

Veles Water Weekly Report

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January 27th 2022

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VelesWater



WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Joshua Bell

CLICK THE LINK BELOW

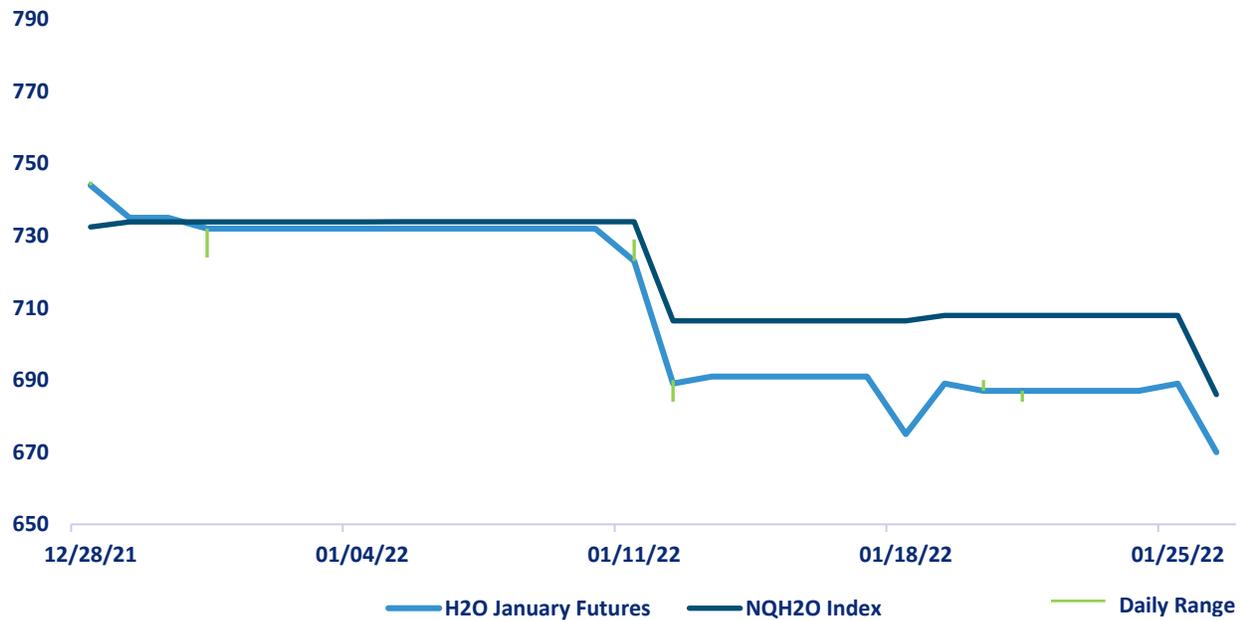
"A 2 minute technical analysis video of H2O futures"

<https://vimeo.com/670608817>



NQH2O INDEX PRICE vs H2O FUTURES PRICE

1 Month Price Performance NQH2O Index vs H2O Futures



Price Chart Based upon Daily Close

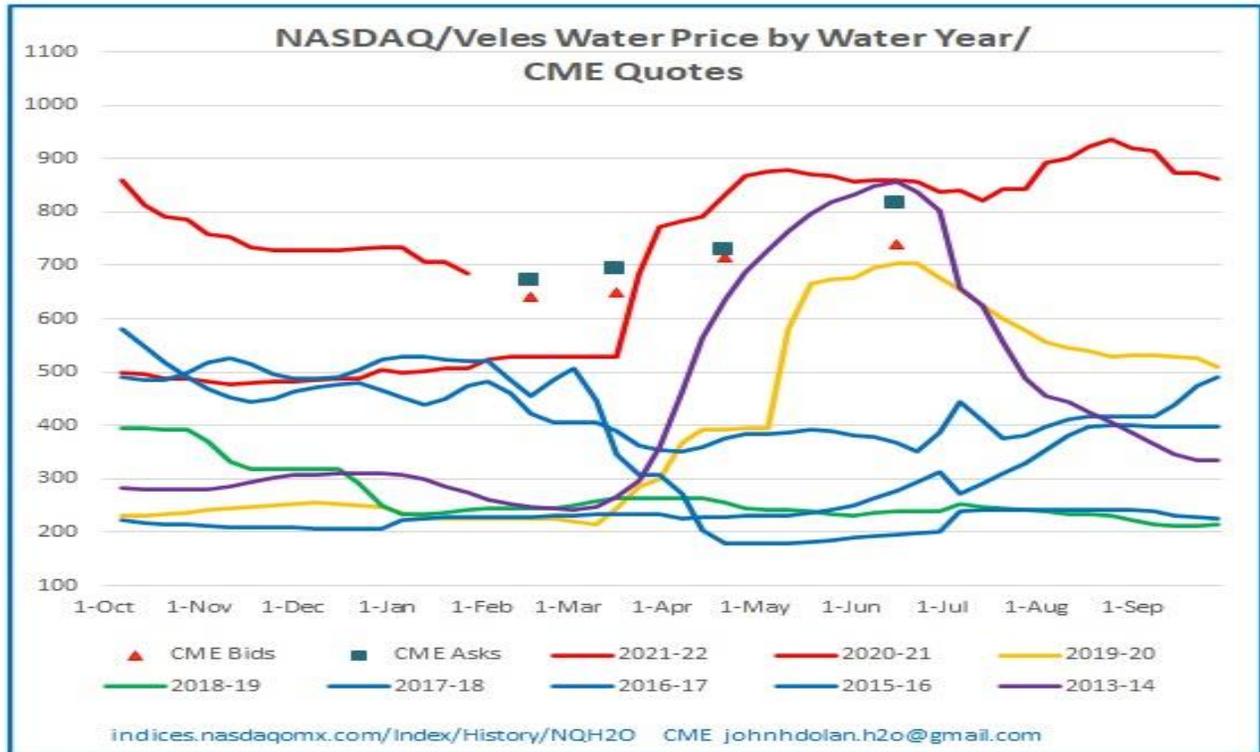
The new NQH2O index level of \$685.97 was published on the 26th of January, down \$21.09 or 3.09%. The February Futures have been trading at a discount to the index of \$15.97 to \$20.87.

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

February 22	640@670
March 22	650@693
April 22	715@728
June 22	740@815



NQH2O INDEX HISTORY



The graph above lays out the Nasdaq Veles water index by year, showing 2013- 2022. In very dry years, prices clearly rise through the spring, peaking in May to July (with the exception of 2015) as demand for water from farmers peaks. Prices then taper off heading into the winter on reduced demand, and the possibility of rain/snow. The restricted ability to “carry” water, much like one can do with financial contracts, gives this index the same type of seasonal pattern that one sees on some other commodities.

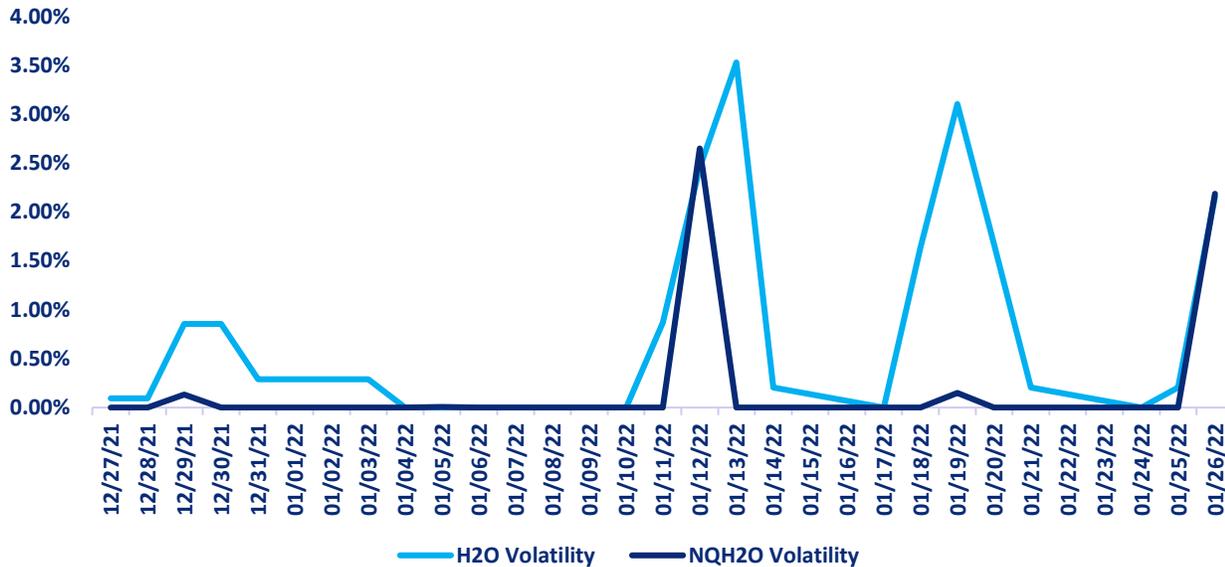
The graph for 2021 is highlighted in red. It shows the same seasonal climb, but at record-high values above each of the last eight years since February. Current bids and offers in the market are still higher than historic prices showing that expectations are that this is an exceptionally dry year and prices may not fall seasonally as much as they have in prior dry years.

(John H Dolan, CME Market Maker)



H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



DAILY VOLATILITY

Over the last week the February daily future volatility high has been 2.16% on January 26th and a low of 0% on the 24th.

ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	35.07%	4.24%	4.11%	3.303%
H2O FUTURES	N/A	7.38%	6.26%	3.46%

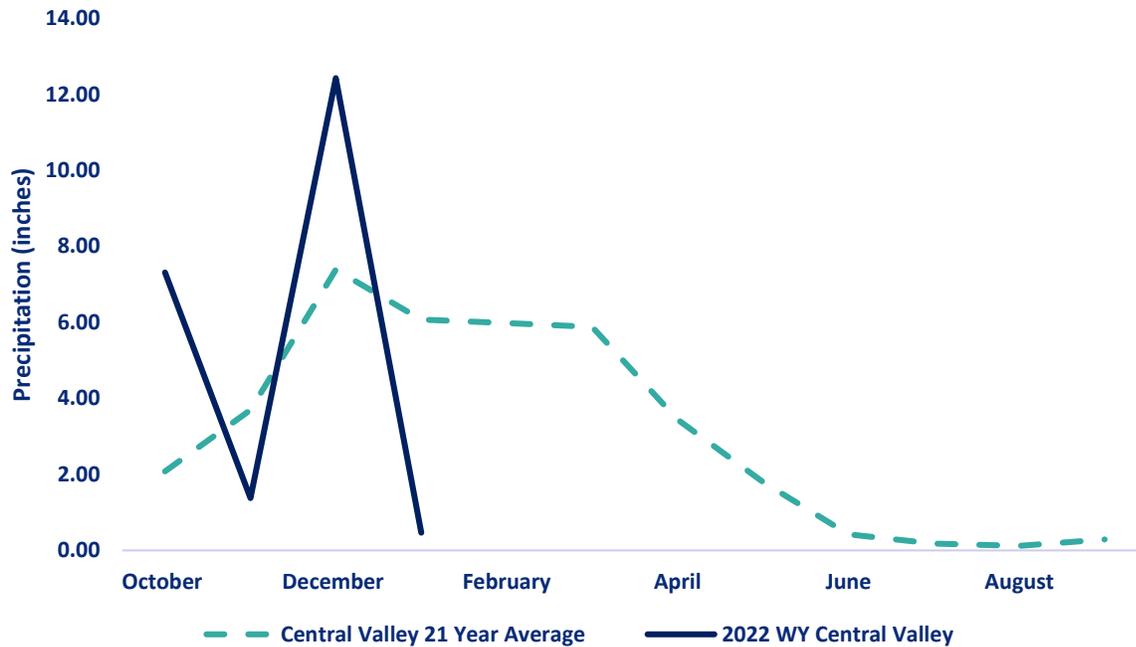
For the week ending on the January 19th the two-month futures volatility is at a premium of 3.14% to the index, down 0.25% from the previous week. The one-month futures volatility is at a premium of 2.14% to the index, up 0.09% from last week. The one-week futures volatility is at a premium of 0.16% to the index, down 1.20% from the previous week. Futures and index volatility is converging appearing to indicate price stabilization.

*Above prices are all **HISTORIC VOLATILITIES** and **IMPLIED VOLATILITIES** will be introduced once an options market has been established. 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 26/01/2022

STATION	MTD (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF 20 YEAR AVERAGE MTD	2022 WYTD VS 2021 WYTD %	2022 WY VS 20 YEAR AVERAGE TO DATE %
SAN JOAQUIN 5 STATION (5SI)	0.04	0.00	0.64	28	111
TULARE 6 STATION (6SI)	0	0.00	0.00	24	103
NORTHERN SIERRA 8 STATION (8SI)	1.36	0.00	18.50	37	125
CENTRAL VALLEY TOTAL	1.40	0.00	6.38	30	113

RESERVOIR STORAGE

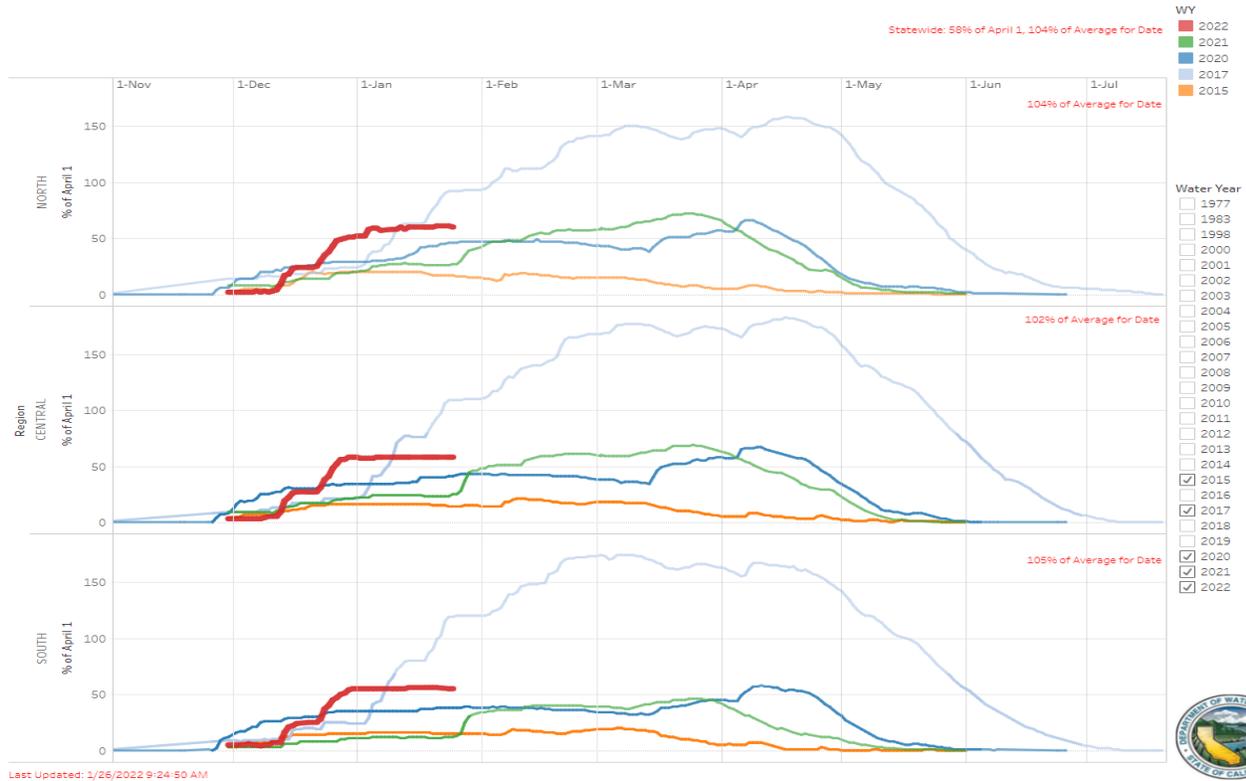
RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	HISTORIC ANNUAL AVERAGE CAPACITY %
TRINITY LAKE	753,806	31	51	49
SHASTA LAKE	1,598,488	35	46	55
LAKE OROVILLE	1,608,794	45	34	80
SAN LUIS RES	836,649	41	50	57

Reference: [California Water Data Exchange](https://www.waterdataexchange.com/)



SNOWPACK WATER CONTENT

Snow Water Equivalent Dashboard



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	17.1	-0.20%	47	104	60
CENTRAL SIERRA	16.9	0.00%	44	102	58
SOUTHERN SIERRA	14.1	0.10%	23	105	55
STATEWIDE	16.1	0.00%	40	104	58

*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.

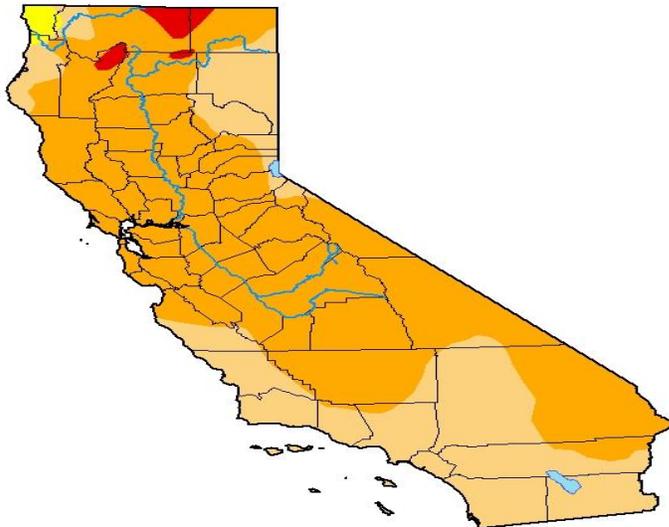
** April 1st is used as the benchmark as it when the snowpack in California is generally deepest. It has been used the benchmark date since 1941 by DWR and can be used to predict spring river flow.



DROUGHT MONITOR

U.S. Drought Monitor California

January 18, 2022
(Released Thursday, Jan. 20, 2022)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.25	66.39	1.39	0.00
Last Week <small>01-11-2022</small>	0.00	100.00	99.25	66.39	1.39	0.00
3 Months Ago <small>10-19-2021</small>	0.00	100.00	100.00	93.81	87.18	45.66
Start of Calendar Year <small>01-04-2022</small>	0.00	100.00	99.30	67.62	16.60	0.84
Start of Water Year <small>09-28-2021</small>	0.00	100.00	100.00	93.93	87.88	45.66
One Year Ago <small>01-19-2021</small>	0.00	100.00	95.20	78.12	39.46	1.19

Intensity:
 None (White) D0 Abnormally Dry (Yellow) D1 Moderate Drought (Light Orange) D2 Severe Drought (Orange) D3 Extreme Drought (Red) D4 Exceptional Drought (Dark Red)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:
 Brian Fuchs
 National Drought Mitigation Center



U.S. Drought Monitor Class Change - California 1 Week



January 18, 2022
 compared to
 January 11, 2022

droughtmonitor.unl.edu



The US Drought Monitor release their statistics with a 1-week lag to this report. Over the past week there has been 0% change in all classifications of drought. Still important to note that 0% of California is classed as being in Exceptional (D4) drought conditions and 100% of California is in some form of drought.

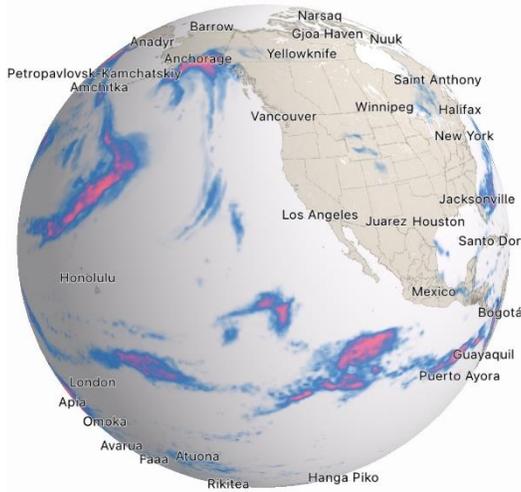
The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. Map courtesy of NDMC.



CURRENT SATELLITE IMAGERY



The current satellite picture shows a dry western region of the US with some frontal weather in Alaska.



Map Reference: Dark Sky

To the West, there is a dissipating frontal system over the North West Pacific and a further frontal system developing to the South. It is expected that the second system will bring some precipitation this week to the North Western US, unlikely to get as far South as Los Angeles.

The South Western US continues to look dry with a high pressure system in place. This could weaken at the end of the week allowing more moisture to flow in with the potential of some precipitation.

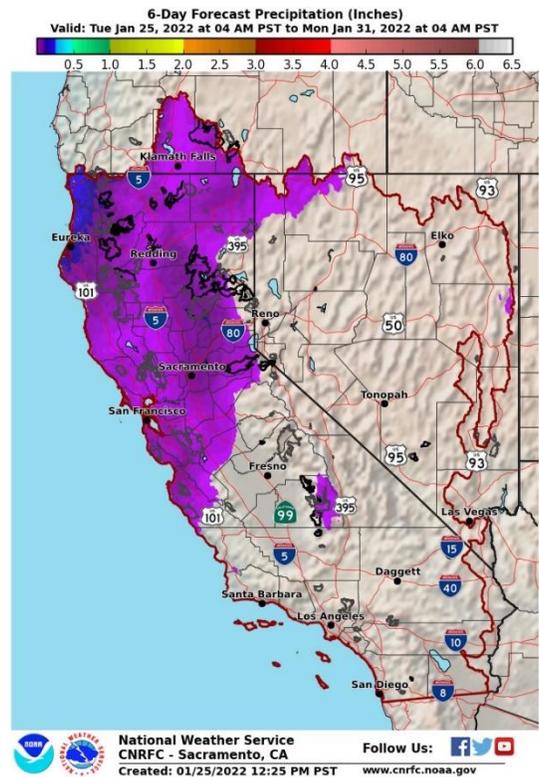
There is no Monsoonal effect at this time of the year as the current weather systems dominate.

Our models are still showing that there will be more ongoing precipitation over the next few months.

10 Day Outlook

High pressure ridge will be aligned inland from the lower Colorado River basin up across the Great Basin and Pacific Northwest before reaching into western Canada. Just offshore will be a weak upper low spinning just west of the SF Bay Area. Through the weekend...the upper ridge is expected to get displaced downstream...while the upper low moves across central/southern CA before moving east of the area on Sunday. There isn't any increased moisture with this feature...and if any precip does develop it will be rather scattered and most likely confined to the southern Sierra.

For later Sunday into Monday...a s/wv trof will make its way toward the west coast with both the deterministic and ensemble means of the 25/00Z models showing light precip spreading across northern CA. For now...used a general blend of the EC and GFS. Look for amounts



National Weather Service
CNRFC - Sacramento, CA
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mainly near or less than 0.10-inch...except for the Smith River basin and up near the crest of the southern OR Cascades that may reach closer to 0.25-inch. Freezing levels by Monday morning will be from 3000- to 5500-feet across northern CA and southwest OR.

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

WESTERN WEATHER DISCUSSION

Temperatures were near normal for most of the region this week with areas of Wyoming and Montana having departures of 10-15 degrees above normal. With most of the region recording little to no precipitation for the week, most of the changes in the area were based on an assessment over the last several weeks. Improvements were made to the extreme and exceptional drought in western Montana and eastern Idaho as well as in northwest Wyoming.

Reference:

Brian Fuchs, National Drought Mitigation Center
Richard Heim, NOAA/NCEI



WATER NEWS

CALIFORNIA WATER NEWS

After snowy December, California suddenly turns dry, magnifying drought concern

California is approximately halfway through what may be the most closely watched wet season in state history. A rainy October and snowy December brought some relief from the extensive, multiyear drought, but a vanishingly dry January portends continuing water challenges.

Parts of central California have seen a record lack of precipitation so far this month.

What happens in the weeks ahead will have huge implications for the summer dry season. Almost all of the precipitation that nourishes soil and fills reservoirs in the western United States falls from November through March. The amount that it rains and snows in these five crucial months has a substantial influence on a region home to tens of millions of people and billions of dollars of agricultural production.

Years with insufficient precipitation have seen huge wildfires, widespread farming woes, domestic water rations and extreme heat. For much of the West, including California, another dry winter could turn a worrying situation dire.

A promising start and sudden stop

The water year began with the immense bang of a record-setting October storm system, which dragged a Category 5 atmospheric river into California. The deluge set Sacramento's all-time single-day rainfall record, ignited flooding and all but ended a disastrous wildfire season.

Though California had seen a lot of rain in that October storm, mountain snowpack — essential for easing drought conditions — remained largely absent. It was not until the middle of December, when a series of significant storms made landfall in the state, that this changed. Nearly continuous precipitation fell in hefty snowstorms that blanketed California's higher elevations, bringing adverse short-term effects such as power outages and road closures. But the barrage was overwhelmingly good news and brought Sierra snowpack well above normal.

By Jan. 1, total snowfall in the Sierras was over 50 percent higher than normal for the date.

The weather pattern responsible for the heavy snow allowed so-called atmospheric rivers to slam the coast repetitively. These "rivers" are plumes of moisture sucked from the tropical Pacific by long tongues of northerly wind. Weather patterns in which the high-altitude jet stream bends into a u-shape over the eastern Pacific Ocean steer such storminess toward the coastline. December saw the jet stream stuck in this offshore u-shape.



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But an abrupt pattern shift in early January saw this persistent u-shape flip to an n-shape. Suddenly, the moisture-rich southwesterly wind stopped flowing, and the tap turned off.

Original Article: [The Washington Post by Jacob Feuerstein](#)

SWP Water Allocation Increased After December Storms

Last week the Department of Water Resources (DWR) announced it will be increasing allocations for the State Water Project. In a press release, DWR Director Karla Nemeth said that December storms have allowed the Department to convey and store water in the San Luis Reservoir. Those storms and additional water have enabled a modest increase in deliveries. The State Water Project (SWP) allocation has been increased to 15 percent of requested supplies for 2022.

Even with the December storms and increased allocation, DWR is still planning for a third consecutive dry year. DWR and the U.S. Bureau of Reclamation have also withdrawn an application for a Temporary Urgency Change Petition for February 1 through April 2022. The petition would have provided flexibility for the SWP and the Central Valley Project to release less water into the Delta, conserving stored water in Shasta, Oroville, and Folsom reservoirs.

Original Article: [AG Net West Radio Network](#)

Santa Monica Moves Toward Water Self-Sufficiency

The City of Santa Monica has taken a significant step toward a self-reliant water future as expansions to the Arcadia Water Treatment Plant (WTP) and restorations to the Olympic Well Field break ground. The key water infrastructure improvements are a component of the City's goal of becoming water self-sufficient by 2023.

Santa Monica's water system comprises groundwater basins, treatment facilities, and imported water connections to serve 18,000 customers with an average annual water demand of approximately 11,600 acre-feet per year (AFY). About 50 to 60% of its water supply is from local groundwater resources. The remainder consists of imported water. Following 2015 statewide emergency drought conditions, the City responded with an aggressive water conservation effort which yielded a 25% decrease in water demand and the need to develop a diverse, sustainable, and drought-resilient water supply.

Additionally, the City mapped a path toward water self-sufficiency through further innovative conservation and efficiency programs, demand reduction, and the addition of local water supplies as outlined in the City's 2018 update of its Sustainable Water Master Plan (SWMP).

Expansions to the Arcadia WTP and restoration of the Olympic Well Field are core components of the SWMP. The \$72 million project is an immediate solution to developing sustainable and drought-resilient water supplies and expanding



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groundwater production as described by City of Santa Monica Public Works/Water Resources Division's Water Resources Manager Sunny Wang:

"By maximizing local water resources, Santa Monica residents and businesses will benefit from long-term cost savings and water security. This new diversified water portfolio will provide a more sustainable, economical source while reducing our water supply energy footprint."

Original Article: [Contractor Mag](#)

DWR denies approval for groundwater sustainability plans

The Department of Water Resources (DWR) has marked four groundwater sustainability plans (GSPs) as incomplete. DWR gave the local agencies 180 days to address the deficiencies and resubmit the plans.

The four basins are the Delta-Mendota Subbasin, Cuyama Valley Basin, Paso Robles Subbasin and Westside Subbasin, which was submitted by the Westlands Water District. DWR notified Westlands of the potential deficiencies in November.

"We are disappointed that Westlands and DWR lacked sufficient time to adequately evaluate potential modifications to the Westside GSP," said Westlands General Manager Tom Birmingham.

Birmingham was confident the district will be able to resolve the issues within the prescribed timeframe and that the actions outlined in the plan would sustain groundwater levels by 2040. These include advanced monitoring, data, metering and groundwater recharge programs.

DWR faulted the plan for not addressing subsidence issues from continued pumping, with "several vague, ambiguous, and incorrect statements" on this. DWR is also seeking more information on potential water quality impacts.

If the four groundwater agencies are unable to correct their plans within six months, the State Water Resources Control Board will step in as the regulatory backstop for the Sustainable Groundwater Management Act. The board could work with the agencies on further refining the plans or implement its own rudimentary management plans for the basins.

Original Article: [Agri-Pulse by Brad Hooker](#)

Sierra snow levels still above average, more storms predicted first week of February

The National Weather Service in Sacramento tweeted Sunday that, despite California having a mostly dry January, snow depth and snow water content "is looking good and still running above average for this time of year."

Currently, the Northern Sierra is at about 113% of what is considered the normal amount of snow for this time of year. Central Sierra snow is at about 109%. Overall, the state has



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about 111% of its average snowpack right now, thanks to the record-breaking storms that came toward the end of 2021.

And while no rain is being predicted for the coming week, the NWS in San Diego tweeted Sunday "And more rain and mountain snow may arrive to California during the first week of February!"

Original Article: [Pleasanton Weekly by Tony Hicks/ BCN Foundation](#)

Zone 7 receives increased water allocation for 2022; mandatory conservation still in effect

Zone 7 Water Agency announced last week that an increased water allocation of 15% will be given for this year from the State Water Project, up from the initial 0% given by state officials last month.

The California Department of Water Resources (DWR) informed SWP contractors about the change on Jan. 20. Officials from Zone 7, the Tri-Valley's water wholesaler, said in a statement that the increase "provides much-needed relief after the two driest years combined on record."

Approximately 70% of the region's water is bought and imported through the SWP. Last year, Zone 7 received 5% of its allocation and has been relying on the groundwater basin, which holds imported water during wet years that Zone 7 then uses during dry years.

Storms that took place in October and December have since allowed about 380,000 acre-feet of water to be transferred into the San Luis Reservoir, located south of the Delta.

"While this increase in allocation offers some reprieve, it is important to keep our eyes on the ball," General Manager Valerie Pryor said. "This does not mean we are out of the severe drought by any means."

With the Tri-Valley already having dry conditions in January, Pryor said "we don't know what the rest of the year has in store," and that residents "must continue to conserve as we proactively plan for a third dry year."

Mandatory 15% conservation is still in effect locally, and residents are asked to continue reducing their water usage by decreasing outdoor irrigation, which accounts for approximately 60% of household water consumption, according to Zone 7 officials.

Original Article: [Pleasanton Weekly by Julia Baum](#)

Groundbreaking of Friant-Kern Canal held

A "historic ceremony" is what was heard again and again Tuesday afternoon by numerous keynote speakers who gathered at the Friant-Kern Canal near the intersection of Avenue 96 and Road 208 in Terra Bella to celebrate the groundbreaking of a \$187 million construction project to restore capacity in a 10-mile portion of the Friant-Kern Canal.



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The event marked the beginning of Phase 1 of a multi-phased construction project – the Friant-Kern Canal Middle Reach Capacity Correction – to restore capacity in a total of 33 miles of the existing canal damaged from subsidence, a sinking of the ground from groundwater removal.

Friant Water Authority (FWA) Chief Executive Officer Jason Phillips served as emcee, offering a welcome and introducing of all the key speakers.

“Today’s groundbreaking is the culmination of five years of dedicated work to design and fund a project to address the most severe subsidence on any major canal in the San Joaquin Valley. While many water projects throughout the West take decades to plan and implement, this project is turning dirt today and will in a few short years restore critical water deliveries that support the San Joaquin Valley’s businesses, communities and farms,” Phillips said. “This effort wouldn’t be possible without the support of our local, federal and state partners, all of whom deserve credit for this major milestone.”

Phase 1 of the project includes constructing of 10 miles of new concrete-lined canal to replace one of the most damaged areas of the canal’s subsiding middle reach. The project is funded by the Bureau of Reclamation, Friant Water Authority, and Department of Water Resources, with phase 1 of the project anticipated to be completed and fully operational by January 2024.

“What once seemed impossible has quickly and impressionably come within reach,” Phillips said. “Today is a day that should be celebrated. Some feel like this is the end of the beginning.”

Phillips then introduced Cliff Loeffler, FWA Board Chairman.

“What we celebrate today is a tangible step following many years of study, planning, discussion and debate,” said Loeffler. “As one of the Friant Water Authority directors who has been involved in the process from the beginning, this day represents more than just the physical start to the subsidence fix.”

The celebration is about looking ahead, he said, and not getting mired in distraction and debate.

“Today we celebrate the fact that a group of independent farmers could agree to move ahead so that the legacy of providing water to the eastern portions of the San Joaquin Valley could be preserved, even enhanced, for future generations.”

Farmers, Loeffler said, are known for their grit, determination and independence.

“Those qualities include looking to alternatives in solving problems and creating new ways to get things done,” Loeffler said. “In that sense, the independence and determination of our Farmer/Directors representing the farms, families and towns along the east side of the Valley deserve a hearty thank you for their sustained efforts in bringing this project to this historic point.”

And after identifying the problem of reduced water delivery, determining options and potential solutions, they had to figure out how to make it work and how to pay for it, Loeffler said.



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And through numerous conversations with friends in the Federal and State Legislatures, Bureau of Reclamation, Office of Management and Budget, and numerous other agencies, a path was slowly forged, bringing about the funding needed, Loeffler said as he praised and thanked his many predecessors by name and the work they provided.

That included an agreement with the Eastern Tule Groundwater Sustainability Agency in which the agency will provide a minimum of \$125 million for damage caused by the over pumping of groundwater.

Original Article: [Recorder Online by Esther Avila](#)

Humboldt County supervisors OK Eel River Basin groundwater sustainability plan

The Humboldt County Board of Supervisors approved a state-mandated sustainability plan for groundwater in the Eel River Basin on Tuesday.

Required as a part of the Sustainable Groundwater Management Act of 2014, the groundwater sustainability plan provides guidance on how to manage the Eel River Valley's complex system of groundwater and surface water resources, especially during critical drought years.

The plan must be submitted to the California Department of Water Resources for evaluation and assessment by the end of the month. The plan must be updated every five years.

The board reviewed a draft groundwater sustainability plan for the Eel River Valley earlier this month. The staff report notes several changes made to the plan, including clearer language surrounding "the expectation that upstream surface water diversions from the Potter Valley Project in Mendocino County will be discontinued during the dry season when the (PG&E) decommissions Scott Dam in the near future," additional content to enhance water flows entering the basin, and the basis for sustainable management criteria, "as a percent increase of current pumping levels," was adjusted from 150% to 100%.

The board adjourned as the Board of Supervisors and reconvened as the Humboldt County Groundwater Sustainability Agency before receiving a detailed update on the plan from county Deputy Director of Environmental Services Hank Seemann.

"The Sustainable Groundwater Management Act is based around six sustainability indicators and our analysis of those indicators concluded that this basin is being managed sustainably," he said. "... Probably the biggest question was whether groundwater pumping affects the beneficial uses of interconnected surface waters."

The county used a computer model to look at the effects of pumping along the lower Eel and lower Van Duzen rivers and whether conditions would allow for the passage of adult salmon and steelhead, Seemann explained.



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“We concluded that pumping volumes could increase, for the effects would potentially have a significant and unreasonable effect,” he said. “In the draft report, we estimated that the pumping volumes could increase up to 150% before those effects could be significant. After further review, we reduced that hypothetical pumping increase to 100%.”

Seemann said staff had taken into account several points made by community members during the Jan. 4 discussion on the draft sustainability plan, including increased watershed management projects to benefit flows coming into the basin.

Original Article: [Times Standard by Isabella Vanderheiden](#)

Scientist says DWR is taking huge risks by increasing State Water Project allocations

The California Department of Water Resources (DWR) yesterday announced that they will increase the State Water Project allocations to 15%, but Scientist Deirdre Des Jardins of California Water Research warns that DWR is “taking a huge risk” of not meeting environmental water needs later in the year given the huge problems last year with watershed runoff forecasts.

2021 was one of the most disastrous years ever for imperiled salmon and other fish species on Central Valley rivers and the San Francisco Bay-Delta Estuary, due to mismanagement of scarce water during a record drought by the state and federal governments, according to a coalition of Tribes and fishing, environmental justice and conservation organizations.

Only 2.6 percent of endangered winter-run Chinook juveniles on the Sacramento River survived and the majority of wild spring-run Chinooks on Butte Creek perished before spawning in low, warm water conditions: [sacramento.newsreview.com/...](#)

The Delta smelt, once the most abundant species on the entire estuary, became virtually extinct in the wild as zero Delta smelt were caught in the Fall Midwater Trawl Survey for the fourth year in a row: [www.dailykos.com/...](#)

In December of 2021, due to low water levels, DWR announced that the initial water allocation would cover only “critical health and safety needs” of the 29 water agencies that contract to receive State Water Project supplies.

Then things “changed.”

“December storms enabled DWR to convey and store water in San Luis Reservoir, which allows for a modest increase in water deliveries this year,” said DWR Director Karla Nemeth. “But severe drought is not over. Dry conditions have already returned in January. Californians must continue to conserve as the state plans for a third dry year.”

In addition to the “modest increase” in State Water Project allocation to 15 percent, DWR said it will continue to “work with its water supply contractors to address any unmet health and safety needs for 2022.”



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Although DWR is making this allocation increase, the agency said it continues to plan for a third consecutive dry year.

However, Des Jardins said DWR made “major errors” in runoff forecasting — and never provided a report on the reasons for these errors.

“In June of 2021, we asked the State Water Resources Control Board to require the Department of Water Resources and the Bureau of Reclamation to provide a report on the reasons for the major errors in runoff forecasting, and to hold a workshop on runoff forecasts,” countered De Jardins. “DWR revised their 2021 snow runoff forecasting method, but did not provide a report. The Water Board did not hold a workshop.”

“DWR's new runoff forecasting method is untested and has not been provided for independent experts to examine. Nor to my knowledge has there been independent peer review. And the Dixie Fire is likely to alter watershed hydrology,” noted Des Jardins.

“This is a Don't Look Up moment for the Sacramento-San Joaquin Delta,” Des Jardins concluded, referring to the widely acclaimed movie.

In related news, DWR and the U.S. Bureau of Reclamation withdrew their application for a Temporary Urgency Change Petition (TUCP) for February 1 through April 2022.

“The petition would have provided flexibility for the State Water Project and the Central Valley Project to release less water into the Delta through April 2022 to conserve limited stored water in Shasta, Oroville and Folsom reservoirs. While Shasta continues to be in a critical condition, Oroville and Folsom reservoirs are projected to meet downstream water quality needs through the spring,” DWR stated.

DWR each year makes an initial State Water Project allocation on December 1. Allocations are updated as snowpack and runoff information are assessed, with a final allocation typically determined in May or June.

Currently the statewide snowpack is at 113 percent of average for this date and 58 percent of the seasonal average, according to DWR.

Original Article: [Daily Kos by Dan Bacher](#)

Metropolitan General Manager Issues Statement on Increased State Water Project Allocation

“The snow and rain we received in December provided some much-needed relief to the extremely dry conditions challenging our state. We will likely avoid, at least for now, the most severe cutbacks we were expecting if we didn’t receive some precipitation.

“But I must emphasize that a 15 percent allocation is still very low, and our water supplies from the State Water Project remain exceptionally limited. Even with this modest allocation, we’ll need to continue drawing down our storage reserves to meet demands. To make those reserves last if the dry conditions prevail into next year, we all need to keep using water as efficiently as possible. Metropolitan is here to help the public conserve, with tips and rebates at [bewaterwise.com](#).



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“We’ve learned some important lessons over the past decade and have a deeper understanding of what we need to do to improve our delivery infrastructure so that every community in Southern California has the same level of reliability and access to diverse sources of water. We are working hard with our member agencies to make the necessary changes and investments to ensure Southern Californians always have the water they need, regardless of whether the drought continues and regardless of where they live. We need bold and strategic investments in recycling and reuse, local water supplies, storage, resilient conveyance systems and regional conservation. And we need direct federal and state support for these investments to prepare our communities and our state for future droughts and climate change.”

Original Article: [Business Wire](#)

Biden administration pledges billions to fight wildfire crisis in California and across the West

Acknowledging that the U.S. Forest Service has fallen short when it comes to preventing wildfires, the Biden administration this week said it would spend nearly \$3 billion to reduce risk across the most fire-prone areas of the United States, largely in the American West.

The impact could be significant in California, where the federal government is the largest landowner, responsible for nearly half of all land area in the state, including 20 million acres of federal forests vexed by an enduring wildfire crisis.

Wildfires burned just over 6.8 million acres across California in 2020 and 2021, more than half of that on Forest Service land. Those fires have saddled the government with an enormous territory of damaged landscapes that, if left alone, could create more dry tinder and other fire-prone hazards for the next blaze.

The Forest Service says the goal is to address fire danger across 20 million acres of federal forests in 10 years and provide funding to support projects on another 30 million acres of state, private, tribal and other federal properties. With these funds, it will double the acres each year — from 2 million to 4 million — it treats with thinning projects, prescribed burns and other methods for clearing overgrowth to lessen wildfire dangers thanks to new funding from the Bipartisan Infrastructure Law.

Jennifer Eberlien, top forester for the Forest Service’s Pacific Southwest region that includes California, said they are looking closely at areas of the Sierra Nevada region where large federal forests abut communities — places where a major wildfire would threaten homes, businesses, infrastructure, tourism, commercial timber and critical watersheds.

“The goal is to go much bigger — that’s the paradigm shift,” Eberlien said.

To focus on the most high-impact projects, the Forest Service is asking agency scientists to work with state agencies and community groups to identify high-risk “firesheds” —



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defined as forest tracts of about 25,000 acres in size that, if aflame, could pose imminent threat to people and property.

Original Article: [San Francisco Chronicle by Julie Johnson](#)

Water agencies table Delta drought regulation

The Department of Water Resources and Bureau of Reclamation have withdrawn an emergency drought regulation for the Sacramento–San Joaquin Delta.

The regulation, known as a temporary urgency change petition (TUCP), would not improve conditions if implemented as planned in February, despite a dry January, according to staff researchers for the two agencies, who provided the State Water Resources Control Board an update on Wednesday. They found no potential benefits to Shasta and Trinity reservoirs, which have the greatest need for water.

If the state remains extremely dry into April, the TUCP could bring benefits in late spring to Folsom and Oroville reservoirs, which support Delta outflow and water quality needs, and the agencies could at a later date bring the TUCP to the water board to consider for approval. Last year the board approved a similar emergency order for the Delta in late summer.

Environmental groups immediately applauded the decision, arguing the plan would have gutted environmental protections.

Staff will deliver an update on the state's drought contingency plan at its Feb. 1 meeting.

Original Article: [Agri Pulse West by Brad Hooker](#)

A bitter feud centers on source of Arrowhead bottled water

High in the San Bernardino Mountains, water seeps from the ground and trickles down the mountainside among granite boulders and bay laurel trees.

Near this dribbling spring, water gushes through a system of tunnels and boreholes, and flows into a network of stainless steel pipes that join together in a single line. The water then courses downhill across 4.5 miles of rugged terrain in the San Bernardino National Forest to a tank, where some is hauled away in trucks to be bottled and sold as Arrowhead 100% Mountain Spring Water.

Local environmentalists say the bottled water pipeline doesn't belong in the national forest and is removing precious water that would otherwise flow in Strawberry Creek and nourish the ecosystem. After nearly seven years of fighting against the extraction of water, activists say they hope California regulators will finally order BlueTriton Brands — the company that took over bottling from Nestlé last year — to drastically reduce its operation in the national forest.

“They're sucking out so much water,” said Amanda Frye, one of the leading activists. “Imagine if all the springs were just allowed to naturally flow. We'd have a lot of water in here.”



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Frye and other bottling opponents hiked with a Times reporter and photographer to sites where water is collected to explain their concerns. If more water were flowing freely downstream, they argue, it would provide a healthier habitat for wildlife, reduce wildfire risk and help replenish groundwater in the San Bernardino Valley. Frye said it's outrageous for a company to profit by taking water from public land while Californians are being asked to conserve.

"I have friends that are collecting water in their shower in pitchers," Frye said, standing next to a pipe that hissed faintly with the sound of running water.

"We're under a state drought emergency," she said.

Frye has spent long hours combing through historical archives, and said she believes the company lacks valid water rights. She also thinks the U.S. Forest Service should shut down the pipeline immediately.

Original Article: [The LA Times by Ian James](#)

California drought: January is a rainfall bust. How big of a problem is that?

Sunny skies. Balmy temperatures. Walks on the beach. Umbrellas back in the closet.

After a soaking wet December that ended fire season, delivered more 15 feet of snow to the Sierra Nevada, and boosted hopes that California's severe drought might be coming to an end, dry weather is back, in a big way.

Like a baseball player stuck in a hitting slump, it hasn't rained significantly in the Bay Area for 14 days, since Jan. 4. Although reservoirs received a nice boost from big storms in December and late October, they still remain well below normal levels in most parts of the state.

Time to start sweating that the state's two-year drought might be turning into a three-year drought? Not yet, say experts. As it turns out, dry spells in the middle of winter are actually quite common. The key is how long they last.

There's been a dry stretch in nearly every winter season in December and January back to 1950 in the Bay Area. The average duration is 19 days.

"It's not unusual for us to have dry periods in December and January," said meteorologist Jan Null with Golden Gate Weather Services in Half Moon Bay. "It's the rule rather than the exception."

What happens is that a ridge of high pressure builds up off the coast, diverting storms to the north or south, and bringing summer-like weather to wintertime Northern California. That's what's afoot now.

The shortest such winter dry spell was 8 days long, in 1957-58 and in 1994-95, said Null, who compiled the data. The longest was a parching 56 days in 2014-2015, during the depths of California's last drought. Only one winter season avoided the December-January trend — in 1964-65, when the dry period started in early February and continued for 19 days.



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But there's some reason to be concerned. The forecast calls for lots more dry, sunny weather across the Bay Area for at least the next two weeks.

And as Null noted, another two weeks of that would put the Bay Area's dry streak at 28 days. That would rank it as the 11th driest dry spell in the past 71 winters, with no way to know how long the streak will continue.

And the longer the Bay Area goes without rain, the more likely a dry winter becomes. Overall, eight of the 10 winters since 1950 with the longest dry spells ended up with below-average rainfall.

On average, half of Northern California's precipitation falls in December, January and February. For the state to continue to fill reservoirs and emerge from the drought, February and March will need to be wet.

"We simply don't know what the rest of the water year is going to be like," said Jeanine Jones, drought manager for the California Department of Water Resources in Sacramento. "We can't count our chickens until they are hatched. We've had a very good start to the water year and we hope that continues."

The lack of rainfall is returning some of California's eye-popping December numbers back closer to historical averages.

On Jan. 1, the statewide Sierra Nevada snowpack was 168% of normal for that date. On Tuesday, it was down to 117%.

Rainfall totals around California cities show a similar trend.

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



US WATER NEWS

Supreme Court to Weigh Curbs on Clean Water Act, Pitting Property Rights Against Wetlands

The U.S. Supreme Court, heeding calls from business and property-rights groups, agreed to use a long-running Idaho fight to consider curbing the reach of the Clean Water Act. The justices said they will hear an appeal from Chantell and Michael Sackett, an Idaho couple waging a 15-year-old battle to build a house on land that federal regulators say is protected wetlands. The Sacketts won a 2012 Supreme Court ruling that let their lawsuit go forward.

The case becomes the second major environmental clash on the court's docket. The justices next month will consider limiting the Environmental Protection Agency's ability to address climate change through sweeping reductions of power-plant emissions.

The Supreme Court is likely to hear the case in the term that starts in October.

The new case could give companies a freer hand to discharge pollutants and let developers construct more new houses without getting a federal permit. The U.S. Chamber of Commerce and the National Association of Home Builders were among the groups urging the Supreme Court to hear the case.

The Sacketts' appeal asks the court to revisit a 2006 Clean Water Act case, *Rapanos v. United States*, which failed to produce a majority decision and left uncertainty about the governing standard. Four justices, led by Antonin Scalia, said the law covers wetlands only if they have a continuous surface connection to a river, lake or other major waterway.

A fifth, Justice Anthony Kennedy, created his own test, saying the Clean Water Act covers wetlands with a "significant nexus" to one of those larger bodies of water.

In their appeal, the Sacketts say courts and regulators alike have struggled to figure out how the two standards intersect. The couple's lawyers say the court should adopt Scalia's test and clear up the confusion.

Years of Confusion

"Fifteen years of fruitless confusion, conflict, and litigation is enough," the Sacketts argued in their appeal. "This court can and should chart a better course for the Clean Water Act by articulating a clear, easily administered, constitutionally sound rule for wetlands jurisdiction, using the surface-water-connection test set forth in the *Rapanos* plurality opinion."

President Joe Biden's administration urged the court to reject the appeal, arguing that the Sacketts were overstating the confusion and that the Scalia approach would create a regulatory gap.

Original Article: [BNN Bloomberg by Greg Stohr](#)



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Water users reach preliminary agreement to regulate groundwater use

Water users in the Big Wood River Ground Water Management Area have a preliminary agreement to regulate ground water use over the next three years.

The agreement includes 10 different stakeholders, like municipalities, user associations, and the Big Wood Canal Company.

The term sheet outlines how junior ground water users will fallow acres, and how water will be stored and delivered to senior water holders.

“The agreement really provides some certainty to them (junior users) and some control as to how they manage and use water and satisfy some of these senior right holders at the same time,” said Water Compliance Bureau Chief Tim Luke.

Municipalities will also contribute to conservation funds, which will be matched by the state.

The agreement still has a ways to go before becoming official, as an advisory committee will review it. There will be opportunities for public comment, and it has to eventually be approved by the Director of the Idaho Department of Water Resources.

Original Article: [KMTV News by Jack Schemmel](#)

A drought is cutting Colorado River usage. But this tribe has water to spare — and lease

The Colorado River is in dire straits. It provides water to millions of us here in the arid Southwest, and ongoing drought driven by climate change is threatening its future. But one Arizona tribe is in a unique position: It has water to spare.

The Colorado River Indian Tribes have senior rights to a sizable portion of the Colorado’s water. And now, they want to lease some of it to others — water they’ve saved through conservation in the way they farm their land and have for millennia.

But they can’t lease the water without federal approval, and a bill introduced by Arizona Sen. Mark Kelly is making its way through Congress now to do just that.

Amelia Flores is the chairwoman of the Colorado River Indian Tribes.

The Show spoke with her to learn more about the situation, and she said members of the tribe gave their approval to the deal back in 2019 at the ballot box, and that the tribe has already done a lot to try to keep the Colorado flowing.

Original Article: [Fronteras Desk by Lauren Gilger](#)

Gov. Beshear announces \$19.4M to clean drinking water projects, improved sewer systems in NKY

Gov. Andy Beshear announced more than \$19.4 million to one county and three water utilities serving Campbell, Kenton and Boone counties in multiple stops in NKY Tuesday.



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The funding is part of the Better Kentucky Plan's \$250 million Cleaner Water Program to deliver clean drinking water and improved sewer and water systems around the state, creating an estimated 3,800 jobs statewide.

"Our Northern Kentucky region is a hub for economic growth," said Gov. Beshear. "We're proud to work with each of you to address needed infrastructure improvements that will bring safer, more reliable sanitary sewer services and clean, healthy drinking water to thousands of residents and area businesses."

The Northern Kentucky Area Development District submitted funding requests for 10 Cleaner Water Program projects to the Kentucky Infrastructure Authority. These include wastewater treatment plant improvements, the replacement of aging waterlines, and the installation of new technology.

Campbell County grants

The Governor awarded a \$999,352 Community Development Block Grant to the City of Newport to support its Homeownership Development Housing Project. The city and its partner, nonprofit Newport Millennium Housing Corporation, will use the funds to build five new single-family homes and rehabilitate two vacant homes in the community. The new homes will be made available to qualifying low-to moderate-income households. The city will also offer qualified households a forgivable, 10-year, \$20,000 loan.

In Campbell County, the Governor presented \$1 million to the Northern Kentucky Water District to help replace water mains throughout much of downtown Newport, improving service for families and businesses, including at the Ovation development downtown.

Original Article: [Northern Kentucky Tribune](#)

NJDEP Seeks Input on \$1 Billion Water Infrastructure Investment Plan

Elected officials had a chance earlier this week to share with state environmental experts what their water infrastructure needs and challenges are in an effort to help shape New Jersey's \$1 billion water infrastructure investment plan. Now, interested residents have an opportunity to learn more about the state's efforts to better understand and resolve challenges afflicting communities and utilities through short- and long-term investments.

The initiative was announced Jan. 20 by N.J. Department of Environmental Protection Commissioner Shawn M. LaTourette. A stakeholder session for environmental justice advocates, non-governmental organizations and interested residents is slated for 9 to 11 a.m. Thursday, Jan. 27. For those interested, registration is eventbrite.com/e/wiip-engagement-session-on-iups-ej-advocates-all-interested-parties-tickets-244608599907

"This is our moment to make once-in-a-generation investments that will create jobs improving our public and environmental health, while motivating long-term growth in communities that our infrastructure investments will uplift and support," LaTourette said in a statement announcing the program.



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The program is being funded, in part, by the Bipartisan Infrastructure Law and continuing state appropriations. New Jersey is slated to receive \$169 million this year for drinking water, storm water and wastewater infrastructure improvement projects. This is the first of five years of investment through the federal law and allocates \$73.3 million for any eligible clean water state revolving fund project; \$30.6 million for any eligible drinking water state revolving fund project; \$48.3 to address drinking water lead service line replacements; \$12.9 million to address contaminants of emerging concern; and \$3.8 million to address contaminants of emerging concern in wastewater. Money earmarked by the state and federal government is expected to spur the construction of projects that will better protect drinking water supplies, ensure delivery of clean drinking water to all New Jersey communities and reduce the risk of exposure to lead and synthetic chemicals that can impact the safety of drinking water.

“The funding will also improve our communities’ resilience in the face of increasing precipitation, extreme weather, and flooding by right-sizing stormwater infrastructure,” according to the DEP’s statement announcing the WIIP. “The funding will also improve New Jersey’s lakes, rivers and streams through upgrades to wastewater infrastructure, including long-deferred improvements to combined sewer overflow systems, the pollution from which disproportionately impacts underserved communities.”

Congressman Jeff Van Drew (R-2nd) said the efficient and effective water infrastructure is the way of life for the communities he represents.

“It is time for New Jersey and the United States to invest in critical infrastructure like water treatment and storm-water management systems. I will do everything I can to make sure we strengthen South Jersey through these investments.”

Elizabeth Maher Muoio, New Jersey’s treasurer, said this year’s budget includes record investments “in our communities, few of which will have a more profound impact on the people of this state and the places they call home.”

Original Article: [The Sand Paper by Gina G. Scala](#)

Sunnyside senator introduces bill in state legislature to fund water projects

A Yakima Valley state senator has introduced legislation to create a \$5 billion program to fund water projects across the state.

Sen. Jim Honeyford, R-Sunnyside, introduced Senate Bill 5632 on Jan. 10, which was meant to create the Washington Water Infrastructure Program, which would use a combination of federal funds and proceeds from state bond sales to pay for projects that would improve water supply, help deal with stormwater runoff, alleviate flooding and make it easier for fish to move up and down river.

The measure would channel the proposed new funding through existing agencies, like the Department of Ecology, the Fish Barrier Removal Board, the Office of the Chelan Basin and the Office of the Columbia River.



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“My goal in this bill is not to establish any agencies,” Honeyford said. “The funding could be used to handle water supply like irrigation, municipal water, anything to do with water storage, use or efficiencies.”

According to Sara Higgins, the assistant director of the Columbia Basin Development League, those projects could include the Odessa Groundwater Replacement Program, an effort to expand the eastern reaches of the Columbia Basin Project to include nearly 90,000 acres of farmland currently within the project, which does not have access to irrigation water.

That last, east of the East Low Canal, was to be fed from the proposed East High Canal. However, Congress defunded the East High Canal in the early 1970s as a cost-saving measure.

“The Columbia Basin Project provides a lot of value for the state,” Higgins said. “We see the opportunities there, and we are supportive of funding opportunities.”

Honeyford said he was initially confident the measure would find broad support, but after a contentious hearing before the Senate Agriculture, Water, Natural Resources & Parks Committee on Jan. 18, he said he has his doubts about passage during this year’s 60-day legislative session given a lack of support from the state Department of Ecology. “I’m not so sure of passage,” he said. “They were not for or against.”

Higgins said, however, Honeyford’s legislation is not the first attempt to create a water project fund in Washington, and she expects a “determined and persistent” struggle to get this passed.

“This is a long-term effort,” she said.

Original Article: [Columbia Basin Herald by Charles H. Featherstone](#)

\$600M for Water Projects Gains Support, but Senators Pause

A proposal from South Dakota Gov. Kristi Noem to use the bulk of federal coronavirus relief funding on water and sewage projects has so far met little opposition in the state Senate, but a powerful committee on Friday withheld its approval to vet the proposal further.

The Senate State Affairs committee on Friday heard enthusiastic support from groups representing municipal governments, water utility providers and a conservation group for sending \$600 million of federal funds to a grant program that would fund water supply projects across the state.

But the Republican committee's chairman said he also wants to make sure the state is ready to disburse the funding before the bill gets the committee's blessing.

“A bill of this gravity — we don't want to rush it through,” said Sen. Gary Cammack, the Senate Republican leader, adding that it was the largest single budget item he had ever tackled.



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The funding would allow utility providers across the state to launch the next generation of water pipelines and treatment, said Kurt Pfeifle, the director of the South Dakota Association of Rural Water Systems.

“It's going to ensure that we'll continue to provide adequate service,” he said. “Making sure that the water's clean, safe, filtered.”

Several large projects hoping to tap into the fund would pipe water from the Missouri River to both the Black Hills region and the northeast corner of the state, both of which have experienced droughts in recent years.

But even the \$600 million allotment won't come close to matching all the projects that have applied for funding. Hunter Roberts, the Secretary of the Department of Agriculture and Natural Resources, said the state has received applications from 250 projects requesting over \$3.2 billion.

The state will use an existing loan program for water infrastructure projects to distribute the funds, but Cammack said lawmakers want to make sure the Board of Water and Natural Resources is ready to handle the influx of applications.

“It's huge, we really need some assurances along those lines,” the senator said.

The state is looking to spend \$975 million from the federal government over the next five years. Cities and towns will get another \$276 million to spend on a wide variety of projects that qualify under the American Rescue Plan Act that Congress passed last year.

Original Article: [US News by Stephen Groves, Associated Press](#)

Native American tribe, New Mexico ink water leasing deal

A Native American tribe has agreed to lease more of its water to help address dwindling supplies in the Colorado River Basin, officials announced Thursday.

The agreement involves the Jicarilla Apache Nation, the New Mexico Interstate Stream Commission and The Nature Conservancy.

The tribe has agreed to lease up to 6.5 billion gallons (25 billion liters) of water per year to the state to bolster flows for endangered species and increase water security for New Mexico.

The water would be released from the Navajo Reservoir in northwestern New Mexico to feed the San Juan River, which flows into the Colorado River.

New Mexico is among the seven Western states that rely on the Colorado River. Water managers elsewhere already have had to come up with contingency plans as less snow, warmer temperatures and water lost to evaporation have affected the river's ability to meet demands.

Daryl Vigil, the Jicarilla Apache Nation's water administrator, highlighted the need for creative solutions as pressure grows across the drought-stricken basin. He pointed to the benefits of meaningful cooperation with Native American communities, saying this novel project could serve as a model for other tribes and opens the door to broader



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conversations as officials try to chart out guidelines for future operations of the Colorado River.

The goal is to create flexibility across sovereign jurisdictions to get water to where it needs to be, Vigil said.

"It's about building a future together," he said. "This sets the stage for that."

Not all tribes in the basin have legal authority to lease water. Some tribes in Arizona already have played a significant role in shoring up water supplies as that state deals with mandatory cuts to its Colorado River allocation.

Original Article: [ABC News by Susan Montoya Bryan, Associated Press](#)

Idaho's water resources department says management is getting more expensive with population growth

Water management in Idaho is getting more expensive with continued drought and population growth, according to the Idaho Department of Water Resources.

This year, the department has a number of big management and infrastructure projects it wants to fund, utilizing some large one-time appropriations that could be at its disposal.

On Wednesday, Director Gary Spackman outlined several line items in a presentation to the Joint Finance-Appropriations Committee. They include \$716,000 for aquifer recharge and monitoring and \$336,300 for personnel and equipment to manage a major water rights resolution process in the Bear River Basin.

The department also wants to hire additional personnel to manage water rights, groundwater well development and hydrologic models.

Overall, the requests center around the idea that more people and money are needed to manage water in Idaho, as the population continues to grow at a fast rate.

"I want to echo what the state engineer said in 1895," Spackman said. "And that is that water is a scarce resource and that as we have more people, there will be more and more attention on the resource, and more and more demands. And my personal opinion is that it will be exponential."

Spackman said there are 5,000 wells being drilled in the state every year.

"I don't know whether that, in the future, means that there might be some restriction on well drilling. I don't have that vision right now," he said, "But it may come to that."

With more demand for a scarce resource comes more legal disputes about who gets what. From the Eastern Snake Plain Aquifer to the Big Wood River and now to the Portneuf River, the state is increasingly being asked to step in to manage water rights. Spackman says the disputes are growing more complex, and often involve court challenges.

"That's the level of attention that people are giving to water resources these days," he said.



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After the resolution of the water rights disputes, there's often an increased need to measure where water is going – both surface water and groundwater. In two years from now, water managers could be measuring stream flows at about 10,000 sites throughout the state – up from 3,000 five years ago, Spackman said.

If approved, the department could have some help on its priorities from one-time funds, including \$100 million from the federal American Rescue Plan Act and \$75 million under Gov. Brad Little's proposed budget for water infrastructure projects.

Original Article: [Boise State Public Radio News by Rachel Cohen](#)

Joe Biden infrastructure bill sends \$1.1 billion for Everglades restoration

Congressional Democrats hailed Wednesday's announcement that the Everglades restoration is getting its largest infusion of federal money ever from President Joe Biden's administration.

The infrastructure bill passed in November will steer \$1.1 billion to Florida's famed "River of Grass." That's enough to fund what Democrat Rep. Debbie Wasserman Schultz of Weston calls the largest environmental restoration project in American history.

The area — which can look like an unremarkable field from the road — is crucial for the state's drinking water, climate resiliency and economy.

"The Everglades is the lifeblood of South Florida, and this historic funding commitment by the Biden administration will ensure we can much more aggressively move to restore and protect the natural sheet flow of water," said Wasserman Schultz, the co-chair of the Everglades Caucus with Republican Rep. Mario Díaz-Balart, who represents parts of Miami-Dade and Collier counties.

Not only will the money combat climate change and protect the areas' biodiversity, but the project also will mean job creation, Wasserman Schultz said.

"There's no more infrastructure more critical to Florida than the Everglades," she said. Several other congressional Democrats from Florida joined Wasserman Schultz on a Wednesday afternoon call praising the funding, including Reps. Sheila Cherfilus-McCormick, Val Demings, Ted Deutch, Lois Frankel, Stephanie Murphy, Darren Soto and Frederica Wilson.

Wilson was among the five co-sponsors of Biden's \$1 trillion package that builds bridges, public transportation and roads.

Original Article: [Florida Politics by Anne Geggis](#)

Saving water with real-time data collection

Idaho's Water District 63 is automating its management of the Boise River by setting up broadband capabilities that will provide real-time measurements and data.

Currently, district workers monitor the river levels and flow by driving once or twice a week to 88 sites – a total of 121 miles – to collect data, and they spend three to four



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hours the next workday inputting that data into the state's database. The information is used to make determinations about the river's headgates – gates for controlling water flow – for the following week.

“Right now we administer the river a week behind, so all that data we've collected over the week, that's just a snapshot of the previous week,” said Mike Meyers, the district's watermaster.

In the next couple months, however, the district will implement a setup that uses Paige Wireless, Cisco Meraki and Cisco's Ultra-Reliable Wireless Backhaul – formerly Fluidmesh – to get that data in real time, saving hours of driving and worker time.

By putting a motor on top of a headgate and controlling it from a computer, the team can adjust those gate to get your water flowing into the canal, Meyers said.

That communication will happen through high-speed broadband and access points. The backhaul provides the broadband and Meraki the access points so that the district can connect to the broadband through Meraki.

“This is like a rural broadband issue, where we don't have cables buried in the ground, and so you're relying on very low-throughput technologies to get to these places,” said Gary DePreta, Cisco's vice president of the U.S. public sector for state, local and education. “What Cisco did is build that output infrastructure that allows the automation that Mike described through our Fluidmesh solution without laying any cables. So, now you have high-speed broadband eventually going to every one of these sites.”

Paige Wireless provides a dashboard where Meyers can visualize metrics for each water site and make on-the-fly decisions.

The technology also allows the water district to include more capabilities, such as adding cameras to provide real-time visibility into the sites. “You can start adding more sensors, more services once you deliver that infrastructure to that point,” DePreta said.

Original Article: [GCN by Stephanie Kanowitz](#)

More than \$50.5 million investment coming to Arizona for drought relief from bipartisan infrastructure law

Over \$50.5 million will be invested in Arizona in 2022 for critical drought relief measures from the bipartisan Infrastructure Investment and Jobs law led by Senator Kyrsten Sinema and shaped by Senator Mark Kelly.

Sinema and Kelly's Infrastructure Investment and Jobs law provides the Bureau of Reclamation \$1.6 billion for Western Water Infrastructure in 2022, including \$50 million to implement the Drought Contingency Plan at Lake Mead and \$500,000 for the Verde Reservoirs Sediment Mitigation Project.

“Arizona jobs, economic opportunities, and the health of our communities all depend on clean and sustainable water. The historic investments we secured in our bipartisan infrastructure law strengthen Arizona's water systems and help secure our state's water



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future,” said Sinema, co-author and negotiator of the bipartisan Infrastructure Investment and Jobs Act.

“As Arizona continues to grow, it’s critical that every Arizonan has reliable access to clean water. The historic drought we’re facing is serious, but the bipartisan infrastructure law we passed is going to help us take meaningful steps towards securing a sustainable water future by upgrading not just our dams, canals, and reservoirs, but also water management and conservation strategies for decades to come,” said Senator Kelly.

Sinema led bipartisan Senate negotiations with Republican Senator Rob Portman of Ohio that included Senator Kelly and senators from both parties.

The bipartisan Infrastructure Investment and Jobs law makes the strongest investment in clean drinking water and wastewater infrastructure in U.S. history, delivering clean water to millions of American families – and more than \$8 billion to strengthen water infrastructure throughout the American West, such as aging infrastructure, water storage, water recycling, drought contingency plans, and dam safety. This funding specifically includes \$300 million over the next five years for water reclamation operations under the Colorado River Drought Contingency Plan. Of this funding, \$250 million is for the Bureau of Reclamation to create or conserve 100,000-acre feet of water annually for the Lower Colorado River Basin at Lake Mead. In October of 2021, Senator Kelly chaired a hearing of the Senate Subcommittee on Water and Power to examine the historic drought affecting Arizona and the western United States, as well as focused on effective uses of funding in the bipartisan infrastructure law to mitigate drought.

The bipartisan infrastructure law was supported by groups including The U.S. Chamber of Commerce, Business Roundtable, The National Association of Manufacturers, The AFL-CIO, The National Retail Federation, The Bipartisan Policy Center, North America’s Building Trades Unions, the Outdoor Industry Association, The American Hotel and Lodging Association, The National Education Association, as well as hundreds of mayors across all 50 states.

Original Article: [Gila Herald](#)



GLOBAL WATER NEWS

New economic model finds wetlands provide billions in filtration value

Southern Ontario wetlands provide \$4.2 billion worth of sediment filtration and phosphorus removal services each year, keeping our drinking water sources clean and helping to mitigate harmful and nuisance algal blooms in our lakes and rivers.

A new study from the University of Waterloo uses economic valuation to help us understand the importance of Southern Ontario's wetlands for water filtration—particularly as these sensitive ecosystems continue to be lost by conversion to agriculture or urban development.

"Wetlands naturally filter out phosphorus and sediments from water, but their value is often greatly overlooked," said Tariq Aziz, who carried out the study during his Ph.D. and postdoctoral work in Waterloo's Department of Earth and Environmental Science. "By calculating the economic value of wetland filtration and comparing it to the costs of engineered interventions, we hope to reinforce the importance of protecting our wetlands."

The total value of \$4.2 billion in sediment and phosphorus filtration services was found based on the average rate of sediment accretion in each type of wetland in Southern Ontario and estimating how much the removal and disposal of the same amounts of sediment and phosphorus in stormwater management facilities in Ontario would cost. This is the first economic valuation study to separate the values of the major types of wetlands in Southern Ontario: marshes, bogs, swamps, and fens. "We found that marshes were the most valuable wetland type for sediment and phosphorus filtration, based on the removal rates per hectare," said Aziz. "However, because swamps make up 87 percent of Southern Ontario's wetlands, they contribute about 80 percent of the overall filtration services we benefit from, at a value of about \$3.4 billion per year."

This study also calculated how much it would cost to replace wetlands' existing phosphorus filtration function with three different human-engineered solutions. Building artificially constructed wetlands would cost an average of \$2.9 billion per year to replace the free phosphorus filtration service our natural wetlands currently provide. Implementing agricultural Best Management Practices to remove an equivalent phosphorus load would cost society \$13 billion annually, while expanding current wastewater treatment capacity to replace wetlands' filtration service would cost \$164 billion per year.

Original Article: [Phys.Org by the University of Waterloo](#)



VELES WATER WEEKLY REPORT

Budget 2022 should create more opportunities for making India water secure

India will be seeing a water demand rise of over 70% by 2025 according to a report by the Organization for Economic Co-operation and Development (OECD). This brings to light a huge demand-supply gap that will cause several challenges in the coming days. Budget 2022 is an opportunity for the government to boost the country's water infrastructure thereby enhancing water security for Indians.

Proper planning and allocation of resources will also help the government in tackling natural calamities such as damage to infrastructure and life from floods, landslides among others. For example, the 2018 Kerala floods led to an estimated loss of INR 31,000 crore as per report by United Nations. On the other hand, introducing nationwide schemes to install gate pumps will offer municipal bodies the ability to control flood and storm water challenges with state-of-the-art mechanisms.

Organizations in the water sector are looking at long term plans in making the country water secure. This is a perfect opportunity to initiate a ten plus year roadmap for integrating existing water solutions with the efficient and intelligent technology.

Creating the right platforms

Special initiatives that will truly focus on the unification of various stakeholders of the water industry will help in setting up the right parameters to strengthen the country's water security. In the FY 2022 budget, the Ministry of Jal Shakti can create a specialized body that will act as a platform where various stakeholders can interact and put forth their needs and ideas. This will help the government to not only bring diverse stakeholders together, but have more insights into the issues on ground, as well as the advanced technology and solutions available to address them.

Another important factor to consider is the introduction of a national mission for flood prevention. Climate change poses a significant threat to India's dream of USD 5 Trillion economy and the need of the hour is to put policies in place that are effective in dealing with India's worsening flood situation. For example, special reforms for adoption of Artificial Intelligence (AI) based early warning systems along coastal states, real-time landslide early warning, drone-based reconnaissance programs to encounter illegal encroachment among a host of other methods.

Mapping of India's water footprint is something that should be initiated at the earliest. Unavailability of data hinders implementation of policies and initiatives across municipal bodies and water utilities. By adopting digital enabled solutions like IoT based sensors and AI, the government can undertake data collection, remote management of water networks, predictive maintenance to prevent water loss and gauge the country's water demand. This will further ensure that water stressed regions in the country are allocated optimum resources to meet water demands while also ensuring that water networks and infrastructure in flood prone areas of this country receive special attention for functioning during natural calamities.



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Coupled with this, it is expected that the government will lay a roadmap for making water available to rural households, prevent droughts and improve India's water quality to make the country water secure. The union government should make substantial allocations for various schemes catering to rejuvenation of water resources, drinking water accessibility, piped water connections, river development and rejuvenation among other priorities. As per World Resources Institute, it would take India 3.2% of the GDP it is estimated to have by 2030 to deliver sustainable water management.

Original Article: [The Financial Express by George Rajkumar](#)

Competition for water induced by transnational land acquisitions for agriculture

The ongoing agrarian transition from smallholder farming to large-scale commercial agriculture promoted by transnational large-scale land acquisitions (LSLAs) often aims to increase crop yields through the expansion of irrigation. LSLAs are playing an increasingly prominent role in this transition. Yet it remains unknown whether foreign LSLAs by agribusinesses target areas based on specific hydrological conditions and whether these investments compete with the water needs of existing local users. Here we combine process-based crop and hydrological modelling, agricultural statistics, and georeferenced information on individual transnational LSLAs to evaluate emergence of water scarcity associated with LSLAs. While conditions of blue water scarcity already existed prior to land acquisitions, these deals substantially exacerbate blue water scarcity through both the adoption of water-intensive crops and the expansion of irrigated cultivation. These effects lead to new rival water uses in 105 of the 160 studied LSLAs (67% of the acquired land). Combined with our findings that investors target land with preferential access to surface and groundwater resources to support irrigation, this suggests that LSLAs often appropriate water resources to the detriment of local users.

Original Article: [Nature Communications by Davide Danilo Chiarelli, Paolo D'Odorico, Marc F. Muller, Nathaniel D. Mueller, Kyle Frankel Davis, Jampel Dell'Angelo, Gopal Penny and Maria Cristina Rulli](#)

Iran, Iraq exchange accusations over water flow

Iraq is planning to file a lawsuit against Iran for water cuts, according to Iraq's Minister of Water Resources Mahdi Rashid Al Hamdani.

Iraq has received only one-tenth of what it was receiving in the past from Iran, while water from Turkey also fell by almost two-thirds.

"The Ministry of Water Resources submitted a letter to the Foreign Ministry and has completed all technical and legal procedures for the lawsuit," Hamdani said in December 2021.



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Iran is blaming climate change and asking Iraq to understand its position, saying Iraq should follow up on the matter with Turkey instead.

Farshid Shokrkhodai, head of the Commission for Sustainable Development, Environment and Water of the Iranian Chamber of Commerce, said in a recent interview with the Iranian Labor News Agency, "Iran's water tension with other countries, including Iraq, is increasing. Although we deny the problems of climate change or try not to get involved in climate change, we are victims of it in the region." Regarding Iraqi officials' statements that Iran is not giving Iraq enough water, he said, "Arvand is the only river that flows from Iran to Iraq; the water of the dams in the Karun River is not even given to the people of Khuzestan. That is the issue: the Arvand drought. The problem of the Iraqis is the Tigris and the Euphrates [rivers], which originate from Turkey, and Turkey has built dams [on both rivers]. This action, and the reduction of Iraq's water supply from the Tigris and the Euphrates, has caused the Arvand water shortage to show itself. The Hawizeh Marshes are also drying up on the Iranian side." This part of his interview was somewhat a repetition of the words spoken by Iranian Fereydoun Abbasi, former head of the Atomic Energy Organization of Iran and a member of the Parliamentary Energy Commission who three months earlier on Sept. 24, 2021, had responded to Iraqi officials' threats to complain about Iran in international circles and said, "If Iraq is going to go to international authorities for noncompliance with its water rights by its neighbor, it is better to complain to Turkey, which has built many dams in its country without coordination with neighboring countries and does not allow water to flow in the Tigris and the Euphrates. This issue has affected Arvand and Karun and has caused the water of the Persian Gulf to advance at the time of the sea tide and saline water to enter the canals of Bahmanshir and Arvand rivers, and the groves of Abadan, Mino Island and Khorramshahr to dry up."

According to Abbasi, there is an agreement regarding border waters, and any country that builds a dam on the border river must also consider a share for the destination country of the river. Due to the same agreement, until 2020 it was not necessary to coordinate with neighboring countries to build the dam.

Original Article: [Al-Monitor by Muhammad Jawad Adib](#)

Morocco Allocates \$260 Million to Secure Water Supply

Morocco's Minister of Equipment, Transport, Logistics, and Water Nizar Baraka confirmed that his ministry has allocated MAD 2.42 billion (\$260 million) for the 2021-2022 emergency plan to secure drinking water supply across the country.

The plan focuses on the hydraulic basins suffering from water deficit such as Moulouya, Oum Er-Rbia, and Tensift basins, Baraka reported on January 21.

In an interview with MAP, Morocco's news agency, the minister noted that some basins continue to suffer from water shortages even after the adoption of the 2020-2027



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National Program for Drinkable Water Supply and Irrigation. The plan covers the construction of 120 [dams](#) by 2024 among other measures, the minister recalled, noting that dams do not only secure water supply but also counter flooding.

Moulouya, Tensift, and Oum Er-Rbia basins have recorded a drop in their filling rates. Today, the Moulaya basin (near Oujda) records only an 11% filling rate while the Tensift basin (near Marrakech) has a 34% filling rate.

To address the water deficit issue in the three basins, the ministry took different measures to meet the needs of each region.

For the Moulaya basin, the ministry allocated MAD 1.3 billion (\$140 million) for building a dam, searching for new groundwater sources, and launching a desalination water station in Nador, Baraka added.

Original Article: [Morocco World News by Souad Anouar](#)

China takes stock of groundwater resources for first time

China's total storage of groundwater resources stands at about 52.1 trillion cubic meters, the China Geological Survey announced on Thursday.

The country's total storage of underground freshwater is about 37.4 trillion cubic meters, and underground saltwater is about 14.7 trillion cubic meters.

China's groundwater storage increased by 36.3 billion cubic meters in 2021, noted the China Geological Survey, including a net increase of 35.7 billion cubic meters of shallow groundwater storage and a net increase of 600 million cubic meters of deep groundwater storage, compared with the previous year.

In 2021, the China Geological Survey organized 25 surveys with the help of 31 provincial-level geological environment monitoring agencies to complete the first national groundwater storage evaluation.

Original Article: [CGTN](#)

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