January 15th, the two-month futures volatility is at a premium of 8.71% to the index, up 2.57% from the previous week. The one-month futures volatility is at a premium of 9.14% to the index, up 4.04% The one-week futures volatility is at a premium of 6.19% to the index, volatility.

*Above prices are all **HISTORIC VOLATILITIES**. All readings refer to closing prices as quoted by CME.*



CENTRAL VALLEY PRECIPITATION REPORT

Central Valley Precipitation Index



Central Valley average is calculated using data from 19 weather stations in the Central Valley, California.
Data as of 15/01/2025

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)	0.45	0.45	7.20	39	85
TULARE 6 STATION (6SI)	0.05	0.05	1.08	28	64
NORTHERN SIERRA 8 STATION (8SI)	1.06	1.06	14.42	38	93
CENTRAL VALLEY AVERAGE	0.52	0.52	8.56	35	81

RESERVOIR STORAGE

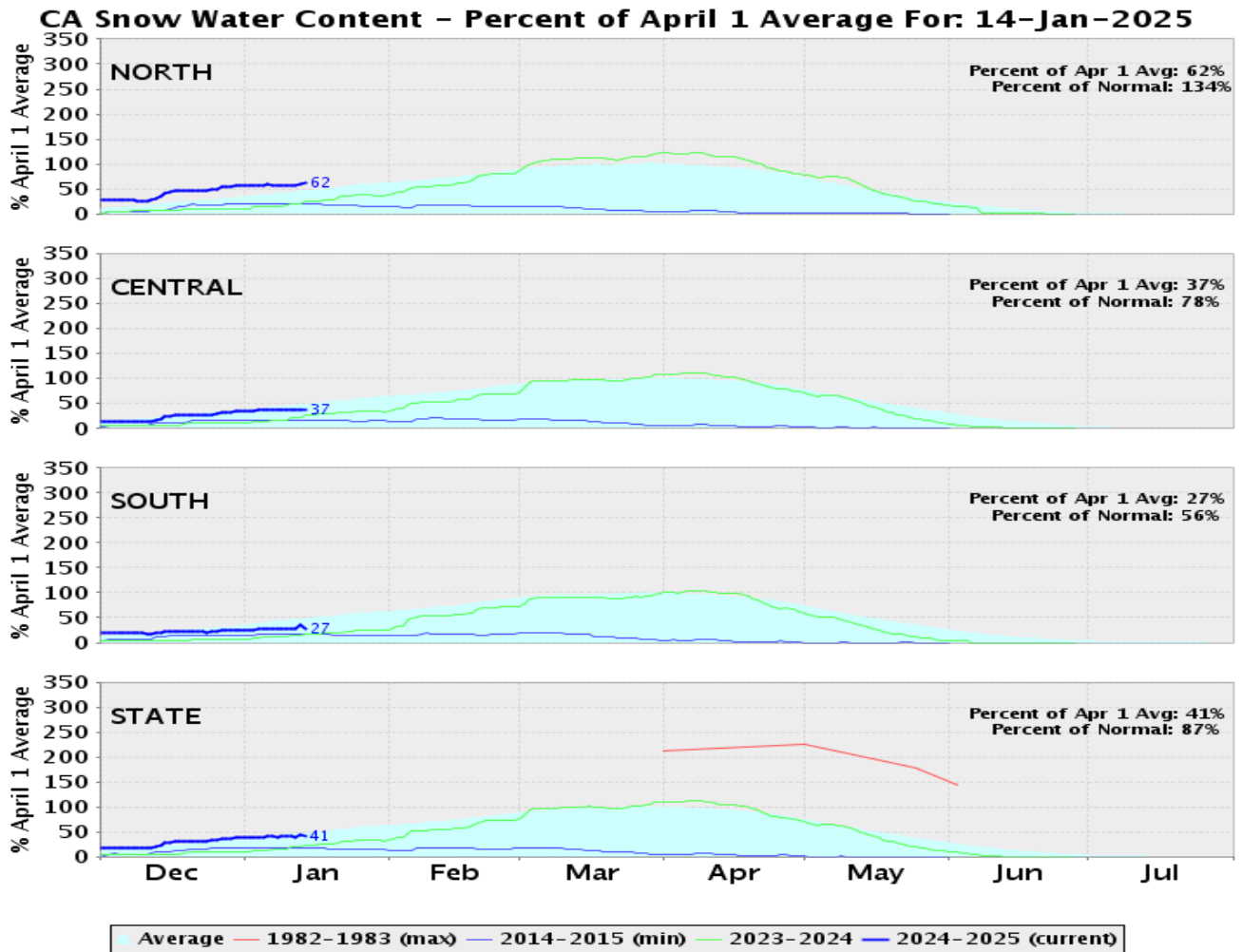
RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	*% HISTORICAL AVERAGE
TRINITY LAKE	1,900,174	78	88	126
SHASTA LAKE	3,502,493	77	113	125
LAKE OROVILLE	2,497,180	71	127	129
SAN LUIS RES	1,487,079	73	86	108

*% 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	15.2	-0.7	38	139	58
CENTRAL SIERRA	10.4	0.4	39	85	37
SOUTHERN SIERRA	6.5	0.3	28	64	28
STATEWIDE	10.7	0	37	93	40

*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.

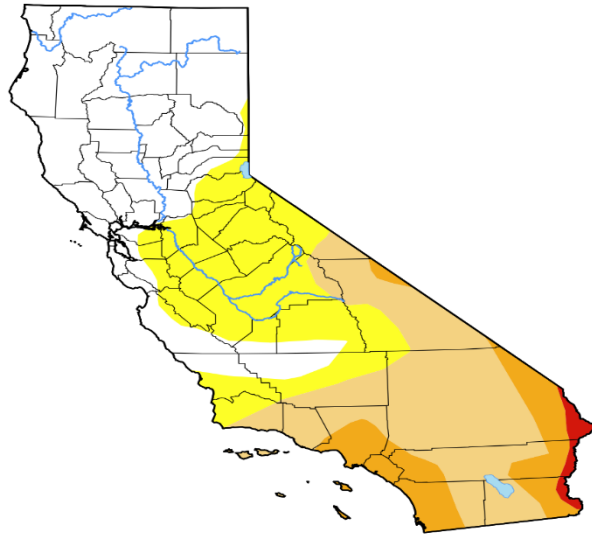
** April 1st is used as the benchmark as it when the snowpack in California is generally deepest. It has been used the benchmark date since 1941 by DWR and can be used to predict spring river flow.



DROUGHT MONITOR

California

[Home](#) / California



Map released: Thurs. January 9, 2025

Data valid: January 7, 2025 at 7 a.m. EST

Intensity

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

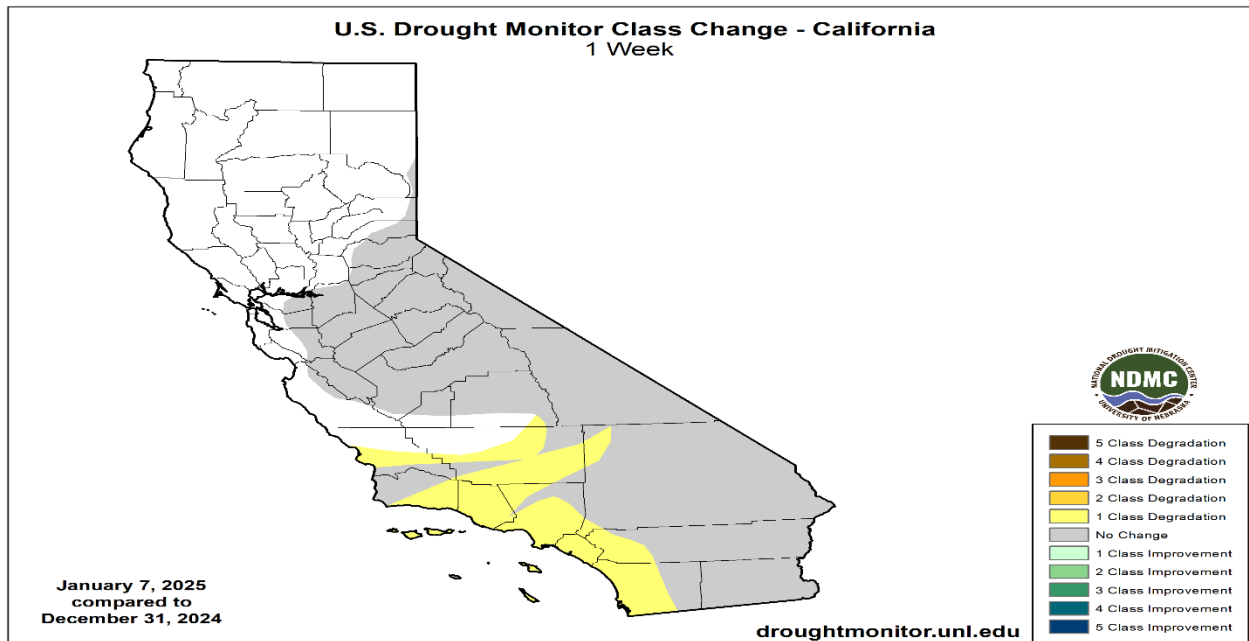
Authors

United States and Puerto Rico Author(s):

[Brad Pugh](#), NOAA/CPC

Pacific Islands and Virgin Islands Author(s):

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



Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2025-01-07	39.11	60.89	35.93	10.43	1.06	0.00	108
Last Week to Current	2024-12-31	40.90	59.10	31.52	5.70	1.06	0.00	97
3 Months Ago to Current	2024-10-08	24.68	75.32	13.77	1.72	0.00	0.00	91
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	2024-01-09	96.65	3.35	0.00	0.00	0.00	0.00	3

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 relatively dry California but wispy clouds off San Francisco show signs of a wind still blowing. There is cloud cover and frontal systems backing up over the Pacific but these may take a few days to reach landfall and most probably only in Northern California. The southern US is relatively dry but some weather coming out of the Gulf of Mexico which may affect the Florida region. In the northern US there are cold weather systems looking to bring snow and other precipitation to these areas.

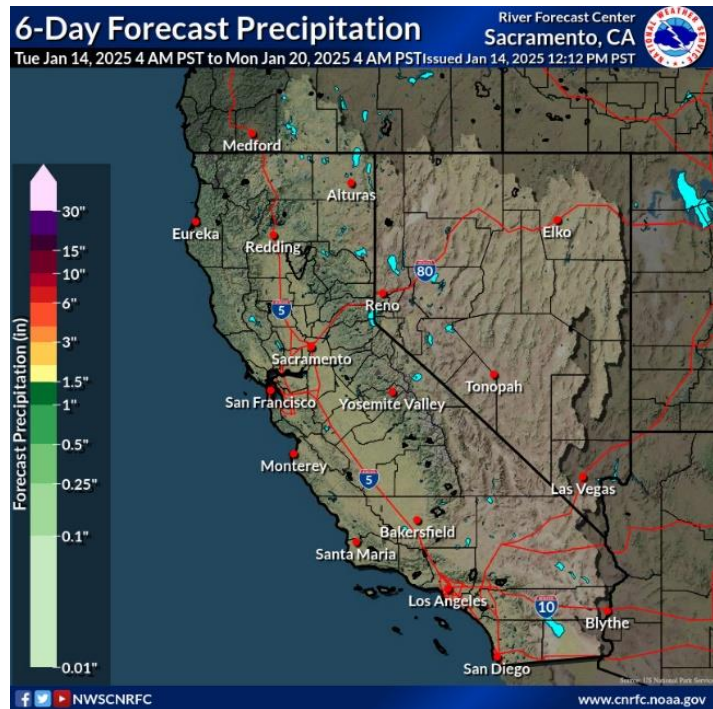


10 Day Outlook

High pressure off the west coast with an upr trof carved over the interior of the country will be the general pattern for the upcoming weekend with rather dry northerly flow over the region. A weak disturbance moving southward near the coastal waters will reach southern CA for the weekend...and there still appears to be the potential for a couple hundredths of an inch of precip along the immediate coast of Orange and San Diego counties...mainly on Saturday.

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

Map Ref: Zoom Earth



**WESTERN WEATHER DISCUSSION**

A dry start to the winter and using 90-day SPI and soil moisture, moderate drought (D1) was expanded across southern California. The NDMC short-term blend, 90-day SPI, and many 28-day average streamflows below the 10th percentile supported the addition of severe drought (D2) to portions of southern California. The Santa Ana winds during early January are likely to exacerbate the worsening drought conditions. Consistent with the NDMC short-term blend along with 30 to 120-day SPI, D2 was expanded for portions of southeastern Arizona and southwestern New Mexico. Based on water year to date (WYTD: October 1, 2024 to January 6, 2025) precipitation averaging above normal and snow water equivalent (SWE) above the 80th percentile, a 1-category improvement was made to southwestern Idaho, eastern to central Oregon, eastern Washington and a small part of northwestern Montana. This 1-category improvement is also supported by NDMC drought blends and SPIs at various time scales. As of January 7, SWE was above-normal (period of record: 1991-2020) across the southern Cascades along with eastern Oregon and southwestern Idaho. SWE was highly variable for the Sierra Nevada Mountains and below-normal across the Four Corners Region.

Reference:

Lindsay Johnson, National Drought Mitigation Center

Richard Tinker, NOAA/NWS/NCEP/CPC



WATER NEWS

CALIFORNIA WATER NEWS

San Jose water agency to vote on whether to help fund Gov. Gavin Newsom's \$20 billion Delta tunnel project

Silicon Valley's largest water agency will vote Tuesday on whether to support Gov. Gavin Newsom's plan to spend \$20 billion to build a massive, 45-mile long tunnel under the Sacramento-San Joaquin Delta to make it easier to move water from Northern California to Southern California.

The board of the Santa Clara Valley Water District, a government agency based in San Jose, will [consider contributing \\$9.7 million toward planning and geotechnical studies](#) for the project, which it says could improve its water supply reliability — but which is also one of California's most long-running and controversial water proposals.

Newsom's idea is to build [a 36-foot diameter concrete tunnel](#) to take water from the Sacramento River about 15 miles south of Sacramento, near the town of Courtland, and move it roughly 150 feet deep, for 45 miles under the marshes and sloughs of the Delta to the massive State Water Project pumps near Tracy, reducing reliance on them.

In recent years, courts have ruled that the pumps must be turned down, or shut off temporarily, at certain times of the year when salmon, Delta smelt and other endangered fish swim near them, limiting when farms and cities such as San Jose, Los Angeles and San Diego can receive water from the Delta. A tunnel bored below Delta mud would allow the state to more easily move water south during very wet winters in "big gulps," supporters argue, which is particularly important as climate change makes wet storms wetter and drought years more severe.

"With our changing hydrology, the stakes are higher for us to need to move water when we get these big events," said Karla Nemeth, director of the California Department of Water Resources, which would oversee construction.

Nemeth noted that in the spring of 2023 when California was being drenched with atmospheric river storms, 156,000 cubic feet of water per second — an enormous amount similar to the flow of the Columbia River — was flowing through the Delta and under the Golden Gate Bridge out to the sea. When the state and federal pumps near Tracy are turned up to maximum capacity, they can move about 15,000 cfs. The tunnel would help California move more water south more reliably, into San Luis Reservoir, groundwater storage and other locations, she said.

Had the tunnel been in place last spring during atmospheric river storms, it would have moved 941,000 acre feet of water — enough for 9.8 million people for a year, she added, which otherwise flowed out to sea.



VELES WATER WEEKLY REPORT

Opponents of the project, who include environmental groups and Delta counties such as Contra Costa, call the project a Southern California water grab that will take too much fresh water, degrading water quality in the Delta and San Francisco Bay and harming populations of salmon and other fish and wildlife.

“The Delta Tunnel would burden our infrastructure and communities with over a decade of unbearable construction, and ultimately increase water salinity and harmful algal blooms, in addition to causing the Sacramento River to flow backwards at times,” wrote Contra Costa County Supervisor Ken Carlson in a letter to the Santa Clara Valley Water District last week that was also signed by supervisors from Solano, Yolo, San Joaquin and Sacramento counties.

The project has been around for generations. In 1982, former Gov. Jerry Brown called it “the peripheral canal.” That year voters rejected it in a statewide election that became a Northern California vs Southern California water battle. Former governors Gray Davis and Arnold Schwarzenegger both tried to bring it back, without luck. Brown, renaming it the “California Water Fix,” pushed a two-tunnel version a decade ago, only to leave office in 2019 with it stalled after the massive Westlands Water District in Fresno pulled out of the partnership.

Newsom took office in 2019 and [downsized the plan to one tunnel](#). He emphasized how it was needed amid climate change and against earthquakes that could wreck Delta levees.

In December the state certified its final environmental impact statement. Also that month, the huge Metropolitan Water District of Southern California, which provides water to 20 million people, voted to contribute \$141 million for its remaining studies.

There are 18 agencies that have agreed to be partners in the project and help pay its costs. The goal is to break ground in 2027, Nemeth said, with construction finished in 2042.

The big question for those local agencies — whether to fund the \$20 billion construction cost and who will be on the hook for overruns — will come in 2026 or 2027. The Santa Clara Valley Water District’s share would be about \$650 million.

Two other Bay Area water agencies, the Alameda County Water District in Fremont, and Zone 7 Water Agency in Livermore, have also recently endorsed the project and agreed to pay for some of its studies. East Bay MUD and Contra Costa Water District are not partners on the project.

Newsom has called the project one of his top priorities during the final two years of his term.

In 2019, the Santa Clara Valley Water District Board voted 4-3 to endorse the plan and contribute \$11 million toward its planning and environmental studies.



VELES WATER WEEKLY REPORT

“The Delta has many risks,” said Cindy Kao, the district’s imported water manager.

“Sea level rise, climate change, seismic issues and environmental issues. This will make our water supplies more resilient and more reliable.”

Critics say water agencies across the state should do more to develop local supplies, such as stormwater capture, recycled water and conservation, instead of relying on water shipped from hundreds of miles away.

“It’s a really risky and unsure project,” said Katja Irvin, conservation chair for the Guadalupe Regional Group the Sierra Club. “We’re going to be spending a lot of money on it before we know whether it’s going to be feasible. And we could be spending that money instead repairing local dams or lowering water rates.”

Original Article: [The Mercury News by Paul Rodgers](#)

'We need to be prepared': La Niña to bring extreme weather shifts to California

At the beginning of the new year, California’s snowpack looked promising. On Jan. 2, the state’s Department of Water Resources [measured the snowpack at 108% of average](#), for that date.

The [bomb cyclone](#) in November and a push of winter storms in December had set up California’s mountains with a better start than last year. On the same day last year, the state’s snowpack was just 28% of average, to date.

“While our snowpack looks good now, we have a long way until April when our water supply picture will be more complete,” said Department of Water Resources Director Karla Nemeth in a statement.

No one knows how the rest of this winter will play out. In both 2013 and 2022, dry conditions followed above-average snowpacks in January. However, it’s worth noting that these early statewide snowpack figures are glossing over the extreme shifts between wet and dry weather in California.

So far this winter, storms from the Pacific Northwest have been sweeping across the far northern parts of California, while Southern California experiences [record-setting drought conditions](#). Since Jan. 1, the Sierra Nevada has been in a holding pattern of perpetual sun, with no sign of a storm in the forecast.

“Extreme shifts between dry and wet conditions are continuing this winter and if the past several years are any indication, anything could happen between now and April and we need to be prepared,” Nemeth said in the statement.

And now, in light of a Climate Prediction Center report last week, it seems this trend — a wetter Northern California while Southern California goes dry — may hold until early spring.

After a bit of a [waiting game](#), La Niña conditions have finally materialized, characterized by below-average ocean temperatures in the Pacific, according to the Climate Prediction



Center. A [statement](#) issued last week says there is a 59% chance that La Niña’s influence will last through early spring, between February and April, and a 40% chance it could hold even longer.

“La Niña conditions are present and are expected to persist through February-April 2025,” the Climate Prediction Center announced in the statement. The center did not respond to questions sent by SFGATE before publication.

Original Article: [SF Gate by Julie Brown Davis](#)

‘Completely Dry’: How Los Angeles Firefighters Ran Out of Water

Capt. Kevin Easton and his firefighting team had already spent hours battling an out-of-control fire sweeping through Los Angeles’s Pacific Palisades area, leaving gutted homes in its wake. Then, around midnight, their water lines started to sputter. Before long, the hydrants had run dry.

“Completely dry — couldn’t get any water out of it,” said Captain Easton, who was part of a small, roaming patrol of firefighters who were trying to protect the community’s Palisades Highlands neighborhood. Even on Wednesday afternoon — hours after the hydrants had gone dry — there was still no water. Houses in the Highlands burned, becoming part of the more than 5,000 structures destroyed by the Palisades fire so far. Officials now say the storage tanks that hold water for high-elevation areas like the Highlands, and the pumping systems that feed them, could not keep pace with the demand as the fire raced from one neighborhood to another. That was in part because those who designed the system did not account for the stunning speeds at which multiple fires would race through the Los Angeles area this week.

“We are looking at a situation that is just completely not part of any domestic water system design,” said Marty Adams, a former general manager and chief engineer at the Los Angeles Department of Water and Power, which is responsible for delivering water to nearly four million residents of Los Angeles.

Municipal water systems are designed for firefighters to tap into multiple hydrants at once, allowing them to maintain a steady flow of water for crews who may be trying to protect a large structure or a handful of homes. But these systems can buckle when wildfires, such as those fueled by the dry brush that surrounds Los Angeles’s hillside communities, rage through entire neighborhoods.

Original Article: [NY Times by Tim Arango, Mike Baker and Nicholas Bogel-Burroughs](#)

Why fire hydrants and water supply failed during Los Angeles wildfires

California’s Los Angeles continues to grapple with the wildfires that broke out on January 7. The wildfires, which have [killed 24 people](#), are presenting a range of challenges for authorities and firefighters attempting to extinguish them.

Here is a look at the latest state of the fires, and what is hindering firefighters’ efforts.



What is the current status of the LA wildfires?

The fires have burned 16,300 hectares (40,300 acres) and destroyed more than 12,300 structures, according to the California Department of Forestry and Fire Protection (Cal Fire).

Three fires are still actively burning, according to Cal Fire. The first and largest fire, which is burning in the [Pacific Palisades](#), is at 13 percent containment, Cal Fire says. The Eaton fire, which is affecting Altadena, is 27 percent contained. The Hurst fire is 89 percent contained.

Containment is a term firefighters use to represent how much of a control line has been placed around a fire, which could then allow firefighters – at least in theory – to contain its spread. Containment does not equal safety.

What are the main challenges surrounding the wildfires?

Santa Ana winds and dry conditions have made it difficult for firefighters to extinguish the blaze.

“Extreme wind conditions did not allow for a common wildland firefighting approach, which is water dropped by air,” Faith Kearns, a water and wildfire expert with the Global Futures Laboratory at Arizona State University, told Al Jazeera. “Helicopters, for example, were not able to fly under those conditions early on in the fires, so the demand on hydrants and other urban water infrastructure was intense.”

The wildfires have also stoked anxiety about insurance among those California homeowners who have lost their property. A week into the fires, California Insurance Commissioner Ricardo Lara invoked moratorium powers, suspending all policy cancellations and refusals for renewal for one year.

Issues with low water supply have also hindered firefighting efforts.

Why did the fire hydrants run dry?

The rescue efforts in the Palisades were hindered by low pressure in the water supply at elevated areas.

Los Angeles receives its water supply from 114 tanks in total, all of which were fully filled before the fires. However, the three water tanks in the elevated Palisades were unable to be refilled due to high demand.

On the morning of January 8, Janisse Quinones, the chief executive of the Los Angeles Department of Water and Power, told reporters that water tanks in Palisades had been depleted.

“We pushed the system to the extreme,” she said, adding that “four times the normal demand was seen for 15 hours straight, which lowered our water pressure.”

The fire started in the Pacific Palisades neighbourhood at 10:30am (18:30 GMT) on Tuesday, according to Cal Fire. Two of the one-million-gallon tanks, located at an elevation in the Palisades, ran out late on Tuesday.



VELES WATER WEEKLY REPORT

By 3am (11:00 GMT) on Wednesday, the third tank had also run out, Quinones said. Water reserves were located at a lower elevation, which made it difficult to refill the high-elevation tanks.

Quinones said fire hydrants are built to extinguish fires from one or two houses at once, not hundreds of them.

Kearns co-authored a report in 2021, discussing potential solutions to California's water infrastructure woes in the face of wildfires.

"Some suggestions for this particular challenge included creating backup power supplies for water infrastructure like pumps and installing larger pipes for fire flows," Kearns said. "Some of the questions moving forward will be about costs – some of the thousands of water providers in California are relatively well resourced and many others are not – and risk tolerance. I hope these events will lead to a larger conversation about how to help water providers adapt to climate change."

On the night of January 9, firefighters stopped tapping into fire hydrants at all. On January 10, Democrat California Governor Gavin Newsom called for an independent investigation into water shortages during the wildfires.

What really happened to the water supply?

Republican President-elect Donald Trump has blamed Newsom for damage caused by the fires.

On January 8, he wrote on his Truth Social platform that Newsom "refused to sign the water restoration declaration put before him that would have allowed millions of gallons of water, from excess rain and snow melt from the North, to flow daily into many parts of California, including the areas that are currently burning in a virtually apocalyptic way".

The lack of water has also been criticised by others. Los Angeles Fire Chief Kristin Crowley said during a local news interview: "When firefighters arrive at a hydrant, they expect water to be available."

However, others have [dismissed Trump's allegations](#) that California's water policy is to blame. Instead, the shortages happened because Los Angeles is simply not designed to bear a fire incident as large and intense as the one that is burning in Palisades and elsewhere, they said.

Southern California has ample water stored, said Mark Gold, the water scarcity solutions director at the Natural Resources Defense Council and a Southern California Metropolitan Water District board member.

"It doesn't matter what's going on at the Bay Delta or the Colorado [River] or Eastern Sierra right now," Gold said. "We have all this water in storage right now. The problem is, when you look at something like firefighting, it's a more localised issue on where your water is. Do you have adequate local storage?"



VELES WATER WEEKLY REPORT

Fires can damage water pipes, further reducing water pressure. While the situation is still evolving, “what we’ve seen in similar situations is that you can have direct fire damage to water infrastructure like pipes and pumps,” Arizona State University’s Kearns said, adding that this “can lead to water loss from a system or depressurisation”.

When are the Santa Ana winds going to stop?

These hot, dry gusts blow from the interior of the region towards the coast and offshore. They dry out vegetation, making it very flammable.

On the night of January 7, gusts up to 100mph (160km/h) were recorded at higher elevations, according to AccuWeather meteorologist Danielle Ehresman.

While the winds slowed down by January 9, they are expected to intensify again until Wednesday evening, with officials warning that the strongest gusts are expected on Tuesday.

A red flag warning is in place until 6pm local time (02:00 GMT) on Wednesday.

Mountainous areas with elevation are expected to experience gusts between 25mph (40km/h) and 40mph (95km/h) in the coming days, and speeds could reach up to 70mph (112km/h).

Original Article: [AlJazeera by Sarah Shamim](#)

Are the Resnicks “hoarding” water while LA burns? No

Almost as soon as the unprecedented scale of the Los Angeles wildfires hit the public’s awareness, SJV Water started getting some pretty out there emails and texts alleging that Lynda and Stewart Resnick “own” 60% (75%, even 80%) of California’s water and were somehow “hoarding it” so it couldn’t be used to put out the flames.

No. This is absolutely false information.

The Resnicks and their \$6 billion farming company, the Wonderful Company, do not own or control anywhere near that percentage of water in California. And what they do own or control, has nothing to do with the Los Angeles region’s supplies.

In fact, it’s fairly ironic that the very people often accused of selling the San Joaquin Valley’s water to LA for profit, are now accused of keeping it from the same region.

It should also be noted that the multi-billion dollar J.G. Boswell Farming Company, headquartered in Pasadena, [owns or controls](#) substantial amounts of water in the San Joaquin Valley, but hasn’t been singled out in vicious misinformation campaigns. Nor has John Vidovich a wealthy northern California developer, who controls Sandridge Partners, a major landowner with water assets in the valley. The list of major water players is long. All of which makes one wonder, why the Resnicks?

That question aside, the Resnicks do own or control a lot of water. But nothing close to amounts claimed in the viral posts now circulating.



VELES WATER WEEKLY REPORT

“The Wonderful Company uses less than 1% of the state’s water,” wrote Seth Oster, a Wonderful spokesman, in an email. The company put out a thread on “X” in response to the swirl of social media falsities.

“There is zero truth that any individual or company, much less ours, owns or controls most of the water in CA. It’s also not true we have anything to do with water supplied to Los Angeles,” a portion of the thread reads.

Los Angeles gets its water either from the Owen’s Valley via an aqueduct owned by the Los Angeles Department of Water and Power or the Metropolitan Water District of Southern California, which buys it through contracts with the State Water Project.

The Wonderful Company isn’t a participant in either of those entities and has no control over those supplies

The state’s reservoirs hold a combined 23.9 million acre feet, according to Department of Water Resource’s [website](#).

In 2017, Wonderful’s extensive agricultural lands used about 400,000 acre feet of water, according to the book “The Dreamt Land,” by journalist and author Mark Arax. Stewart Resnick confirmed that amount was accurate, Arax said in a recent interview.

Clearly, the Resnick’s share of California’s surface water isn’t anywhere near 60%.

And *how* the Resnicks control that water makes it ludicrous for social media posters to say they could somehow release it to Los Angeles, or hold it back.

California water just doesn’t work like that.

The Resnicks own land, about 180,000 acres, in the San Joaquin Valley. That land is in agricultural water districts that hold state or federal water contracts, not the Resnicks. The contracts specify how and where that water can be used, not the Resnicks.

They can move it, trade it and even sell it, but typically only to other state or federal water contractors and it’s all done through the districts, which also own the canals.

The most likely source of these hoarding rumors is that the Resnicks own the Westside Mutual Water Company. That company has a 57% stake in the [Kern Groundwater Bank Authority](#), which operates the Kern Water Bank, a vast stretch of land that can hold up to 1 million acre feet of groundwater.

Ownership of the Kern Water Bank is controversial and has been since the 1990s when it was deeded to the Kern County Water Agency from the state and then immediately turned over to the authority, which is, arguably, controlled by one private individual – Stewart Resnick.

The state had put more than \$70 million into creating the water bank as a hedge against drought. But as part of revamping how the State Water Project operated, known as the Monterey Agreements, the bank was used as a bargaining chip and ended up in, largely, private hands.



VELES WATER WEEKLY REPORT

Again, however, the water to fill that bank comes mostly through excess state and federal water delivered under contracts similar to those attached to ag land owned by the Resnicks and others.

Valley water can be – and is – sold to urban developments in southern and northern California. Such uses are controversial and often result in lawsuits. But those deals all involve [contracts and permits](#) to move water through publicly-owned canals.

The Resnicks can't just open or shut a valve at their personal whim.

Original Article: [SJV Water by Lois Henry](#)

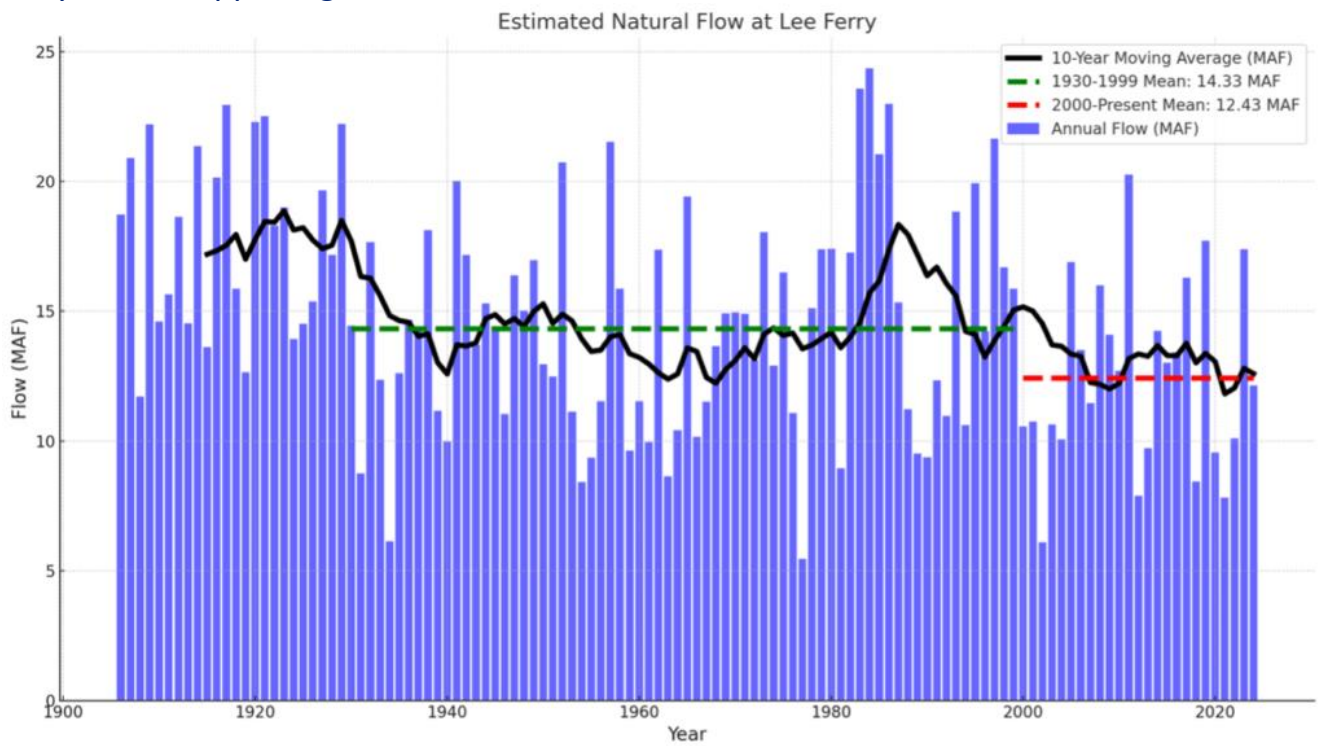


US WATER NEWS

Stable on the Colorado River: When “good” is not good enough

Preliminary year-end Colorado River numbers are stark. Total basin-wide storage for the last two years has stabilized, oscillating between 30 and 27 maf (million acre-feet), where storage sits at the start of 2025[1]. That is lower than any sustained period since the River’s reservoirs were built (Fig. 1). Stable is better than declining, but we did not succeed in rebuilding reservoir storage during 2024’s excellent snowpack but modest inflow. Although reservoir storage significantly increased after the gangbuster 2023 snowmelt year, we have not protected the storage gained in 2024 when inflow to Lake Powell was ~85% of normal from a 130% of normal snowpack. We can’t rely on frequent repeats of 2023; we must do better at increasing storage in modest inflow years like 2024.

Why is this happening?



Less water.

The phrase “the new normal” can be misleading, suggesting a new, more stable state for the climate. It’s not gonna be stable. But by one reasonable measure – total estimated natural flow in the Colorado River at Lees Ferry – Calendar Year 2024 was typical of the first quarter of the 21st century, with [a preliminary estimate of 12.1 million acre-feet “natural flow.”](#) Thus, the calendar year average annual natural flow at Lees Ferry between 2000 and 2024 has been 12.4 maf/yr, down from 14.3 maf for the period



VELES WATER WEEKLY REPORT

1930-1999. An additional 770,000 af/yr in side inflows between Lees Ferry and Lake Mead add to the available water supply^[2].

That we made the cuts needed to stabilize reservoir levels with a natural flow at Lees Ferry as low as 12.1maf would have been a substantial achievement in the wetter “before times.” Now, it’s table stakes. The most important point is that we absolutely *did not rebuild* storage in 2024, despite a 130 percent snowpack. We must do better in reducing total basin consumptive use.

Once again in 2024, we saw substantial water use reductions among the states of the Lower Colorado River Basin. Total U.S. Lower Basin main stem use of 6.08 maf is the lowest since 1985 (meaning the lowest since the Central Arizona Project came on line). California’s use, based on preliminary numbers published by Reclamation seems to be the lowest since 1950, and use by the Imperial Irrigation District seems to be the absolute lowest in a dataset that goes back to 1941. These are important achievements, to be celebrated.

With regard to the other two major U.S. areas of use – Lower Basin tributaries and the Upper Basin as a whole – we have no idea what 2024 consumptive use was. *This is a problem.* Lower Basin main stem use is quantified through Reclamation’s annual accounting reports and reported on a nearly daily basis during the course of the water year. River flows and reservoir levels across the basin are similarly reported in public, transparent ways. That’s how we’re able to provide the data you see above. Anyone can download and crunch the numbers. The general public can’t readily do that for consumptive use in the Upper Basin or Lower Basin tributaries.

As Elinor Ostrom noted in her classic book *Governing the Commons*, shared understanding of the resource is crucial to successful water management. Increasingly, areas of uncertainty have become contested ground, as the genuine technical uncertainties collide with the motivated reasoning of political actors across the basin.

With respect to the Upper Basin, we note that the rhetoric that Upper Basin water users *suffer shortages in dry years* has shifted to a broader claim that Upper Basin users *always suffer shortages*. We quote here from the Upper Basin states’ January 2 press release: “There are acute hydrologic shortages in the Upper Basin every year – there simply isn’t enough water in any year to satisfy current needs in the Upper Basin every year. The Upper Basin has made uncompensated cuts to their water users every year for the past 24 years.” Some of the data to support this assertion was presented at the December 2024 UCRC meeting, and we look forward to a more complete and transparent accounting of these data, because these data are crucial to a robust Colorado River management discussion. The Upper Basin’s experience of “acute hydrologic shortages ... every year” is exactly what John Wesley Powell described in 1878 in the first edition of *The Arid Lands Report*. Nothing has changed, and the challenge of agriculture throughout the watershed has been well known for 150 years. We also note



VELES WATER WEEKLY REPORT

that consumptive use data throughout the basin has not been integrated with the important findings of Richter et al (2024) who documented the proportion of water used by different agricultural sectors. They estimated that 55% of all Colorado River water use supplies livestock feed.

We leave a discussion of Lower Basin tributary use for another post but note that in both the cases of the Upper Basin use and Lower Basin tributary use, the numbers are entangled in the current Upper Basin-Lower Basin feud, which makes serious efforts to think about how to manage water at the Basin scale, rather than simply defending parochial interests, much more difficult. It is important that the general public not employed by a state or water agency, and therefore not beholden to local parochial interests, help the basin community as a whole navigate these technical issues.

Original Article: [InkStain by John Fleck and Jack Schmidt](#)

Colorado's snowpack is average for January despite near-record warm conditions

Colorado's mountain snowpack is hovering around average so far this winter despite flatlining snowfall in December.

While winter recreationists might watch the buildup of snow in Colorado's mountains with skiing or snowmobiling in mind, many water managers are watching for one thing: water supply. The state's snowpack is a vital frozen reservoir for communities across Colorado, 19 downstream states and Mexico — one that is being strained by rising temperatures and prolonged drought.

As of Monday, the snowpack measured slightly below normal for early January, at 95% of the median between 1991 and 2020, according to federal data.

"It's pretty close, in the grand scheme of things, to where you'd expect to be at this point in the winter," said Russ Schumacher, Colorado state climatologist and a professor at Colorado State University.

The snow that accumulates in Colorado's mountains eventually melts in the spring and provides water to farmers, cities, industries and ecosystems in major river basins like the Colorado River Basin, which supports 40 million people across the West.

Huge, early-season snowstorms in late October and November, [like a blizzard in southern Colorado](#), gave the snowpack a head start — helpful in light of the sparse snowfall across many of the state's major river basins for most of December, [the third warmest December on record for the state](#).

It was the conclusion to a very warm year, Schumacher said. Globally, 2024 was the [warmest year on record since 1850](#), according to the National Oceanic and Atmospheric Administration.



VELES WATER WEEKLY REPORT

The year 2024 was the fourth warmest in Colorado, compared to a record stretching back 130 years, Schumacher said. Eight of the top 10 warmest years for Colorado have been since 2012.

Warmer days can contribute to large but less-frequent storms, drought, wildfire potential, harsh conditions for native fish and greater uncertainty for irrigators in Colorado.

Snowfall around Colorado

Snowfall totals, like temperature, can vary widely across Colorado, depending on whether you're looking at a single community, small watershed or a large river basin.

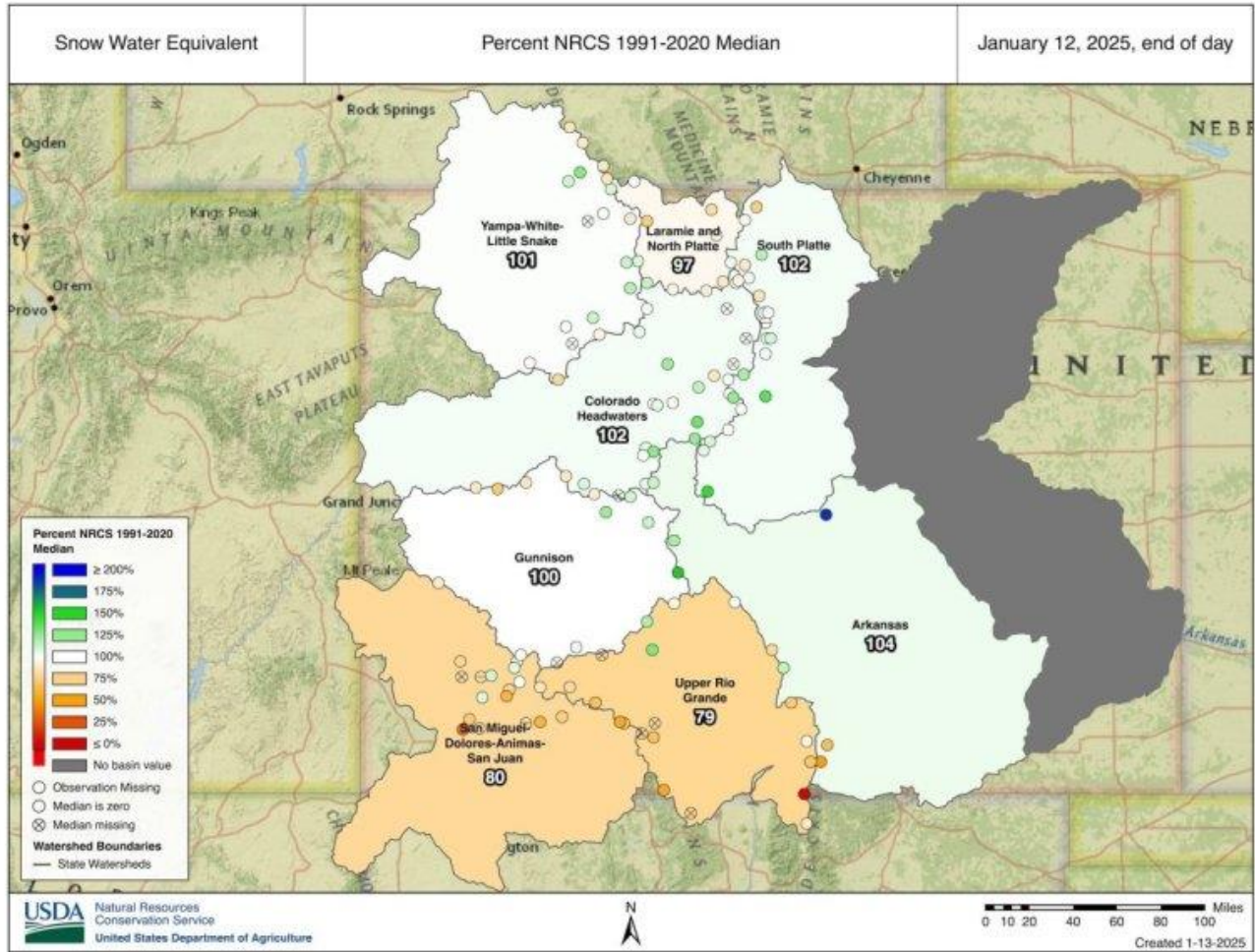
As of Sunday, the snowpack was normal, or close to it, in most of Colorado's major river basins like the Gunnison and Colorado River headwaters on the Western Slope, and the South Platte and Arkansas basins on the Front Range and Eastern Plains.

The Yampa, White and Little Snake river basin in northwestern Colorado was below average until a Christmas storm brought it to its normal snowpack levels, according to data from the [Natural Resources Conservation Service](#).

The federal agency [pulls this data from a network of individual measuring stations](#), called snow-telemetry stations, that are mostly located between 9,000 and 11,600 feet in elevation.

"You look at the numbers early on and they look really bad. They've caught up at least for now. A long way to go yet in that area," Schumacher said. "It was the opposite in southern Colorado."

After the big storms in October and November, precipitation in two southern basins — the San Miguel-Dolores-Animas-San Juan and the Upper Rio Grande River Basin river basins — was scant in December. The snowpack in both regions was below normal, 80% and 79%, respectively as of Sunday.



Federal measuring stations around the state report average snowpack in Colorado as of Sunday. (Natural Resources Conservation Service, Contributed)

The early storms helped Purgatory Resort, just north of Durango, open early this year, said Jim Brantley, the resort’s director of mountain operations. A “Christmas miracle” storm helped add to the 33-inch base on the slopes, he said, which still had icy areas over the weekend.

But going forward, he expects ski seasons could start later — which makes snowmaking even more important. The resort is paying hundreds of thousands of dollars to make those systems more efficient, he said.

“The future of the ski business in the desert southwest, at least the Christmas season, may well depend on snowmaking going into the future if the warming trend continues,” he said. “Ski resorts live and die by the Christmas season and the spring break season.”

Conditions in the Colorado River Basin

Colorado’s Western Slope is part of, and a main water source for, the broader Colorado River Basin. Overall, the basin’s snowpack is slightly less than normal for mid-January. In December, the Upper Basin — Colorado, New Mexico, Utah and Wyoming — had about 65% of the normal snowpack from 1991 to 2020, according to the Colorado Basin



VELES WATER WEEKLY REPORT

River Forecast Center. About 85% to 95% of the basin's water comes from the Upper Basin mountain snowpack.

"We're off to a pretty dry start," said Paul Miller, a hydrologist at the center. So far it's comparable to early snow accumulation in 2024, 1998 and 1994. "We are still really early in the season."

The forecast center predicted the Colorado River's flows this year will be around 84% of average, or about 5.4 million acre-feet. The forecasts become more certain in March and April, Miller said.

One acre-foot would cover a football field in a foot of water.

Lower flows in the river are an ongoing strain on the basin's system of reservoirs, which help pace water deliveries to farms and communities throughout the year. Water levels in the two largest reservoirs, lakes Powell and Mead, are still recovering from historic lows in 2021 and 2022.

Powell, on the Utah-Arizona border, was at 35% of its capacity as of Monday. Mead, on the Arizona-Nevada border, was at 34% of its capacity.

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

Federal government says land exchange proposed by billionaire in Grand and Summit counties is complete

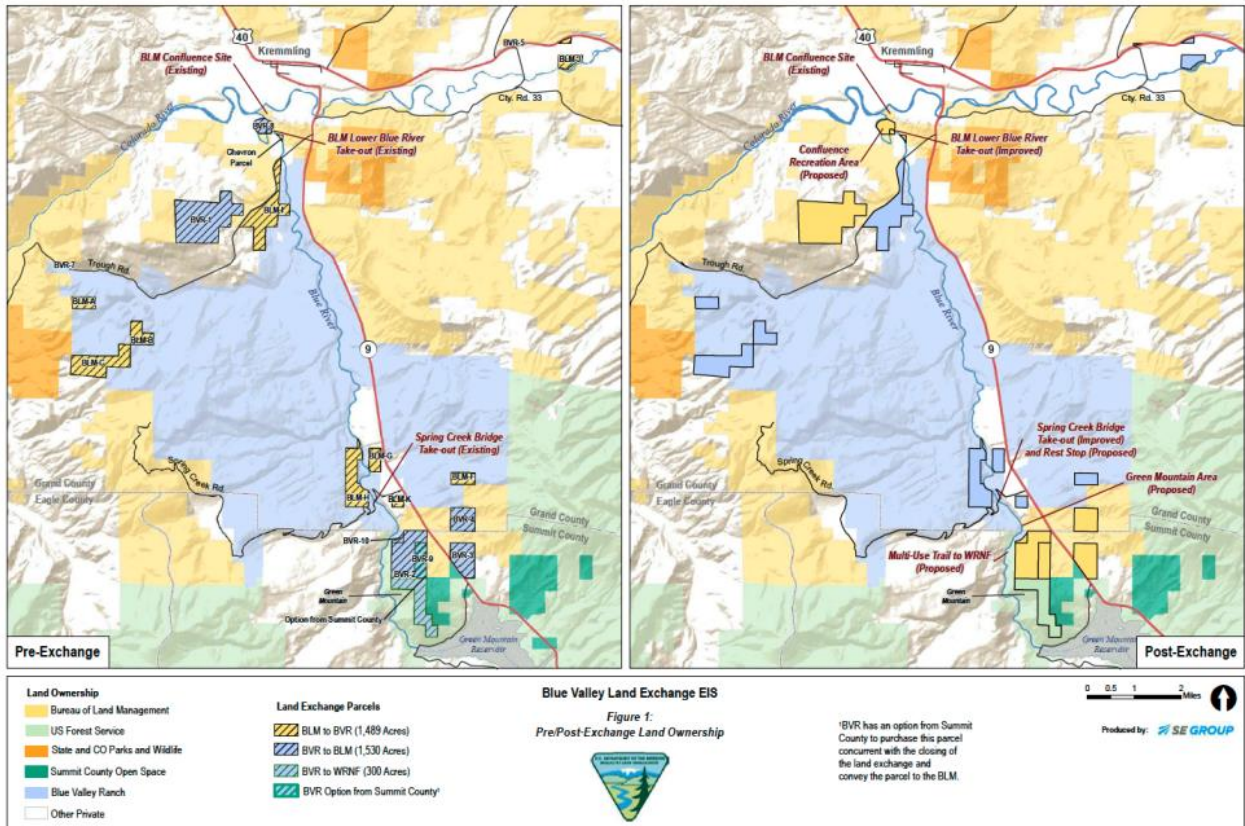
Officials in Colorado are applauding after the federal government announced Monday Jan. 13 that it has completed [a land exchange trading parcels of private land for public land in Summit and Grand counties](#).

The Bureau of Land Management said in a news release Monday that it has closed on the land exchange with Blue Valley Ranch, which is owned by billionaire Paul Tudor Jones II. The Blue Valley Ranch land exchange, which has been decades in the making, trades nine parcels of federal land totaling 1,489 acres in Grand County for nine parcels of private land totaling 1,830 acres in Grand and Summit counties.

The exchange will be implemented on public lands as weather allows, according to the news release.

"We congratulate the Colorado Bureau of Land Management and other local stakeholders in finalizing this exchange," Colorado Department of Natural Resources Executive Director Dan Gibbs said in a statement. "The Blue River is treasured by Summit and Grand County residents and all Coloradans."

The land exchange was first proposed in some form in 2001, with the stated purposes of addressing the "checkerboard nature" of ownership in the area.



A pair of maps show land ownership prior to the Blue Valley Ranch land exchange compared to land ownership after the exchange. The Bureau of Land Management announced Monday, Jan. 13, 2025, that the land exchange has been completed. Bureau of Land Management/Courtesy illustration

Blue Valley Ranch has said that the public gains more from the land exchange than it loses. As part of the exchange, the ranch has agreed to cover the costs of [river restoration work for a three-quarter-mile stretch of the Blue River](#) near its confluence with the Colorado River, pay for the creation of the Confluence Recreation Area with more than 2 miles of new walking trails and wheel-chair accessible fishing platforms and provide Summit County with \$600,000 for new open space acquisition.

For those who float the river, a permanent, seasonal takeout and rest stop near the Spring Creek River Bridge will be constructed, with another rest stop 3 miles downstream from the bridge as well. The exchange will also result in more than a mile and a half of hike-in access to the Blue River that is currently inaccessible except by floating.

“Summit County commissioners have remained steadfast in their support of the land exchange since its inception and commend all of the parties involved for their commitment to bring us to this closing,” Summit County Commissioner Tamara Pogue said in a statement. “Our local communities look forward to the many public benefits it



VELES WATER WEEKLY REPORT

will bring, including the new Confluence Recreation Area near Kremmling funded by Blue Valley Ranch.”

Grand County commissioners have also expressed their support for the land exchange, according to the news release.

While some local anglers [protested the loss of their favorite, public](#) fishing spot, which became private through the exchange, the Colorado River Headwaters Chapter of Trout Unlimited has supported the land exchange.

Trout Unlimited chapter president Kirk Klancke in a statement pointed to the river restoration promised near the Blue River’s confluence with the Colorado River as “the most important concession” by Blue Valley Ranch. Klancke said the restoration project “will have positive impacts on the aquatic ecosystem ... of the Blue River and downstream on the Colorado River.”

In contrast to the support from local and state officials, the nonprofit Colorado Wild Public Lands was a leading voice in opposition to the land exchange. Colorado Wild Public Lands [wrote a 24-page protest of the land exchange](#). Among the nonprofit’s chief concerns was that the land exchange was proposed by a wealthy landowner, not by the public or the Bureau of Land Management itself.

“Immensely valuable public lands are to be traded away for restrictive access easements and non-guaranteed infrastructure improvements,” Colorado Wild Public Lands board member Anne Rickenbaugh wrote in protest of the exchange.

Original Article: [Summit Daily by Ryan Spencer](#)

Reclamation announces over \$284 million for long-term conservation in the Lower Colorado Basin

The Bureau of Reclamation has announced a **\$284.8 million** investment through President Biden’s Investing in America agenda for **long-term conservation projects** in collaboration with the **Southern Nevada Water Authority**, the **Metropolitan Water District of Southern California**, and the **Coachella Valley Water District**. The projects, funded through the Inflation Reduction Act, will conserve a combined 492,531 acre-feet of Colorado River water to shore up Lake Mead.

“These investments through the Lower Colorado Basin System Conservation and Efficiency Program, are yielding hundreds of thousands of acre-feet of water savings,” said Reclamation Commissioner Camille Calimlim Touton. “Thanks to historic resources provided through President Biden’s Investing in America agenda, we are advancing essential water infrastructure projects that mitigate the worst impacts of climate change and safeguard communities in the Colorado River Basin.”

The Biden-Harris administration has led an all-of-government effort to **make Western communities more resilient to climate change and address the ongoing megadrought across the region** by harnessing the full resources of President Biden’s historic Investing



VELES WATER WEEKLY REPORT

in America agenda. Additionally, the Administration continues to support life-saving wildfire response efforts in California. The Lower Colorado River Basin System Conservation and Efficiency Program is a part of the commitment made by the Department of the Interior to address the drought crisis with prompt and responsive actions and investments to ensure the entire Colorado River Basin can function and support all who rely on it.

Reclamation is using the best available science and actively collaborating with water users across the Colorado River Basin to determine best ways to meet the Basin's increasing conservation needs.

Southern Nevada Water Authority Project: The project with the Southern Nevada Water Authority will invest \$60 million to convert more than 23 million square-feet of water-intensive lawn to efficient landscaping through SNWA's landscape rebate program. It is estimated to result in 189,635 acre-feet of water conservation in Lake Mead.

Metropolitan Water District Projects: A project with the Metropolitan Water District will expand their existing Regional Turf Replacement Program and convert approximately 30 million square-feet of non-functional turf to water-efficient landscaping resulting in 97,296 acre-feet of water conservation. An additional project with Metropolitan in partnership with Antelope Valley- East Kern Water Agency will store Metropolitan's surplus State Water Project supplies near the West and East Branch split of the California Aqueduct, recover the stored supplies during dry years, and deliver them to Metropolitan's service area via a direct pump-back into the California Aqueduct. The project is estimated to result in 168,000 acre-feet of system conservation.

Reclamation and Metropolitan Water District are working on a third project in support of disadvantaged communities. The agreement for this project is expected to be final next week and will invest \$8 million for leak detection and repairs. This third agreement is expected to result in 4,000 acre-feet of water conservation in Lake Mead and reduce household costs for local communities.

Coachella Valley Water District Project: The project with Coachella Valley Water District is a 1 million gallon per day tertiary facility that will deliver a blend of recycled water and canal water to large agricultural customers and will result in 33,600 acre-feet of water conservation in Lake Mead and ensure a more stable and resilient water supply for agriculture.

Original Article: [Smart Water Magazine](#)

Massachusetts to Sell \$541.2 Million of Bonds for Improve Water Quality

The Massachusetts Clean Water Trust plans to sell \$541.2 million of revolving fund bonds in three separate series, with proceeds slated for capital projects and to refinance existing debt.



VELES WATER WEEKLY REPORT

The trust will issue \$261.8 million of Series 26A Green Bonds, \$146.6 million Series 26B Sustainability Bonds, and \$132.8 million of Series 2025 refunding bonds three sets of bonds, according to documents posted Monday on MuniOS.

Retail orders will accepted on Jan. 22 and institutional pricing is scheduled for Jan. 23. The securities are set to be delivered on Feb. 6.

The Series 26A bonds mature from 2026 through 2042, the Series 26B from 2039 through 2045, and the Refunding Bonds from 2026 through 2037. Interest rates and yields for any of the bonds have yet to be determined.

The trust will use proceeds from the sale to finance or refinance the costs of certain wastewater and drinking water projects, and to refund debt previously issued by the trust.

Sources for repayment of the securities includes borrower payments on loans financed by the MTA, according to a document posted on MuniOS.

According to its website, the trust helps communities build or replace infrastructure that improves ground and surface water resources, ensures the safety of drinking water, and protects public health.

The bonds have ratings of Aaa from Moody's, and AAA from both Fitch Ratings and S&P Global Ratings.

Original Article: [Morning Star by Chris Wack](#)



GLOBAL WATER NEWS

RAF bases are hotspots of ‘forever chemical’ groundwater pollution, MoD documents show

RAF bases are hotspots of toxic “forever chemical” pollution in water, analysis of [Ministry of Defence](#) documents has revealed.

Moreover, some of the highest concentrations of these chemicals in British drinking water sources are near RAF bases, official sampling results obtained by the Guardian and Watershed Investigations show.

PFAS, [known as forever chemicals due to their indestructible nature](#), include PFOS and PFOA, which are toxic and linked to cancers, thyroid disease, and fertility problems. These two have been banned, but more than 10,000 PFAS are still in use, many of which are thought to have unknown toxic effects.

“The concentrations of PFOS and PFOA in the groundwaters at these sites is extremely concerning” said Cecilia MacLeod, a leading remediation expert.

“If there is no intervention, ie a remediation system installed to treat the groundwater and prevent offsite migration, then the MoD could be considered to be breaking the Environmental Protection Act,” MacLeod said.

Environmental reports commissioned by the MoD between 2017 and 2022 have uncovered high levels of these banned forever chemicals.

Levels of PFOS and PFOA have been recorded as high as 7,700 nanograms a litre (ng/l) in the groundwater at RAF Benson in South Oxfordshire, with similarly high levels found at RAF Coningsby and RAF Waddington in Lincolnshire. For context, the maximum allowable level for drinking water in [England](#) is 100ng/l, above which water may pose health risks.

Original Article: [The Guardian by Leana Hosea and Rachel Salvidge](#)

Enhanced hydrologic monitoring and characterization of groundwater drainage features

Groundwater drains to the land surface, generating the baseflow of streams, lakes, and wetlands. The hydrologic resilience of baseflow during prolonged dry periods and after disturbance can be assessed with evolving remote sensing analysis paired with localized monitoring of groundwater drainage features and creative model calibration strategies.

Original Article: [Nature.com by Briggs, M.A. Enhanced hydrologic monitoring and characterization of groundwater drainage features. Nat Water \(2025\).
<https://doi.org/10.1038/s44221-024-00376-6>](#)



Conti Federal Awarded \$18.5M Task Order Contract for Groundwater Remediation at the Tutu Wellfield Superfund Site

Conti Federal Services, a leading federal construction and design-build firm specializing in environmental remediation, has been awarded a task order contract in the amount of \$18.5M for remedial action of Tutu Wellfield Operable Unit 2 (OU2) in St. Thomas County of the U.S. Virgin Islands (USVI).

Awarded by the U.S. Environmental Protection Agency (EPA) Region 2 through the Remediation Action Framework (RAF) Remediation Environmental Services (RES) multiple award contract, the contract for OU2 will focus on the source area groundwater contamination at the USVI Department of Education Curriculum Center property, which is approximately two acres in size. Remediation activities include installation of extraction, injection and monitoring wells as well as upgrading the existing pump and treat system. The overall project will have a duration of up to 78 months.

“This significant project underscores our continued commitment to environmental stewardship and builds upon our proven remedial construction expertise under the RES contract. We look forward to applying our innovative solutions to improve groundwater quality, a critical resource, for this community,” states Laura Tobin, Conti Federal Vice President, Environmental Business Line Leader.

The expected completion date for this project is June 2031.

Original Article: [Morning Star](#)

Tech innovations tackling the global water crisis: From data to action

In an age marked by the climate crisis, population growth, and rapid urbanisation, the world’s freshwater resources are under stress like never before. According to the United Nations, over two billion people currently live in regions facing high water stress—an unsettling figure that underscores the urgency of rethinking how we source, manage, and distribute water. Aquifers are depleting, infrastructure is aging, pollution is widespread, and erratic weather patterns regularly disrupt ecosystems and agricultural cycles. Yet amidst these daunting realities, technological innovations are emerging to not only understand the severity of the crisis but also to drive transformative, evidence-based solutions.

Original Article: [Hindustan Times by Navkaran Singh Bagga](#)

How AI enhances inspections at hydropower and dam projects

The inspection and maintenance of dams and hydropower facilities are vital for ensuring structural integrity, operational efficiency, and regulatory compliance. These tasks traditionally involve a combination of manual inspections and mechanical testing, which are labour-intensive and time-consuming. Moreover, they often expose inspectors to



hazardous conditions, such as navigating steep dam walls, inspecting underwater structures, or working in remote and inaccessible areas. These inspections are further hampered by human error and subjectivity, which can lead to inconsistent results. Additionally, the cost and time involved in conducting comprehensive inspections limit their frequency. This delay increases the risk of undetected issues escalating into significant problems, including structural failures or operational inefficiencies. In light of these limitations, AI has emerged as a key tool to augment and modernize inspection practices, offering accuracy, speed, and predictive capabilities that traditional methods cannot match.

Transformative capabilities

AI has introduced several transformative capabilities in the inspection of dams and hydropower projects. Structural health monitoring is one of the most critical applications. Using data from drones, sensors, and satellite imagery, AI systems analyse structural elements for signs of wear, such as cracks, deformation, or erosion. Unlike manual inspections, these systems can process vast amounts of data quickly and detect anomalies that might be imperceptible to the human eye. By automating these processes, AI significantly improves both efficiency and accuracy.

Another area where it excels is in predictive maintenance. Hydropower plants rely on turbines, generators, and other machinery that are prone to wear and tear over time. Models, trained on historical and real-time performance data, can predict when components are likely to fail. This foresight allows operators to schedule maintenance proactively, avoiding costly unplanned shutdowns and extending the lifespan of critical equipment.

Environmental monitoring is another essential application of AI. Hydropower projects can sometimes have significant impacts on ecosystems, from altering river flows to affecting fish populations. AI-driven systems analyse data from environmental sensors, cameras, and satellite images to track these changes. For instance, algorithms can monitor fish migration patterns, sedimentation rates, and water quality metrics, providing actionable insights to mitigate ecological disruptions.

Moreover, AI plays a crucial role in risk assessment and emergency preparedness. Dams, by their nature, pose potential risks such as flooding in the event of structural failure. AI systems simulate various scenarios using historical and real-time data to identify vulnerabilities and enhance emergency response plans. These tools can also issue real-time alerts based on sensor data, helping operators respond swiftly to emerging threats.

Real-world applications

The implementation of AI in hydropower and dam projects is already yielding impressive results. One notable example is the [Oroville Dam](#) in California. After a spillway failure in 2017 caused widespread damage and led to evacuations, the dam incorporated advanced monitoring systems that leverage AI. Drones equipped with high-resolution



VELES WATER WEEKLY REPORT

cameras capture images of the dam's surface, which AI algorithms then analyze to detect cracks, erosion, and other signs of deterioration. This system not only prioritizes repairs but also learns and improves over time, enhancing its predictive accuracy.

Another example comes from the Itaipu Dam, located on the Brazil-Paraguay border. As one of the world's largest hydropower plants, its operations are critical for both countries. To optimize turbine maintenance, the dam has adopted AI systems that analyze data from sensors embedded in its machinery. These systems monitor factors such as vibration, temperature, and wear patterns to predict when maintenance is required. This approach has reduced both downtime and maintenance costs, while also improving the turbines' efficiency.

In China, the [Three Gorges Dam](#) employs AI for environmental monitoring on an unprecedented scale. Given the project's massive impact on ecosystems, AI-powered systems track water levels, sedimentation, and fish migration patterns. For example, underwater cameras collect footage of aquatic life, which AI algorithms analyze to identify species and their behaviors. These insights have informed strategies to minimize ecological disruptions, demonstrating how AI can align hydropower operations with environmental conservation goals.

In southern Africa, the Kariba Dam has faced challenges associated with aging infrastructure and extreme weather conditions. To address these issues, an AI-powered early warning system was installed. This system processes data from seismic sensors, water pressure gauges, and weather stations to predict potential risks in real-time. During heavy rains in 2020, the system successfully issued alerts about rising water levels, enabling authorities to implement preventive measures and avert flooding. Such applications illustrate AI's potential to enhance disaster preparedness and protect downstream communities.

Original Article: [Water Power Magazine](#)

Over \$34 million for better water security in remote NT communities

The Australian Government, in partnership with the Northern Territory Government, is investing \$34.3 million to enhance water security and infrastructure across 10 remote NT communities.

The Better Bores for Communities program will improve water supply and quality, and support growth and development by providing greater certainty of water availability in 7 communities and expanding water supply in 3 others.

The Australian Government is contributing \$27.8 million through its National Water Grid Fund, with the Northern Territory Government providing an additional \$6.5 million.



VELES WATER WEEKLY REPORT

The program will conduct water source investigations and bore drilling in the communities of Robinson River, Warruwi, Yuelamu, Titjikala, Finke, Atitjere and Gapuwiyak.

It will also install essential equipment to connect new water sources in the Wugularr, Haasts Bluff and Ntaria (Hermannsburg) communities.

Power and Water Corporation will lead the works with water source exploration to begin in early 2025. All works are expected to be completed by 2027.

Quotes attributable to Minister for the Environment and Water, Tanya Plibersek:

“Every Australian should be able to drink water from the tap, no matter where they live.

“That's why we're investing in projects to deliver critical water infrastructure projects in First Nations remote communities, ensuring they can remain living on Country.

“We're working with state and territory partners and First Nations organisations and representatives to Close the Gap on water security.”

Quotes attributable to Minister for Indigenous Australians, Senator Malarndirri McCarthy:

“Too many First Nations communities in the Northern Territory don't have access to clean and reliable water.

“This funding demonstrates the Albanese Labor Government's commitment to improving life outcomes for First Nations people.

“The Albanese Government will continue to work closely with our state and territory partners and First Nations organisations and representatives across the country to identify, plan and deliver future water security projects.”

Quotes attributable to Federal Member for Lingjari, Marion Scrymgour:

“I congratulate the Australian and Northern Territory governments on funding nearly \$35 million to enhance water security and infrastructure across 10 remote Aboriginal communities in my electorate of Lingjari. Water from bores is a vital resource, especially in remote Australia where quality water supplies are often difficult to access, and rainfall may be irregular.

“Well functioning bores are a viable alternative for delivering safe and reliable water, while also lowering environmental impacts and enhancing community self-sufficiency and resilience.”

Quotes attributable to the Northern Territory Minister for Housing, Local Government and Community Development Steve Edgington:

“This investment will address critical water needs in remote areas.

“Water is a resource many of us take for granted, but in remote NT communities, water stress remains a significant challenge.

“Many aquifers supplying community water have limited capacity and may be at risk of failure during extended dry periods, or in some instances, due to naturally occurring minerals in the water supply.



VELES WATER WEEKLY REPORT

“Water availability is often the main obstacle to new housing and community infrastructure development, and contributes to broader issues such as overcrowding, poor health outcomes and exacerbates other social problems remote communities are facing.

“Without expansion of water source capacity in many communities, new houses cannot be built.”

Quotes attributable to the Northern Territory Minister for Water Resources, Joshua Burgoyne:

“This project is about more than just water supply. It’s about improving liveability, promoting economic opportunities, and supporting sustainable growth in these communities.

“Reliable water access is fundamental to reducing overcrowding, improving health outcomes, and driving positive social change. To improve the quality of life for Territorians in these communities, we need to improve access to, and quality of, water.

“We’re working closely with the Central Land Council, Northern Land Council, and the Aboriginal Areas Protection Authority (AAPA) to ensure these projects have the support of local communities.”

Original Article: [Australian Government](#)

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