

# Veles Water Weekly Report

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**VelesWater**



## WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Joshua Bell

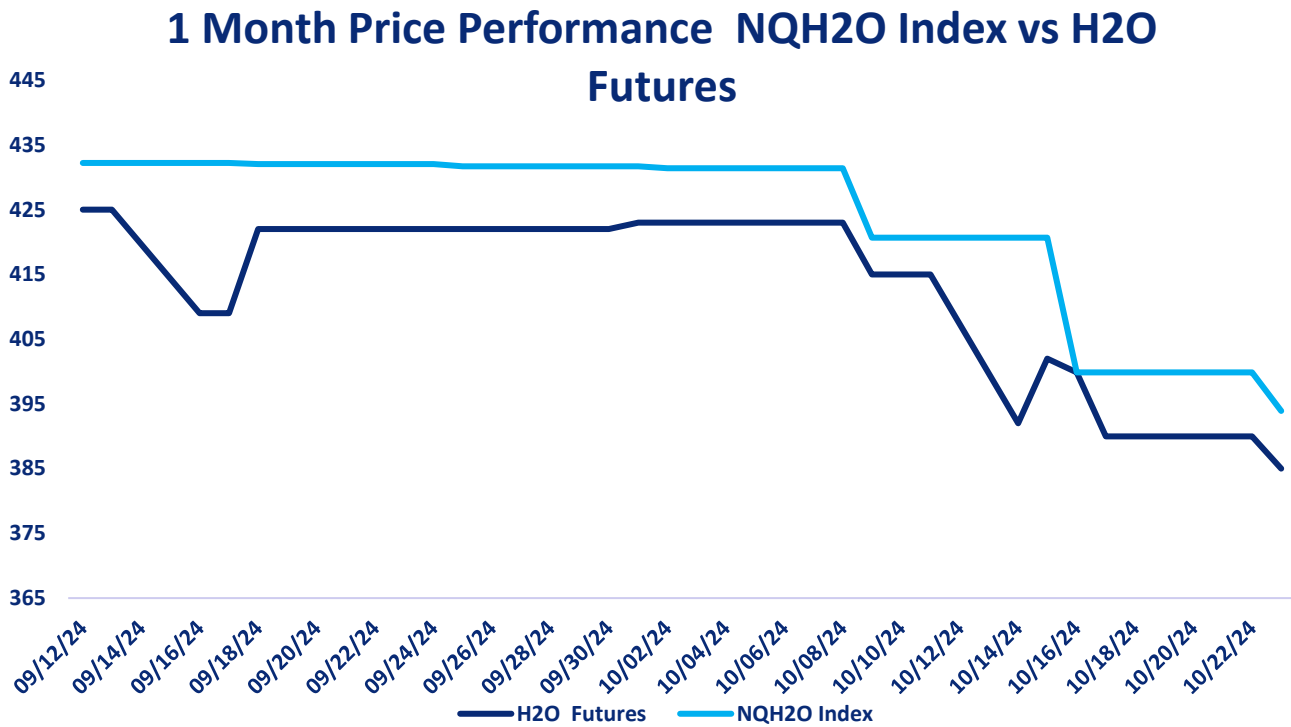
**CLICK THE LINK BELOW**

*“A 2 minute technical analysis video of H2O futures”*

<https://vimeo.com/1022801975?share=copy#t=0>



NQH2O INDEX PRICE vs H2O FUTURES PRICE



Price Chart Based upon Daily Close

The new NQH2O index level of \$393.91 was published on October 23<sup>rd</sup> down \$5.93 or 1.48% from the previous week. The November contract is considered the front month. The futures prices have closed at a discount of \$8.91 to \$9.84 versus the index over the past week.

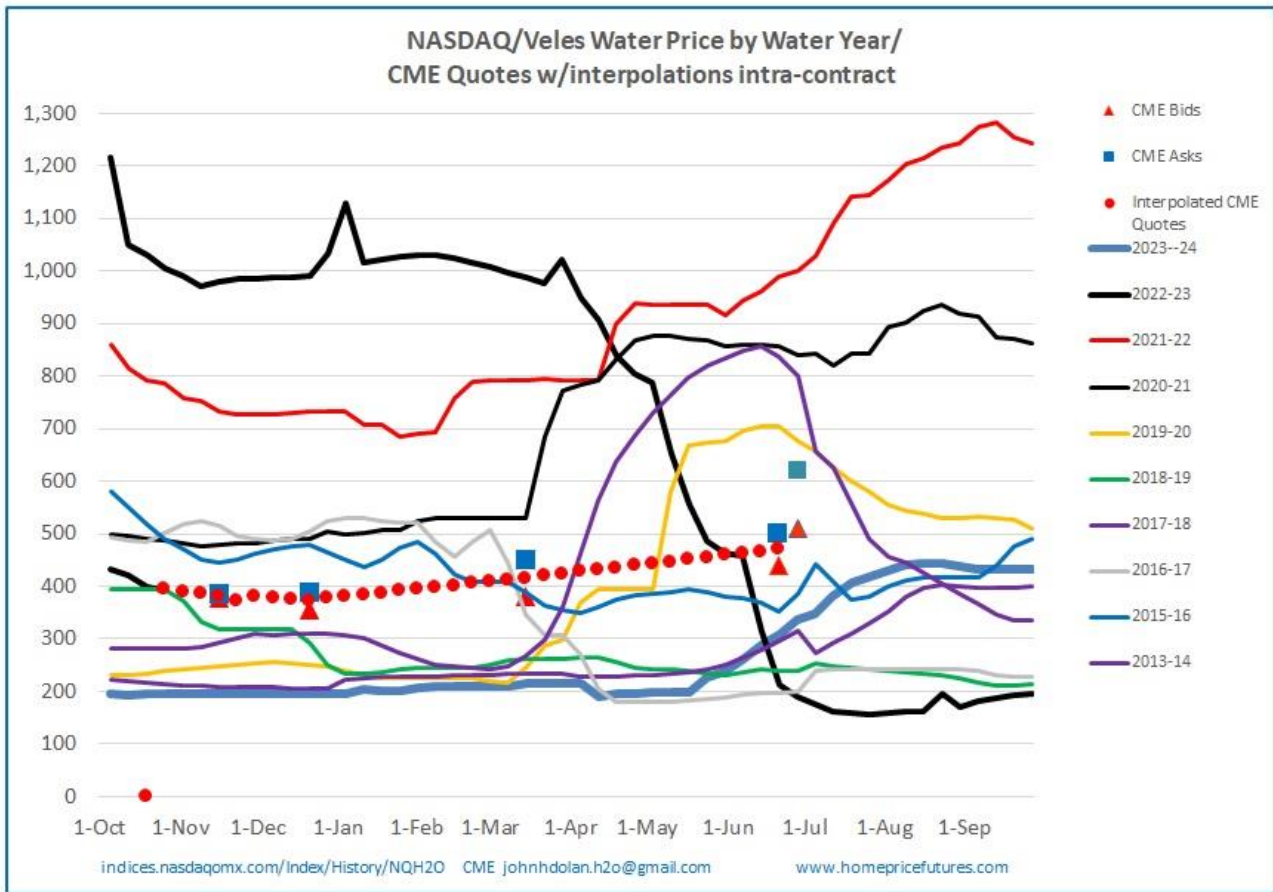
Below are the bid offer prices on different expiries being quoted in the market.

Nov 24	377@385
Dec 24	355@390
Mar 25	380@450
June 25	440@500
June 26	510@620





NQH20 INDEX HISTORY

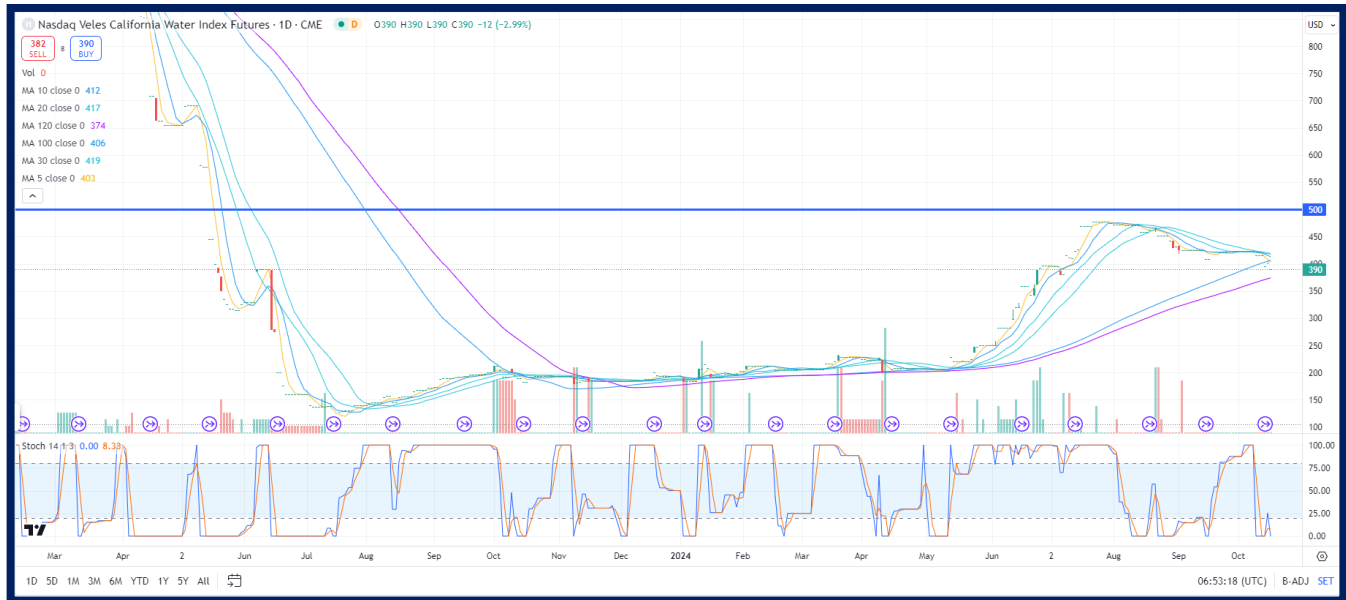


The graph above shows the CME water contracts for November 2024, Dec 2024, March 2025, June 2025 and June 2026 superimposed over historical NASDAQ Veles water indices. The interpolated curves for 2024-25 and 2025-26 (to include June 2026 contract) are shown in red dots.

**(John H Dolan, CME Market Maker)**



## H2O FUTURES TECHNICAL REPORT



### Price Action

- **Current Price: 385**
- The price has decreased by 1.28% in this trading session, which signals bearish momentum.

### Moving Averages (MA) Analysis

- **MA 5 (5-day Moving Average): 389**
  - The current price is below the MA 5, indicating short-term bearish momentum.
- **MA 10 (10-day Moving Average): 396**
  - The price is below the MA 10, suggesting that the short-term weakness is continuing.
- **MA 20 (20-day Moving Average): 409**
  - The price is below the MA 20, confirming recent weakness in the short-term trend.
- **MA 30 (30-day Moving Average): 413**
  - The price is below the MA 30, which signals medium-term bearish momentum.
- **MA 100 (100-day Moving Average): 413**
  - The price is below the MA 100, indicating that the long-term trend has weakened compared to previous trading sessions.



- **MA 120 (120-day Moving Average): 382**
    - The price is currently slightly above the MA 120, which suggests that the longer-term trend is still holding, despite the recent short-term and medium-term weakness.
- 

### Support and Resistance

- **Immediate Resistance: 500**
    - This level has been tested before and remains a key resistance point for a potential breakout.
  - **Immediate Support: 385 (current price level)**
    - The current price might act as support, but if it falls below this, the next significant support would be around the MA 120 at 382.
- 

### Stochastic Oscillator

- **Stochastic (K%: 0, D%: 0)**
    - The stochastic indicator is in oversold territory, suggesting that there could be further downward pressure. However, this also hints at a possible reversal or bounce if buying pressure increases.
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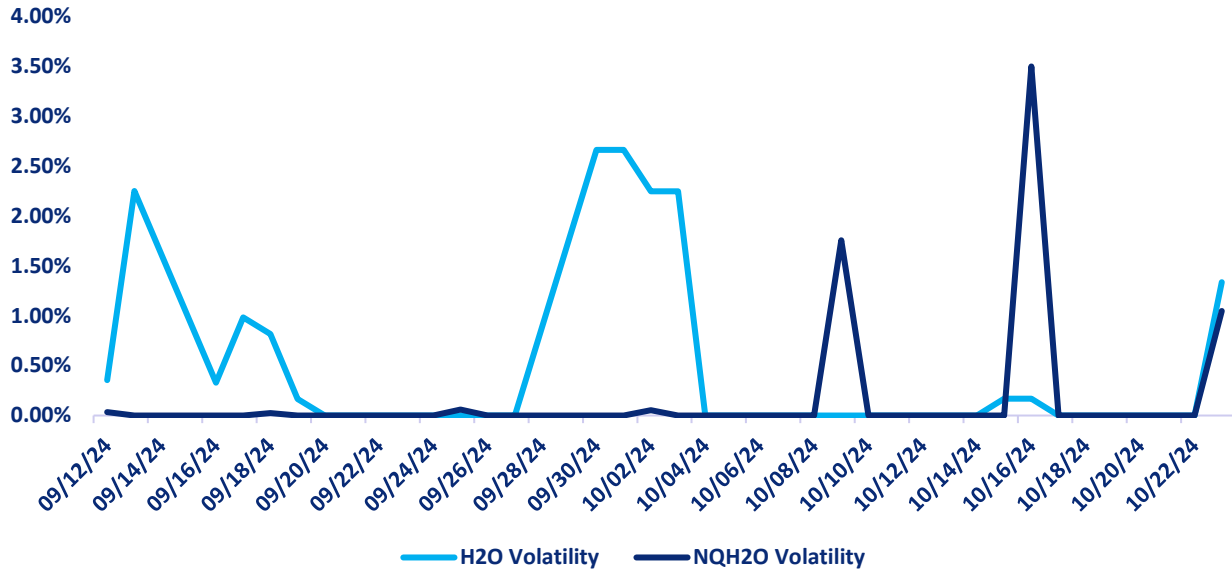
### Summary

- The price is currently experiencing short-term and medium-term bearish momentum, as it is below the MA 5, MA 10, and MA 20.
- The long-term trend, while slightly weakened, still holds a relatively positive outlook, as the price remains above the MA 120, though it's below the MA 100.
- The stochastic indicator indicates oversold conditions, meaning that while further downside is possible, a reversal or bounce could occur soon if buying pressure materializes.
- Key levels to watch: Immediate support at 385 and resistance at 500. If the price continues to fall, look for support around the MA 120 at 382.



## H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

### Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



### DAILY VOLATILITY

Over the last week the November contract daily future volatility has been 1.74%.

ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	29.24%	4.62%	3.57%	3.46%
H2O FUTURES	N/A	8.96%	6.87%	2.47%

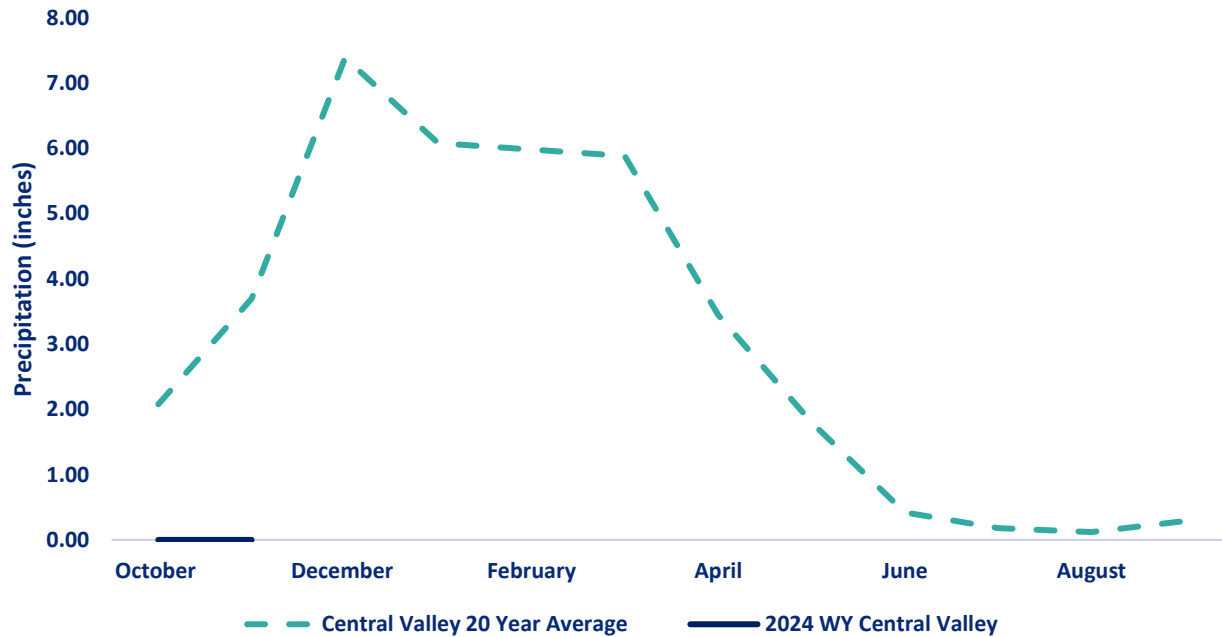
For the week ending on October 23<sup>rd</sup>, the two-month futures volatility is at a premium of 4.39% to the index, down 0.03% from the previous week. The one-month futures volatility is at a premium of 3.31% to the index, up 2.73% The one-week futures volatility is at a discount of 0.99% to the 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 23/10/2024

STATION	MTD (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF 20 YEAR AVERAGE MTD	2025 WYTD VS 2024 WYTD %	2025 WY VS 20 YEAR AVERAGE TO DATE %
SAN JOAQUIN 5 STATION (5SI)	0	0.00	0.00%	0	0
TULARE 6 STATION (6SI)	0	0.00	0.00%	0	0
NORTHERN SIERRA 8 STATION (8SI)	0.04	0.04	1.37%	0	3
CENTRAL VALLEY AVERAGE	0.01	0.01	0.00%	0	0

## RESERVOIR STORAGE

RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	*% HISTORICAL AVERAGE
TRINITY LAKE	1,662,082	67	51	114
SHASTA LAKE	2,681,181	58	71	108
LAKE OROVILLE	1,779,885	51	71	96
SAN LUIS RES	1,059,782	52	77	119

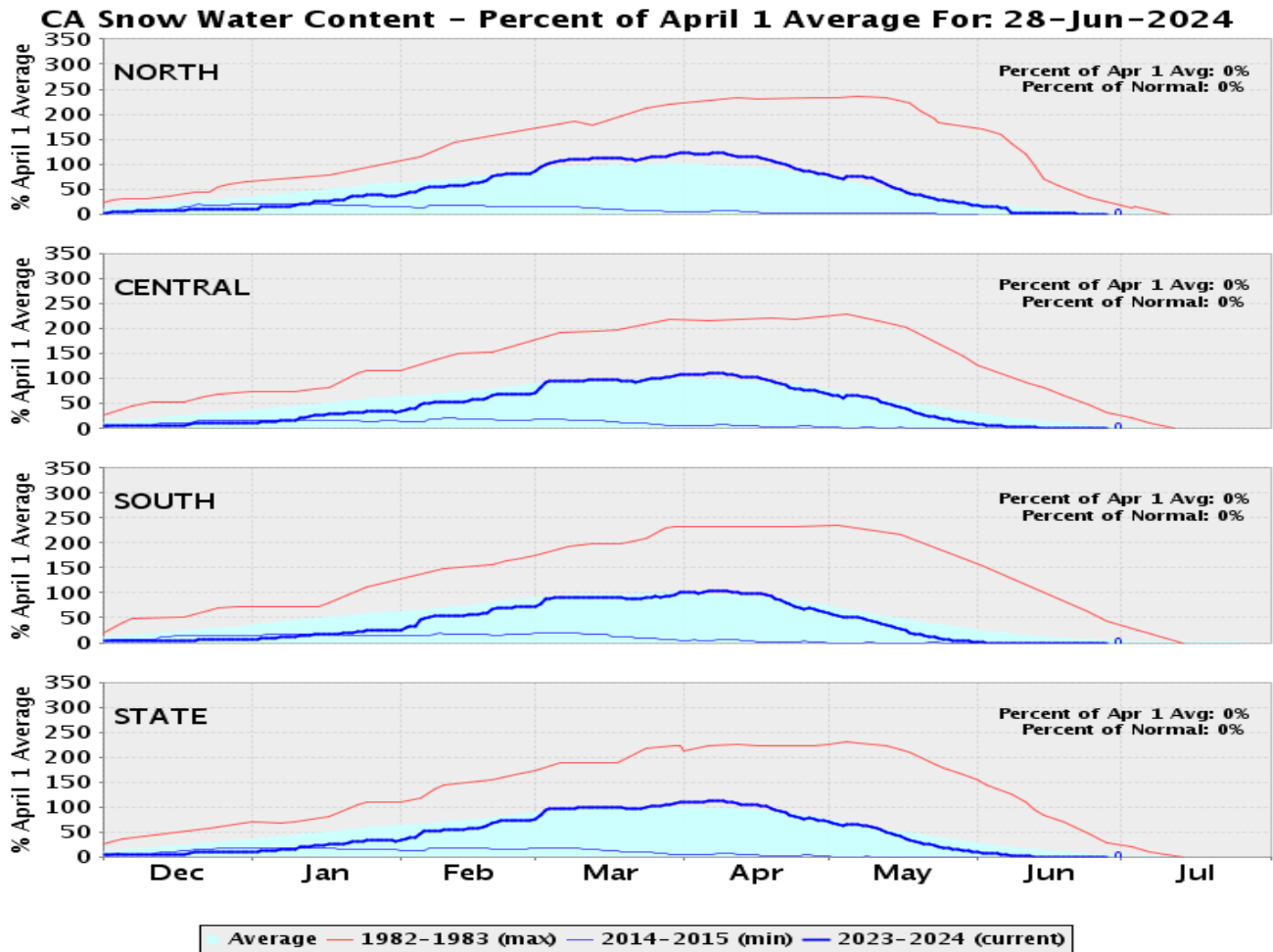
\*% Historical Average is based on a daily average that is interpolated from historical monthly averages. The monthly averages are computed using monthly data from water year 1991 to 2020. The monthly averages are updated every 5 years using a sliding 30 year period.

[Reference: California Water Data Exchange](#)





## SNOWPACK WATER CONTENT



REGION	*SNOWPACK WATER EQUIVALENT (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF AVERAGE LAST YEAR	% OF 20 YEAR HISTORICAL AVERAGE	% OF HISTORICAL **APRIL 1ST BENCHMARK
NORTHERN SIERRA	0	0	0	0	0
CENTRAL SIERRA	0	0	0	0	0
SOUTHERN SIERRA	0	0	0	0	0
STATEWIDE	0	0	0	0	0

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

\*\* April 1<sup>st</sup> 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. October 17, 2024

Data valid: October 15, 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

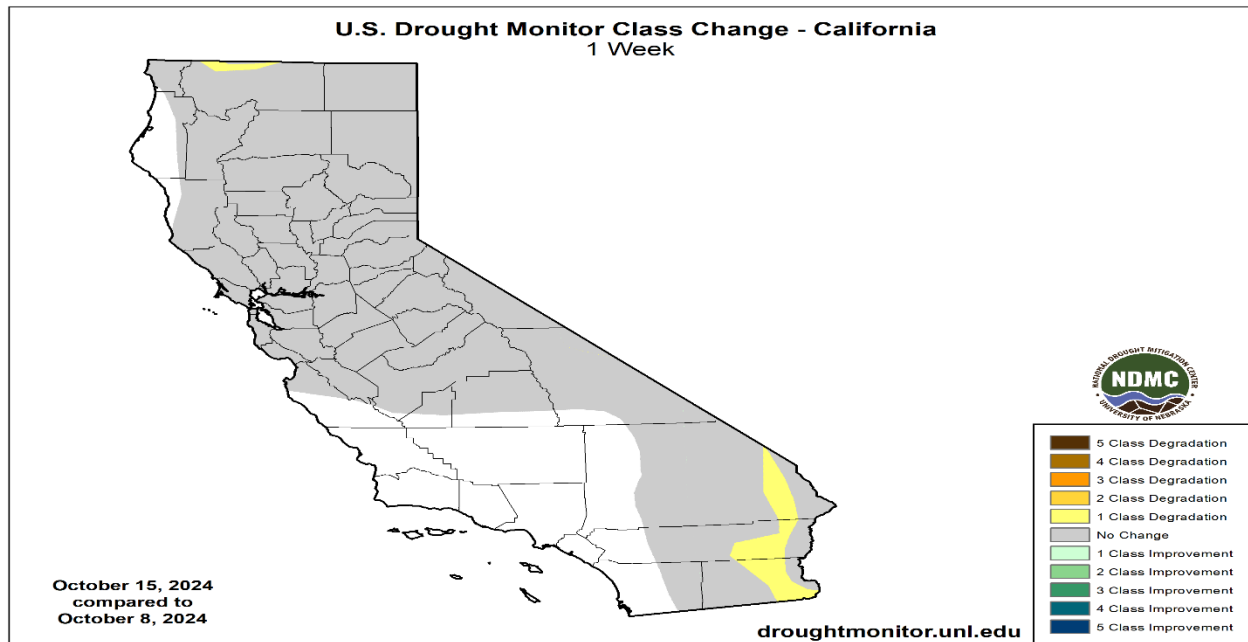
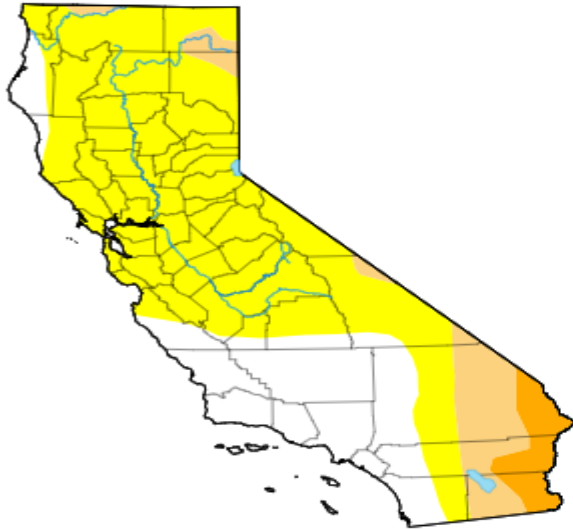
### Authors

United States and Puerto Rico Author(s):

[Brian Fuchs](#), National Drought Mitigation 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	<a href="#">2024-10-15</a>	24.68	75.32	14.05	4.30	0.00	0.00	94
Last Week to Current	<a href="#">2024-10-08</a>	24.68	75.32	13.77	1.72	0.00	0.00	91
3 Months Ago to Current	<a href="#">2024-07-16</a>	78.80	21.20	1.62	0.00	0.00	0.00	23
Start of Calendar Year to Current	<a href="#">2023-12-26</a>	96.65	3.35	0.00	0.00	0.00	0.00	3
Start of Water Year to Current	<a href="#">2024-10-01</a>	28.40	71.60	10.67	0.08	0.00	0.00	82
One Year Ago to Current	<a href="#">2023-10-17</a>	94.32	5.68	0.00	0.00	0.00	0.00	6

The U.S Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. Map courtesy of NDMC.



### CURRENT SATELLITE IMAGERY

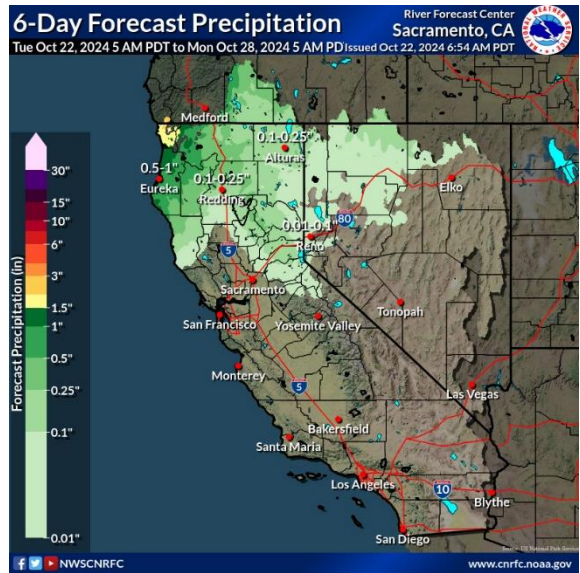
The satellite picture shows 3 different systems affecting the US weather today. Firstly, a large Pacific storm off the west coast which may hit landfall by the weekend. Secondly an area of cloud and precipitation over the Rockies and moving west. Thirdly, there is a large storm off the east coast but this will head out further over the Atlantic and not affect the US. Most of the country has clear skies.



Map Ref: Zoom Earth

### 10 Day Outlook

Weak ridging and dry conditions Thursday into Friday afternoon as another low drops down from the Gulf of Alaska and pushes the weakening system over the eastern Pacific towards the west coast. Max temperatures generally above normal up to 15 degrees on Friday. The weak system moves into the Pac NW with the trailing edge of a weak front brushing the far north for possible light precip to NW CA and the west slope of the Srn OR Cascades Friday night into Saturday. The trough deepens over the Eastern Pacific on Saturday and along the west coast on Sunday for a chance of precip over the north and cooler temperatures. Although the models vary with the timing, strength and track for low confidence in precip amounts and southern extent and timing. about 75% of the ensemble members on the The 24H QPF 50th percentile ending 00Z Sunday Clusters show precip over NW CA with amounts vary between a quarter of an inch up to 2 inches for the Smith Basin and 2 clusters (about 24% of members) show precip south to around Cape Mendocino and to Pt Arena. Around a quarter of Ensemble members keep precip at and north of orca border through Saturday afternoon. The forecast is mainly a blend of NBM and WPC and some previous forecast for Saturday with precip over Srn Or Cascades and along NW CA coast





around Pt Arena and North with the highest amounts up to an inch over the Smith Basin and around half an inch srn end of Cape Mendocino. Over half of the ensemble members on the 24H QPF 50th percentile ending 00Z Sunday Clusters show precip spreading south and east Saturday night into Sunday. Although cluster 1 42% of ensemble members (canadian 45%, GFS 13% and EC 58%) are slower and keep precip confined to NW CA (around Cape Mendo and north). The forecast leans towards faster timing of the trough and uses a blend of NBM and WPC spreading precip to the South and east (to around the I-80 corridor) Saturday night into Sunday with precip mainly along the coast and over the higher terrain of Nrn CA and as far east as NW NV.

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



### WESTERN WEATHER DISCUSSION

As with the Plains and the South, most all of the West was dry this week with only some coastal areas of California and Washington measuring any precipitation. Warm temperatures dominated the region with almost everyone at least 3-6 degrees above normal for the week and areas of Utah, Idaho, Colorado, Nevada, Wyoming and southern Montana 9-12 degrees above normal. Abnormally dry and moderate drought conditions expanded over Washington and Oregon. In Arizona, moderate and severe drought expanded in the southern portions of the state and into southern California. Moderate drought also expanded in central Arizona. The heat that has impacted the Southwest has been record-setting. Phoenix went 21 straight days of setting all-time daily high temperature records that ended on October 15, when the high temperature of 99 degrees Fahrenheit did not break the daily high. New Mexico had severe and extreme drought expand over southern parts of the state, while abnormally dry conditions filled in more of the west. Moderate drought emerged in southwest Colorado, with severe drought expanding and a new area of extreme drought in the north central portions of the state. Utah had abnormally dry conditions and moderate drought expand in the east. In Wyoming, moderate drought expanded over the southwest part of the state, severe drought expanded in the central area, and moderate drought expanded in the northwest.

Reference:

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





## WATER NEWS

### CALIFORNIA WATER NEWS

#### **Cadiz's ATEC Water Systems Wins \$1.6M in New Sales Contracts**

Cadiz, Inc. (NASDAQ: CDZI / CDZIP) ("Cadiz" or the "Company"), a California water solutions company, today announced that its operating subsidiary ATEC Water Systems, LLC ("ATEC") was awarded three new sales contracts totaling \$1.6 million for arsenic, iron and manganese filtration systems. The systems will be delivered in 2025.

"Groundwater contamination is a growing global threat," said Susan Kennedy, Cadiz CEO and Board Chair. "The demand we've been seeing over the last few months for ATEC's treatment products is setting us on a path for strong segment growth in 2025."

Under the new sales contracts announced today, ATEC will manufacture treatment systems using its 42" and 48" wide filters to remove arsenic, iron and manganese from groundwater supplies in rural and suburban communities in California, Washington and Oregon that serve close to 100,000 people reliant on groundwater as their principal water supply. The filters will be capable of processing up to 10 million gallons per day.

"I am proud of the work we are doing to help water districts, cities and disadvantaged communities clean up their groundwater, and we are excited to ramp up production at ATEC to meet the growing demand we're seeing for our products." said Lee Odell, ATEC's Chief Operating Officer."

Since Cadiz acquired ATEC's assets in 2023 for \$2 million, ATEC has experienced rapid growth in orders in 2024 propelled by tightening water quality regulatory standards and the need to integrate groundwater into the portfolio of water supply for growing communities. Cadiz continues to expect gross ATEC segment revenues to reach \$15 million for fiscal year 2024 and anticipates strong segment growth in 2025.

The ATEC treatment system uses patent-pending filter media processes to remove common groundwater contaminants by adsorption. The filters and systems are fully scalable and can be manufactured to different sizes and specifications depending on the volume of groundwater treated; contracts to date range from 60 million gallons a day for the largest water conservancy district in Utah to customized smaller systems for isolated smaller communities dependent on groundwater for their water supply. ATEC systems provide treatment for groundwater addressing a wide range of contaminants including arsenic, hexavalent chromium, nitrates, and other groundwater constituents of concern.

Original Article: [Cadiz Inc. Press Release](#)



## **California Department of Fish and Wildlife (CDFW) Announces Klamath River Chinook Salmon Reoccupying Historic Habitat, Spawning Above Former Dam Locations**

The California Department of Fish and Wildlife (CDFW) is excited to announce that adult fall-run Chinook salmon have begun occupying and spawning in newly accessible habitat behind the former dam locations on the Klamath River. These are the first observations of anadromous fish returning to California tributaries upstream of the former Iron Gate Dam since 1961.

On Oct. 15, spawning fall-run Chinook salmon were observed in Jenny Creek, a Klamath River tributary 4.3 river miles upstream of the former Iron Gate Dam location, the southernmost barrier of four dams removed from the Klamath River. Additionally, adult fall-run Chinook are starting to return to CDFW's newly rebuilt Fall Creek Fish Hatchery on Fall Creek, a formerly inaccessible tributary about 7.5 miles upstream of the old Iron Gate Dam.

In addition to returning fall-run Chinook, an adult Pacific lamprey was observed swimming through CDFW's fish counting station in Jenny Creek on Oct. 1.

These observations come shortly after volitional fish passage was restored Sept. 26 when the last fish barrier on the Klamath River in California was removed and the coffer dam was breached at Iron Gate Dam.

One of the major goals of the Klamath River dam removal project is to reestablish viable, wild, self-sustaining populations of anadromous fish species for conservation, ecological benefits and to enhance Tribal, commercial and recreational fisheries.

These returning adult salmon mark a major step forward toward reaching these goals. CDFW's post-dam removal management strategy, as detailed in the recently released Klamath River Anadromous Fishery Reintroduction and Monitoring Plan, is to mostly allow these ocean-going fish species to naturally recolonize the 420 miles of newly accessible habitat as they are now doing.

Over the next few months ongoing monitoring by Tribal, federal, state, and other partners will assess the repopulation of anadromous fish to the mainstem Klamath and additional tributaries above the former dam locations within California and Oregon. Returns of Klamath River fall-run Chinook will be ongoing and final estimates will be available in January of 2025.

CDFW's Fall Creek Fish Hatchery also will play a significant role in the repopulation of the Klamath River. The newly constructed, \$35 million hatchery is intended to jump-start salmon populations in the upper basin and be a bridge to a restored Klamath River. Annual production goals consist of 3.25 million fall-run Chinook salmon and 75,000 coho salmon.



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With the independent return of adult fall-run Chinook salmon to Fall Creek and the Fall Creek Fish Hatchery, CDFW is scheduled to begin spawning salmon at the facility next week.

Original Article: [Sierra Sun Times by CDFW](#)

### **Proposition 4 authorizes \$10 billion bond sale for climate change mitigation**

Proposition 4 on California's Nov. 5 general election ballot authorizes the sale of a \$10 billion state bond for the purpose of funding programs aimed at conserving natural resources and responding to climate change.

The state will distribute the majority of the money raised from the sale among local governments, Native American tribes, non-profit organizations and businesses in the form of grants and loans. The rest of the funds will be made available to state agencies for related state-run activities.

California taxpayers will repay the bond through the state General Fund at a rate of about \$400 million annually over a 40-year period, making the total amount repaid \$16 billion. This includes \$6 billion in interest. The repayments will be drawn from the state's general fund, rather than from a direct tax increase, with \$400 million representing 0.5% of the general fund's budget, itself derived from state tax revenues. The estimated cost per Californian divided evenly among the current population is \$410 over the full term. Funds will be allocated for activities across eight broad categories: drought, flood and water supply (3.8 billion), forest health and wildfire prevention (1.5 billion), sea-level rise and coastal areas (1.2 billion), land conservation and habitat restoration (1.2 billion), energy infrastructure (850 million), parks (700 million), extreme heat (450 million), and farms and agriculture (300 million).

Activities identified within those categories range from conservation land acquisitions and hard infrastructure projects such as water treatment and recycling facilities, wildlife corridors and soil restoration efforts; to training and education, unemployment mitigation, and soft infrastructure such as pop-tents, port-a-potties and point-of-sale systems for farmers markets.

Other spending stipulations include allocations for low-income communities and tribal lands that may be disproportionately affected by climate change. Preference will be given to socially disadvantaged grant applicants.

Supporters of the proposition include Clean Water Action, National Wildlife Fund and other environmental groups, alongside California Professional Firefighters, California Labor Federation and the Sacramento Bee. These organizations are among others that have long lobbied for increased funding to tackle climate change related issues.

The opposition to Proposition 4 includes senate GOP leader Brian Jones, assemblyman Jim Patterson, and the Howard Jarvis Tax Association who argue that bonds burden



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taxpayers disproportionately, and the planned expenditures are unproven to address climate concerns.

If Proposition 4 is rejected, natural resource preservation and climate change mitigation initiatives will continue to be funded by regular state and local budgets.

If authorized, funds raised from the bond may either broaden state and local efforts to protect natural resources and mitigate the effects of climate change or free up for other needs state and local funds that would otherwise have been spent on such efforts without this proposition.

However, bonds are the most expensive way for governments to raise money and are usually reserved for wars or large hard infrastructure projects that will outlast the debt. Much of the expenditure in this proposal is for soft infrastructure and activities that will not be seen by those Californians repaying the debt in the latter of the next four decades, with speculative, if not spurious, influence on future climate related outcomes.

Original Article: [The Oak Leaf News by Marty Lees](#)

### **San Joaquin River Restoration Program: Draft Channel Capacity Report for the 2025 restoration year available for review**

The San Joaquin River Restoration Program, through its partnering agency, the California Department of Water Resources, has released the Draft Channel Capacity Report for the 2025 Restoration Year.

The primary objective of this report is to provide the Channel Capacity Advisory Group (CCAG) and the public a summary of the prior Restoration Year's data, methods, and estimated channel capacities, as well as, recommendations for monitoring and management actions for the following year.

Original Article: [Mavens Notebook by San Joaquin River Restoration Program](#)



## US WATER NEWS

### State sets temporary allowable PFAS limits in groundwater

The state's environmental regulatory agency has established temporary caps on the amounts of several PFAS that industries will be allowed to release into groundwater. Until permanent limits are set, interim maximum allowable concentrations introduced by the North Carolina Department of Environmental Quality's Division of Water Resources allows officials to set cleanup targets for groundwater contaminated with high levels of the chemical compounds. SPONSOR SPOTLIGHT Stay extra cozy during your Beaufort, NC, Extended Weekend! Save 50% on Sunday nights when you stay three nights! Fireplaces open Oct. 15 in our first-floor waterfront rooms. Call 252-728-3600 or visit [inlet-inn.com](http://inlet-inn.com) now to book your stay! The division's announcement last week came on the heels of a study that found per- and polyfluoroalkyl substances, or PFAS, including some of those for which the state has set interim allowable limits, have remained in groundwater offsite of Chemours' Fayetteville Works plant for up to more than 40 years. Water resources division Director Richard Rogers will, within a year, recommend to the state Environmental Management Commission, or EMC, whether any of the interim maximum allowable concentrations, or IMACs, should be replaced or terminated. That 15-member commission, whose role is to adopt rules that protect, preserve and enhance the state's water and air resources, voted earlier this fall to move forward with a proposed draft rule outlining health standards for three PFAS in groundwater. The proposed rule includes PFOA and PFOS, which are classified by the U.S. Environmental Protection Agency as likely carcinogens, and GenX, a compound specific to Chemours' plant on the banks of the Cape Fear River. The Department of Environmental Quality, or DEQ, announced Monday that public comments on the proposed draft rule will be accepted from Nov. 1 – Dec. 31 by email to [GWTriRevComments@deq.nc.gov](mailto:GWTriRevComments@deq.nc.gov) or by mail to Bridget Shelton, NC DEQ Division of Water Resources, Planning Section 1611 Mail Service Center Raleigh, N.C. 27699-1611. The EMC and DEQ will also host three public hearings on the proposed draft rule beginning next month. The commission is expected to vote on the draft rule next year. If approved, the rule is anticipated to be effective by mid-2025. The commission omitted five other compounds state environmental quality officials sought to include in proposed groundwater limits. Those five – PFBS, PFNA, PFHxS, PFBA and PFHxA – were specifically listed along with PFOA, PFOS and GenX in a July request by an Alamance County couple asking Rogers to establish interim maximum allowable concentrations in groundwater for all eight compounds. Related: Public may comment on requested interim PFAS limits State groundwater rules grant any person the right to request the water resources director establish an IMAC for a substance for which a groundwater standard has not been set. Graham residents Jonathan and Stephanie Gordon wrote





that at least a half-dozen drinking water wells in their community tested for “extremely high levels of PFAS.” “Issuing an IMAC will only be one step towards the relief we need, but it will at least give us greater clarity about the risk we face and the eventual obligations for unknown responsible parties to address the contamination they have visited upon us,” they wrote.

Original Article: [Coastal Review by Trista Talton](#)

### **Billions in new projects expected to increase utility bill base rates in Colorado Springs**

Utility bills in Colorado Springs are likely to keep going up. The average homeowner’s cost has recently grown by about \$9 a month to cover rising fuel prices. Now the city-owned Colorado Springs Utilities, which handles power, gas, water and sewer, is about to ask for another type of increase called a base rate increase. That’s to cover billions of dollars in new infrastructure.

The utility currently owns and maintains about \$5 billion worth of infrastructure built during its 100-year history. According to a utility official, the base rate increase is necessary because the next five years bring an unprecedented need for upgrades and expansion, with capital project costs increasing to \$600 to \$950 million annually, from the more typical \$150 million to \$250 million annual investments of the past decade. Colorado Springs Utilities customers have seen base rate increases annually for most of the past decade, except in 2022.

City Council will hold a public hearing about the base rates and budget during its regular meeting on Tuesday, Oct. 22. Following the hearing they’ll discuss possible changes and the final vote on adopting the resolution is expected next month. If adopted, the new base rates will go into effect on January 1, 2025.

KRCC’s Shanna Lewis spoke with Colorado Springs’ Utilities Chief Financial Officer Tristan Gearhart about capital projects and the proposed base rate increase.

Why Colorado Springs Utilities expects to build about \$3.7 billion in new infrastructure over the next five years

It’s really being driven by three different factors. One is regulatory. From the state, we have the Clean Energy Plan, which requires us to reduce carbon emissions by 80 percent by 2030. That’s one factor. We are at the same time trying to make sure that we have a very reliable system for those essential services that we have for our customers, making sure that they can count on their electricity, gas, water and wastewater.

And finally, just the overall growth of Colorado Springs that we continue to see. Those three factors really do lead into the billions of dollars (in capital projects) that we’re needing to do by the year 2030. This is probably not 100 percent down to the penny, but essentially it breaks out almost a third for each of those categories (regulatory, reliability, and growth)



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repair a wastewater pipe.

Dozens of projects are planned or already in the works. One of the largest is the Eastern Wastewater System Expansion with a total cost of nearly \$400 million. Is this going to serve existing customers or is it for expected growth?

The Eastern Wastewater project will allow us to move wastewater from the eastern growth side of town to the Las Vegas wastewater treatment plant. We've had the question, "Why not just build a new wastewater treatment plant out in those areas?" Permitting for those types of things is very difficult at this time with PFAS and other regulations that have been coming out, so it's harder and harder to get permits for those types of plants. Also, by being able to move the water on the eastern side of town that is growing to our Las Vegas water treatment plant, we're able to get more from our water rights.

So what that requires is for us to build somewhere around 14 or 15 miles of wastewater pipeline infrastructure to get to Las Vegas from those growth areas. The way that we're setting that up is through base rates right now to be able to recover some of those costs which are spread across all of our customers, but at the same time, there will be recovery agreements for everyone that buys homes in these areas, which means eventually as those areas fill out, there will be additional revenue that comes in and offsets future rates for all of our customers.

Breckenridge is part of the Colorado Springs Utilities water system.

Other big projects include enlarging a reservoir in Park County that's part of Colorado Springs Utilities' water infrastructure and building a new electric substation to serve the southeast side of the city. What effects do these huge capital projects have on the day-to-day lives of people in Colorado Springs?

It helps us to be able to have those resources that everyone counts on. The power that we need comes through those substations that ultimately deliver that power to all of our customers. Montgomery Reservoir sits on the Hoosier Pass. It's been serving our community for decades and decades, but in the wettest years, we do have water rights that end up spilling over the reservoir. By enlarging that reservoir, we're able to capture even the wettest year's worth of precipitation to be able to use it for the future growth of our city.

Original Article: [KRCC by Shanna Lewis](#)



## GLOBAL WATER NEWS

### **Scientists Say Our Water Cycle Has Started Breaking Down**

Think back to elementary school science class, and you'll likely remember studying the water cycle—staring at an illustration filled with arrows forming an overall circular motion and annotated with words like evaporation, transpiration, condensation, and precipitation. This system forms the bedrock of life on Earth as it moves moisture across the planet, but now scientists think that, for the first time in human history, that system is malfunctioning.

That's the conclusion of a new report published this week by the Global Commission on the Economics of Water—a group of leading scientists and economists formed in 2022 whose mission is to assess the state of Earth's hydrological systems and how those systems are being managed. The results are not encouraging. The report finds that demand for fresh water will outstrip supply by more than 40 percent by the end of the decade, mostly due to stresses caused by climate change.

The report also mentions that governments currently underestimate how much water a person needs to live a “dignified life.” According to the report, while 50 to 100 liters are required for essential health and hygiene, that number balloons to 4,000 liters when considering estimation beyond mere survival.

The 194-page report highlights two types of water: green water (found in plants and soils) and blue water (which makes up rivers and lakes). Every 1 degree Celsius increases moisture in the atmosphere, which powers up the hydrological cycle—not to mention making hurricanes, typhoons, and other tropical storms more frequent. The destruction of forests also interrupts the piece of the water cycle that relies on vegetation to store water and release moisture through transpiration. It also doesn't help that 80 percent of wastewater around the world isn't recycled.

Government water subsidies have also greatly impacted the water cycle by encouraging wasteful use of a precious resource. In the U.S., this has been especially true of the Colorado River—though, in 2023, Arizona, Nevada, and California agreed to terms that would reduce their reliance on the beleaguered waterway by 3 million acre-feet by 2026.

While the American West certainly faces a litany of issues as the climate warms, the regions most impacted by this water shortage—at least, according to this report—will be northwestern Indian, northeastern China, and southern and eastern Europe. But, like all climate change impacts, repairing the world's malfunctioning water cycle will require a global effort.

“The Chinese economy depends on sustainable forest management in Ukraine, Kazakhstan and the Baltic region,” Johan Rockström, the director of the Potsdam Institute for Climate Impact Research and co-chair of the commission, told The



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Guardian. “You can make the same case for Brazil supplying fresh water to Argentina. This interconnectedness just shows that we have to place fresh water in the global economy as a global common good.”

There is no easy solution to fortifying one of the planet’s most fundamental life support systems. That said, the report urges that it’s not too late, and calls to “redeploy \$600 billion in annual agriculture subsidies,” according to Reuters. It also emphasizes that the crisis needs more attention, in addition to the U.N.’s recently appointed “envoy on water.”

Water is life’s most precious necessity. For the survival of humanity, we can’t let that global well run dry.

Original Article: [Popular Mechanics by Darren Orf](#)

### **India is facing the biggest water crisis in its history**

Lack of water is not unusual, especially in developing countries. A concrete example is China, which holds 7% of the world's water resources, but uses 16% of the planet's water.

Meanwhile, India is facing the biggest water crisis in its history.

About 600 million people suffer from water scarcity. The Niti Aayog report, which is based on data from 24 cities in India, says the crisis will "only worsen" in the coming years.

It also warns that 21 cities will have no groundwater by 2028 despite growing demand. This would also threaten food security as 80% of water is used in agriculture. Rural areas are also affected by the lack of drinking water.

About 200,000 Indians die every year because they do not have access to clean drinking water.

Many rely on private water supplies or tankers paid for by the government.

Long queues of people waiting to get water from cisterns or public taps are a common sight in Indian slums.

A project to clean up the Ganga River, which flows through 11 states, is estimated to cost 1 trillion rupees (\$15000000000 billion). The project is expected to generate about 10 billion liters per day in additional treatment capacity over the next 10 to 15 years.

India needs 13.5 trillion rupees (\$220 billion) of investment in urban water supply and sanitation over the next 20 years, and this creates a huge opportunity for players in the water industry, according to Credit Suisse.

Original Article: [Telegrafi](#)

### **Water scarcity threatens global food supply as temperatures rise**

A new report finds that one-quarter of the world’s crops are grown in places facing high levels of water stress, water unreliability, or both. The analysis comes from the research



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nonprofit World Resources Institute, or WRI, and highlights the difficulty of growing enough food to meet rising demand on a warming planet.

One out of every 11 people in the world are hungry, meaning they don't get enough food to maintain basic health, according to a recent United Nations report. The water challenges outlined in WRI's latest research could potentially contribute to increased levels of food insecurity, especially as global temperatures continue to rise.

The report looks at both irrigated crops, in which water is transferred from reservoirs to cropland, and rain-fed crops, which receive water through precipitation. The authors relied on WRI's existing global water risk data and compared it to crop production data from the International Food Policy Research Institute.

Analyzing both sets of data, the report authors found that both irrigated and rain-fed crops face complications when it comes to water access. For example, about 60 percent of irrigated crops by weight come from regions of the world facing high or extremely high levels of water stress. Water stress refers to heightened competition over water resources; it is considered high when 40 percent or more of an area's local water supply is spoken for by agriculture, energy, industry, and household use.

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Areas facing high levels of water stress require robust water management and governance, said Sam Kuzma, one of the report authors. The problem, she said, stems partly from a common tendency to take water for granted and treat it like an endlessly renewable, on-demand resource. "Because we don't put a value on water, you can irrigate and not pay much at all for the water that you're using," said Kuzma, who runs the water data program at WRI. "That means we can be pretty reckless with how we're growing and in what environments. That's why you see alfalfa being grown in the desert."

The majority of the world's irrigated crops — 72 percent — are grown in just 10 countries, including Brazil, China, India, and the United States, according to WRI. These crops include staples like rice, wheat, and corn that make up a good chunk of the world's calories.

The high rate of water stress in areas that grow irrigated crops spells trouble for global food security. India, for example, is a major agricultural producer and the world's largest exporter of rice. The country faces significant water risks; about one-fourth of its total crop production comes from areas using more water than can be naturally replenished, according to WRI's analysis. Kuzma noted that this can lead to groundwater depletion in parts of the country that rely on a source of water that "just isn't going to be there forever" if current usage rates continue. "If that's a key part of our global food supply chain and we no longer have the water to create those commodities, then sorry, everyone is impacted," she added.





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WRI also looked at water unreliability facing rain-fed crops, which make up two-thirds of the world's food supply. Its analysis found that 8 percent of rain-fed crops by weight face high to extremely high levels of water unreliability, which refers to fluctuations in the annual water supply such as periods of drought and extreme precipitation events caused by climate change. As the planet continues to warm, the amount of rain-fed crops affected by these conditions could jump 40 percent by 2050, compared to 2020 levels. Warming temperatures are also likely to impact irrigated crops, as crops need more water to survive in hotter climates.

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Nicole Silk, the global director of freshwater outcomes at the environmental nonprofit The Nature Conservancy, noted that these challenges are having a dire impact on people and communities. Floods and droughts are just as likely to put both “people and crop production in jeopardy,” she said. “We’re increasingly moving towards a world where both people and food production are going to be in places that are particularly water stressed,” she added.

As a sector, agriculture is the number one consumer of freshwater globally, accounting for 70 percent of freshwater withdrawals — the process of removing freshwater from surface-water sources, like rivers and lakes, as well as groundwater sources like underground aquifers. In its latest report, WRI refers to agriculture as the largest driver of water stress. And yet, food has to be grown somewhere, somehow, by someone. Indeed, all signs point to more food needing to be grown, as the global population is projected to reach 10 billion by 2050. The challenge, then, becomes how to grow crops without exacerbating water resources.

“We have to be smarter about what we grow, and we can be smarter about how we grow what we’re growing,” said Silk. She endorsed some of the interventions proposed by WRI as potential solutions — particularly, paying more attention to soil health (because the more moisture soil can retain, the less water farmers need to add to crops). WRI also recommends shifting diets away from meat, which requires a tremendous amount of land and water to produce, towards less water-intensive foods.

Silk also mentioned incorporating more nature-based solutions, “green” strategies that attempt to replicate an ecosystem’s natural rhythms, as opposed to “gray” interventions that involve humans building new infrastructure. The most effective nature-based solutions for managing water on cropland will vary from place to place, depending on geography as well as what’s being grown. Silk observed that “because water is always on the move,” finding the best management strategies will require taking a step back to see the full picture — for instance, reforestation can improve water quality and regulate the water cycle within a landscape. “I think ultimately it becomes a really interesting opportunity for conservationists to meet with farmers and ranchers, to meet with local



water regulators and utilities, and also with Indigenous peoples and populations,” she said.

Kuzma noted that farmers know better than anyone — and typically before anyone else — about the water challenges they face, and that WRI’s analysis is really meant to communicate those risks to a broader audience. And she recognized that these management shifts and policy recommendations involve asking farmers to “change how they operate,” which usually requires them to shoulder the financial burden of climate adaptation alone. “We also need to be thinking about what type of financial policies and corporate sponsorship we can be providing” to make those shifts possible, she said.

Silk agreed. “Sometimes farmers and ranchers are willing to change their practices, but they don’t necessarily have the financial resources to do so,” she said. “So if they’re incentivized to change those practices or somebody else can come in and help them, it makes a big difference.”

Original Article: [Grist by Frida Garza](#)

## **Tijuana River Gets More Sewage Pollution Tests As Veolia Faces New Suit by Residents**

The U.S. section of International Boundary and Water Commission has agreed to more tests of water, sediment and trash samples in the Tijuana River and adjacent canyons along the U.S.-Mexico border to determine effects of decades of transboundary raw sewage flows into the U.S. side of the river valley and, eventually, the Pacific Ocean— awarding a five-year, \$1.9 million contract to EGC-AGEISS, a San Antonio environmental engineering joint venture.

The sampling program was developed with input from the regulatory community and the Minute 320 water quality workgroup created by the U.S.-Mexico border management agency to address ongoing problems with sewage overflows. It said the testing program will characterize transboundary flows and develop an ongoing warehouse of water quality and sediment data to plan future projects to mitigate the pollution effects and make safety recommendations to residents and landowners.

Original Article: [Engineering News Record by Jeff Yoders](#)

## **Desalination system adjusts itself to work with renewable power**

Fresh water we can use for drinking or agriculture is only about 3 percent of the global water supply, and nearly 70 percent of that is trapped in glaciers and ice caps. So far, that was enough to keep us going, but severe draughts have left places like Jordan, Egypt, sub-Saharan Africa, Spain, and California with limited access to potable water.

One possible solution is to tap into the remaining 97 percent of the water we have on Earth. The problem is that this water is saline, and we need to get the salt out of it to make it drinkable. Desalination is also an energy-expensive process. But MIT researchers



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led by Jonathan Bessette might have found an answer to that. They built an efficient, self-regulating water desalination system that runs on solar power alone with no need for batteries or a connection to the grid.

### Probing the groundwaters

Oceans are the most obvious source of water for desalination. But they are a good option only for a small portion of people who live in coastal areas. Most of the global population—more or less 60 percent—lives farther than 100 kilometers from the coast, which makes using desalinated ocean water infeasible. So, Bessette and his team focused on groundwater instead.

“In terms of global demand, about 50 percent of low- to middle-income countries rely on groundwater,” Bessette says. This groundwater is trapped in underground reservoirs, abundant, and, in most places, present at depths below 300 meters. It comes mostly from the rain that penetrates the ground and fills empty spaces left by fractured rock formations. Sadly, as the rainwater seeps down it also picks up salts from the soil on its way. As a result, in New Mexico, for example, around 75 percent of groundwater is brackish, meaning less salty than seawater, but still too salty to drink.

We already have the ability to get the salt back out. “There are two broad categories within desalination technologies. The first is thermal and the other is based on using membranes,” Bessette explains.

Thermal desalination is something we figured out ages ago. You just boil the water and condense the steam, which leaves the salt behind. Boiling, however, needs lots of energy. Bringing 1 liter of room temperature water to 100° Celsius costs around 330 kilojoules of energy, assuming there’s no heat lost in the process. If you want a sense of how much energy that is, stop using your electric kettle for a month and see how your bill shrinks.

“So, around 100 years ago we developed reverse osmosis and electrodialysis, which are two membrane-based desalination technologies. This way, we reduced the power consumption by a factor of 10,” Bessette claims.

Reverse osmosis is a pressure-driven process; you push the water through a membrane that works like a very fine sieve that lets the molecules of water pass but stops other things like salts. Technologically advanced implementations of this idea are widely used at industrial facilities such as the Sydney Desalination Plant in Australia. Reverse osmosis today is the go-to technology when you want to desalinate water at scale. But it has its downsides.

“The issue is reverse osmosis requires a lot of pretreatment. We have to treat the water down to a pretty good quality, making sure the physical, chemical, or biological foul doesn’t end up on the membrane before we do the desalination process,” says Bessette. Another thing is that reverse osmosis relies on pressure, so it requires a steady supply of power to maintain this pressure, which is difficult to achieve in places where the grid



is not reliable. Sensitivity to power fluctuations also makes it challenging to use with renewable energy sources like wind or solar. This is why to make their system work on solar energy alone, Bessette's team went for electro dialysis.

Original Article: [ARS Technica by Jacek Krywko](#)

### **In a first, India extends rupee-denominated line of credit to Mauritius for water pipeline project**

In a significant step forward in its development assistance strategy, India has extended its first-ever rupee-denominated Line of Credit (LOC) under the Indian Development and Economic Assistance Scheme (IDEAS) to the Government of Mauritius. Valued at INR 487.60 crores, this LOC will finance the replacement of approximately 100 kilometers of obsolete water pipelines in Mauritius, marking a new milestone in India's economic and diplomatic outreach.

This unprecedented rupee-denominated LOC is a critical development for India, signifying a broader shift in its foreign assistance program, traditionally dominated by dollar-denominated loans. The LOC will be financed by the State Bank of India at concessional terms, further bolstering India's position as a trusted partner for development projects in the Global South.

External Affairs Minister S Jaishankar made the formal offer to his Mauritian counterpart Maneesh Gobin, which has now been accepted by the Government of Mauritius, India's Ministry of External Affairs (MEA) said on Thursday (October 17, 2024).

The water pipeline replacement project will address an urgent infrastructure need in Mauritius. As the existing water supply network in many areas of the country has aged, the replacement of approximately 100 kilometers of outdated pipelines is expected to significantly improve water access and management across the island nation. This project will not only enhance the reliability of water distribution but also contribute to public health outcomes by ensuring a more stable and safe water supply.

India's LOC represents a tangible contribution to the daily lives of Mauritians, as it addresses a core infrastructure challenge.

"This is yet another reflection of India's long-standing commitment to overall socio-economic development of countries in the Global South. India's development projects continue to be driven by the aspirations and needs of its partner countries," the MEA said.



### Rupee-Denominated LOC: A Strategic Shift

Traditionally, India has extended its Lines of Credit in US dollars, but the introduction of a rupee-denominated LOC marks a strategic shift. By denominating this LOC in Indian Rupees, India is advancing its efforts to internationalise its currency, encouraging its use in international transactions, and strengthening bilateral trade flows. The repayment for this LOC will be made in rupees, effectively increasing the circulation and acceptance of the Indian currency abroad. This could have far-reaching implications for India's trade and economic diplomacy, as it reduces dependence on foreign currencies and strengthens India's economic sovereignty.

India's decision to extend a rupee-denominated LOC is in line with broader global trends where emerging economies seek to reduce their reliance on the US dollar. For India, this is not only about enhancing its currency's international profile but also about creating a robust financial system that supports long-term trade and investment partnerships with countries like Mauritius.

### Unique India-Mauritius Relationship

India and Mauritius share a unique relationship, underpinned by historical, cultural, and demographic ties. With over 70% of Mauritius' 1.2 million population being of Indian origin, the two nations enjoy a deep connection that extends beyond formal diplomatic relations.

The LOC comes at a time when both countries are celebrating the 75th anniversary of the establishment of diplomatic ties. It also aligns with the broader framework of India's "Act East" policy, under which India has sought to deepen its engagement with countries across Asia and the Indian Ocean region.

### IDEAS and India's Role in the Global South

The IDEAS initiative, under which this LOC has been extended, is India's flagship development assistance programme. It aims to support infrastructure, capacity-building, and social welfare projects across Asia, Africa, and the Caribbean. By providing concessional loans, India enables recipient nations to tackle pressing developmental challenges while avoiding crippling debt burdens.

### Boosting Indian Industry

The structure of the LOC under IDEAS often mandates that a portion of the goods and services procured for projects must come from Indian companies. This creates a win-win situation, where Indian firms gain access to new markets while partner countries benefit





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from high-quality products and services. In this case, Indian companies specializing in water management and infrastructure stand to gain from the project in Mauritius, further strengthening the economic ties between the two nations.

India's first-ever rupee-denominated Line of Credit to Mauritius underlines a significant evolution in India's development assistance strategy. The financing of the water pipeline project not only addresses a critical infrastructure need in Mauritius but also serves as a broader strategic move by India to boost the international use of its currency, deepen trade ties, and enhance its geopolitical influence in the Indian Ocean region.

Original article: [India News Network](#)

### **Only 37% of Europe's Surface Water Is Healthy, Study Finds**

Just a little more than one-third of Europe's surface water is in "good" health or better, a new report from the European Environment Agency (EEA) has found. The report also said the majority of protected aquatic species and habitats have either a "poor" or "bad" conservation status.

The data was collected from 19 EU member countries.

According to the report, only about 37% of the surface water analyzed in 2021 was identified as having "good" quality or better, and only 29% had at least a good chemical status.

A major contributing factor to poor chemical status was long-lived pollutants, like mercury or "brominated flame retardants." If these were not a factor, the study says, 80% of the surface water would be in good health or better.

Another major factor is ongoing atmospheric pollution, largely coming from coal plants and diffuse pollution from agriculture.

Groundwater, on the other hand, which supports local ecosystems and supplies two-thirds of the continent's drinking water, was reported to be much healthier, although still not in perfect health. About 77% of groundwater studied was in good chemical status and 91% was in "good quantitative status."

According to the study authors, "Failure to achieve good ecological status shows that European aquatic ecosystems are still seriously degraded."

Only 17% of protected lake, river, alluvial and riparian habitats were shown to be in good health, while 89% of wetlands were shown to be in bad health or worse. A majority of protected fish and amphibian species were shown to be in poor or bad ecological health and are threatened with becoming locally extinct. "This shows that the EU is far from achieving its biodiversity ambition in aquatic ecosystems," the authors wrote.

The study uses the 2022 catastrophic die-off event in the Oder River in Germany and Poland as an example of the consequences of bodies of water being in poor or bad health. More than 100 metric tonnes (148 U.S. tons) of dead fish were removed from



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the river after an algal bloom of the harmful species *Prymnesium parvum* released deadly toxins in the water.

The algal bloom was largely caused by a combination of salt pollution from salt mines and nutrient pollution — including nitrogen and phosphorous — from urban wastewater, the study said.

The “most significant” pressure, according to the report, was from agriculture, especially from the use of “nutrients and pesticides” for crops.

Agriculture as a practice also consumes an immense amount of water and is the single practice that uses the most water in all of Europe by far. The report warns that, without any significant changes, agricultural demand is set to increase in the coming years.

Original Article: [EcoWatch by Michael Riojas](#)

### **Solution: a new economics of water 8% GDP loss by 2050 due to world water crisis**

"THE Economics of Water: Valuing the Hydrological Cycle as a Global Common Good," a report by the Global Commission on the Economics of Water (GCEW), says the water crisis will put at risk more than half of the world's food production by 2050. It also estimates an 8-percent loss of gross domestic product (GDP) in countries worldwide on average by 2050, with as much as a 15-percent loss in lower-income countries and even larger economic consequences beyond.

Original Article: [The Manila Times](#)

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