Veles Water Weekly Report

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July 21st 2022

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Welcome to **WATERTALK**

by Joshua Bell

**CLICK THE LINK BELOW**

“A 2 minute technical analysis video of H2O futures”

https://vimeo.com/731998220
The new NQH2O index level of $1140.99 was published on the 20th of July, up $50.32 or 4.61%, which sets another new all-time high for seventh week in a row. The July contract has been trading at premium of $9.33-$63.33 over the past week.

NQH2O is up 61.52% Year to Date.

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

Aug 22  1183@1220
Dec 22  950@1010
Jun 23  1150@1280
Over the last week the June daily future volatility high has been 3.34% on July 18th and a low of 0% on the 15th.

For the week ending on the July 20th, for the first time in over 3 months all the futures volatilities are higher than the index volatilities, the two-month futures volatility is at a premium of 2.77% to the index, up 1.14% from the previous week. The one-month futures volatility is at a premium of 1.78% to the index, a reversal 6.81% from last week. The one-week futures volatility is at a premium of 3.28% to the index, up 3.30% from the previous week.

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 Index

Central Valley average is calculated using data from 19 weather stations in the Central Valley, California. Data as of 20/07/2022

<table>
<thead>
<tr>
<th>STATION</th>
<th>MTD (INCHES)</th>
<th>WEEK ON WEEK CHANGE (INCHES)</th>
<th>% OF 20 YEAR AVERAGE MTD</th>
<th>2022 WYTD VS 2021 WYTD %</th>
<th>2022 WY VS 20 YEAR AVERAGE TO DATE %</th>
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<tr>
<td>SAN JOAQUIN 5 STATION (5SI)</td>
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<tr>
<td>TULARE 6 STATION (6SI)</td>
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<tr>
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<td>0.00</td>
<td>34.43</td>
<td>44</td>
<td>79</td>
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<tr>
<td>CENTRAL VALLEY AVERAGE</td>
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<td>0.00</td>
<td>11.48</td>
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RESERVOIR STORAGE

<table>
<thead>
<tr>
<th>RESERVOIR</th>
<th>STORAGE (AF)</th>
<th>% CAPACITY</th>
<th>LAST YEAR % CAPACITY</th>
<th>HISTORIC ANNUAL AVERAGE CAPACITY %</th>
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<tbody>
<tr>
<td>TRINITY LAKE</td>
<td>685,664</td>
<td>28</td>
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<tr>
<td>SHASTA LAKE</td>
<td>1,723,312</td>
<td>38</td>
<td>35</td>
<td>52</td>
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<tr>
<td>LAKE OROVILLE</td>
<td>1,555,891</td>
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<tr>
<td>SAN LUIS RES</td>
<td>704,630</td>
<td>35</td>
<td>25</td>
<td>72</td>
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Reference: California Water Data Exchange
Snow Water Equivalent (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.

<table>
<thead>
<tr>
<th>REGION</th>
<th>*SNOWPACK WATER EQUIVALENT (INCHES)</th>
<th>WEEK ON WEEK CHANGE (INCHES)</th>
<th>% OF AVERAGE LAST YEAR</th>
<th>% OF 20 YEAR HISTORICAL AVERAGE</th>
<th>% OF HISTORICAL **APRIL 1ST BENCHMARK</th>
</tr>
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<tbody>
<tr>
<td>NORTHERN SIERRA</td>
<td>0.4</td>
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<td>0</td>
</tr>
<tr>
<td>STATEWIDE</td>
<td>0.1</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>
The US Drought Monitor release their statistics with a 1-week lag to this report. Over the past week there has been 1.15% class 1 degradation in D4 Drought conditions.

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 very dry western and Southwestern US. Little or no storm activity brewing over the Northwestern Pacific. There is some scattered clouds over the Eastern Great Lakes region into Canada. Some small storm activity to the Southwest of New York. The only significant moisture inflow is from Monsoon activity that is bringing in moisture to Arizona and New Mexico. This moisture may move Northeasterly and bring some relief to the Midwest. We expect this Monsoon activity to continue over the next few months.

10 Day Outlook

Models indicate the most likely areas of afternoon and early evening convection developing over the southern Sierra south of Lake Tahoe and then eastward of portions of NV stretching ENE. This is all the result of high pressure continuing strong over the 4-Corners region and a weak disturbance off the CA between 130W and 140W. This is allowing the southerly flow to advect moisture northward across the region. The offshore disturbance will rotate northeast across the Pacific Northwest and northern CA later this week...which may bring some relief in temperatures to coastal areas an northern CA. This will help to decrease moisture across the region with the opportunity for scattered precipitation decreasing through the upcoming weekend. Although these disturbances will moves across the northern/western portion of the region, the high pressure cell over the 4-Corners region will continue above normal temperatures for much of the region, especially eastern areas closer to the NV/UT border.
WESTERN WEATHER DISCUSSION

Cooler-than-normal temperatures prevailed from the Pacific Northwest into much of California and western Nevada, where temperatures were 1-3 degrees below normal. Much of the rest of the region was normal to slightly above normal for the week. Above-normal rains fell in portions of Oregon and Washington as well as in Montana. Monsoonal moisture continues in New Mexico and Arizona, but it is widely scattered in nature compared to earlier in June. The rains did allow for some improvement in areas of New Mexico, where extreme and severe drought were reduced, and western Arizona, where severe drought was reduced. Severe drought was improved in southwest Colorado and much of the drought area of Montana had a full-category improvement. Moderate drought and abnormally dry conditions were adjusted in Washington to show a mix of improvements and some expansion of moderate drought. Extreme and exceptional drought was expanded over central Nevada and exceptional drought was expanded to include more of the San Joaquin Valley in California.

Reference:

Brad Pugh, NOAA/CPC
Brad Rippey, U.S. Department of Agriculture
Second Tulare County town goes dry as water tables plummet in drought

The town of Tooleville in Tulare County is once again without water. The town, which has struggled for years with dropping groundwater levels and contamination issues, saw its wells dry up over the weekend.
On July 15, residents called nonprofit Leadership Counsel for Justice and Accountability reporting very low water pressure and some with no water at all, said Elvia Olea, policy advocate for Leadership Counsel.
This is the second town in Tulare County to lose water this summer. East Orosi, about 30 miles north of Tooleville, was without water for 24 hours when one of its two wells went down July 12, according to news reports. A pump was installed and restored water to East Orosi.
Tooleville, meanwhile, is surviving on water hauled in to storage tanks. The town has two storage tanks which were installed by Visalia-based nonprofit Self-Help Enterprises. On Saturday, the community was switched over to the storage tanks which started receiving 27,000 gallons of hauled water per day after the outage.
But another problem arose over the weekend. A joint in the connection system to the storage tanks came undone. The town had to switch back to the well while the leak was repaired. Because pressure was taken off the well for a day, water levels rebounded enough to sustain people. But the well will probably not last, said Michael Claiborne, directing attorney for Leadership Counsel. “It’s only a matter of time before they go out again,” said Claiborne. “Water levels just are not sufficient to keep this system going.”
Tooleville sits in a sea of agriculture fields. Farmers received little to no surface water this year because of the ongoing drought, pushing them to rely heavily on pumping groundwater. That has driven Tooleville’s water levels lower, said Claiborne. Drilling new, deeper wells in Tooleville isn’t an option, he added. Test wells have shown that new wells would produce water that is unsafe to drink.
Tooleville experienced similar problems almost exactly a year ago when its wells went dry. It’s a recurring problem and the only permanent solution is hooking the town up to the water system of the nearby city of Exeter, said Claiborne. That process, called a consolidation, was resisted by Exeter for decades. But the state has the authority to mandate consolidation and in August of 2021, it began that process for Exeter and Tooleville. That spurred Exeter into voluntary negotiations.
“The long term solution here is consolidation,” said Olea. “In the meantime though, obviously residents are still struggling to do their everyday activities with very little water.”
Most residents in Tooleville rely on bottled water which has been provided by the state since 2014 because of groundwater contamination. But the well water is used for all
other domestic purposes such as, flushing toilets, washing dishes and taking showers. The lack of domestic water is compounded by the scorching temperatures in Tooleville which are already consistently upwards of 105 degrees. Olea anticipates that Tooleville will remain on hauled water for the rest of the summer. But it’s not the only solution being discussed. Given the severe lack of water, advocates have been meeting with state and county officials to discuss other temporary solutions. One proposal on the table is a pipeline from Exeter to Tooleville, similar to the consolidation. But instead of connecting every household to the system, the pipeline would run to the storage tanks. It would act as a more reliable source of emergency water than hauled water. “I’m just really worried about the logistics of hauling water out there every day, I think that’s going to be an absolute challenge,” said Claiborne. “And so getting a connection in place that’s reliable, doesn’t require truckers to go out on a daily basis would be really, really helpful.” Exeter is open to the idea as long as the state provides funding for the pipeline and a new well, said Claiborne.

Original Article: SJV Water by Jesse Vad

California’s Idle Crop Land May Double as Water Crisis Deepens
California’s historic drought may leave the state with the largest amount of empty farmland in recent memory as farmers face unprecedented cuts to crucial water supplies. The size of fields intended for almonds, rice, wine grapes and other crops left unworked could be around 800,000 acres, double the size of last year and the most in at least several decades, said Josue Medellin-Azuara, an associate professor at University of California Merced. The figure is preliminary as researchers continue to look at satellite imaging and other data. An official estimate remains a few weeks away, said Medellin-Azuara, who is leading an economic study on farm production and droughts with funding from the California Department of Food and Agriculture.
Much of the idle land is in California’s Central Valley, which accounts for about a quarter of US food production. Mile after mile of farmland reveals withered crops next to fields of lush green plants, a testament to the tough decisions growers are forced to make on how much and what to produce, and whether to keep farming at all. Surface water rights are seeing sharp cuts amid the drought and reserves are declining because of critically low snowmelt and depleted storage from last year. “What’s really concerning is for the first time we are fallowing at least 250,000 acres in the Sacramento Valley,” Karen Ross, secretary of the California Department of Food and Agriculture, said in an interview. “Those are the most senior water rights holders.”
VELES WATER WEEKLY REPORT

Last year, some California farmers were stunned to find their so-called senior water rights restricted. Water laws in the state are governed by a complex system that dates back to the Gold Rush era. Senior rights holders -- which include companies, growers and cities with claims that were acquired before 1914, and landowners whose property borders a river -- are the last to see their supplies curtailed.

Sacramento Valley typically “acts a funnel” that provides key water supplies to the broader region, according to the Northern California Water Association.

New regulation of the use of groundwater is also complicating the supply picture in the state, Medellin-Azuara said.

California has roughly 9 million acres of irrigated land. Drought last year directly cost the local agriculture industry and state about $1.7 billion, according to UC Merced researchers.

Original Article: Bloomberg by Kim Chipman

California is desperate to stop mega-fires. But controversy rages over tree thinning

Firefighters in Yosemite National Park have been celebrated for preventing this month’s Washburn Fire from destroying the nearly 3,000-year-old giant sequoias at Mariposa Grove.

But it wasn’t just hand tools and hose lines that kept the fire at bay. Past forestry projects, which slashed the amount of brush and trees fueling the flames, made the job much easier, park officials say.

And yet, the topic of forest management remains a fraught one in California, especially in Yosemite.

While practices such as tree thinning and prescribed burning have proved effective at reducing the risk of a catastrophic fire, disagreement remains about when and where the work should be done. Some people even say the effort is often not worthwhile and at times counterproductive.

A recent lawsuit from an environmental group in Berkeley shut down fire prevention projects in Yosemite Valley and other parts of the park this summer; the group says forests are being destroyed with little or no safety benefit.

“Like wildfires themselves, the debate about treatments is perennial,” said Char Miller, a professor of environmental analysis and history at Pomona College in Southern California who studies fire. “There are all sorts of arguments and concerns, some of which have nothing to do with fire and everything to do with whacking (forest managers) from the right or the left. And this isn’t getting us closer to resolving in specific ways the threats on the ground.”

The division, which adds to the obstacles of funding and staffing that hold up countless projects many say are needed to keep communities safe, comes as California’s wildfire
crisis shows little sign of abating. Since 2017, the state has experienced eight of its 10 biggest blazes, and more than 10 million acres and thousands of homes have burned.

In Yosemite, park officials were planning this year to remove potentially tens of thousands of trees they say pose a fire hazard. The hope was to lessen the possibility that a small burn would explode into a giant inferno at such high-profile spots as Yosemite Valley and the Merced and Tuolumne sequoia groves. The nonprofit Earth Island Institute, however, sued, and crews stopped working, at least temporarily, last month.

The group says the work did little to address fire danger. Reflecting a vocal yet minority view on forest management, members of the group maintain that removing trees doesn’t lower the threat but increases it. The reason, they say, is that more warm sunlight and menacing wind get into the forest, which some research shows to be true. “The logging that Yosemite National Park is doing will not curb fires, it will make them spread faster and more intensely,” said Chad Hanson, a research ecologist with the John Muir Project, part of the Earth Island Institute. “We need to change course.”

Hanson, an influential voice in the wildfire debate who has fought numerous forestry projects, advocates for doing fire safety work closer to communities instead of intervening in the woods. While sometimes supportive of prescribed burning, he and his colleagues say creating defensible space in developed areas and arming homes with fire-resistant materials is the most effective preparation.

The lawsuit against the park notes the conflicting points of view, but the legal case is based mainly on procedural issues. The complaint accuses park officials of failing to conduct adequate environmental review. It’s a common strategy used to halt forestry work, both when the environmental analysis is believed to fall short and when there are broader concerns about the merits of a project. “What you get with these (challenges) is a proper vetting of the science and the evidence in terms of what the effects are going to be,” Hanson said.

Yosemite officials did not respond to questions about their work before The Chronicle’s publishing deadline. Their plan remains on hold until a federal judge in Fresno conducts a formal hearing on the case, scheduled for next month.

Several others, however, have spoken in favor of the park — or at least against Hanson and those who are getting in the way of clearing trees. “The science doesn’t support what these people are showing and putting out there,” said Malcolm North, a longtime expert in the field who works as a research scientist for the U.S. Forest Service. “Most of the science community would agree there’s not enough forest management being done.”

Original Article: San Francisco Chronicle by Kurtis Alexander
In face of recurring drought, cities seek security in wastewater recycling projects

When it comes to slaking Southern California’s colossal thirst for water, more and more local governments are searching their own sewer lines for a solution. In the face of dire drought, cities and water agencies are now investing heavily in large-scale wastewater recycling facilities — systems that will purify the billions of gallons of treated sewage that are currently flushed out to sea.

Among the massive water recycling initiatives now under development in Los Angeles County are a $3.4-billion plant at the Joint Water Pollution Control Plant in Carson and Operation Next — a roughly $16-billion plan from the Los Angeles Department of Water and Power to purify up to 100% of the wastewater processed by the Hyperion Water Reclamation Plant and put it to good use.

“Our goal is really to turn the largest discharge of treated wastewater in Southern California into an engine for groundwater replenishment,” said Brad Coffey, of the Metropolitan Water District of Southern California. “That’s in an attempt to interrupt, break the snowpack-dependent water cycle of much of California and much of the West … that’s threatened by climate change.”

The push to recycle municipal wastewater so that it could be added to reservoirs, underground aquifers and even municipal water lines began during the state’s last severe drought. Among other benefits, water managers say wastewater recycling will reduce the region’s dependence on water imported from Northern California or the Colorado River.

The statewide potential for water recycling is huge. Only 23% of California’s wastewater is currently recycled. In the South Coast hydrologic region — which includes Los Angeles and half the state’s population — the rate of recycling is slightly higher at 29%, according to a report by the Pacific Institute, a water think tank in Oakland.

That leaves 1.1 million acre-feet per year, or about 981 million gallons per day, of untapped wastewater in the South Coast region that could potentially be recycled after accounting for water needed to maintain river flows or discharged for environmental purposes, experts say.

The primary hurdle to building out massive water recycling projects, however, has been the way in which sewer systems are organized.

“We have built a very highly centralized system, and it’s sort of a once through system,” said Heather Cooley, director of research at the Pacific Institute. “We often build recycled wastewater treatment facilities at a low point in the watershed … and all the pipes are sort of oriented towards that.”

But instead of treating wastewater and discharging it into the ocean, agencies must consider new pipes and delivery systems for pumping the purified water to various locations, whether it’s for groundwater recharge or nonpotable reuse.
VELES WATER WEEKLY REPORT
This also highlights the collaboration needed between various groups, which is at odds with the “fragmentation” of water in our current system.
“In many instances, there is a water provider and a wastewater provider and those are separate groups,” Cooley said. “The folks who are getting the recycled wastewater are not folks that are providing water to the community typically.”
The Joint Water Pollution Control Plant in Carson discharges 260 million gallons of treated wastewater per day, treating sewage from as far away as Pomona. It’s an efficient operation powered entirely by biogas that results from treating wastewater and solid waste. Excess energy is sold to the local power grid.
Currently, the MWD operates a half-million gallon a day demonstration facility there. Ultimately, it hopes to run a full-scale plant that will eventually supply 150 million gallons of water per day — enough to supply more than 500,000 homes.
Original Article: Los Angeles Times by Jaimie Ding

US WATER NEWS

Lake Mead forecast: Southwest should brace for more water cuts from Colorado River
More extreme water cuts are all but certain in the Southwest starting next year -- including new water cuts for California -- according to the latest government forecast for the Colorado River and Lake Mead, the country's largest reservoir.
Lake Mead, which provides water to roughly 25 million people in Arizona, Nevada, California and Mexico, is losing water at an alarming rate amid an extraordinary, multi-year drought made worse by the climate crisis.
More extreme water cuts are all but certain in the Southwest starting next year -- including new water cuts for California -- according to the latest government forecast for the Colorado River and Lake Mead, the country's largest reservoir.
Lake Mead, which provides water to roughly 25 million people in Arizona, Nevada, California and Mexico, is losing water at an alarming rate amid an extraordinary, multi-year drought made worse by the climate crisis.
More critically, the bureau predicts the reservoir will be at nearly the same level, around 1,041 feet, come January.
If that forecast holds in next month’s report, which is what federal officials will use to determine cuts for 2023, the Southwest will be subject to a Tier 2 water shortage -- and the fresh cuts that come with it -- starting in January.

At 1,050 feet, a Tier 2 shortage is declared, further decreasing the amount of water Arizona, Nevada and Mexico can use from the Colorado River. If the forecast is below 1,045 feet, which the latest forecast would suggest, then parts of California would be forced to cut its Colorado River water consumption, too.

At Tier 3 -- something the forecast suggests is possible starting in January 2024 -- water cuts could be deep enough to extend beyond agriculture and impact household and industrial water use.

Importantly, the Bureau of Reclamation's studies are based on historical data from the 1990s -- a much wetter period in the West, said Eric Kuhn, a retired former manager of the Colorado River Water Conservation District.

"This means that the 'most probable' 24-month study should be considered to have a wet or 'optimistic' bias," Kuhn told CNN, which suggests that it's likely the actual levels will run a bit below what the bureau is predicting.

Original Article: CNN by Rachel Ramirez

Michigan communities get $5 million for clean drinking water

The Michigan Department of Environment, Great Lakes, and Energy awarded more than $5 million to help six communities improve drinking water systems. The funding stems from a $4.8 billion bipartisan infrastructure plan Gov. Gretchen Whitmer signed into law earlier this year.

EGLE awarded Drinking Water Infrastructure grants and other money listed below.

- City of Ann Arbor: $1.38 million to upgrade the overall drinking water system.
- East Lansing – Meridian Water and Sewer Authority: $2 million to upgrade the drinking water system.
- City of Owosso: $403,500 for projects to upgrade the drinking water system.
- Village of Shelby: $621,000 to upgrade the drinking water system.
- Benton Charter Township received $690,000 in a Consolidation and Contamination Risk Reduction grant to remove or reduce per- and polyfluoroalkyl substances or other contaminants.
- The city of Romulus received $456,300 in a Drinking Water Asset Management grant to help drinking water suppliers develop and update asset management plans and create a process to identify and remove hazardous materials such as lead service lines.

“The City of Ann Arbor is excited to receive a Clean Water Grant from the State of Michigan to support improvements to its raw water pump station,” City Administrator Milton Dohoney said in a statement. “This station was constructed in 1949, and this
VELES WATER WEEKLY REPORT

project will allow the city to replace aging infrastructure. Once complete, this project will improve water supply reliability for the City’s 125,000 customers.”

So far, the plan has spent $124 million, including the following:

- $56.4 million for 19 municipalities for lead service line replacement.
- $35.5 million for 105 communities to study their water systems infrastructure and identify potential hazards.
- $21.6 million for 10 communities to reduce PFAS contamination.
- $8.6 million for eight communities to improve their drinking water infrastructure.
- $1.9 million for 27 communities to implement water rate plans to support their asset management plan or watershed plans supporting long-term infrastructure needs to address public health and environmental risks.

The funding follows lead contamination of water systems in Flint in 2014 and in Benton Harbor in 2018.

Original Article: The Centre Square by Scott McClallen

NASA-funded project to help water utilities cope with wildfire

Data from space will be used to help keep drinking water clean in the Pacific Northwest, under a Washington State University-led project that recently received a $1 million NASA grant.

The effort answers a call from coastal utilities that rely on water sources in forested watersheds, which historically have burned once every 100 to 200 years. The 2020 Labor Day fires in Oregon signaled that was changing.

The agencies now feel an urgency to prepare for fire-induced impacts such as erosion that pushes sediment, chemicals, and nutrients into their water sources.

“As the climate changes, it’s expected that these forests will dry out and burn more regularly,” said Julie Padowski, the project’s lead principal investigator and assistant director of WSU’s Center for Environmental Research, Education and Outreach or CEREO. “The infrastructure required to treat drinking water is expensive, and these water utilities really need to be able to plan in advance.”

Padowski is leading a multi-institutional team through CEREO to develop a modeling tool that simulates potential fire impacts in watersheds to help these utilities prepare.

The challenge is the lack of data for these types of forests since they have not burned regularly in the past. Other areas where wildfires have been more common like New Mexico and Colorado do not resemble Pacific Northwest forests, so the team will use data from NASA’s satellites, such as soil moisture, leaf area and other types of surface-reflectance data, to inform their models and tool development. This data also is regularly updated so the model of a particular watershed will be based on current conditions.

“This modeling tool will offer them a way to think through likely fire scenarios and their impacts to water and vegetation in their watersheds in the coming 25 to 50 years, and
what that might look like for their mission to provide clean drinking water," said Padowski.

Knowing this information helps them take steps such as identifying types of pre-fire mitigation that might be useful for protecting the water intakes from sediment and debris flows, or perhaps be ready with post-fire measures such as mulching or other treatments that help keep ash in place instead of running off into a reservoir.

The team includes researchers from Oregon State University, University of Idaho, and University of Nevada, Reno and the U.S. Forest Service. Seven utilities located in Western Oregon and Washington are advisors on the project, but the team hopes the tool will be useful across the Pacific Northwest, and ultimately throughout the U.S. The grant, which was made through NASA’s ROSES program or Research Opportunities in Space and Earth Science, will last three years. The project will officially kickoff this fall.

Original Article: WSU Insider by Sara Zaske

Parts of the U.S. and Europe are bracing for some of their hottest temperatures yet

Across much of the United States, millions of Americans are getting ready for some of the warmest days they've ever seen.

Parts of the Great Plains are forecast to hit record-breaking temperatures this week, according to meteorologists at AccuWeather. Kansas, Oklahoma and Texas could reach temperatures as high as 110 degrees.

The heat is already affecting the region's crops, livestock and power grids. Parts of Texas and Oklahoma were under excessive heat warnings on Sunday, while Arkansas and Louisiana were under heat advisories.

Residents of Texas, mired in a heat wave for much of the past six weeks, have seen triple-digit heat from north to south and east to west. The city of Austin just experienced the hottest seven-day period in its recorded history. As residents there and across the state turn up their air conditioners, fears about the resilience of the state's power grid are on the rise.

Wildfires across Europe

But it's not just happening here. Climate change is making heatwaves around the world more frequent and intense, scientists have found.

Extreme heat in parts of Europe sent wildfires burning across Spain, France, Portugal and other surrounding countries, causing thousands of people to evacuate.

A pilot died after his plane crashed during a Portuguese firefighting operation Friday. Portugal has experienced some of the worst damage. Wildfires have already destroyed roughly 74,000 acres of land so far this year, according to the Portuguese broadcaster RTP.
In France, two huge wildfires in the nation's southwest have spread for nearly a week now and decimated the country's pine forests, according to the Associated Press. The wildfires caused roughly 14,000 people to evacuate the region.

Wildfires are also damaging parts of Spain, prompting the country's National Defense Department to deploy most of its fire-fighting aircraft to get to the areas with limited access on the ground, the Associated Press also reported.

Blazing temperatures

The heat wave in Portugal caused 659 deaths over the past week, according to Reuters, citing the nation's Health Ministry. Temperatures reached as high as 117 degrees in some parts of the country.

As of Saturday, some 360 people in Spain died from heat-related causes, according to the daily Spanish newspaper La Vanguardia.

Meanwhile, for the first time in history parts of the United Kingdom are under a "Red warning" for extreme heat.

The U.K.'s national weather service, known as the Met Office, said temperatures could hit as high as 40 degrees Celsius (104 degrees Fahrenheit).

The extreme heat warning will affect parts of England on Monday and Tuesday, according to the Met Office.

Despite the widespread harm people are already feeling from climate change, countries around the world risk stalling in their efforts to cut heat-trapping greenhouse gas emissions as they scramble to deal with problems such as high inflation and fossil fuel prices.

The U.S. is the world's second biggest emitter of greenhouse gases. But its ability to reduce its heat-trapping pollution has been limited recently by political conservatives. In late June, the Supreme Court curtailed the U.S. Environmental Protection Agency's ability to regulate emissions from existing power plants. And last week, Sen. Joe Manchin (D-WV) shot down legislation backed by other Democrats and the Biden White House to pump more money into clean energy.

Original Article: GPB News by Shauneen Miranda
**Water recycling system Hydraloop wins prestigious UN award**

World Intellectual Property Organization (WIPO), the agency of the United Nations, has chosen Hydraloop as winner of the WIPO Global Awards Program. Hydraloop was elected because it has developed unique, patented technology that can substantially reduce water consumption worldwide, realizing a huge social impact. Due to human behavior and the effects of climate change, almost every region in the world now suffers from water stress.

WIPO's Global Awards program praises Hydraloop as an exceptional company that uses its intellectual property (IP) in an innovative and smart way to help solve the water crisis and improve the quality of life worldwide.

Arthur Valkieser, CEO of Hydraloop, says: "This UN award is a great recognition of the value of our intellectual property and the impact Hydraloop has in the fight against the rapidly growing global shortage of clean water. Our no filters/membranes/chemical technology and proprietary IP are unique and change the market. With Hydraloop, anyone - anywhere in the world - can take action and save water."

**GLOBAL AWARDS PROGRAM** - The Global Awards program is rooted in WIPO's mission to ensure a world where innovation and creativity are supported by intellectual property. WIPO's program recognizes the central role of innovative and creative activities of SMEs that leverage intellectual property rights to develop solutions that make a positive contribution, economically, socially and culturally. The prize is awarded based on successful commercialization of IP and its positive impact on society.

**HYDRALOOP** - Hydraloop is a multi-award-winning company that designs and manufactures decentralized, consumer-friendly, IoT-connected, compact and scalable graywater recycling products for residential and commercial properties, reducing water consumption by up to 45 percent. Hydraloop has a global partner network of more than 120 partners in more than 50 countries. Headquartered in the Netherlands, Hydraloop has offices in the United States and the Middle East, as well as representatives in Canada and Australia.

Original Article: [Bezinga/ PR Newswire](https://bezinga.com/)

**Water firms see 'extraordinary' demand in heatwave**

Water providers across the west are urging customers to use water responsibly "for the benefit of everyone". They warned that an "extraordinary" demand due to the hot weather could see a drop in water pressure and potentially affect the taste of water.

But Bristol Water told people not to worry, adding "this will return to normal as temperatures start to cool".

At this time, providers said they are not expecting to bring in restrictions.
VELES WATER WEEKLY REPORT

Bristol Water, which supplies about 500,000 homes and businesses in the city and surrounding counties, said: "With the weather getting warmer, you may experience a drop in water pressure, especially during peak times."

It said water supplies might be temporarily redirected so customers’ water comes from different treatment works or reservoirs than usual.

"This may mean you notice your water tastes a little bit different to normal," it added.

The company said that as a result of the hot weather there has been an increase in water use as people try to cool down with showers, hoses and paddling pools.

"During this heatwave we're asking everyone to please consider your water use and whether it's essential," it added.

Meanwhile, Thames Water had reported no water and low pressure in the GL7 and GL54 areas of Gloucestershire, but the issue was resolved in the early hours of Monday.

Water use in the Thames Water area soared to its highest level for over 25 years over the weekend, currently using an extra 300 million litres of water a day, it said.

Andrew Tucker, water demand reduction manager for Thames Water, told BBC Radio 4: "We know exactly how much water we have got in the system, and that is both in our rivers and underground, and also how much is in our reservoirs, we balance that with how much demand we are seeing from homes and businesses, but at the moment, that demand is at near record levels.

"We are going through it faster than we would like... so we are faced with the challenge of can we make water fast enough."

Original Article: BBC News

Murray-Darling Basin critical for Australia's future, water advocates say, and time is running out

Murray-Darling Basin critical for Australia's future, water advocates say, and time is running out

It provided a place to live, a source of food and water and has acted as a meeting place for many First Nations groups who found their place along the river.

Now, the basin is lined by growing towns, thousands of irrigators and locks and dams aimed at making sure the river can best serve human populations.

One thing remains constant though — Australia relies on the Murray-Darling Basin to survive.

Erawirung woman Lucille Sumner works as a ranger along the Murray River in South Australia's Riverland, helping to rehabilitate the environment after years of drought and water manipulation.

She said Australia needed to put the health of the river, its environment, animals and people before profit.

"The trees don't ask for money, they can't live on money, the birds can't live on money, only people live on money," she said.
"We've all got to survive on this river, and we all don't want to be living in the semi-desert. 
"We've already done too much damage as it is in my eyes. 
"If we start doing something really deadly and working together, without having to put a dollar sign to everything, we might make something of this place."

Ms Sumner's calls come as a new ABC, BBC and Screen Australia documentary, River, takes a look at the world's mightiest waterways and how human intervention has left many on the brink.

The documentary, made with Create NSW, gives a cinematic view of the planet's rivers, with music by the Australian Chamber Orchestra.

'We are all going to suffer'

The Murray-Darling Basin Plan was established in 2012 and outlined a road map for each state to rehabilitate the system in the wake of the Millennium drought.

It included a number clauses that needed to be fulfilled, but two years before its June 2024 completion deadline, many of these are yet to have been met.

Competing horticultural, environmental and cultural interests around the basin mean the area remains a hot political topic.

Australian National University economics and water expert Quentin Grafton has held myriad water-related positions across the globe and is currently the lead expert and commissioner for the Global Commission on the Economics of Water.

He said Australia had a poor global reputation when it came to how we dealt with water.

"The storyline that people keep telling, that it's just drought, is just not true. The evidence shows that's not the case," he said.

"Droughts of course contribute, but they are not the cause or factor alone — it's over-extraction [of water].

Original Article: abc News by Sam Bradbrook

Water crisis straining govt-private sector relations in Monterrey

Comments by Mexican President Andrés Manuel López Obrador (AMLO) about the role that big water consumers should play during the drought affecting capital Monterrey have brought a sharp retort from Nuevo León state water utility Agua y Drenaje de Monterrey (SADM).

During his morning press conference on Monday, AMLO (pictured) called on local beer and soda makers to temporarily cut their production to a minimum so that more water can be supplied to the public.

“I take this opportunity to make a call to continue helping, cooperating. I don't deny that they're helping, they are, but more help is needed and important decisions are needed. It's a call to those who have water and are using it for other purposes. Water is a fundamental human right,” he said.
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Just minutes later, however, the director of SADM, Juan Ignacio Barragán, came out to defend the beverage producers, saying that they are playing a key role in supplying water to the drought-stricken city.

“Yes, they are supporting us, and drilling of a deep well that the Heineken company is carrying out is well advanced. It's giving us approximately 20l/s,” he said during a press conference.

According to Barragán, soda producers have also given access to around 12-14 wells in the city so far.

Early in July, the director of national water authority Conagua, Germán Martínez Santoyo, said that more than half of the companies that hold water rights in Nuevo León state had agreed to provide part of the water needed to supply capital Monterrey.

However, he said the help of more companies was needed to reach the goal of 500l/s. Nuevo León has a deficit of 3,236l/s that is affecting the metropolitan area of the state capital, Martínez said.

Original Article: BN Americas

Flood, Evacuate, Rinse, Repeat: A Relentless Pattern Batters Australia

Emma Winley pointed to the markings on the outside of her house, recording the levels of the three floods that have hit in the past 16 months.

In March of last year, the water came up to her knees. In March of this year, it nearly reached her shoulders. Still rebuilding after that flood, she and her husband hadn’t even moved back in when another one hit earlier this month, submerging half the house and going up to her neck — denoted by the film of sludge still smeared on the wall.

“They each go up a bit higher,” she said, her voice threatening to break.

In the first five days of this month, a storm system deposited 8.7 inches of rain on Sydney, double the month’s average rainfall and leading to the wettest July on record. Some surrounding areas received over 30 inches. In what has now become a familiar routine, tens of thousands of people living along the Hawkesbury-Nepean River, west of the city, evacuated. For some towns, it was their third severe flood in the past 16 months. For others, their fourth.

Australia’s leaders have been quick to praise the “resilience” and community spirit of local residents. But as the cleanup begins again, that resilience is starting to falter. With climate change intensifying extreme weather events, residents must confront the prospect that a constant and exhausting cycle of evacuation, return and months of cleanup will become the new normal.

“It feels like you’re living on a knife’s edge all the time now,” said Linda Gregoriou, another Windsor resident.

Windsor, a town of 1,900 an hour northwest of Sydney, sits on a floodplain. Ms. Winley, 54, and her husband, Andy Ryland, 63, knew the risks when they bought their house nearly 15 years ago. They thought they were prepared.
The first flood in March 2021 wasn’t too bad, Ms. Winley said. She looked for silver linings. It was about time to replace the kitchen anyway, she thought. They refitted the house and replaced the furniture, using up their savings.

The second flood, the next year, caught them off guard, and they lost it all again. Now, the third time around, she said, “at least we haven’t lost as much — because we’d already lost it all beforehand.”

Australia is a continent of extremes. It has always gone through periods of drought followed by severe flooding. Most residents living on the Hawkesbury-Nepean floodplains can recite by heart the levels of the worst floods to hit the area and compare them with new deluges — the ones last year and this year have fallen well short. It is both a warning and an assurance: This will always happen, and it could always be worse.

But climate change now adds a complicating factor, with scientists noting that Australia, like many countries, is seeing an intensification of extreme weather. While it’s impossible to say how much climate change is responsible for the recent floods, said Jamie Pittock, an environment and society professor at the Australian National University, “all the science points to climate change making this kind of flooding more frequent and worse.”

Even for residents who have grown up on floodplains, the latest deluges are something of an anomaly.

Camden, about an hour south of Windsor, has flooded four times this year — twice in March, once in April and again this month. The local lawn bowling club has gone underwater every time. Dennis Crouch, 71, the club’s vice president, grew up in the town and said he has never seen it hit by so much flooding, so close together.

Original Article: NY Times by Yan Zhuang

Heavy Rains Continue In Kerala, Water In Some Dams Reach Red Alert Levels

With heavy rains continuing to lash parts of Kerala, water levels in several dams, including the Mullaperiyar and Idukki, in the state are reaching their respective storage capacities and some even reached red alert status on Sunday.

According to figures provided by the Kerala State Disaster Management Authority (KSDMA), water in six dams — of which four are in Idukki — under the control of KSEB is at red alert levels and in one at the orange alert level.

The dams where water reached red alert levels at 11.00 AM were -- Ponmudi, Kallarkutty, Erattayar, and Lower Periyar in Idukki, Kuttiyadi in Kozhikode, and Moozhiyar in Pathanamthitta districts of the state.

Water levels in the Mullaperiyar dam, meanwhile, were holding steady at 135.7 feet as of 12 PM due to a reduction in rainfall in the area for the last few hours and no alerts have been issued, an official from the control room set up in Idukki district said.
VELES WATER WEEKLY REPORT

The official said that there was a slight increase in water level at the Idukki dam, but nothing to be concerned about due to the reduction in rainfall there at the moment.

The India Meteorological Department (IMD) on Sunday issued a yellow alert in nine out of the 14 districts of the state for the day.

On Saturday, Chief Minister Pinarayi Vijayan, referring to weather data, had said heavy rains would continue for the next five days and cautioned people living in hilly regions to remain vigilant.

Authorities had sounded alerts to people residing on banks of various rivers where water levels were rising due to heavy rainfall in the state.

The uninterrupted downpour in Kerala continues to play havoc in various parts of the state with reports of massive flooding in some areas and people being shifted to rescue shelters in others.

Many houses in the coastal belt of the state were partially damaged by the gusty winds and massive rains there.

Original Article: Outlookindia.com

Illegal groundwater extraction: Govt body names 2,069 units, grants relief

Just over a fortnight after it declared as “illegal” the extraction of groundwater by 2,069 industries, including projects and units of big corporates like Tata Steel, Adani Wilmar and Ramdev’s Divya Pharmacy, the Central Ground Water Authority (CGWA) granted relief to them on Thursday, as it extended the last date for applying for no objection certificates (NOCs) from June 30 to September 30.

On June 27, the CGWA, under the Ministry of Jal Shakti, had listed 2,069 projects/ units which had failed to renew the NOCs issued by the authority for groundwater extraction.

“Groundwater withdrawal by the projects (as per list attached) is illegal as per law,” said a communique issued by the CGWA member secretary.

According to the “Guidelines to regulate and control groundwater extraction in India”, issued by the Ministry of Jal Shakti Ministry on September 24, 2020, barring five exempted categories – individual domestic consumers in rural and urban areas for drinking water and domestic use; rural drinking water supply schemes; Armed Forces establishments and Central Armed Police Forces establishments in rural and urban areas; agricultural activities; and Micro and Small Enterprises drawing less than 10 cubic metres per day – all other users are required to get NOCs from the CGWA for extraction of groundwater.

The NOCs are issued for a period of 2 to 5 years, depending on the users and the category of area in which they are located (over exploited, critical, semi-critical and safe).

Among the 2,069 projects that were listed, the NOC for Adani Wilmar Limited (2,673 cubic metres per day) was due for renewal in April 2021. The NOC for Ramdev’s Divya
VELES WATER WEEKLY REPORT

Pharmacy Unit-II, based in Haridwar, for extraction of 179 cubic metres per day, expired on December 23, 2017.

Among the listed projects, the NOC for maximum groundwater extraction – 5,77,550 cubic metres per day – was issued to Tubed Coal Mine project, in Latehar district of Jharkhand; it was due for renewal on August 13, 2021.

The NOC for Tata Steel Ltd’s Open Cast Coal Mine in West Bokaro (20,094 cubic metres per day) expired in December 2021.

“It has come to the notice of the Authority that NOC issued to the… projects has expired and is no more valid... The renewal of NOC for groundwater abstraction by the industries/ projects is overdue as project proponents have failed to apply for renewal within the stipulated time,” said the CGWA member secretary’s communique.

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Original Article: The Indian Express by Harikishan Sharma

Calls for more water buybacks to sustain Murray Darling Basin as government continues to fall short of target

Hopes that environment-saving water will be delivered through the Murray-Darling Basin plan are evaporating rapidly.

Just two gigalitres of a promised 450GL have been delivered so far. The federal government is set to table the much-delayed Water for the Environment Special Account (WESA) report when parliament sits in just over a week.

The Australia Institute and the Greens say further water buybacks – which were capped under the Coalition – are the only way to get the water needed to sustain the basin, but that would require legislation.

The lack of water threatens species and their habitats throughout the basin.

Water minister, Tanya Plibersek, said the government remained committed to the target despite challenges. The government was not ruling out buybacks.
The Nationals have long been on the side of the irrigators, against delivering the 450GL, and critical of buybacks, while the Liberal party always said it would deliver the plan “in full and on time”.

The $13bn plan divided states, political parties, irrigators and conservationists. It was years in the making, and adding the 450GL of environmental water to the original 2,750GL was a hard-fought concession to South Australia. The 2012 plan decreed that 450GL a year should be returned to the river system by 2024. Meanwhile, the Murray-Darling faces ever-increasing dry periods because of climate change.

While the water is critical to the health of SA’s Coorong, Lower Lakes, and Murray mouth, it’s also crucial throughout the basin to maintain wetland refuges, avoid species loss, halt salinity and keep water flowing between the rivers, lakes and floodplains.

The 450GL was legislated, but another deal was struck by water ministers in 2018, which effectively said the water can only be recovered for the environment if no socioeconomic harm is done to river communities.

Shadow water minister, Perin Davey, called the target an “upper limit”, and said only 62GL was needed. She said this week that through “politicisation” the 450GL had “morphed into an interpreted fixed target”.

“The opposition only supports water recovery that meets the socioeconomic assessment criteria agreed by the ministerial council in 2018,” Davey’s office said in a statement.

Plibersek said the government was committed to delivering the Murray Darling Basin plan, “including the 450GL, which was the basis for SA signing up to the plan”.

“After nearly a decade only 2GL has been delivered. It shows [the Liberals and Nationals] were never serious about delivering on the plan,” she said.

“For senator Davey to claim that the 450GL is an ‘interpreted target’ is to deliberately misinterpret history.”

Greens water spokesperson, Sarah Hanson-Young, said Plibersek was facing a “monumental task” after nine year’s of the Coalition’s “incompetence”.

“But I urge her not to wave the white flag,” she said, and called on her to lift the moratorium on voluntary buybacks to farmers who wanted to could sell their water to the environment.

Davey’s comments showed she was “either misreading the plan, doesn’t understand it, or simply doesn’t care”, Hanson-Young said.

SA deputy premier and water minister, Susan Close, said the 450GL was enshrined in the law, and necessary for the sustainability of the basin.

Original Article: The Guardian by Tory Sheppard

Traditional owners use AI and aerial imaging to help restore wetlands in south-west NSW
Traditional management techniques are being combined with modern technology to aid the restoration of vitally important wetlands near Balranald, in south-west New South Wales.

Indigenous traditional owners, the Nari Nari Tribal Council and their partners have started using artificial intelligence and aerial imaging to more effectively target their work at the Gayini Nimmie Caira property.

Data from high-resolution aerial images of the property is being fed into mapping and artificial intelligence tools to map water and show how environmental watering, allocated from the Murrumbidgee River, has been used.

The environmental water is spread across the property to add life to the wetlands and the animals and plants that rely on that precious ecosystem.

Since the Nari Nari began managing the old cattle stations in 2000, native birds and plants have begun returning in large numbers and it's hoped the new technology could help guide the work into the future.

Through busting old irrigation channels and banks, and targeting areas with environmental water, the 88,000-hectare property has been transformed in 22 years from a dust bowl into a thriving wetland ecosystem.

To date, the Nari Nari and their partners The Nature Conservancy, which led a consortium to purchase Gayini Nimmie Caira in 2019, have relied on sight, as well as hydrological monitoring and drones to plan and monitor the work.

"Now the water is spreading to new places we never thought it had in the past, and one of the critical elements is how do we monitor that and show change over time?" said James Fitzsimons of The Nature Conservancy.

Technology company Nearmap is providing the new technology, which will allow land managers to see exactly where water is on the property and how its distribution is changing over time.

The changes can then be interpreted into data, which feeds into artificial intelligence tools that allow for sophisticated monitoring and management of water at Gayini Nimmie Caira.

"Being able to see that change in extent of water, the extent of greenness, is going to be really important to show results over time," Dr Fitzsimons said.

Original Article: abc News by Victor Petrovic
Note the attachment is not an inducement to trade and Veles Water does not give advice on investments.