



TMWA Board Meeting

Tuesday, July 26, 2022

Press Clippings

June 8, 2022 – July 21, 2022



S. Virginia 24-inch Main Replacement

VOICES | Opinion *This piece expresses the views of its author(s), separate from those of this publication.*

Making changes for a better community | Bonnie Weber

Bonnie Weber

Published 4:00 p.m. PT June 8, 2022

This opinion column was submitted by Bonnie Weber, the Reno City councilwoman from Ward 4, seeking to retain her seat in the 2022 elections. Her campaign website is bonnieforreno.com.

The only constant in life is change. My goal is to change things for the better.

I have lived north of McCarran Boulevard for 38 years. Back then, Lear Fan, the J.C. Penney warehouse and Desert Research Institute were the major employers out here. No industrial parks, no grocery stores, no North Valleys Regional Park, and Red Rock Road was dirt.

Back then, I volunteered on the Stead Neighborhood Advisory Board to help build up our community. We fought for things like improving traffic on 395. It could take an hour to get home due to several traffic signals and railroad crossings on the rural highway. NDOT responded and built the freeway.

Back then, the Stead Sewer Treatment Plant consisted of evaporation ponds that smelled awful on warm summer nights. The City of Reno responded and converted the sludge ponds to a modern facility.

Back then, all the power poles to Stead snapped during a blizzard. We were without any power for more than a week in the middle of winter. Sierra Pacific responded and rebuilt the lines using more robust poles.

Back then, we worried about our water supply. Sierra Pacific supplied the water to the North Valleys using a small pipeline under North Virginia Street. Water was so limited that water rights sold for more than 10 times the rate in the lower Truckee Meadows. TMWA was created and responded by building a new, larger pipe. They also added new supply by integrating the Fish Springs Water Project.

Back then, the Swan Lake Advisory Board worked with Senator Richard Bryan to help keep the Lemmon Valley wetlands from drying up. In 1999, they reached a federal agreement to water the bird sanctuary using excess effluent water from the Stead Sewer Treatment Plant. Then the City was sued because the area received too much water. The City responded and built a new export pipeline to send excess sewage to the Reno Sparks Water Resource Reclamation Facility.

Infrastructure always chases need.

I ran for public office to improve the quality of life in the North Valleys. Serving in office during the past 20 years, I have helped bring about many positive changes. Improved infrastructure, new parks, shopping centers and higher paying jobs have all been added. We also stopped the City from dumping strip clubs in Ward 4.

As your City Council representative, I continue my fight for improvements in Ward 4. We have a new signal at Beckwourth at and Golden Valley. We have a new sports field at Mayor's Park. I worked with City staff to get a Ward 4 Services Guide to help direct our citizens to City resources. And as a fiscal conservative, I pushed for the City of Reno to pass a balanced budget for only the second time in the last 20 years.

Looking back, we can see how far we have come, but we still have a long way to go. I am working with the Reno Police Department for new Neighborhood Watch Programs in Ward 4. Sky Vista Parkway is set for widening this summer. We're getting a new playground at Dorothy McAlinden Park. We recently got two new restaurants with more to come. NDOT will begin widening the freeway starting in 2023!

Working together, we can build a brighter tomorrow in the North Valleys.

Bonnie Weber is the Reno City councilwoman from Ward 4, and is seeking to retain her seat. Her campaign website is bonnieforreno.com.

Have your say: How to submit an opinion column or letter to the editor

LOCAL NEWS

Water levels in Nevada will ‘continue to decline’ as summer heat approaches

by: [Madison Kimbro](#)

Posted: Jun 8, 2022 / 09:59 AM PDT

Updated: Jun 8, 2022 / 10:01 AM PDT

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LAS VEGAS (KLAS) — The Las Vegas valley gets 90% of its water from the Colorado River, which is experiencing its worst drought in recorded history.

Southern Nevada has done more to cut down on its water use, but Lake Mead is losing water faster than ever as we head into the hottest months of the year.

We already have watering restrictions in place, but for many, the fear is what will happen as our water levels continue to drop.

Spring Valley resident Ronald Longley told 8 News Now he’s worried about our water future but is doing what he can to conserve.

“I don’t know what we’re going to do if this drought continues,” Longley said. “It’s very concerning. We’re following the guidelines, you don’t water on Sundays, only certain times during the week and you try to be responsible about it.”

Bronson Mack with the Las Vegas Valley Water District said the likelihood of the water levels declining more next year is real.

“We do expect that water levels in Lake Mead are going to continue to decline. There is a high probability that we could move to the next level of shortage next year,” Mack said.

Nevada is currently at the first tier of the three tier level system, and the Bureau of Reclamation projects that we will be at tier 2A by next January.

This means that valley residents can expect smaller pools and tighter water budgets for golf courses in the future.

Mack said he recommends sticking to our watering schedule and never watering on Sundays. “The future is in our hands, all about saving water, especially outdoors,” he said.

The projection of when we might phase into the next tier level will officially be made August.



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Lawn Watering Restricted to 3 Days a Week in San Diego Beginning Friday

Times of San Diego - Jun 10



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Lawn watering will be restricted to three days per week in San Diego beginning Friday amid a record drought that has largely spared the region until now.



© Provided by Times of San Diego

Sprinklers watering a Southern California lawn. Courtesy Metropolitan Water District

The city is moving to “Level 2” restrictions following an executive order by Gov. Gavin Newsom calling for conservation throughout California.

“We are asking San Diegans to take these steps now, so we can help avoid a more dire situation in the near future,” said Juan Guerreiro, director of the city’s [Public Utilities Department](#).

Related video: New water restrictions and the rules to follow in San Diego



The restrictions that go into effect Friday are:

- Areas with no irrigation system must use a hand-held hose with a shutoff nozzle, hand-held container, or a garden hose sprinkler system on a timer.
- Irrigation is prohibited during and within 48 hours of rain.
- Landscape irrigation is limited to no more than three days per week before 10 a.m. or after 6 p.m. This does not apply to commercial growers or nurseries.
- Use of recycled or non-potable water, when available, is required for construction purposes.
- Washing of vehicles at residences is prohibited. Washing is still permitted at commercial car washes.

Most of the city's water is supplied by the [San Diego County Water Authority](#). Although the water authority's supplies are currently stable, the dire drought in Northern California and throughout the West requires all water customers to help reduce use.

To reduce its need for imported water, the city is developing drought-proof local supplies by constructing the [Pure Water](#) recycling system that will provide San Diego with nearly 50% of its drinking water by 2035.

NEWS

Ask the RGJ: Why is Juneteenth not a holiday for all TMWA workers? It is, now



Mark Robison

Reno Gazette Journal

Published 10:39 a.m. PT June 10, 2022 | Updated 12:40 p.m. PT June 10, 2022

Updated at 12:34 p.m. June 10, 2022 in regard to a direct quote saying all government employees get Juneteenth as a paid holiday. Not all do.

Question: Why do Truckee Meadows Water Authority managers get Juneteenth as a paid holiday but not rank-and-file workers?

Short answer: All TMWA workers get Juneteenth as an observed and paid holiday, as of Wednesday afternoon.

Full response

Angie Rouse sent an email to Reno, Sparks and Washoe County officials, as well as the news media, asking about what she saw as unfair treatment at Northern Nevada's main water utility.

"Truckee Meadows Water Authority is only allowing for management to observe the Juneteenth holiday," she wrote.

"Why is this? Is the holiday not important to all? Last year all employees including management got the holiday off. This is upsetting to me, my ancestry, and my children.

"[Many] federal, state and local public agencies are observing Juneteenth. Why is this holiday only important for the management at TMWA? And why is the management excluding the majority of their employees? This does not make any sense to me. I hope this matter matters to you as much as it does to me."

The RGJ contacted TMWA to learn more.

Andy Gebhardt, TMWA's director of distribution services, put the ball in the union's court.

"This was never a value statement regarding the importance of Juneteenth, or an attempt to minimize the value or importance of any of our employees," he responded by email Wednesday.

"This was simply a contract issue which we have been trying to resolve from the beginning. We respect and appreciate all our employees and the work that they do for the community."

He explained that some employees are covered by a collective bargaining agreement worked out between TMWA and the union, IBEW Local 1245. There was a memorandum of understanding reached last year, when Juneteenth was first recognized as a federal holiday, that allowed all employees to have the day as a paid holiday.

"TMWA met with the IBEW in August of 2021 and made a proposal that would have provided Juneteenth as an observed and paid holiday for represented employees," Gebhardt said. "IBEW rejected TMWA's proposal and chose not to make a counterproposal, instead opting to address the issue in the upcoming contract negotiations.

"As we really want to try and resolve this issue, and as IBEW has not made any attempt to address this issue, we have authored and provided another MOU to the IBEW, which would stipulate that Juneteenth is now an observed holiday for represented employees."

The RGJ contacted IBEW on Wednesday to understand its side.

In an emailed response Thursday morning, IBEW Local 1245 communications director Rebecca Band emailed: "Your timing is quite impeccable, as we just executed an MOU at 3 p.m. yesterday, which gives all IBEW 1245 bargaining unit members Juneteenth as an observed holiday, and makes it a part of the current collective bargaining agreement."

She added a statement from Mike Venturino, who is the union's representative for members at TMWA, that explains why IBEW didn't accept the original Juneteenth proposal.

"TMWA's quid pro quo proposal included the elimination of previously-negotiated floating holiday for new hires – meaning that, in exchange for the Juneteenth holiday, TMWA intended to do away with the floating holiday for workers hired on or after September 1, 2021," Venturino said.

"Knowing general contract negotiations were coming up, we responded to TMWA and explained that IBEW is not in the practice of waiving future members' rights and benefits,

securing the Juneteeth holiday for all bargaining unit members at TMWA, while still retaining the floating holiday for both current and future members.”

Juneteenth commemorates a Union army general proclaiming freedom for slaves in Texas on June 19, 1865. It was made a federal holiday in 2021. This year, the official holiday falls on a Sunday and will be observed Monday, June 20.

"Juneteenth is a celebration of freedom and equality," Rouse texted the RGJ on Friday after hearing news of the change in policy. "It is a holiday to end division and celebrate equal rights.

"When my husband came home from work and told me that he was not getting Juneteenth off this year and that only management was commemorating the day off, I could not believe the irony, and I knew I had to take action, and let others know of the wrongdoings. Thank you so much to Mark at the Reno Gazette Journal, and to Jenny Brekhuis and Naomi Duerr TMWA Directors/Reno City Council Members for investigating this issue."

Mark Robison covers local government for the Reno Gazette-Journal, as well as writes Fact Checker and Ask the RGJ articles. His position is supported by donations and grants. Because of this, the journalism he creates is free for all to read. If you'd like to see more articles like this, please consider sharing this article or giving at RGJ.com/donate – 100% of donations go to Mark's wages.

Subscribe to Mark's Greater Reno weekly newsletter here. Follow him @GreaterReno, Facebook.com/GreaterReno, and Instagram.com/GreaterRenoRGJ.

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Planned growth can reduce water scarcity if we let it



David Colborne June 12th, 2022 at 2:00 AM

Opinion



*Wingfield Park in Downtown Reno along the Truckee River on Saturday, May 9, 2020.
(David Calvert/The Nevada Independent)*

Like many of you, I don't always agree with every opinion I read in *The Nevada Independent*. As I don't write for the [Washington Post](#), however, I am professionally obliged to be somewhat careful in how I couch my criticisms of Bob Fulkerson's [recent column](#) in *The Nevada Independent*.

There is, to be clear, much I agree with. He is undeniably correct that the Truckee River — the primary water source for Nevada's second-most populous metropolitan area — provides a finite supply of water to the region. He is further correct that the demands placed against the Truckee River are rapidly approaching the practical limits of what local residents can realistically expect the river to deliver. He is also correct that, if the region develops as it largely has thus far — as mile after mile of cheaply built single-family homes, each surrounded by small lawns, a collection of foliage, and a slowly disintegrating patch of pavement — the region's water and nearby open lands will be swallowed whole. Additionally, he's correct that this issue can't be fixed by piping [fossil water](#) from distant desert valleys into Reno.

I even agree that this clearly destructive pattern of development is the product of [indefensible property tax subsidies](#) and other unpleasantly venal byproducts of intense political lobbying by well-connected special interest groups.

Where I disagree with conservatives like Mr. Fulkerson — I call him a conservative not because I think he's a Republican (he is most assuredly not) but because, like William F. Buckley when he founded the [National Review](#), Fulkerson's proposed solution to these problems is to “stand athwart history, yelling Stop” — is not in the initial diagnosis. Instead, the problem lies in the fact that many conservatives, like Mr. Fulkerson, take much of the society they live in, and the assumptions that society is built around, as an inevitable, natural order instead of as the collective consequence of a series of conscious choices.

Take, for example, the assumption the Truckee Meadows Regional Planning Agency made in 2008 that 3.18 residents will consume an acre-foot of water per year. With each acre-foot of water being the equivalent of approximately 325,850 gallons, that works out to just under 102,469 gallons of water per person per year, or a bit more than 280 gallons of water per person per day. That is more than twice as much water as [Clark County](#) and [New York City](#) residents currently use. Expecting each resident in a desert valley that receives roughly the [same amount of precipitation](#) as [Phoenix](#), on average, to consume more water each day than two people in our nation's largest city — a city which receives nearly 50 inches of precipitation each year — is a choice.

Truckee Meadows Water Authority's [below-market rates](#) are also a choice. If a Reno resident consumes 280 gallons of water each day, or 8,400 gallons every 30 days, the charge is only \$18.96 each month (\$11.52 for the first 6,000 gallons, \$7.44 for the next 2,400 gallons) for the water, not including the meter fee. By comparison, the same amount of water in [Houston, Texas](#) — which receives an average of nearly [47 inches of precipitation](#) each year — costs \$29.70 each month (\$3 for the first 3,000 gallons, \$29.70 for the remaining 5,400 gallons) — more than 56 percent higher than residents in Reno pay for the same quantity of water.

Imagine for a moment that Japan had cheaper gasoline than Saudi Arabia despite Japan having little domestic oil production. How fuel efficient would you expect a Toyota or Honda to be if the engineers paid less than half as much for each gallon of gasoline as we do?

Letting 636,000 people monopolize 200,000 acre-feet of water, instead of encouraging them to reduce their water consumption to the same 127 gallons per capita per day Clark County residents use so the same source of water can instead serve 1,400,000 people, is a choice — or, more accurately, the end product of several choices, each of which should and must be carefully reexamined.

Unfortunately, instead of carefully examining how we got to the point where desert residents believe they're each entitled to use more water each day than residents of Gulf and Atlantic coast metropolises (if you're about to write me an email pointing out how it's easier to water a lawn when enough rain falls from the sky to keep it watered, you're not making the point you think you are), conservatively-minded environmentalists instead arrive at a solution that, to paraphrase another famous [conservative writer](#), is neat, plausible, and wrong: Just stop building anything near anyone.

This wrong solution, of course, is nothing new — it's been the driving force of coastal Californian development for over two generations now. As Conor Dougherty [effectively explained](#) in his recent profile of Susan Kirsch, the founder of Livable California, in *The New York Times*, reflexive opposition to development was a reasonable response to the automobile and single family-focused development patterns of the 1950s and 1960s. Faced with the unpleasant externalities of endless tract housing paving over every hill and valley in sight — endless and polluting traffic, the destruction of open space — environmentalists of the era did their best to think globally and act locally by demanding cities and developers both stop doing any further harm.

For what it's worth, the environmentalists of the era were absolutely correct. Newly-imposed [parking requirements](#) gutted previously walkable neighborhoods and replaced tax-paying residential and commercial buildings with empty parking lots. The flurry of highway construction begun under the Eisenhower administration led to the construction of hundreds of thousands of miles of roadway nobody has the [money or resources to maintain](#). Automobile-focused development led to the construction of [actively unsafe neighborhoods](#) people barely want to drive through, much less bike or walk in. These harms absolutely needed to be stopped.

Unfortunately, you can say whatever you might about billionaires, venture capitalists, and developers, but they're not why people frequently have sex and occasionally get pregnant. Whether housing is built for them or not, the people who currently live in the Bay Area or near Reno would still live *somewhere*, work *somewhere*, and raise their children *somewhere*. Children would still grow into adults and want to move out of their parents' home, preferably to somewhere where they can safely and comfortably raise children of their own.

Consequently, by categorically blocking housing construction, environmentalists didn't just unwittingly create the housing scarcity that has since led to out of control housing and rent prices. They also permanently locked in the dysfunctional development and traffic patterns they abhorred by preventing the infill and neighborhood densification necessary to support mass transit and walkable neighborhoods.

That's why housing more people in the Truckee Meadows (and Las Vegas, for that matter), will actually encourage Nevada to reorient towards lower impact, more environmentally sound development patterns. Those new people will have to live somewhere — and as Truckee Meadows is less than a sixth as large as Las Vegas Valley, most of those people will need to move into new, modern, more energy- and water-efficient housing built on the current sites of decades-old housing with decades-old plumbing and decades-old insulation. In other words, many of the single-family homes built in the area, along with their water-consuming yards, will need to be demolished to make way for new apartment complexes and condominiums. Thankfully, this won't be done by force — new residents, or at least the developers who wish to cater to them, will pay existing residents handsomely for their land

at least the development shows to cater to the ,w paye st g es de ts a dso ey o t e a d as the need arises (if we let them).

Even so, it's undeniable that a few new residents might move into the North Valleys, Spanish Springs, or — if the [Washoe County Lands Bill](#) ever passes — into nearby foothills. Thankfully, our region's geography may help protect us from our worst impulses. The maximum amount of car traffic that can leave neighboring valleys is geographically constrained, which is why commuting by car from those valleys to where most area jobs is already quite miserable, especially whenever an accident or inclement weather snarls traffic. We should take advantage of that by encouraging and permitting as many people as possible to live and work within Truckee Meadows itself so new residents are less likely to move into the urban periphery next to our diminishing open spaces.

If we want to preserve our open spaces, the way we do that isn't by freezing our existing, broken suburban development pattern into amber while we flush the occasional homeless encampment full of people who can't cough up \$2,000 per month in rent into Pyramid Lake during each spring thaw. Instead, we should use the money of Reno's and Sparks' newest residents to fund the redevelopment of many of our existing neighborhoods into far more efficient, far less wasteful, and far less environmentally damaging forms of housing — the sort of housing we can not only afford to buy or rent now, but can also continue to afford to live in through an uncertain future.

David Colborne ran for office twice and served on the executive committees for his state and county Libertarian Party chapters. He is now an IT manager, a registered nonpartisan voter, the father of two sons, and a weekly opinion columnist for The Nevada Independent. You can follow him on Twitter [@DavidColborne](#) or email him at david@colbornemmx.com.

Is recycled wastewater the answer to California's water shortage?

USC Viterbi researcher Dan McCurry discusses recycling sewage, how golf courses are watered and his personal water usage.



BY **Paul McQuiston**

JUNE 14, 2022



Water levels in Grant Lake, part of the Los Angeles Aqueduct system, are down due to a low snowpack. (Photo/[Ross Stone, Unsplash](#))

An exceptional drought season means California enters the summer under mandatory water use restrictions for the first time [since 2015](#). Increasingly light snowfall sends less fresh water to be treated and distributed as fully drinkable water, making new methods of purifying water a vital priority. In fact, [nearly 60% of the state](#) is suffering from “extreme drought” conditions, according to the National Integrated Drought Information System.

Enter [Dan McCurry](#), assistant professor of Civil and Environmental Engineering at the [USC Viterbi School of Engineering](#). McCurry is an environmental engineer who specializes in wastewater reuse and drinking-water treatment. We spoke with him about the water restrictions, the different types of wastewater and whether he meets the new state requirements for personal water use.

What is environmental engineering?

Environmental engineering is somewhat confusingly named. People tend to think that it involves building habitats for the spotted owl or something like that. Really the main goal is to control and remediate environmental pollution for ecological and human health reasons, and primarily the latter. It used to be called sanitary engineering until the 1960s, when they realized they had a marketing problem because that term sounds gross.

What do you research?

Environmental engineering is primarily split between air and water researchers — I work on the water side. My research is specifically about water reuse and the process that we use to take treated wastewater and turn it into something that is usable as a drinking water source. I study the chemicals in wastewater and how they interact with our treatment processes. These include all kinds of things like industrial solvents and stuff that gets flushed down the drain, like pharmaceuticals. Two-thirds of my research is focused on how well those chemicals are removed during the treatment process and understanding the chemical mechanisms of that. And the other third of my research is on developing new treatment technologies that might be able to get rid of some of those chemicals more efficiently or in a better way.



Dan McCurry's research focuses on water reuse.
(Photo/Courtesy of Daniel McCurry)

How does recycling wastewater work?

If you imagine a river going past a city, raw water comes in and is turned into tap water. We take water out of a river or the ground — or in the case of Los Angeles, we actually import it from hundreds of miles away — and treat it to make tap water and send it to people's homes and businesses. It then becomes sewage and is treated as wastewater — it's not clean enough to drink but it's safe to discharge back into the river. With water reuse, we're trying to close that loop by taking the treated wastewater and running it through a third plant and turn that into a new source for drinking water.

How is recycled wastewater used?

There are three flavors of water reuse — non-potable reuse, indirect potable reuse and direct potable reuse. Non-potable reuse is just recycling water to use on things like grass or golf courses, and also crop irrigation and industrial purposes — places where the water quality doesn't bother people very much. You see this all over the place in Southern California. Anytime you see a purple pipe on the side of the freeway or in a median, that indicates that it's using recycled water.

When you put water into the ground, it's assumed you are getting a bit of treatment for free from nature.

Dan McCurry, USC Viterbi water researcher

Moving into potable reuse, the overwhelming majority of reused wastewater is being used for indirect use. The treatment plant in Orange County is a good example of this — once it's recycled, it's put into what is called an environmental buffer or environmental barrier. What that means 99% of the time is that the treated water is injected back into the ground where it essentially becomes new groundwater. It's considered lower risk than direct potable use because when you put water into the ground, it's assumed you are getting a bit of treatment for free from nature. Anything we missed with engineered processes will hopefully get filtered out by the ground.

OK, but what about water we can drink?

Direct potable use means closing the loop fully: Water coming out of the recycling process is run directly to the drinking water plant or refills a reservoir. Imagine something like a plant recycling water and then pumping it up to reservoirs like Castaic Lake or Pyramid Lake in the mountains north of L.A. There's a lot of excitement about direct potable reuse, but right now it's not legal in California but should be soon. The bar is much higher for direct use reuse because you sacrifice the filtration given by the environment. The good thing is that it ends up being a bit cheaper because you're not pumping water out of the ground, which consumes an enormous amount of energy.

How close are we to having this technology available widely?

The short answer is we're already there. There's a couple dozen full-scale water reuse plants around the world and we have the biggest one in the world in **Fountain Valley in Orange County**. When fully operational, it will be able to process 100 to 130 million gallons per day — it is able to process 100% of Orange County's reclaimable wastewater into water suitable for indirect potable reuse.

What impact will the new water restrictions have?

This isn't a one-time thing. The water use restrictions are needed, but we're kidding ourselves if we think that a short-term fix will solve the problem. There was a big call for voluntary water usage cuts followed by a conservation mandate during the last drought in 2015, and it worked, but only for a year and then water use went right back up. It's the kind of thing you can get people to do for a little bit but then they get sick of it. In the long term, we need to produce more reliable local sources of water.

Are you following the restrictions?

I was looking at my water bill the other day because I've been interviewed by the media a few times recently and wanted to make sure I'm not using more than I should. Thankfully, I am already using less than the future restricted amount. In fact, we ripped out most of our backyard when we got our house about a year and a half ago, replacing most of it with native plants and leaving a little 10-by-10 patch of grass for the dog to roll around in. That's to say your yard doesn't need to be a barren wasteland — you can have a bit of green landscaping and still easily comply with the restrictions as long as you're sensible about it.

PHOTOS: Ambassador program set to monitor forest health at Mt. Rose, Galena

By Ty O'Neil Published: June 13, 2022 Last Updated on June 12, 2022

Advertisement

With fire season here and outdoor recreation growing in the Mt. Rose area, a new program is focused on monitoring forest health and water quality.

The goal is to help keep the watershed in the Galena Forest area in a healthy condition.

Stephanie Morris, a water resources manager with the Truckee Meadows Water **Authority, which funded the program, said, “What we know is that heavy** recreational use can cause impacts to water supply. So people go off trails, and they cause erosion. That puts more sediment in water, and [it] impacts water **treatment.”**

TMWA recently began running the Mt. Rose water treatment plant after it was previously operated by Washoe County until 2015. The treatment plant does not store water but treats the seasonal water flow from the surrounding mountains.

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While going off trails is an issue, another big concern is wildfires and their effect on the watershed.

Morris said wildfires in Colorado have caused huge water supply issues. Ash can contaminate water and loose debris from wildfires can greatly reduce water quality by bringing sediment into the reservoirs.

Algae blooms are also a possibility after wildfires.

The TMWA program with the National Forest Foundation will fund training and employing an ambassador who will monitor the area as well as educate the community about water quality and fire impacts.

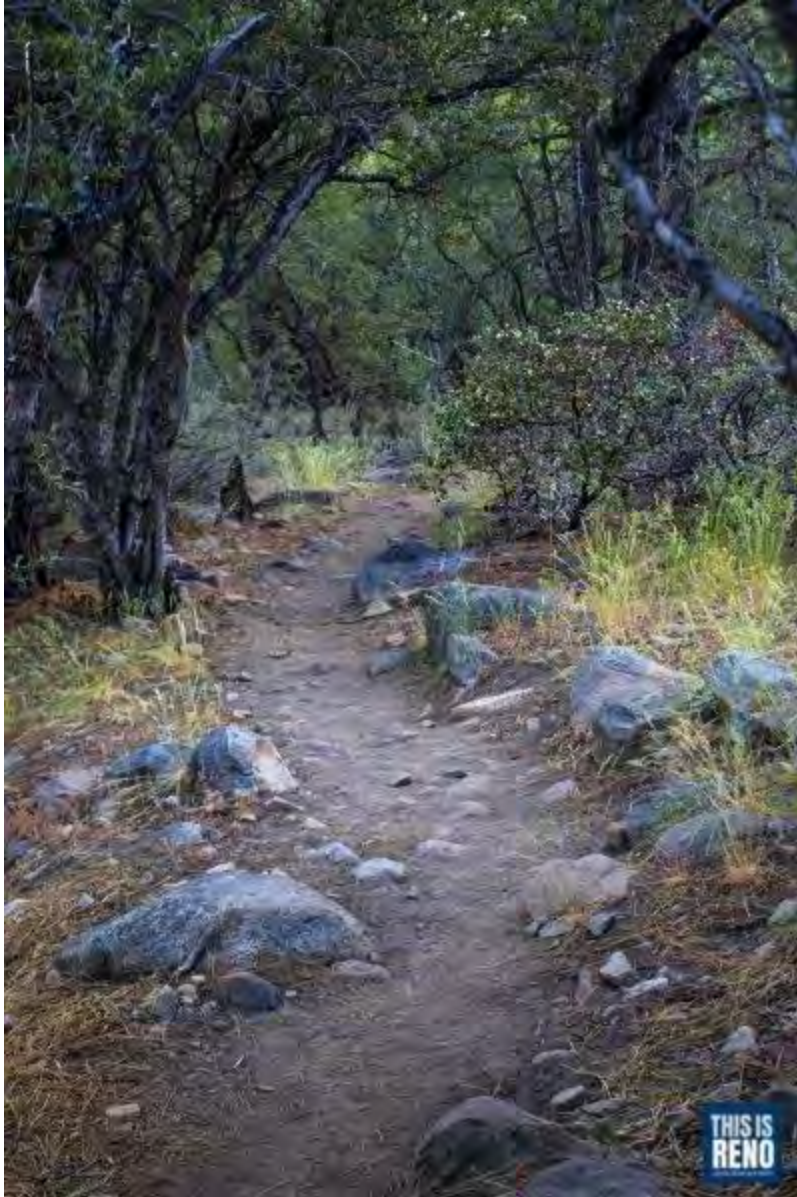
The program is a pilot for this season.







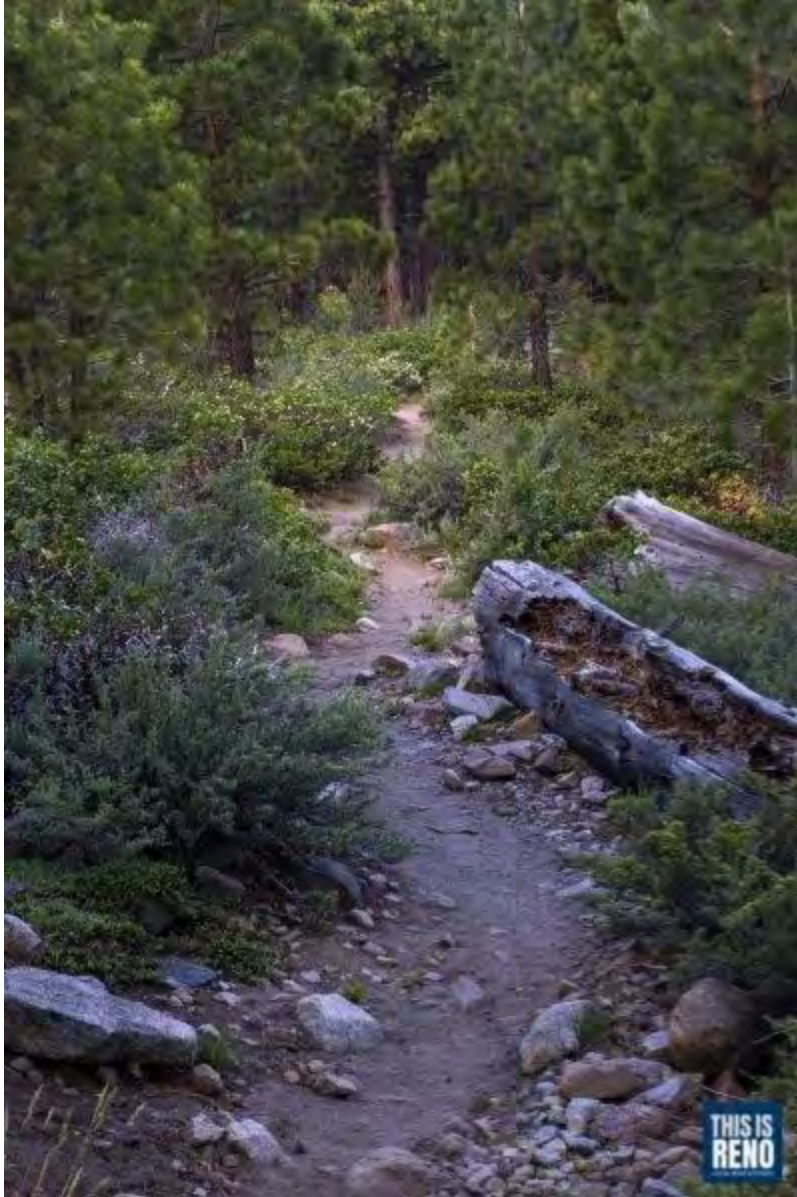


































Announcement | June 15, 2022

2021 ANNUAL REPORT RECAPS WATER EDUCATION EFFORTS IN CALIFORNIA AND THE WEST AMID A GLOBAL PANDEMIC WATER EDUCATION FOUNDATION REPORT HIGHLIGHTS A YEAR OF CHALLENGES, ACCOMPLISHMENT AND GRATITUDE

The Water Education Foundation's just-released [2021 Annual Report](#) recaps how, even amid the ongoing global pandemic, we continued educating about the most crucial natural resource in California and the West — water.

The annual report takes readers along to see the array of educational events, trainings and articles we produced last year, including engaging [virtual water tours](#) that educated participants on pressing water issues and allowed them to interact with each other and a wide range of experts offering different viewpoints.

The report also spotlights a nationwide award given to the Foundation for its innovative partnership with California Department of Water Resources to train schoolteachers across the state on climate science and how they can bring hands-on activities into their classrooms tied to local examples of climate change impacts.

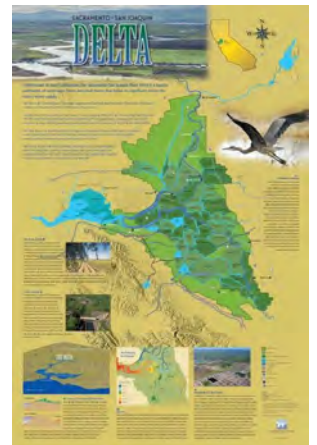
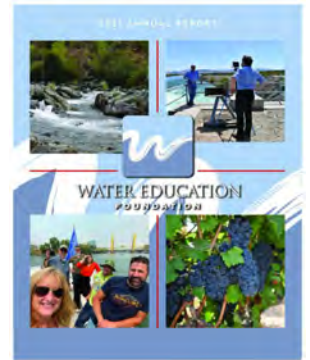
In addition, the report highlights [Project WET's](#) teacher training programs and the resources made available to help teachers adapt water lessons to a distance learning format; the Foundation's [Water Leaders](#) program, which was able to finally bring participants together for in-person work group meetings as COVID-19 infections waned later in the year; and its online news publication, [Western Water](#).

The report also highlights the Foundation's:

- **Staff and Board of Directors**, including President **Mike Chrisman**, former California Natural Resources Secretary
- New updates to its Layperson's Guides to **California Water** and the **Central Valley Project**, and a new map of the **Sacramento-San Joaquin Delta**
- **All Things Drought** online resource page, which helps the public keep up to date on the drought gripping California and the West
- Annual **Water 101** workshop, which provided an overview of the history, geography, legal and political facets of water, as well as hot topics such as the Sacramento-San Joaquin Delta
- Annual **Water Summit**, which featured top policymakers and leading water advocates discussing the state's drought and innovative programs, projects and partnerships aimed at addressing the challenges

Last but not least, the report recognizes the Foundation's many supporters whose contributions allowed us as a nonprofit to do this work, even in the most challenging of times. For that, we are grateful!

You can read the Annual Report [here](#).



[View this email in your browser](#)



Solar panels at the Copper Mountain Solar 3 facility near Boulder City in April 2019. (Jeff Scheid/The Nevada Independent)

Indy Environment: At Vegas activist training, Al Gore highlights peril, promise of Nevada's climate response

Good morning, and welcome to the Indy Environment newsletter.

Over the weekend, reporter Carmen Landinger attended a climate training hosted by the Climate Reality Project and attended by policymakers and activists across the state. In this week's newsletter, she writes about what she observed and how despite the many climate challenges facing the region, speakers also highlighted several potential climate solutions.

Later in the newsletter, reporter Daniel Rothberg breaks down the news of the week, including the Biden administration's decision to extend a radiation compensation fund for downwinders.

As always, we want to hear from readers. Let us know what you're seeing on the ground and how policies are affecting you. Email me with any tips or suggestions at daniel@thenvindy.com.

By Carmen Landinger and Daniel Rothberg

As temperatures reached 111 degrees over the weekend in Las Vegas, an organization that educates policymakers and activists about climate change held a training session at the Aria Resort and Casino.

It came at an apt time and place.

Las Vegas and Reno are among the fastest-warming cities in the United States because of climate change and the [heat-island effect, which refers to faster warming in urban areas because of the absorption of heat from roads and other infrastructure](#). Nevada has also witnessed first-hand the effects of prolonged drought, with record low water levels in Lake Mead.

The 49th training session of the [Climate Reality Leadership Corps](#) brought in panelists to speak about the climate issues happening worldwide — and to educate local leaders about how to address these issues across the Southwest. Ranging from Indigenous artist Fawn Douglas to “Property Brothers” star Jonathan Scott, the panelists each shared their own perspectives on climate change’s impact and how policymakers should approach solutions.

With more than 500 attendees — made up of activists, grassroots leaders and volunteers, business owners, and already certified Climate Reality Leaders — the training helped provide tools and resources to raise awareness about the climate crisis. The event also brought in 50 mentors, some local and some traveling from other states. Former Vice President Al Gore, who hosted the event as the founder of the Climate Reality Project, acknowledged that the situation is dire, saying that “on a scale of one to 10, it is an 11.”

But not all hope is lost just yet, he said. The transition to renewable energy powered by wind, air and water is one of the ways Gore said policymakers can address climate change. Nevada has an abundance of sunlight to power solar arrays. With the implementation of more electric vehicles, solar panels and other large-scale renewable energy projects, Nevada can help lead the way to reduce greenhouse gas emissions, Gore said.

“Nevada also has a fantastic set of opportunities to help solve this crisis,” he said during a media roundtable on Sunday. “And if I were to rate Nevada’s renewable energy and electric vehicle and efficiency opportunities on a scale of one to 10, I’d say they’d rank at 12 because you’ve got so much sunlight and you could create 250 times all the energy Las Vegas and the rest of the state uses just from solar energy.”

In 2021, [Nevada approved a clean energy bill](#) that prioritized expanded electricity transmission and electric vehicle charging station infrastructure.

That bill built off of previous legislation, [SB254](#), aimed at developing a state [climate strategy](#) to reduce greenhouse gas emissions to net-zero by 2050.

Another piece of legislation, [SB358](#) from 2019, required NV Energy to meet a 50 percent Renewable Portfolio Standard by 2030. Gore believes that the target puts Nevada on the right track, but still said “it’s theoretically possible to go faster than that.”

When it comes to water issues, the panelists at the event also recognized Nevada as a national leader for environmental solutions. In 2021, Nevada lawmakers [passed a law](#) that required the removal of ornamental turf in the Las Vegas Valley. Grass that is used purely for outdoor decoration requires a significant amount of water from the Colorado River, which is facing a drought amplified by climate change.

Panelists also stressed the need for solutions that avoid worsening existing injustices. Las Vegas and the Mojave desert areas that surround the urban core sit on the

energy sources (if the energy is exported) and are harmed by the resulting issues of air quality, pollution and other disturbances to the land.

“Wind power, solar power, those are all beautiful things, but not at the displacement of the native peoples,” said Douglas, an enrolled member of the Las Vegas Paiute Tribe. “Not at the displacement or the disrespect of this cultural landscape or other cultural landscapes.”

Panelists argued that transitioning to clean energy cannot be fully completed without working with Indigenous leaders. The climate training highlighted efforts to make the planning of renewable energy projects more equitable.

“So there's a lot of challenges,” said Tanksi Clairmont, managing director of the [Tribal Solar Accelerator Fund](#), a group working to fund solar projects in Indigenous communities.

“But I see a lot more opportunity because we're starting to recognize the wisdom of Indigenous cultures across the world which is what has preserved parts of our lands forever.”

Clairmont, an enrolled member of the Sisseton-Wahpeton Oyate tribe and a member of the Sicangu Lakota Oyate tribe, said she is also working within different communities to ensure that tribes have a greater voice when legislative and policy decisions are made.

Other organizations, such as [Native Renewables](#) and [The Nature Conservancy](#), said they are focused on ensuring environmental justice is considered when it comes to clean energy development.

Those who attended the conference said they plan to continue their work throughout the year. Nevada Indian Commissioner Tammi Tiger said she plans to continue discussing the impacts of climate change with tribal nations across Nevada. A Las Vegas chapter of the Climate Reality Project will also be hosting several events over the next six months. They include programming in East Las Vegas, Historic Westside and North Las Vegas.

Three additional takeaways:

1. Gore wasn't shy about calling out the fossil fuel industry for its major role in global warming and its influence over policy.
 - “The fossil fuel industry is one of the most powerful lobbying groups in the history of the United States,” Gore said. “And when they snap their fingers, the majority in the Congress say, ‘Yes, sir, how high do you want me to jump? Yes, sir. Yes, sir. And it's pathetic.’”
2. Solar power is not the only piece of the puzzle. Gore said batteries are needed in the energy transition as well. Nevada is home to the Tesla Gigafactory, a lithium-ion battery and electric vehicle facility, and is a prime site for companies looking to bolster a supply chain for batteries.
 - “There are new battery chemistries that are close to being developed in the marketplace that I think are going to help to greatly improve energy storage. And the technology analysts, that I believe are excellent, are predicting a trillion dollar industry in battery storage emerging over the next two to three decades,” Gore said. “And I am very optimistic about the progress that's being made in reducing the cost of energy storage.”
3. Jaina Moan of The Nature Conservancy, a national organization dedicated to placing renewable energy facilities on already developed land rather than healthy and untouched areas, argued that even well-meaning green development can exacerbate inequities.

subsequently built our energy infrastructures right on top of this inequitable design. We need to rethink this design, how it is built and how we operate within it.”



Former Vice President Al Gore speaks during the National Clean Energy Summit at the Bellagio on Friday, Oct. 13, 2017. (Jeff Scheid/The Nevada Independent)

Here's what else I'm watching this week:

Federal government extends radiation compensation fund: Last week, President Joe Biden signed a two-year extension of a compensation fund that supports those who were exposed to the radiation fallout of nuclear testing or uranium mining, activities that occurred throughout the Southwest during the last century. The measure, however, falls short of what many have long been pushing for: an expanded program that compensates all downwinders (those in the path of radiation) and those exposed to radiation mining after 1971, the current cutoff in the law. Noel Lyn Smith, with the *Farmington Daily Times*, [wrote more on legislation extending the program.](#)

- **The American government detonated more than 1,000 nuclear weapons as part of its atmospheric and (later) underground testing program at the Nevada Test Site, now known as the Nevada National Security Site.** Bombs detonated at the Nevada Test Site, which sits on the ancestral lands of Western Shoshone and Southern Paiute tribes, exposed many individuals across the Great Basin and the Southwest to radiation.
- While the Radiation Exposure Compensation Act was passed in 1990 and subsequently expanded, **the process for receiving compensation funds is a**

when applying for funds.

Should we name heat waves? Maybe, the Atlantic Council's Kathy Baughman McLeod [told NPR's Morning Edition](#). "In all the focus groups that we've done, people land on human names and will respond to human names. And so where the categorization is a scientific process of meteorology, climatology and health data, the naming of heat waves is behavioral science."

- *The New York Times'* Raymond Zhong [looks at](#) the **health effects of extreme heat**.



Hoover Dam on Thursday, July 15, 2021. (Jeff Scheid/The Nevada Independent)

A warning for the Colorado River: "What has been a slow-motion train wreck for 20 years is accelerating, and the moment of reckoning is near," Southern Nevada Water Authority General Manager John Entsminger told a congressional panel on Tuesday. The Colorado River, which runs through seven U.S. states, is likely going to face deeper cuts this year as forecasters look at arid conditions made worse by climate change, [The Los Angeles Times'](#) Ian James reports.

- **On Tuesday, the Bureau of Reclamation, the agency that manages large storage reservoirs along the river said the seven states must plan for further reductions in the next 60 days.** "Let's get to the table, and let's figure this out by August, said Camille Calimlim Touton, the agency's commissioner. "That's what we're working towards."
- **What those cuts are going to look like is the subject of ongoing and increasingly heated discussions,** [The Desert Sun's Janet Wilson reports](#). And a lot of it centers on how the cuts could affect Southern California's agricultural

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San Diego, and will likely talk again at a Boulder, Colorado conference later this week, and again over the weekend,” Wilson reported.

- Colorado River expert [John Fleck with more analysis on the announcement](#).
- **Where the water goes:** A beautiful photo essay by [The Los Angeles Times’ Luis Sinco](#).

An appellate hearing for the Dixie Valley toad: The 9th Circuit Court of Appeals [heard oral arguments Wednesday](#) in a case that **challenges the federal government’s permitting of a geothermal project in Dixie Valley**. Both the Fallon Paiute-Shoshone Tribe and the Center for Biological Diversity had sued federal land managers to halt the project because of its impact on sacred springs for the tribe and the vulnerable Dixie Valley toad, an endemic species that was recently granted emergency protection under the Endangered Species Act. The plaintiffs have asked the court to temporarily halt the project as the district court weighs the merits of the case.

Work to protect and preserve the Truckee River through Reno’s urban core: [The Renoites podcast’s Conor McQuivey talked this week](#) with the executive director of One Truckee River, Iris Jehle-Peppard. One Truckee River, which represents a coalition of groups, is working on implementing a management plan that focuses on the river’s health through Reno-Sparks.

“A Nevada plant can begin turning tons of garbage into a synthetic oil that can be refined into fuel for airplanes after an Environmental Protection Agency rule change,” the *Las Vegas Review-Journal’s* [Gary Martin reported this week](#). “After five years, the EPA finalized the rule sought by Fulcrum BioEnergy’s Sierra BioFuels Plant in Storey County. A company official told the *Review-Journal* the cutting-edge facility would permanently employ roughly 120 people.”

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California drought: ‘Smart’ water meters coming to San Jose, other Bay Area cities in latest effort to boost conservation

Wireless technology is giving a makeover to the often-overlooked water meter as droughts worsen



SAN JOSE, CA – JUNE 15: San Jose Water Company meter reader Jonny Som is photographed along Los Suenos Avenue during his workday on Wednesday, June 15, 2022, in San Jose, Calif. The San Jose Water Company has received approval by state regulators to install smart water meter technology on all of the 230,000 water meters in homes and businesses in its area. The \$100 million project will take four years and is expected to help save water. (Aric Crabb/Bay Area News Group)

By **PAUL ROGERS** | progers@bayareanewsgroup.com | Bay Area News Group

PUBLISHED: June 16, 2022 at 5:45 a.m. | UPDATED: June 18, 2022 at 11:24 a.m.



You've got a smart phone. Maybe a smart watch. Or even a smart doorbell.

In the coming months and years as California struggles with worsening droughts, millions of Bay Area residents will soon be getting a smart water meter.

Water meters — the clunky brass devices that sit in underground boxes near the sidewalks outside most homes and businesses, measuring water use — have been around since the 1820s. But in many areas, utilities only send out water bills every two months, or maybe once a month.

That means unless residents go out, lift the heavy concrete lid and carefully check the numbers on their analog water meter, most people don't know how much water they are using, or until weeks have gone by, whether they have a major leak from their irrigation system, old pipes or toilets, which can waste thousands of gallons of water and run up their bill.



A San Jose Water Company residential water meter is photographed along Los Suenos Avenue on Wednesday, June 15, 2022, in San Jose, Calif. The San Jose Water Company has received approval by state regulators to install smart water meter technology on all of the 230,000 water meters in homes and businesses in its area. The \$100 million project will take four years and is expected to help save water. (Aric Crabb/Bay Area News Group)



Smart meters instead send wireless signals in real time so residents and utilities can better track water use hourly, daily or weekly, making it easier to hit conservation targets and detect leaks.

“We are trying to get our customers over the ignorance-is-bliss mentality to the knowledge-is-power mentality,” said Nelsy Rodriguez, a spokeswoman for the East Bay Municipal Utility District, which provides water to 1.4 million people in Alameda and Contra Costa counties.

San Francisco installed smart water meters in 2014 during California’s last drought. Boston, Washington D.C. and New York City have them. But smart meters are expensive to install. The technology changes every year. Some utilities have been reluctant to take the plunge.

As California’s latest drought stretches into its third year, water supplies continue to tighten and state conservation rules increase, so a growing number of water agencies are deciding to upgrade.

On Friday, the San Jose Water Company, a private firm that provides water to 1 million people in San Jose, Cupertino, Campbell, Los Gatos, Monte Sereno and Saratoga, received [final approval](#) from the California Public Utilities Commission to install smart meter technology on the 230,000 water meters at homes and businesses in its service area.



Photos of smart water meters used in the Advanced Metering Infrastructure pilot. (San Jose Water Company)



Work on the \$100 million project will begin in two years and will finish in 2026, with the average water bill going up about \$5 a month to pay for it, company officials say.

The company ran a pilot project in San Jose's Willow Glen neighborhood and found homes with the technology cut water use 7% on average, and the duration of leaks fell 38%.

"It went well," said Liann Walborsky, a San Jose Water spokeswoman. "The customers who were in the pilot really enjoyed that they were able to see their water usage, and we saw results in conservation."

To the east, the Alameda County Water District, which serves Fremont, Union City and Newark, is spending \$41 million to upgrade its 86,500 meters by 2023. It already has finished 17,500, said spokeswoman Sharene Gonzales.

To the north, the Marin Municipal Water District is moving forward with plans to replace its 58,000 analog meters over three years at a cost ranging from \$20 million to \$25 million.

And East Bay MUD has installed smart meter technology on about 19,000 homes and businesses. The district's board, based in Oakland, is scheduled to decide in September whether to expand the program.

"Just about every utility I know has a full smart meter system, or is investigating it, or is in the process of deploying it," said Dave Wallenstein, an associate engineer with East Bay MUD.

The technology is not without controversy. When Pacific Gas & Electric installed smart gas and electricity meters across Northern California a decade ago, a small but vocal group of protesters fought the idea. They raised concerns about privacy and potential health risks.

In 2011, the California Council on Science and Technology, which advises state government on technology issues, concluded the radio frequency emissions from smart meters were well within federal safety standards for cellphones and microwave ovens.

Still, most agencies, including PG&E, allow customers to opt-out. Walborsky said San Jose Water will do that when specific plans are finished in the next two years and installation begins.



For people who already track their electricity use closely or watch their gas mileage in real time while driving, a smart water meter is another tool to “geek out” on, say some experts. Most systems, like San Francisco’s, allow people to log on to a website and track their water use. Some have smart phone apps. Some send text messages when there are big spikes in water use.



San Jose Water Company meter reader Jonny Som is photographed along Los Suenos Avenue during his workday on Wednesday, June 15, 2022, in San Jose, Calif. The San Jose Water Company has received approval by state regulators to install smart water meter technology on all of the 230,000 water meters in homes and businesses in its area. The \$100 million project will take four years and is expected to help save water. (Aric Crabb/Bay Area News Group)

“I remember a project I was working on in Coachella Valley where somebody had a really high water bill,” said Lon House, a veteran energy and water consultant who works in Arizona and California. “They got irate. The water company said, ‘You used a lot of water in this particular week.’ They said, ‘Oh yeah, we went on a trip and left the hose running.’”

On privacy, as part of its approval from the state PUC, San Jose Water and its contractors are required to comply with the California Consumer Privacy Act and not transmit specific information, such as customer names or bill payment status, over the wireless network.

Some East Coast utilities have installed smart meters to cut down on labor costs. With wireless signals sent from meters directly, they no longer need employees to manually read the meters.



Some water experts say that as climate change continues to heat up the already arid West, nearly every city will have smart water meters, which also can detect large leaks in distribution pipes and, in some cases, more easily locate people who are watering lawns over the limited number of days in droughts.

"In a drought, a utility can either say, 'You can never water your grass again,' or you can say, 'Here's how much water you can use, you decide when you use it and how you use it,'" House said. "It's a two-edged sword. It can be a bludgeon from the government, or it can be enabling for customers. But given what California is facing, they have to do this."

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These maps illustrate the seriousness of the western drought

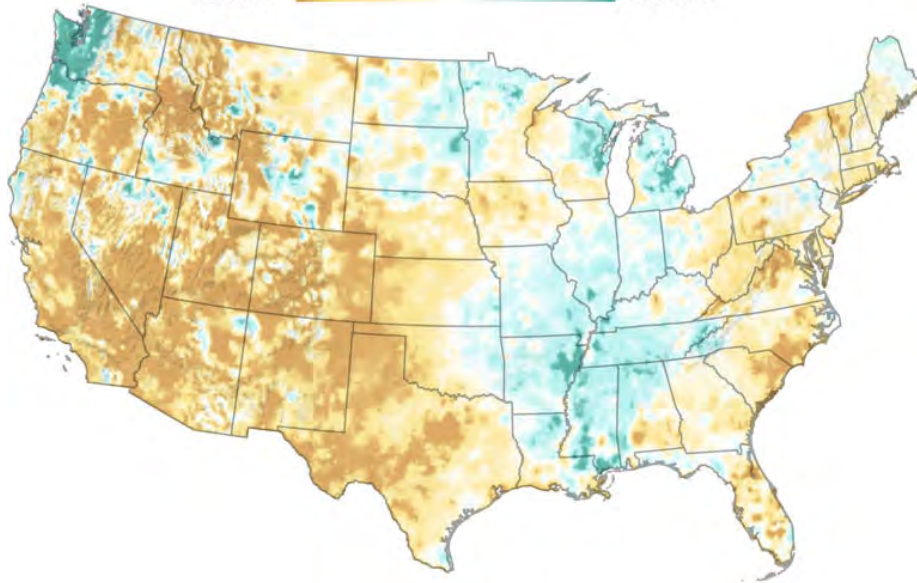
Kasha Patel, Lauren Tierney - Thursday

The historic drought in the western United States is about to get worse.

Groundwater conditions

Groundwater wetness percentile as of
June 6, compared to 1948-2012

Drier  Wetter



© Provided by The Washington Post

These maps illustrate the seriousness of the western drought

Much of the West is already experiencing severe to exceptional drought, but scorching summer temperatures will dry out the parched landscape even more.

"In the last [1,200 years](#), we haven't seen a period as dry as right now," said Ann Willis, a researcher at the Center for Watershed Sciences at the University of California at Davis. "We're really hitting new lows in terms of how extreme the conditions are."

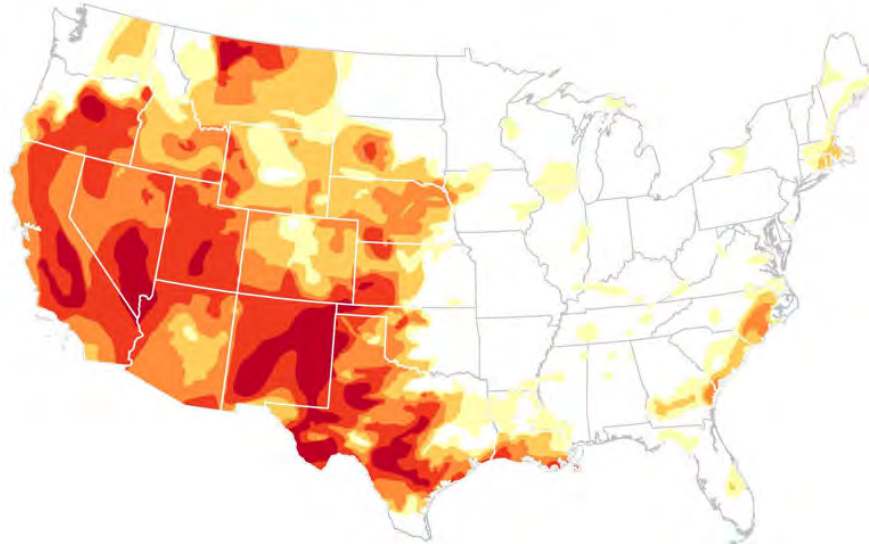
California, which is enduring its third consecutive year of drought, has employed unprecedented measures in some counties to conserve water. For nearly 6 million people in the Los Angeles area, outdoor water use is [restricted to one day a week](#). Overall, the state aims to cut water use by 35 percent.

[Southwest drought is the most extreme in 1,200 years, study finds](#)

Several other western states, including Colorado and Utah, also have adopted outdoor water restrictions.

Data as of June 7

Abnormally dry  Exceptional drought



© Provided by The Washington Post

These maps illustrate the seriousness of the western drought

How did the West get to this point

Droughts are not new to desert environments, but recent dry spells have lasted longer and been more intense than in previous decades. Although water management and increased water demand by a growing population affect supplies, a warming atmosphere is drying out the ground, shrinking the reservoirs and reducing mountain snowpack.

Scientists say this could be the new normal if climate change continues unchecked.

"There's no good news for the foreseeable future, for the next few decades," Willis said.

"Fundamentally addressing climate change is the ultimate answer. ... If we don't, then what we're really seeing is just preamble to an even more extreme and catastrophic set of conditions."

Not-so-snowy Sierra Nevada

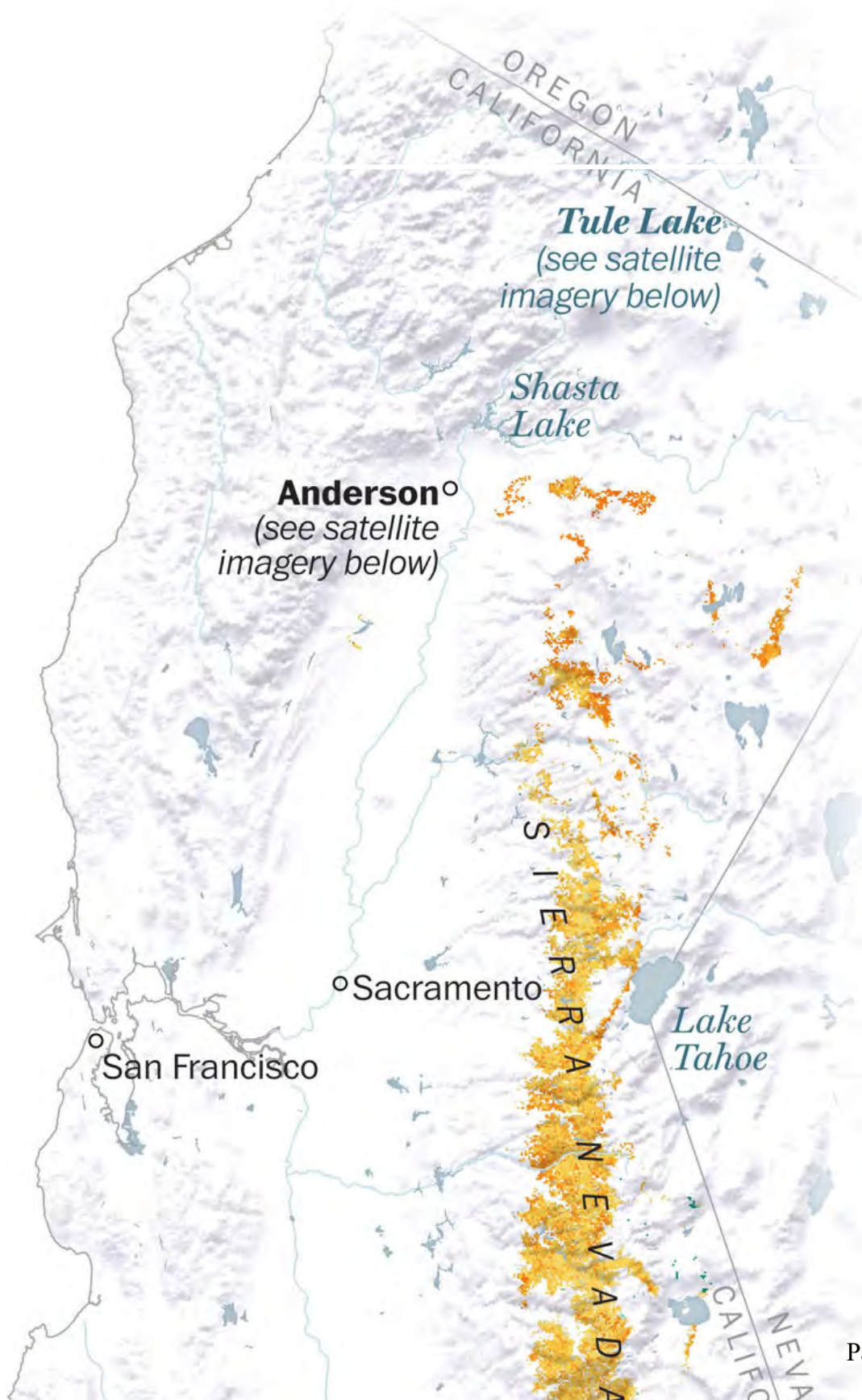
Sierra Nevada roughly translates to "snowy mountains" in English, but the mountains have frequently been bare in recent years.

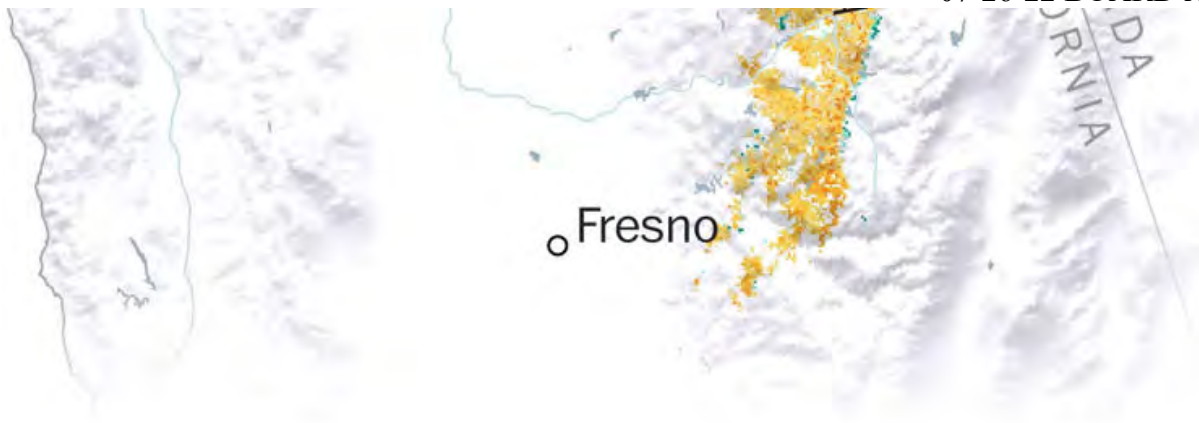
Snowpack in the Sierra is an important water resource for California, supplying around one-third of the state's freshwater supply. Winter storms typically bring generous amounts of snow, which melt as temperatures rise in April. The meltwater runoff helps replenish rivers, reservoirs and groundwater.

Because of a historically dry winter, the statewide snowpack stood at 38 percent of its average at the end of the season on April 1. The little snowpack that accumulated in the southern Sierra had fully melted by May 24, leaving no additional freshwater supply for the hot months ahead.

Water available as snowpack

Snow water equivalent, percent of average





© Provided by The Washington Post

These maps illustrate the seriousness of the western drought

The map above shows the snow water equivalent for the Sierra Nevada, or how much liquid water was contained in the snowpack on April 1 this year compared to its 20-year average. The data, modeled weekly by the [University of Colorado's](#) Institute of Arctic and Alpine Research, is used by water forecasters, managers, irrigators, public utilities and many other parties.

"What matters most is how much snow is on the ground on April 1st, because that's really the indicator of the total amount of snow that accumulated for the whole winter," said Noah P. Molotch, a hydrologist with the monitoring project and a professor at the University of Colorado at Boulder. This year's depletion of the snowpack followed lackluster winters in 2020 and 2021, making this the third dry year in a row for California.

[Snow may vanish for years at a time in Mountain West with climate warming](#)

Molotch said 2022's winter snow is likely to rank among the smallest five annual snowpacks since 2000. The lowest snowpack occurred in 2015, when accumulation was less than 10 percent of the average. California has not fully recovered from 2015, Molotch said.

Related video: Drought reveals this ancient city hidden for thousands of years



Willis said the past two years of drought have been unique because the region's atmosphere and soil have become "thirstier." She explained that rising global temperatures dry out the atmosphere, which increases the amount of water evaporating from the ground. [Research has shown](#) that the atmosphere's drying power has intensified over much of the western United States in recent decades.

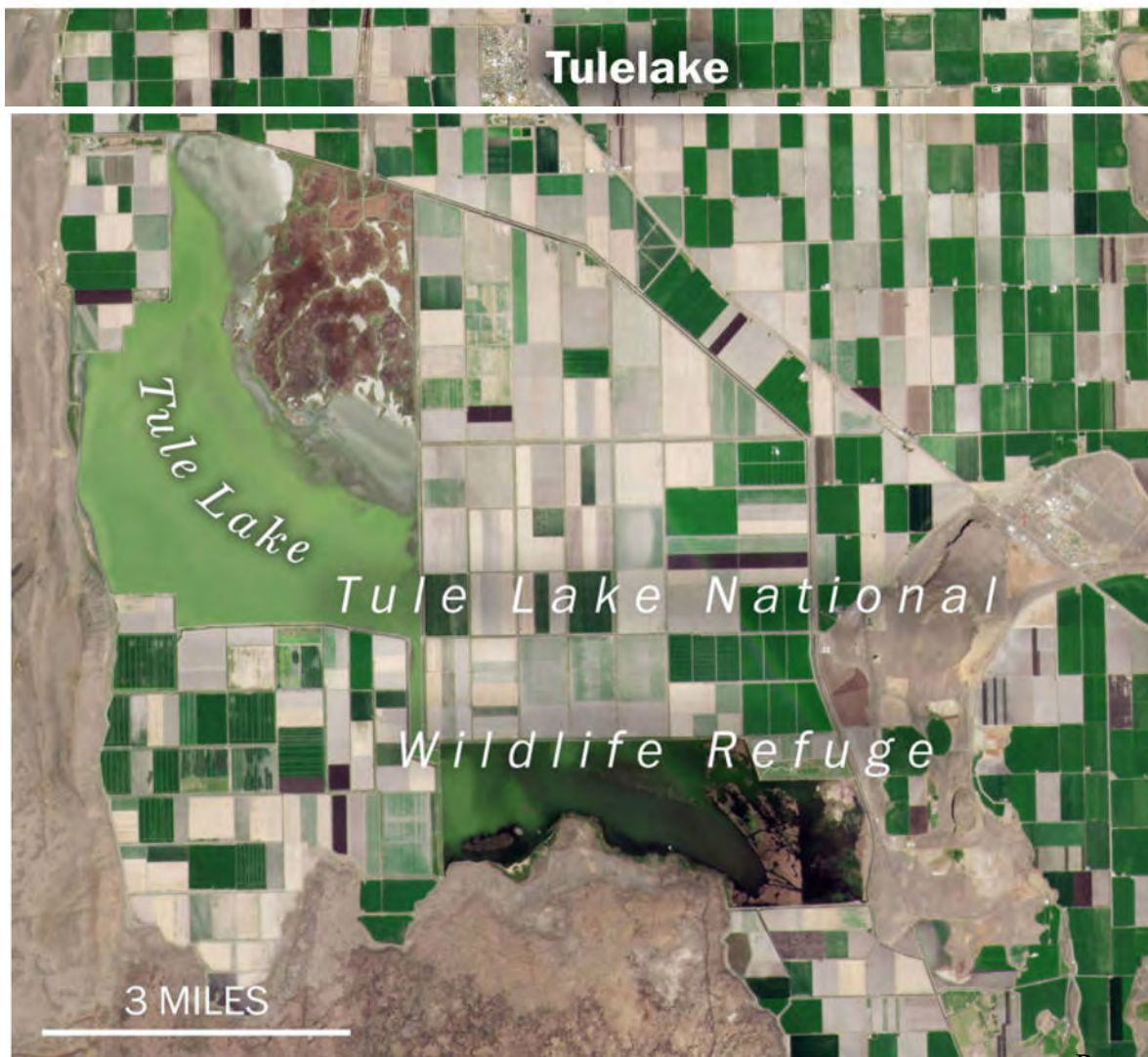
"[W]e're getting less runoff from the same amount of precipitation," Willis said. "That's been a really unusual and new phenomenon that's become much more apparent in the last couple of years."

And those changes are seen on the ground.

The satellite imagery below, provided by Planet Labs, highlights changes in the past year in northern California. The first image pair shows Tule Lake near the Upper Klamath Watershed, which is one of the prime migratory destinations for birds as they travel between the Northern and Southern hemispheres.



May 2021





Source: Planet Labs PBC

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These maps illustrate the seriousness of the western drought

Over the past year, much of the lake has dried out. Willis also pointed out the poor water quality in 2021, as less water was available to flush the system.

"Because there's so much less runoff than we would normally expect out of these watersheds ... we're seeing exactly the effects of what you're showing here," Willis said.

The next pair of images shows communities in Shasta County. Notice how much of the lush vegetation and agricultural fields visible in 2021 has browned by 2022, probably because of a combination of drought and [recent cuts in water supply](#) to the Sacramento Valley.



May 2021



May 2022





Source: Planet Labs PBC

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These maps illustrate the seriousness of the western drought

Kyra Kim, a postdoctoral researcher at NASA's Jet Propulsion Laboratory, said that during droughts, many areas can pump water out of the ground to compensate for the lack of surface water. Much of this groundwater supports agricultural industries in California.

However, drought also affects groundwater levels. Groundwater data from NASA, shown in the map at the top of this page, indicate that some areas in the Southwest contain only around 2 percent of their average groundwater for this time of the year.

"California has experienced about 100 years of groundwater depletion, much of which occurs during drought periods," said Jay Famiglietti, the executive director of the Global Institute for Water Security at the University of Saskatchewan. "Research in review from our team indicates that the rate of depletion may actually be accelerating since 2019, relative to the previous droughts of 2006-2010 and 2011-2016."

Climate change also slows the replenishment of groundwater. A warmer atmosphere increases evaporation over land and affects the amount of water that penetrates into the soil. Groundwater takes a long time to recover from drought and requires moisture slowly and steadily seeping through soil and rock layers.

In California, the majority of pumped groundwater is also ancient groundwater from the Last Glacial Maximum, when ice and snow covered the terrain. "It's really old groundwater, and we were essentially not getting that with one year's worth of rain or one year's worth of snow," Kim said.

Variable snowpack in the Rocky Mountains



These maps illustrate the seriousness of the western drought

The Rocky Mountains are another important source of water for many western states. Winter snowpack accumulates on the western slopes of the mountains and melts during the spring, with the runoff funneling into the Colorado River, which feeds into some of the largest artificial reservoirs in the country, Lakes Mead and Powell.

[The Colorado River is in crisis, and it's getting worse every day](#)

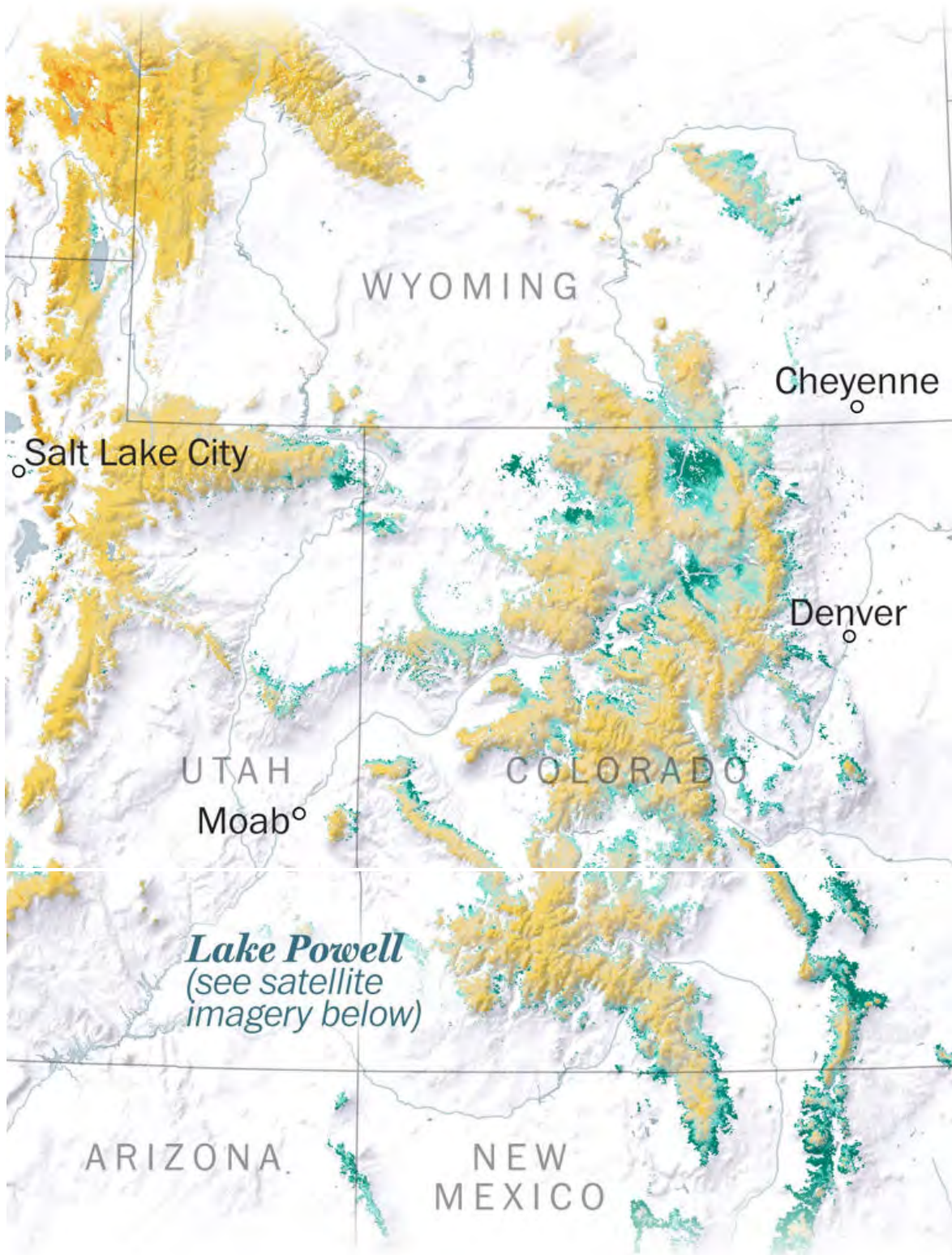
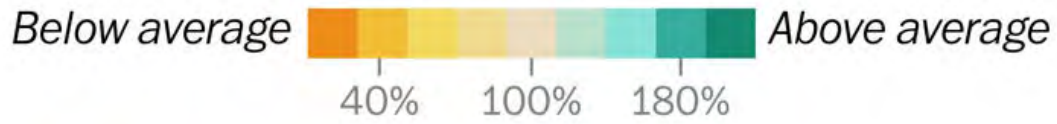
For winter 2022, Rocky Mountain snowpack tracked close to the long-term average until March, then April was "horribly dry," said Leanne Lestak, who works with Molotch on modeling snow water equivalent across the Sierra and the Rockies.

© John Locher/AP

As of April 1, snow water equivalent over most areas ranged from 46 to 95 percent of the long-term average, as shown in the modeled data below. By [June 1](#), snow water equivalent had decreased, ranging from 2 to 64 percent.

Water available as snowpack

Snow water equivalent, percent of average



Lakes Powell and Mead have dropped to historically low levels in the past year. Lake Mead has dropped so low that previously sunken boats and [human remains have been recovered](#).

[Depleted by drought, Lakes Powell and Mead were doomed from the beginning](#)

Lake levels have been decreasing for the past two decades because of poor recovery from past droughts, water management practices and increased demand from booming populations. The U.S. Bureau of Reclamation has declared water shortages and reduced operations on the lakes for 2022.



May 2021



April 2022





Source: Planet Labs PBC

© Provided by The Washington Post

These maps illustrate the seriousness of the western drought

Some [researchers say](#) the lakes may never recover to healthy water levels again — especially with the added stress of climate change.

"Climate change makes things more challenging because it makes things more extreme," said Willis. "Our droughts are drier than they've ever been in the past. ... Some of our flood seasons will be bigger than they've ever been in the past. What we're really losing is the kind of moderate, manageable middle ground."

About this story

Current drought intensity data sourced from the [National Drought Mitigation Center at the University of Nebraska at Lincoln](#). Groundwater conditions data sourced from [NASA Grace](#). Snow water equivalent data for the [Sierra Nevada](#) and [Rocky Mountains](#) provided by [Leanne Lestak](#) and [Noah P. Molotch](#) of the [Institute of Arctic and Alpine Research at the University of Colorado at Boulder](#). Satellite imagery courtesy of [Planet Labs](#).

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A regional collaboration of public media stations that serve the Rocky Mountain States of Colorado, Idaho, Nevada, New Mexico, Utah and Wyoming.

Nevada tribe tries to recover native fish amid impacts of dams, climate change

KUNR Public Radio | By Kaleb Roedel

Published June 16, 2022 at 9:05 PM MDT



Kaleb Roedel / Mountain West News Bureau

The Numana Dam, located on the Pyramid Lake Paiute Tribe Reservation, was built in 1971 to divert the Truckee River to the reservation for irrigation. For decades, the tribe has wanted to modify it to help recover endangered and threatened fish species.

On a hot spring day on the Pyramid Lake Paiute Tribe Reservation in Northern Nevada, clouds hung over miles of remote desert land while mountain ranges pierced the overcast sky.

At the edge of a bluff, tribal member Susan Albright looked down at the Truckee River. Its cold, clear waters come from melting snow on the Sierra Nevada mountains.

Albright, who works for the tribe's natural resources department, caught fish in those waters as a child.

"We used to go to the mouth of the lake and just throw triple hooks out there and grab a bunch of fish and come back," Albright said. "That's our lifestyle. That was what everybody ate."

Specifically, they ate [Lahontan cutthroat trout](#), Nevada's state fish, and cui-ui, [which aren't found anywhere else in the world](#). The Pyramid Lake Paiute Tribe refer to themselves as the *Cui-ui Tucutta* in their Native language, which means ["the cui-ui eaters."](#)



Kelsey Fitzgerald /

Cui-ui are an endangered fish native to the Pyramid Lake and the lower Truckee River in Northern Nevada.

But they aren't able to eat as much these days. The cui-ui have been endangered for decades, and that's partially because of a series of dams on the Truckee River.

One of those is the Numana Dam, which Albright looked at as water shot over the 11-foot-high structure.

"Our cui-uies can't go back upstream because they're bottom-feeders, and that's as far as they can get, so they can't go back up to Tahoe like they used to," Albright said. "Since they put dams in there, they really put a damper on everything with our fish."

The Numana Dam was [built in 1971](#) to divert Truckee River water to the reservation for irrigation. For the past 20 years, the tribe has wanted to modify the dam to help the fish recover, but they kept running into the same hurdle.

"We always knew we wanted to do it, but the funding was never available," said Donna Noel, the tribe's natural resources director.

That changed in April, when the Interior Department [announced 40 projects](#) across the U.S. to support fish recovery and migration – including in [Idaho](#), [New Mexico](#), [Wyoming](#) and [Utah](#). The funding comes from the massive infrastructure package Congress passed last fall.

The tribe's [Numana Dam Fish Passage Project](#) reeled in the biggest grant – \$8.3 million to support the recovery of Lahontan cutthroats and cui-uies.

“The tribe, it’s part of their well-being, it’s part of their heritage,” Noel said. “And so, it’s good to see that the government does take that into consideration.”

Noel said the project includes installing screens to help fish swim downstream into the lake. A large underwater ramp will also be built so fish can swim up and over the dam.

But dams aren’t the only obstacle facing fish populations. The other is climate change. Cold-water fish like trout and salmon and especially vulnerable. In 2015, for example, unusually warm water [killed an estimated 250,000 sockeye salmon](#) in the Columbia River and its tributaries.

Dan Isaak, a research fisheries scientist with the U.S. Forest Service, said the warming waters are forcing fish to adapt. That’s true for sockeye and Chinook salmon that migrate from central Idaho through the Snake and Columbia rivers.

“Because the peak summer temperatures in river reservoirs are getting to be so warm now that they can be lethal, we’re seeing fish kind of evolve to migrate earlier and avoid those peak temperatures,” Isaak said. “Or migrate later in the fall when it starts to cool down again.”

Isaak said that suggests fish species are resilient. But resilience only goes so far as climate change and dams reduce the number of suitable habitats.

Take the Chinook salmon in Idaho’s Middle Fork of the Salmon River. In the ‘50s and ‘60s, those waters [supported nearly 50,000 Chinook](#). Now, as a series of dams and warming waters choke the river, the average is less than 1,500 fish – and dropping. Three years ago, only 322 of the salmon returned to spawn.

Back in Northern Nevada, the Pyramid Lake Paiute Tribe’s goal is to finish the permitting process for its fish passage project by next year, with construction likely to start in the fall of 2023.

“We have looked at many ways of solving the problem,” Noel said. “So we’re really excited.”

This story was produced by the Mountain West News Bureau, a collaboration between Wyoming Public Media, Nevada Public Radio, Boise State Public Radio in Idaho, KUNR in Nevada, the O'Connor Center for the Rocky Mountain West in Montana, KUNC in Colorado, KUNM in New Mexico, with support from affiliate stations across the region. Funding for the Mountain West News Bureau is provided in part by the [Corporation for Public Broadcasting](#).

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HOMELESSNESS

Officials: There's much to celebrate about the Nevada Cares Campus

By Bob Conrad | Published: June 17, 2022 | Last Updated on J

Elected officials from Sparks, Reno and Washoe County on Monday said there is much to celeb about the Nevada Cares Campus. That's the massive homeless shelter that opened a year ago Washoe

County consultant said was [unsafe](#) and understaffed.

The officials, comprising the Community Homeless Advisory Board, said, however good things are happening.

"Everybody's kind of been trying to keep the lights on and take care of everybody the best we could emergency situations," said Reno City Council member Neoma Jardon. "And now it's just time to reconnect those fronts. And we have more tools in the toolbox to make it smoother and less fiscally otherwise impactful."

The board also voted to approve meeting quarterly, down from a monthly schedule.

The campus remains understaffed. Of identified positions, eight at Washoe County are still unfilled VOA still wants to hire 29 positions.

Washoe County's Dana Searcy said the county is still focused on hiring more people.

"Our priorities are on staffing and training, safety and security, the facility and the construction efforts and also partnership development," she said. "We've got new case management, mental health and medical support opportunities coming. I think the general atmosphere at the campus is much more hopeful." Searcy said the campus has seen more than 3,500 total people in the past year.

Officials presented data that show the campus serves more than 1,000 people a month. A disproportionate number of residents are those living with disabilities – fewer than half of those stay at the campus reported that they are disabled.

Of those staying at the campus, 80 people in the past three months have been placed into permanent housing, officials said. Prior to the past three months, the campus was seeing about 10 to 20 people getting housing after staying at the campus.



“All of this really leads us to that increased effort in reducing homelessness in our community throu more efficient housing placements,” Searcy added.

New VOA leadership announced

New campus directors were announced at the meeting. Scott Benton of Sparks will take over for Pat Cashell, who left VOA last month. The assistant shelter director is Penny Adams. Both work for Volunteers of America, which operates the shelter.

“I’ve gotten to work hand in hand with the county for the last year bringing partners onto the campu which has been exhilarating,” Benton said. “Seeing the lives change into the participants of the shel with the partnerships has just been such an honor.

“Serving in the role as the assistant director has prepared me to lead the shelter in the best direction



Bob Conrad Publisher & Editor

Bob Conrad is publisher, editor and co-founder of This Is Reno. He has served in communications positions at various state agencies and earned a doctorate in educational leadership from the University of Nevada, Reno in 2015. In addition to managing This Is Reno, he holds a part-time appointment for the Mineral County University of Nevada Extension Office.





Drought's Spillover Effect in the American West

In a region latticed with pipelines and canals, the consequences of dry conditions in one basin are exported to neighboring watersheds.



The Buena Vista Pumping Plant, in southern Kern County, lifts water in the California Aqueduct. Part of the State Water Project, the aqueduct spans hundreds of miles, transferring water from northern watersheds to farms and cities in the south. Photo © J. Carl Ganter/Circle of Blue

By Brett Walton, Circle of Blue — June 16, 2022

- The American West has been plumbed into a series of “mega-watersheds.”
Because basins are connected by pipelines and canals, drought in one region
- affects distant watersheds.
- A big Southern California water agency plans to draw more water from the
- Colorado River this year because of inadequate moisture in the Sierra Nevada.

On a map that might grace the walls of a high school classroom, the watersheds of the American West are distinct geographical features, hemmed in by foreboding plateaus and towering mountain ridges.

Look closer and those natural boundaries are less rigid. A sprawling network of pipelines and canals pierce mountains and cross deserts, linking many of the mighty rivers and smaller streams of the West. These “mega-watersheds” have redrawn the map, helping cities and farms to grow large and productive, but also becoming political flashpoints with steep environmental costs.

"It is absolutely one interconnected system," said Bill Hasencamp of the Metropolitan Water District of Southern California, a wholesale water provider.

Hasencamp was speaking from a Southern California perspective, a region that is a pivot point since it draws water from basins hundreds of miles away in Northern California and the Colorado River. As the manager of Colorado River resources, Hasencamp has one eye on Met's 19-million person home territory while the other peers eastward across the Mojave Desert at the shrinking lakes Mead and Powell, which also supply his agency.

Not every river in the West is linked and few regions are as networked as Southern California. But there are enough connections that the water supply consequences of the drying American West are not felt in isolation. They are exported to neighboring watersheds.

Start in Northern California. The Trinity River Diversion, a federal project, connects the Klamath River basin to the Sacramento River watershed. The Sacramento River flows south until meeting the San Joaquin River in the West Coast's largest estuary. Water from the two rivers is pumped, via state and federal canals, to counties south of the Sacramento-San Joaquin Delta.

Once Northern California water arrives in Southern California, it mingles with water from the Colorado River, which is imported through the 242-mile Colorado River Aqueduct.

Upstream on the Colorado River, there are more links. Tributary streams in Colorado are diverted through the San Juan-Chama Project into New Mexico, where the water enters the Rio Grande system and supplies Albuquerque and Santa Fe. The Central Utah Project pulls Colorado River water into the orbit of the fast-growing Wasatch Front, which is not in the basin.

In the headwaters state of Colorado, 11 major interbasin transfers unite rivers on both sides of the Rockies. The Moffat and Adams tunnels cut through the Continental Divide, a feat of engineering that brings Colorado River water into the South Platte River basin, where it is gulped by Denver and other Front Range cities.



The Moffat tunnel, built in 1936, moves Colorado River basin water across the Rockies, for use in homes and business in Denver. Photo © Brett Walton / Circle of Blue

Smaller projects also crisscross the landscape. San Francisco reaches into the Tuolumne River. Los Angeles

taps the Owens River. The Potter Valley Project diverts water from Northern California's Eel River into the Russian River, which flows through Sonoma wine country.

Water managers like Hasencamp enjoy having a range of sources to draw upon. If one area is dry, they can turn to another watershed. "It's just one egg in a big basket," Hasencamp said.

Problems develop when several of those eggs turn out to be rotten at the same time. The weather in sparsely populated northern counties in California affects water supplies not only in Southern California, but also for cities, farms, and ecosystems throughout the Colorado River's mega-watershed.

Hasencamp illustrated the consequences of the spillover effect with some numbers. Met draws water from Northern California via the State Water Project and water from the Colorado River via the Colorado River Aqueduct. Met isn't expecting much water from the State Water Project in 2022, so it will lean more heavily on the Colorado, tapping "credits" stored in the lake.

"If you look at this year, because it's been so dry in Northern California, we're going to move about 1.15 million acre-feet through the Colorado River Aqueduct," Hasencamp said. An acre-foot can supply about three households in the area for a year. This year's anticipated water delivery from the Colorado is more than double what it was in the recent past. "Just three years ago in 2019, when it was really wet in Northern California, we only diverted [from the Colorado River] in the neighborhood of 500,000 acre feet."

In short, when Northern California is dry, Hasencamp's agency draws more water from the Colorado River,

placing additional pressure on Lake Mead, which is at its lowest point since it was filled in the 1930s. Hasencamp reckons that 500,000 acre-feet, at this point, is about 8 feet of elevation in Lake Mead. Every foot matters these days, when the enfeebled reservoir is just 28 percent full — low enough that mandatory water cuts are in place in Arizona and Nevada.

These complex hydraulic systems can be viewed from several angles, said Felicia Marcus, a visiting fellow at Stanford University's Water in the West program.

"In some ways, it's the miracle of modern engineering, without which modern California simply wouldn't be possible," said Marcus, a former chair of the state's water regulatory agency. "On the other hand, it has consequences. The issues there are both environmental and political or social."

For all the water supply flexibility they provide, these diversions are not risk-free. They have depleted water for native fish. Many of them — from the Owens River in California to the West Slope of Colorado — contend with legacies of acrimony and mistrust, feelings that arose decades ago due to the political imbalance between rural areas where water was extracted and urban areas that benefitted.

New Mexico in the 'Crosshairs'

Southern California is the prime example of the mega-watershed concept. But it is not the only one.

New Mexico straddles two major watersheds: the Rio Grande and the Colorado. Thanks to an interbasin transfer, Albuquerque receives water from both.

"We're in sort of the crosshairs," said John Stomp, who was the chief operating officer for the Albuquerque Bernalillo County Water Utility Authority for 10 years before he retired in 2020. "So we're obviously concerned and looking at both conditions all the time."

The link between the basins is the San Juan-Chama Project. A federal diversion completed in 1971, the project channels water from San Juan River tributaries in the Colorado River basin and delivers it to the Rio Chama, which flows into the Rio Grande. The amount of water the project provides to the Rio Grande varies each year. Diversions take place only when flows in the three tributaries exceed minimum requirements that change each month.

San Juan-Chama water helps to reduce Albuquerque's reliance on local groundwater. The city discovered in the 1980s that it was over-extracting its aquifer. The imported water also provides much needed dry season flows in the Rio Grande to assist endangered species like the silvery minnow, a fish, and the southwestern willow flycatcher, a bird that nests in riverside trees.

Similar to their counterparts in Southern California, Albuquerque water managers speak in the language of tradeoffs.

"We're using Colorado River water to substitute for Rio Grande water, so if Colorado River water is not available, then we have to get an equal amount of groundwater, which puts more of a strain on the Rio Grande system," Stomp said.

More strain is a common refrain in these dry times in the Southwest. It is not, however, always the outcome. The spillover effect could work in the opposite direction, toward less stress.

Hasencamp mentioned one possibility. More water conservation and use of recycled water in Southern California relieves pressure on the Colorado River and Sacramento-San Joaquin Delta.

Met is working with partner agencies in Arizona and Nevada to further that cause. The Southern Nevada Water Authority, Central Arizona Project, and Arizona Department of Water Resources allocated several million dollars for planning studies related to a regional water recycling facility to be located in the Los Angeles metro region.

A deeper relationship might emerge from that partnership. The out-of-state agencies could contribute to the construction and operation cost of the \$3.4 billion facility in exchange for some of the 168,000 acre-feet of water it would produce. The exchange would mean that Met leaves more water in Lake Mead. The states already store water for each other, but such a swap would be a path-breaking agreement.

"Those decisions haven't been made yet, though," Hasencamp cautioned. "But those are the types of creative partnerships that I think we're going to need in the future."



Brett Walton

Brett writes about agriculture, energy, infrastructure, and the politics and economics of water in the United States. He also writes the Federal Water Tap, Circle of Blue's weekly digest of U.S. government water news. He is the winner of two Society of Environmental Journalists reporting awards, one of the top honors in American environmental journalism:

first place for explanatory reporting for a series on septic system pollution in the United States(2016) and third place for beat reporting in a small market (2014). He received the Sierra Club's

What is Nevada Water?

Nevada
Water is
focusing on
building a
trusted
network
that can
address
urban-rural
water challenges across the state.



We are in Phase 1, which is a 12-month network-building effort, funded by the National Science Foundation, that will include partners that represent the full range of water users, purveyors, managers, decision-makers, educators and researchers. Our guiding principle is Science With Society, which emphasizes inclusion, communication, connections and collaboration. Importantly, Nevada Water will not be developing policies or changing water law. Rather, it is intended as a learning network where we co-identify diverse challenges, fill knowledge gaps, understand the social and hydrologic dimensions of water issues, and co-develop strategies for addressing seemingly intractable water issues.



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[\(https://nsc.edu/\)](https://nsc.edu/)



[\(https://www.nsf.gov/\)](https://www.nsf.gov/)

leadership team and partners will:

- Listen to and learn from various groups of water providers, users, managers, etc. about how we each experience water-related challenges, and what issues are most important to our respective communities, organizations and livelihoods.
- Brainstorm ideas for how a well-funded network of public, private, tribal, research, nonprofit and educational water resource partners can come together to facilitate equitable solutions.
- Help design a Nevada Water network that will provide trusted information, collect unique and targeted data to answer key questions, offer research opportunities for students across the state, help educators create learning content, and develop equitable solutions to complex and seemingly intractable water problems.

these goals?

- Holding online small-group discussions
- Touring the diverse urban and rural parts of Nevada to hear from network partners about their water challenges
- Holding a two-day conference (in partnership with the Nevada Water Resources Association) to discuss what we've learned
- Sharing our visions
- Workshopping ideas for a fully-developed Nevada Water network

What's next?

Following this one-year effort, we will craft a five-year \$15 million follow-on proposal to the National Science Foundation to implement the full Nevada Water Network.

What would the network do?

This question is what we seek to answer during the planning stage. The full implementation of Nevada Water could include developing advanced monitoring networks, data analysis, information sharing, education programs, funding for seed projects, fellowships for researcher-practitioner partnerships, webinars, workshops and more.

In the news

- **No return to normal: Low mountain snowpack reflects the West's grim**



climate outlook (<https://www.kunc.org/regional-news/2022-04-08/no-return-to-normal-low-mountain-snowpack-reflects-the-wests-grim-climate-outlook>)

- **KUNR Today: New network aims to connect water stakeholders, Nevada gets \$89 million for transit (<https://www.kunr.org/news/2022-04-07/kunr-today-new-network-aims-to-connect-water-stakeholders-nevada-gets-89-million-for-transit>)**
- **PM Brief: Lawsuit against UVU dismissed & Utah Representatives sponsor energy bill (<https://www.kuer.org/news-briefs/2022-04-06/pm-brief-lawsuit-against-uvu-dismissed-utah-representatives-sponsor-energy-bill>)**
- **UNR leads collaborative effort to address water issues (<https://www.kolotv.com/2022/04/06/unr-leads-collaborative-effort-address-water-issues/>)**
- **Parts of the Mountain West could be nearly snowless for years at a time in just a few decades (https://www.csindy.com/news/parts-of-the-mountain-west-could-be-nearly-snowless-for-years-at-a-time-in/article_37818f0a-b492-11ec-8dcc-43ac42434321.html)**
- **Sierra East Slope experiences driest first quarter in 41 years (<https://www.recordcourier.com/news/2022/apr/05/driest-first-quarter-41-years/>)**
- **Nevada's gloomy water supply outlook prompts new collaborative effort (https://elkodaily.com/news/state-and-regional/govt-and-politics/nevadas-gloomy-water-supply-outlook-prompts-new-collaborative-effort/article_e54bc7a4-dd87-5ef3-8486-39fdfa2ec24a.html)**
- **UNR leading project to address urban, rural water issues (<https://thisisreno.com/2022/04/unr-leading-project-to-address-urban-rural-water-issues/>)**
- **Gloomy water supply outlook in Nevada prompts new collaborative effort (<https://carsonnow.org/story/04/03/2022/gloomy-water-supply-outlook-nevada-prompts-new-collaborative-effort>)**



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Californians finally climbed on water conservation wagon in May

The ride, however, has been a short one so far: residents used a lot more water in April than the prior year.

KEVIN WINTER / June 21, 2022



California's persistent drought has Shasta Lake — the cornerstone of the state's water infrastructure — with rings like a draining bathtub. (Wayne Gungl from Pixabay via Courthouse News)

SACRAMENTO, Calif. (CN) — California Governor Gavin Newsom has been urging Californians to conserve water after another dry winter. And according to preliminary data from California State Water Resources Board, Californians cut their water use in May by 5% from the previous May.

Erik Ekdahl, deputy director of the water board's Division of Water Rights, said a board meeting Tuesday that the snowpack in the Sierra Nevada Mountains is gone for the season and the area will not see significant precipitation any time soon.

"The state still remains in a severe drought with some intensification of the drought in the southern Sierra," said Ekdahl. "The monthly temperature forecast for the coming month shows that most of California has an equal chance of remaining at average temperatures for this time of the year."

A small portion of southeastern California including areas near Needles, Blythe and the Colorado River areas expect higher than normal temperatures for the next month.

Ekdahl said the is data still preliminary and could change based on what water districts that haven't reported usage figures yet reveal. But with water districts serving half the state's population reporting, Ekdahl said average household

consumption stood at 98 gallons per person per day in May. The final figures will be released at the board's meeting in late July.

If the trends hold, the reduction in water use will help to counteract April, when Californians used 13% more water than in April 2021.

Newsom has not issued any mandates to cut water use at the state level and is allowing local water districts to decide how they will meet the water use targets. His office did not respond for comment about the preliminary numbers by press time.

Source




ASCE PLOT POINTS PODCAST

Scenario planning our way to a clean water future

6/21/2022

0


1 MIN READ



ASCE Plot Points Podcast

Episode 122: Danny Rotter, on how scenario planning will e...

PodBean





Big-picture thinking, long-term planning – they seem to be at a premium these days.

But not in Reno, Nevada.

Not when it comes to clean water.

Danny Rotter is an engineering manager for the Truckee Meadows Water Authority in Reno, and he works as part of a team that is using scenario planning and detailed data analysis to ensure the region's clean water future all the way out to the year 2100.

On episode 122 of the ASCE Plot Points, Rotter talks about how that process works and why it's so important and why it s so important.

Listen to the episode above, and subscribe to the show wherever you listen to podcasts.

AUTHOR



Ben Walpole
Aff.M.ASCE

[View this email in your browser](#)



Quote of the Day

“We are of the belief, however, that given the arid nature of this state, it is particularly important that we effectuate the plain meaning of a statute that encourages the sustainable use of water. The [Groundwater Management Plan] here is a community-based solution to the long-term water shortages that befall Diamond Valley.”

— Associate Chief Justice James Hardesty



Low-elevation sprinklers hang over a field of alfalfa in Diamond Valley on Aug. 25, 2020. The sprinklers are meant to reduce water use. (Daniel Rothberg/The

News

Justices uphold groundwater plan in ruling that could 'significantly affect water management'

The Nevada Supreme Court has cleared the way for Eureka County irrigators to move forward with a contested groundwater plan, issuing a 4-3 ruling last Thursday that could have significant implications for the way water is managed in dozens of aquifers across the state. [Daniel Rothberg reports.](#)

Legislators green-light millions in federal funding for free school lunches, mental health services

An interim legislative committee approved more than \$75 million in federal aid money for universal free meals in Nevada's K-12 schools on Tuesday, the latest in a raft of funding approvals disbursed from the [nearly \\$7 billion](#) sent to Nevada through the federal American Rescue Plan (ARP) last year. [Tabitha Mueller and Jacob Solis have the details.](#)

Indy Gaming: SCOTUS ruling favoring Texas tribal casinos has 'wider implications'

A U.S. Supreme Court ruling last week was a victory for a Native American tribe in Texas that had been in a legal tussle with the state over the use of electronic bingo games on tribal land going back to the 1990s. [Howard Stutz reports in this week's Indy Gaming newsletter.](#) Sign up [here](#) to get it delivered to your inbox.

Opinion

[Grading practices can and should support student learning](#)

By Laura Jeanne Penrod

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Lake Mead nears dead pool status as water levels hit another historic low



John Locher



Denise Chow and Kathryn Procriv

June 22, 2022 · 3 min read



Lake Mead's water levels this week dropped to historic lows, bringing the nation's largest reservoir less than 150 feet away from "dead pool" — when the reservoir is so low that water cannot flow downstream from the dam.

[Lake Mead's water level](#) on Wednesday was measured at 1,044.03 feet, its lowest elevation since the lake was filled in the 1930s. If the reservoir dips below 895 feet — a possibility still years away — Lake Mead would reach dead pool, carrying enormous consequences for millions of people across Arizona, California, Nevada and parts of Mexico.

"This is deadly serious stuff," said Robert Glennon, an expert who specializes in water law and policy.

Persistent drought conditions over the past two decades, exacerbated by climate change and increased water demands across the southwestern United States, have contributed to Lake Mead's depletion. Though the reservoir is at risk of becoming a dead pool, it would most likely take several more years to reach that level, Glennon said.

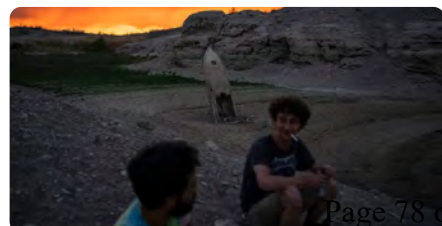
In the meantime, the U.S. Bureau of Reclamation and water managers across the southwestern United States are making efforts to manage the flow of water into the Colorado River and [regulate water use among states in the region](#). These measures are designed to help replenish Lake Mead, which was created on the Colorado River on the Arizona-Nevada border when the Hoover Dam was built in the early 1930s, and another severely depleted reservoir, Lake Powell, which was created along the border of Utah and Arizona.

Dead pool would not mean that there was no water left in the reservoir, but even before Lake Mead were to hit that point, there are concerns that water levels could fall so low that the production of hydroelectric power would be hindered.

"Electricity generation in our western reservoirs becomes a problem as the water level in the reservoirs goes down," Glennon said.

AP PHOTOS: Amid drought, Lake Mead

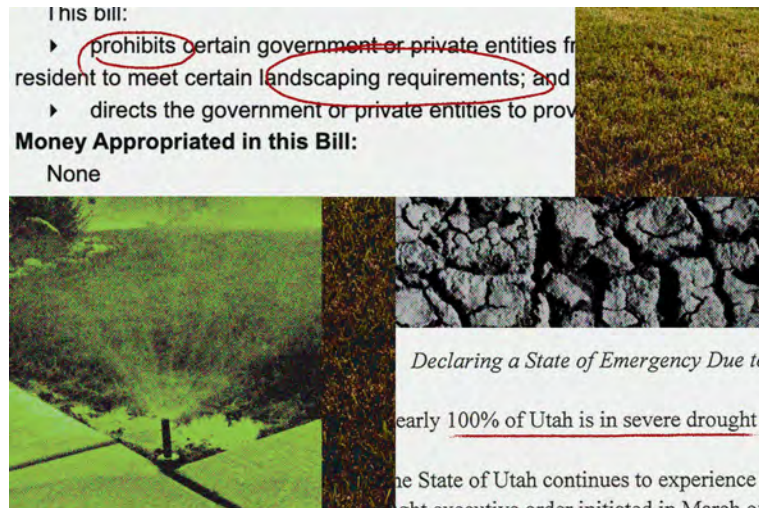
The Independent



Environment

Utah Officials Called It the “Year of Water.” Special Interests Still Resist Conservation.

The nation’s fastest-growing and second-driest state had a banner year for water conservation as it plays catch-up to the rest of the West.



Alex Bandoni/ProPublica. Source images: Mark Olalde/ProPublica, legislative bill and executive order annotated by ProPublica.

by Mark Olalde

June 22, 5 a.m. EDT

Co-published with [The Salt Lake Tribune](#)

ProPublica is a nonprofit newsroom that investigates abuses of power. [Sign up for Dispatches](#), a newsletter that spotlights wrongdoing around the country, to receive our stories in your inbox every week.

This story was co-published with [The Salt Lake Tribune](#).

Utah policymakers billed the 2022 legislative session as the “year of water.” Gov. Spencer Cox signed into law more than 15 measures related to water conservation, heralding “generational” progress as the West’s megadrought continues well into its third decade.

Those pieces of legislation allow farmers to earn money by sending their water downstream to shrinking lakes, require water meters for landscaping, appropriate \$40 million to protect the Great Salt Lake and more. But perhaps more telling were proposals that lawmakers carved up or voted down.

Legislators in the country’s fastest-growing and second-driest state rejected a bill meant to address leaky pipes. New laws aimed at mandating low-flow plumbing both in state facilities and new homes had to be scaled back to win passage. And regulations on Utah’s lush green lawns remained largely off-limits, as interest groups stalled or rewrote bills targeting grass.

A ProPublica investigation last year found that Utah’s water policy was largely controlled by a group of water districts and allied special interest organizations and politicians who prioritized building new water projects over conservation.

ProPublica reviewed water-related proposals again following this year’s legislative session, including minutes from committee meetings, lawmaker testimony and internal communications obtained via public records requests. The analysis showed the Legislature remains hesitant to act quickly on water conservation or on a scale that fully reflects the region’s dire situation, in part due to the influence of a rotating cast of special interest groups.

With little new water to tap, Utah is running out of time to reduce the amount that residents use on a daily basis. The Bureau of Reclamation announced in mid-June that Colorado River Basin states might have to cut water use by as much as a quarter next year, compared with average consumption.

“Is it the year of water?” asked Zach Frankel, executive director of environmental advocacy group Utah Rivers Council. “The answer is, ‘Hell no.’”

The Grass Is Always Greener

The water conservation debate in Utah and around the West often focuses on residential use because taking water from farmers and appearing unfriendly to the agriculture industry remains a political third rail. In Utah, outdoor landscaping accounts for about two-thirds of residential water consumption, and a growing consensus around the region sees tearing out lawns as a key strategy to alleviate the strain on the overdrawn Colorado River.

At least five members of the Utah House of Representatives began the session intending to address the grass question. Two bills passed. One gave the Utah Division of Water Resources approval to spend up to \$5 million annually on turf removal incentives, but the bill didn’t appropriate money to do it; the other prohibited municipalities from banning water-efficient landscaping or mandating grass on park strips, the narrow bands between the sidewalk and the street. Towns have grabbed headlines for threatening to fine residents who replaced lawns with water-saving alternatives.

Utah remains behind other Western states on removing grass.

California banned irrigating ornamental turf, such as landscaping on a highway median. In Colorado, lawmakers passed a bill to create a turf removal system. And Nevada, leading the fight against grass, passed a law in 2021 banning the roughly 40% of turf in the Las Vegas metro area that sees little public use. The Southern Nevada Water Authority, the area’s water wholesaler, has also increased the amount it pays property owners to remove turf from \$0.40 per square foot in 1999 to \$3 in 2018, and it spent nearly \$269 million since 1999 to replace nearly 205 million square feet of grass with less water-intense landscaping.

The largest water district in Utah, the Central Utah Water Conservancy District, pays up to \$1.25 per square foot at residential properties and \$2 at commercial facilities and has ripped out about 233,000 square feet in recent years. The district’s proposed budget for fiscal year 2023 includes \$1.6 million for turf removal. In southwestern Utah, the Washington County Water Conservancy District and the towns it serves are removing nearly 600,000 square feet of grass, and local municipalities are working on ordinances to ban or cap the amount of turf allowed on certain properties.

“We recognize in Utah in a lot of ways we’re behind what Colorado and some of our neighboring states have done, and we as a state are focused,” said Rep. Gay Lynn Bennion, a Democrat who worked on turf legislation this session.

But internal communications suggest Utah is stymied by politicking, with groups such as the Utah League of Cities and Towns, which lobbies on behalf of municipalities, fighting against aggressive policy.

Rep. Raymond Ward, a Republican, proposed a bill to prohibit municipalities from requiring grass lawns. In January, he told ProPublica his idea ran into early opposition from the league, “who I knew would be the chief opponent because it impinges on what they think is their birthright, which is zoning,” he said.

Ward tweaked his proposal to assure the league that the bill wouldn’t get in the way of municipalities’ beautification ordinances. The group toned down its opposition, Ward said, but lobbyists from homeowners associations continued to attack and the bill failed.

A similar turf law did pass — one endorsed by lobbyists from municipalities and water districts — that Ward described as a “watered down version” of his bill.

Sponsored by Republican Rep. Ryan Wilcox, that bill would’ve prohibited municipalities from requiring that grass cover more than 35% of a property’s irrigated area.

On the same day the House unanimously passed the bill, Justin Lee, the Utah League of Cities and Towns’ director of government relations and a registered lobbyist, emailed Wilcox: “With a few tweaks we think there is potential to get our members more excited about this bill.” Meanwhile, the Jordan Valley Water Conservancy District’s general manager, assistant general manager and general counsel were drafting substitute language.

Jordan Valley Water Conservancy District staff drafted substitute language for HB282 the day an earlier version of the bill passed the House. Obtained and annotated by ProPublica

Wilcox met with Lee, the water district and several towns, and later that week he sent Lee a proposed bill substitute. “Please Review,” Wilcox wrote. Lee responded to the legislator, “This is exactly what we were looking for.” Wilcox introduced the substitute, and Lee showed up to support the bill, which had been changed to keep most decision-making on landscaping with local municipalities.

In an interview, Lee said that the league isn’t opposed to all grass-related legislation and that limiting irrigated turf could be considered at some point. The group’s main concern this year was preserving municipalities’ authority to write local rules, such as beautification ordinances, he said.

Bart Forsyth, Jordan Valley Water Conservancy District’s general manager, said he wanted to ensure Wilcox’s bill wouldn’t get in the way of cities that were already implementing water efficiency standards. His district got involved, Forsyth said, because other groups were opposed and “for the bill to pass, some changes would likely be needed.”

Wilcox declined to comment.

The Utah League of Cities and Towns has opposed turf bills for years. In 2016, then-Sen. Scott Jenkins, a Republican who was upset that a local ordinance compelled him to plant a lawn around his plumbing wholesale warehouse in Orem, filed a bill to curb such mandates. Jenkins told ProPublica that the league doomed the bill.

“Considering the fact that we’re hurting for water right now, especially in Utah and in the West, that’s just so dumb to do,” Jenkins said. “They ask us to not turn our faucets on or shut them off when we’re brushing our teeth, but they’re just flat out wasting water here.”

The league’s position statement on that year’s legislation noted that Jenkins did not first run the bill past a group consisting of the league and others representing towns, real estate and development interests. The bill died on the Senate floor.

“People are realizing we need to do things differently,” Lee said. “I think some of the pushback you saw in previous years is just not going to be as big going forward.”

Pulling Punches in the Legislature

With less pushback from special interests, Utah’s Legislature had, for it, a banner year on water. Still, bill sponsors were quick to defang water conservation legislation to get it passed.

Republican Rep. Robert Spendlove wrote HB121 to push water-saving measures at state-owned properties. His bill capped how much turf could be planted at new government facilities and called for state agencies to reduce their water use 25% by 2026. But a fiscal note claimed it would cost nearly \$215 million to install efficient toilets and faucets, and Spendlove amended the bill to only apply to outdoor water savings.

Spendlove didn’t respond to requests for comment.

There was also a bipartisan push to update plumbing and building codes to require more efficient toilets, showerheads, bathroom sinks and urinals. In a presentation, Democratic Sen. Jani Iwamoto and Forsyth argued that more efficient plumbing fixtures could save 4.5 billion gallons annually by 2030. Much of the bill’s substance eventually passed, but sponsors still had to remove toilets from it in an act of appeasement to a fellow legislator.

“In the Legislature, sometimes it can stop for just one person. Their plumber may have said something,” Iwamoto said, declining to name which lawmaker flushed the key provision because of unsubstantiated fears of clogged toilets. Former President Donald Trump railed against low-flow plumbing fixtures when he was in office.

Even one of the signature bills in Utah's year of water — requiring meters on secondary water systems that allow unlimited use of untreated water outdoors — was a target. Since 2018, lawmakers had tried and failed to mandate meters statewide, which data found reduced water use by an average of 23% simply because residents saw how much water they used. But emails showed that the Utah League of Cities and Towns and some individual municipalities continued fighting it this session.

The bill passed after legislators gave cities until 2030 to install meters, exempted small counties and provided money to cover as much as 70% of the cost. Not mentioned in various news releases heralding Utah's commitment to conservation: That money came from the American Rescue Plan Act, the federal COVID-19 stimulus package signed by President Joe Biden.

Lee said a small number of municipalities were worried about secondary meters, and paying for them assuaged those concerns.

But even when state power brokers throw support behind water conservation, it's sometimes not enough to get through the Legislature.

Rep. Melissa Ballard, a Republican, made a third attempt to require providers to study how much water their pipes and other infrastructure lose, often from leaks, and she presented HB115 with the support of both the Utah Department of Natural Resources and the state's largest water districts. The bill failed anyway.

Asked what happened, Ballard told ProPublica in an email: "I wish I had an answer for you. Some legislators and water districts didn't even look at the bill." The Legislature sent HB115 back to the clerk of the House to be filed with bills that didn't pass.

The general session ended in March. In April, with all of Utah in a drought, Cox declared a state of emergency. The governor acknowledged the executive order was largely for public awareness and let it lapse a month later.

Filed under —
Environment

Mark Olalde

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76°

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CALIFORNIA WATER

World's largest water recycling plant located in Orange County getting major expansion

The system is now being expanded to help the area become more drought resilient.

By David Gonzalez

Wednesday, June 22, 2022

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Disneyland gets a portion of its water from this project, and officials say the system is now being expanded to help the area become more drought resilient.

FOUNTAIN VALLEY, Calif. (KABC) -- The largest water recycling plant in the world can be found in Fountain Valley, California, and work is underway to make it even bigger.

According to the Orange County Water District, its Groundwater Replenishment System takes about 110 million gallons of wastewater from the county's sanitation district every day that would normally be dumped in the Pacific Ocean.

It then puts it through a three-step treatment process to produce purified water.

"The water that comes to this facility has already been through a significant amount of what we call conventional wastewater treatment," said Orange County Water District Executive Director Mehul Patel.

Patel said that water is then used to replenish a local groundwater aquifer, which is the main source of drinking water for 2.5 million people in the county.

"We're making about 84 million gallons a day right now," he said.

The first phase is called microfiltration and it uses manmade filters to take out bacteria and larger particles.

"The second step is reverse osmosis," Patel said. "That's kind of the heart of the process."

Patel said during this phase, salts, organics, viruses and other contaminants are removed.

The final step uses high amounts of ultraviolet light with hydrogen peroxide to further break down anything that might pass through the first two phases.

"So after this step we just add a little of the minerals back in and then it goes right into the groundwater aquifer to replenish," Patel said.

Also, Steve Sheldon, the OCWD president, said the system is now being expanded to help the area be more drought resilient.

"Because we live in an arid region, we need to prepare for droughts that come and go all the time," Sheldon said. "This one will pass again, but we need to be able to provide water to our customers."

When finished, Sheldon said the plant will be able to produce up to 130 million gallons of water a day.

He said it is replenished groundwater that is tapped into by 19 communities and pumped out to residents.

[The expansion of the water district's groundwater replenishment system](#) is expected to be completed by January 2023.

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CDFW Awards \$26 Million For Ecosystem And Watershed Restoration, Protection And Scientific Study Projects Statewide

June 22, 2022



The California Department of Fish and Wildlife (CDFW) has selected 23 ecosystem restoration and protection projects to fund under its Proposition 1 Watershed Restoration Grant and Delta Water Quality and Ecosystem Restoration Grant Program. The awards total \$26 million.

Of the \$26 million, approximately \$21 million was awarded to 15 projects statewide through the Prop. 1 Watershed Restoration Grant Program. Approximately \$5 million was awarded to eight projects through the Prop. 1 Delta Water Quality and Ecosystem Restoration Grant Program to projects that directly benefit the Sacramento-San Joaquin Delta.

“California’s fish, wildlife and their habitats are facing continued impacts from climate change including persistent drought conditions,” said CDFW Director Charlton H. Bonham. “These impacted species need strong conservation and protection every year represent a collective effort under California’s 30x30 Initiative.”

The approved projects complement CDFW’s ongoing initiatives toward species recovery and provide resilience to climate change, representing priorities outlined in the solicitation, as well as the California Water Action Plan, State Wildlife Action Plan, Sacramento Valley Salmon Resiliency Strategy, Delta Plan, California EcoRestore, Safeguarding California Plan, the California Biodiversity Initiative and the fulfillment of CDFW’s mission.

Projects approved for funding through the Prop. 1 Watershed Grant Programs include:

Acquisition Projects:

- 2022 Upper Truckee River Watershed Acquisition (\$1,500,000 to California Tahoe Conservancy)
- YMCA Camp Jones Gulch Conservation Easement (\$1,002,000 to Sempervirens Fund)

Implementation Projects:

- Lower Stotenburg Creek Coho Habitat Enhancement Implementation Project (\$946,848 to Smith River Alliance)
- Wheeler Gorge Campground Fish Passage Project - Implementation (\$2,972,220 to Earth Island Institute)
- Phase 1 Finney-Ramer Unit Habitat Restoration Project (\$1,816,516 to River Partners)
- Lower Lacey Meadow Restoration (\$1,344,890 to Truckee River Watershed Council)
- Rowdy and Dominie Creek Fish Passage Improvement Project (\$6,108,032 to Tolowa Dee-ni Nation)
- Fall Creek Fish Ladder Rehabilitation Project: Enhancing Survivability of Central California Coast Steelhead and Coho Salmon in the San Lorenzo River Watershed (\$1,116,166 to San Lorenzo Valley Water District)


Planning Projects:

- Kelsey Creek Fish Passage Project (\$350,000 to Big Valley Band of Pomo Indians) Cedar Creek
- Habitat Restoration and Passage Improvement Design (\$202,291 to Hoopa Tribal Fisheries)
- Soda Creek Restoration and Fisheries Improvement Planning Project (\$180,327 to Trout Unlimited)
- Clear Creek ACID Siphon Fish Passage Planning Project (\$499,734 to Western Shasta Resource Conservation District)
- Buena Vista Lagoon Enhancement Project Phase II (\$1,000,000 to San Diego Association of Governments)
- Robles Diversion and Fish Passage Design Planning Project (\$1,557,926 to Ventura County Watershed Protection District)
- Scott Creek Coastal Resiliency Project: Climate Change Technical Studies and Planning (\$409,133 to Resource Conservation District of Santa Cruz County)

Scientific Studies:

- Green Sturgeon Population Monitoring and Habitat Analysis (\$812,184 to Regents of the University of California, Santa Cruz)
- Quantifying Relative Risk of Collapse for Delta Fish Populations (\$358,463 to Regents of the University of California, Davis)
- Where, When and How do Wetlands Export Food for Smelt to Open Waters of the Estuary? (\$703,883 to San Francisco State University)
- Socio-Ecological Potential for Co-management of Tidal Wetlands for Fish and Fowl (\$944,551 to Regents of the University of California, Davis)
- Trade-offs and Co-benefits of Landscape Change in the Sacramento-San Joaquin River Delta: Phase II Tidal Wetlands and Restoration (\$196,114 to Point Blue Conservation Science)
- Quantifying Component Mortality Rates of Juvenile Salmonids (\$565,268 to Regents of the University of California, Santa Cruz)
- Feasibility of Acoustic Telemetry in Delta Smelt (\$1,226,518 to Regents of the University of California, Davis)
- When the Rubber Meets the River: An Assessment of 6PPD-quinone on Delta Species of Conservation Concern (\$547,024 to Regents of the University of California, Davis)

Additional projects are still under consideration. General information about CDFW's Prop. 1 Restoration Grant Programs, as well as a schedule for upcoming grant solicitations, once available, can be found at wildlife.ca.gov/grants.

Funding for these projects comes from Prop. 1 bond funds, a portion of which are allocated annually through the California State Budget Act. More information about Prop. 1 is on the [California Natural Resources Agency website](#) .

###

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Photo: Martis Meadow, CDFW photo by Cory Saltsman

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CHECK TAHOE PUBLIC BEACHES WEBSITE BEFORE YOU GO TO THE BEACH THIS SUMMER

JUNE 23, 2022 BY CAROLINE WALDMAN



As the summer season gets underway, the Tahoe Fund and agencies that manage Lake Tahoe's public beaches have updated TahoePublicBeaches.org to help improve the recreation experience for residents and visitors. Designed as a resource guide to over 40 beaches that surround the iconic shores of Lake Tahoe, the site offers information about frequented hotspots and lesser known locations. Users will find helpful information about how to get to each beach, where to park, hours of operation, and what amenities and services are offered, if any.

"With the low lake level, the beaches that surround Lake Tahoe will be larger than usual, and are likely to be very busy," said Amy Berry, Tahoe Fund CEO. "As people seek out places to access the lake and recreate on the beach or in the water on kayaks or paddle boards, TahoePublicBeaches.org is a tremendous resource to help people decide where they want to spend their day."

TahoePublicBeaches.org offers information on each beach, including what facilities are available, which beaches are dog friendly, where to BBQ, rent paddleboards or boats, and where to find shade. It also has information about the Lake Tahoe Water Trail and how people can do their part to help take care of Lake Tahoe. By encouraging beachgoers to get around without a car, visit the beach at non-peak times, and protect the environment from litter and pet waste, the website highlights destination stewardship practices emphasized throughout the region.

A collaborative effort, the site was developed by the Tahoe Fund and co-funded by the California Tahoe Conservancy through the Lake Tahoe License Plate Program. Eight public agencies assisted with the project to create one central place for beachgoers to find public beach information. The partners include: California Tahoe Conservancy, California State Parks, City of South Lake Tahoe, Tahoe City Public Utility District, North Tahoe Public Utility District, Nevada Division of State Parks, the U.S. Forest Service, and Tahoe Transportation District.

Low Lake levels this summer mean the beaches will be larger, but many boat ramps around Tahoe will be closed. Currently, the only public boat ramps that are open are at the Lake Forest boat ramp in Tahoe City, Calif. and the Cave Rock boat ramp in Cave Rock, Nev. Non-motorized users are still able to launch paddle boards and kayaks at the closed boat ramps.

Beach goers are encouraged to bookmark the mobile-friendly website and use it to plan their next trip to one of Tahoe's public beaches. Learn more at TahoePublicBeaches.org.

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About the Tahoe Fund

The Tahoe Fund is a nonprofit founded in 2010 to support environmental improvement projects that restore lake clarity, enhance sustainable recreation, promote healthier forests, improve transportation and inspire greater stewardship of the region. Through the generous support of its donors, the Tahoe Fund has leveraged more than \$10 million in private funds to secure more than \$60 million in public funds for more than 80 environmental projects. The projects include new sections of the Lake Tahoe Bikeway, restoration of watersheds, removal of aquatic invasive species, forest health projects, new hiking trails, and stewardship programs. Learn more at www.tahoefund.org.

About the Lake Tahoe License Plate

Lake Tahoe License Plates benefit conservation and recreation projects in the Lake Tahoe Basin. Learn more at tahoeplates.org.

Knowing Nevada: The watchful protectors of northern Nevada at the National Weather Service

by Zachary Slotemaker
Thursday, June 23rd 2022



SV RANCHO SAN RAFAEL

RENO, Nev. (News 4 & Fox 11) — It takes a trained eye to track weather conditions and be the backbone of emergency responses.

When it comes to environmental threats you are used to hearing warnings from local law enforcement or fire officials. But do you ever wonder where their foresight comes from?

head to help keep you

94°

102°

97°

Search Site



or of

our region. Always scanning for threats caused by weather and northern Nevada has a variety of conditions to track.

Chris Smallcomb, an NWS Reno Meteorologist, said:

“ *These winds aren't as concerning given that situation. Given that the vegetation is still relatively green, but again fast forward a month -- different story.* ”

NWS even has the whole hideout out on a hill thing down as they look over the City of Reno from just below Truckee Meadows Community College.

"I always say our forecasters here can't use the excuse of 'we didn't see it coming' because literally, we can see just about everything coming into the Truckee Meadows area, " said Smallcomb.

I mean really they are just missing the cape and grappling hook cause instead it's business casual for the team at NWS and lots of instruments.

A hydrologist with NWS, Tim Bardsley, showed off some of the tech that dictates just a small portion of the data they collect to keep northern Nevadans informed. Bardsley pointed to what looked like a piece cut off from a space shuttle and explained:

"This is a wind sensor for wind speed and direction and this up top in the white can is a tipping rain gauge to measure the rate and volume of precipitation."

Apparently, data, like the portion collected by this device Bardsley showed the News 4-Fox 11 Team, is extremely important to forecasts -- I can't even imagine why.

"Any data we can get we assimilate. We are like the Borg on Star Trek, we just assimilate it all. So satellite data, radar data, weather observations, webcams, and even backyard weather stations, " cited Smallcomb.

According to Smallcomb

Search Site



“ We help get them ready to prepare for those days and they can adjust their staffing levels proactively ahead of those events. That is kind of a common theme is a lot of our information is use to help other agencies staff up and prepare for those big weather days.

This Gotham City is 36,000 square miles large -- all the way from the Oregon border down to Bishop, California.

School districts and airports are all looking to NWS for insight as the weather service faces its the biggest foe yet: the changing climate.

Smallcomb said the peaks and valleys are shifting from what they have historically been. What used to be a really warm year is now actually a relatively cool year, said Smallcomb.

"Fire season, the kinds of winter storms we are getting. For that three months, we were just shut off. That never happens. We would go a few weeks without a storm, but three months? Something ain't right," added Smallcomb.

Chris pointed to last December and October as months that excited meteorologists with all that moisture, but with a dry spell in following, historically reliable, months like January, February, and March it's created a potentially unpredictable fire season -- something we've been seeing a lot of.

“ "I have not seen fires like we have seen in the past several years. These fires that are covering hundreds of thousands of acres, " said Bardsley

See the weather service isn't all about relaying how much rain or snow comes in though. They also have people like to Tim, a hydrologist, looking at the impacts of drought over time -- but more front and center with these massive fires -- the miles and miles of hydrophobic and highly erodable soils left behind. An often forgotten part of post-fire danger.

Severe wildfire seasons threaten Northern Nevada's outdoor recreation culture



Carly Sauvageau

June 23rd, 2022 at 2:00 AM

Wildfires

SHARE



A resident on a bike stops to capture a photo of the Poeville Fire in Stead, Nev., on Saturday, June 27, 2020. (Trevor Bexon/The Nevada Independent)

Northern Nevada is famous for its beautiful outdoors, including Lake Tahoe and an abundance of camping sites and trails to explore. But the outdoor recreation that is a cultural staple for the region may be cut short by another summer tradition: wildfire season.

On Wednesday, the Nevada Wildlife Federation held a roundtable discussion with fire experts at the Desert Research Institute's Reno facility to discuss how to prevent and deal with wildfires. Dr. Tim Brown, director of DRI's Program for Climate, Ecosystem and Fire Applications (CEFA), said that the ecosystem is not the only thing affected by fire.

"I don't know if people are thinking about this too much, but the cultural impacts of our community, [the] realization of the change has taken place here. Our way of life in this region, especially in summer, is outdoors," Brown said.

Christina Restaino, director of Living With Fire, a program that provides recommendations to residents preparing for wildfires, emphasized that not all fires are bad, and that they are and always have been a vital part of the region's ecosystem. Fires such as controlled burns can be healthy for the ecosystem, allowing for water and plant systems to go through important regeneration processes.

It is the super wildfires caused by invasive species such as cheatgrass, combined with drier conditions, that cause the bigger problems seen in recent, smoke-saturated summers. Experts say climate change is part of what is driving the worst drought Nevada has seen in 1,200 years.

"We feel unstable in terms of our expectation of our relationship with our place now. And I feel like that's a really unsettling thing," said Restaino, also an assistant professor and natural resources specialist with University of Nevada, Reno's Cooperative Extension program.

Russell Kuhlman, the executive director of the wildlife federation and an avid backpacker, said he feels that change in his own life.

"Backpacking season now is June [and that's it]," he said.

Jennifer Cantley, state coordinator for Moms Clean Air Force, a network of anti-pollution activists, said last summer her kids went straight from COVID-related school lockdowns to a historically-bad summer smoke season. Cantley said they were literally climbing on the walls, but it was safer than having them play outside in the smoke.

As Northern Nevada is still experiencing a mild June, her family is enjoying camping trips while they can.

“We just went camping this weekend ... how many times will we get to go camping?” Cantley said.

Wildfires affect not only outdoor enthusiasts, but the businesses that depend on outdoor recreation as well.

Meghan Wolf, the environmental campaign manager for clothing company Patagonia, said the increasing frequency of wildfires would have a negative effect on the business side of the outdoor culture of the western United States.

“We can’t have a business on a dead planet,” Wolf said.

Patagonia, [which saw an estimated \\$800 million in revenues in 2019](#), has a distribution center in Reno. The company sells everything from waterproof winter coats to backpacking and camping supplies, making consumers’ interest in the outdoors vital to the health of the company.

Wolf said that Patagonia acknowledges its contribution to climate change and is working on using less energy by repairing reasonably worn gear, reselling used items, and giving one percent of sales to grassroots environmental groups.

While climate change is an ongoing battle, Truckee Meadows Fire Chief Charles Moore said there are things individuals can do to prepare for wildfire season. Homeowners are advised to clear out vegetation around their home, creating [a “defensible space” for re ghters to work and potentially save a home surrounded by re](#).

Brendan Schnieder, an air quality specialist for Washoe County Health District, said it is also important to prepare for the coming smoke season. If a person has the money, an air purifier or at-home air monitor would be a good investment. He also said it’s critical to [know the air quality](#) when the smoke gets bad and not go outside, especially for people who have lung or heart conditions.

Cantley also told the panel that vacuuming or cooking food on a stovetop while it is smoky can contribute to an unhealthy atmosphere indoors. [Other things](#) people can do to protect themselves include making a homemade air purifier, making sure all windows are tightly shut and setting HVAC systems to circulate indoor air rather than taking in outdoor air.

On a broader scale, Kuhlman encouraged people to keep up the fight against climate change.

“The best science says that this planet was a ball of lava for billions of years, and it can come back,” he said. “So it’s not so much a dying planet. It’s a dying human population ... The planet is going to survive climate change. It’s us that [are] the ones fighting.”

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- Nevada Wildlife Federation – \$800



Carly Sauvageau

Carly Sauvageau is a freelance journalist based in Reno.



'A subtraction problem:' A shrinking Colorado River faces sharp, sudden cuts

Daniel Rothberg

June 24th, 2022 at 7:30 AM

Environment

SHARE



Lake Mead sits behind the Hoover Dam on Friday, April 8, 2022. The reservoir has dropped to record low levels. (Tim Lenard/The Nevada Independent)

Good morning, and welcome to the Indy Environment newsletter.

As always, we want to hear from readers. Let us know what you're seeing on the ground and how policies are affecting you. Email me with any tips or suggestions at daniel@thenvindy.com.

To get this newsletter in your inbox, [subscribe here](#).

Within the next two months, Colorado River negotiators face a daunting task: Develop ways to reduce use by an enormous amount, or the federal government will make the cuts on its own.

Earlier this month, the federal government told the seven states in the Colorado River Basin that reservoir levels are so low they face a pressing crisis that warrants large-scale conservation, even as water users negotiate long-term operating guidelines for a shrinking river in an arid future.

The ongoing drought and climatic conditions facing much of the West are "unprecedented," said Camille Calimlim Touton, who leads the U.S. Bureau of Reclamation, the agency responsible for managing water infrastructure across the region. Touton told federal lawmakers on June 14 that Colorado River users must reduce diversions by a substantial amount: 2 to 4 million acre-feet.

One acre-foot, alone, is a massive amount of water. It is enough water to depth of one foot. It is 325,851 gallons of water and weighs about 2.7 million pounds. Multiply that by two to four million, and that is how much water the states are being asked to conserve. For perspective, Nevada has the legal right to consume 300,000 acre-feet, about 1.8 percent of all the legal entitlements in the Colorado River system. Together, Arizona, Nevada and California used about 7 million acre-feet from the Colorado River last year.

The cutbacks are necessary, Touton explained, to stabilize Lake Powell and Lake Mead, the two largest reservoirs on the Colorado River. Over the past year, both reservoirs have hit record-low levels and have continued to drop. If they drop further, the West faces extreme risks in the production of hydroelectric power — which is shepherded across the region — and the deliveries of water downstream for millions of residents and farmers in the Southwest.

The size of the cutbacks is not necessarily a surprise. Nearly all of the state water officials and experts I've spoken to have crunched the numbers and come to a similar conclusion. **But the speed at which the cuts must be made presents a challenging task for negotiators.**

The past decade on the river has been marked by efforts to conserve and cut, to address both a drought, worsened by climate change, and structural overuse that can no longer be ignored with increasingly arid conditions across the Colorado River Basin. The seven states that rely on the Colorado River, often working with the federal government, Mexico and Native American tribes, have entered into several agreements that gradually trigger cutbacks as Lake Mead falls. **Those agreements took years to negotiate, and do not reduce use by what is currently necessary.**

Now, Colorado River water users have two months to make harder and deeper reductions.

Chuck Cullom, who leads the Upper Colorado River Commission, which represents Colorado, New Mexico, Utah and Wyoming, said it is "a subtraction problem because of the time frame."

"We don't have a decade to build elegant new treatment for recycling or desalination," he said. "The tools we have left in this time frame are painful subtraction. And the challenge is how do you distribute the pain in a way that is fair, equitable and will need to have consensus support."

So where will all this water come from?

The water is likely to come from a combination of places, and the cuts will be felt by all sectors. In an interview, John Entsminger, the general manager of the Southern Nevada Water Authority, said that "every sector has to share the pain," including urban, agricultural and industrial users.

But Entsminger is a realist, and he has publicly stated that it is mathematically impossible for the cuts to fall on the cities alone. The cities combined do not consume enough of the water. The agricultural sector uses nearly 80 percent of the water that flows through the Colorado River.

"You can evacuate Denver, Salt Lake City, Albuquerque, Las Vegas, Phoenix, and Los Angeles and still not have counted up enough water to get to what the [U.S. Bureau of Reclamation] is saying needs to be done," Entsminger said. "So the agricultural sector has to be a part of the solution, or these reservoirs are simply going to continue to go down."

Agricultural interests downstream of Lake Mead often have priority "senior" rights, allowing them to continue using water before cities with "junior" rights. At the same time, agricultural producers have an existential interest in ensuring Lake Mead does not crash.

If the reservoir falls further, it would jeopardize deliveries to all users, including farmers. J.B. Hamby, who sits on the Imperial Irrigation District's elected board, recognizes **"that's not a workable solution for anybody."**

The Imperial Irrigation District, located in Southern California, controls 3.1 million acre-feet of Colorado River water, and as *The Los Angeles Times*' Sammy Roth [pointed out last week](#), it is difficult to see how the needed cuts could be made without the district on board.

Hamby said the district is open to negotiating. He mentioned an [expansion of its efficiency program](#) to incentivize conservation and "temporary, emergency fallowing" that would eventually be phased out (Hamby describes fallowing as the F-word).

"The idea is to grow the same amount of crop, just with less water," he said.

But Hamby stresses that the district would want to keep its priority rights, and there must be "equitable severity all around" — in other words, cities and states with "junior rights" must take painful cuts too.

There is a lot on the table. Imperial could be looking for greater ability to bank its unused water in Lake Mead. Then there is a need to fund conservation programs and mitigate the unintended consequences of conservation for the district. When water is conserved, less water runs off and flows into the Salton Sea, where an [environmental crisis is unfolding](#) and local communities in California's Imperial Valley are exposed to hazardous dust coming from the lake's shorelines.

Still, cutting significantly might be difficult to do. Already this year, [the district is expected to go over its Colorado River allocation](#) by about 75,000 acre-feet, due to market demands and a dry start to the year. But the district made progress this week in [approving a new plan](#), known as an Equitable Distribution Plan, that will help it stay within its allotted water budget.

There is still ample room for cities to reduce their water use, as well, with a focus on protecting water supplies for essential drinking water, while reducing unnecessarily water-guzzling outdoor irrigation, which can significantly increase water demand. **Hamby and others said that all urban planners in the basin should be wary about basing new growth on a water supply that is shrinking.** If cities want to grow, they say, the water should come from reducing existing use or augmentation projects in the long term.



The Virgin River flows past the Sun River golf course and community in St. George, UT. St. George wants more Colorado River water for more developments like this.

If all of this sounds complicated and multi-layered, that's because it is exactly that. The negotiations revolve around details like these ones and a series of laws, treaties and deals (some up for interpretation) that have governed the river for the last century. The outcome must balance a number of factors at once, from the politics of local irrigation districts to state-level politics and the legal obligations the federal government has made to deliver water and power across the Southwest.

California holds rights that are given "senior" priority to the Central Arizona Project, a 336-mile canal that can deliver 1.4 million acre-feet of water to Arizona cities, Native American tribes and farms. Arizona has taken the largest volume of cuts under past plans, including the [Drought Contingency Plan approved in 2019](#). Tom Buschatzke, who directs Arizona's Department of Water Resources, said other states should contribute to the solution and reductions in use.

"We're looking for an outcome in which the benefits of the river to all the water users and the risk to that water supply does not fall, certainly, solely on the state of Arizona, and perhaps in a different proportion than the way it has fallen [in past shortage agreements]," Buschatzke said.

That thinking conforms with what the federal government has called for and the type of action it has hinted it intends to take. Touton called for a basin-wide approach that includes actions from all seven states. The signal is important because it could motivate all seven states to work together.

Almost everyone interviewed said the best outcome would be a negotiated solution, rather than see the federal government use its authority throughout the basin. Such a move could risk a protracted lawsuit that deepens the crisis by delaying action.

"Ultimately, do you want to sit at a table and negotiate your own future?" Entsminger said. "Or do you want to throw that into the courts, into the jurisdiction of the federal government, and have them determine what your future is going to look like? For me, it's a matter of self-control."

With its small slice of the Colorado River, Entsminger stressed that his role is to fight for recognition that Nevada has already driven down its Colorado River water use by 26 percent over the last two decades. He said Nevada has historically played a "facilitation" role in the negotiations, and the water authority intends to continue playing that role. But, he added, "if things turn adversarial, we're ultimately going to have to take the steps necessary to protect our community."

What type of action the federal government might take is “uncharted territory,” said Sarah Porter, who directs the Kyl Center for Public Policy at Arizona State University. She noted that “for the seven states to come to consensus in [such a] short amount of time is extremely challenging.”

Whether they come out of negotiations or are implemented by the federal government, the cuts are coming — and they are likely to have an unprecedented effect. Several water experts said the actions are part of a larger discussion about how to manage a smaller river in the long term and how to rethink a system of management that has often sidelined environmental groups and Native American tribes, which hold about a fifth of the river’s rights.

“If we are going to take this big drastic cut, let's take the opportunity to rethink our values,” said John Berggren, a water policy analyst with Western Resource Advocates, a conservation group.

He said it is important that the public is fully engaged in the process and there is a degree of transparency to the negotiations, which often occur among a small group.

Nearly 40 million people in the Southwest rely on the Colorado River for drinking water, agriculture and recreation. Different types of water users in the Colorado River Basin have different relationships to the river. Engaging all communities in these discussions is critical.

But oftentimes, the technocratic tone of water negotiations can feel distant from the everyday ways that many residents interact with water, said Faith Kearns, a scientist with the California Institute for Water Resources and [the author](#) of “Getting to the Heart of Science Communication.”

“People’s everyday use of water is actually way more intimate,” she said. **“There is this huge disconnect between talking about dam levels and the water you use to brush your teeth.”**

Kearns said it is important that leaders are realistic about the pain associated with the cuts and communicate what everyone can do to reduce water use. Kearns, who grew up in Arizona, said that on the individual level, most people understand that there is a problem, that the problem has existed for a long time, and they want to be part of the solution.

“If you sense a disaster looming, you don't necessarily want to be coddled into thinking that it's not the case,” she said. “Having a sense that we’re all going to do something about it is a relief.”



Lake Powell, just upstream from Glen Canyon Dam. At the time of this photo, in May 2021, Lake Powell was 34% full. (Ted Wood/The Water Desk)

Here's what else I'm watching this week:

The Truckee Meadows Water Authority gets a new general manager. John Zimmerman, who currently serves as the water purveyor's deputy general manager, will lead the agency, which is responsible for delivering water to the Reno-Sparks area, [This is Reno reports.](#)

How heat is unevenly distributed in Las Vegas: NASA imagery shows how extreme heat was distributed across the Las Vegas Valley during a heat wave June 10. The map shows the [urban heat island effect](#), which describes the way that infrastructure absorbs sunlight. "Dark surfaces like asphalt pavement absorb up to 95% of the sun's radiation, making them hotter than nearby lighter surfaces and green spaces. Near Lake Mead, dark-colored volcanic rocks also heated up to levels comparable to the 122-degree pavement," [theReview-Journal's Colton Poore writes.](#)

Excellent reporting by KUNR's Kaleb Roedel on the **Pyramid Lake Paiute Tribe's efforts to support the recovery of the cui-ui and Lahontan cutthroat trout** — and a recent \$8.3 million federal grant that will help with a project to build a critical fish passage.

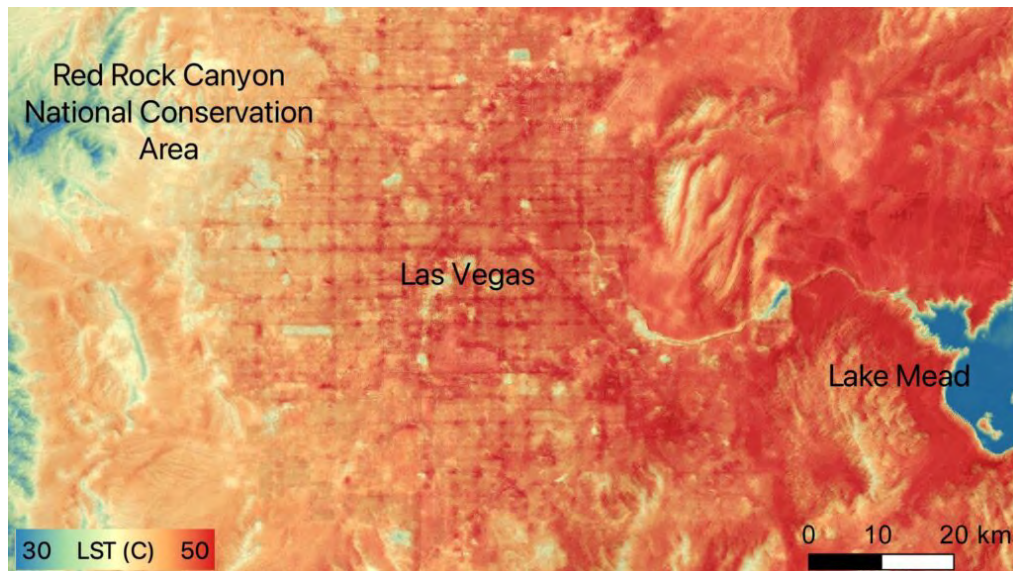
"The river was almost dead for so many years. And right now, this is an historic moment. We are connecting the river." *The Los Angeles Times'* Ian James and Luis Sinco [document efforts to reconnect the Colorado River with its delta](#), which has been significantly altered by years of overuse. The project shows how even a small pulse of water can make a difference.

Last week, the Nevada Supreme Court released a decision the **court majority said could "significantly affect water management in Nevada."** [I wrote more about what it means.](#)

The Bureau of Land Management is [considering raising fees at Red Rock](#).

"We feel unstable in terms of our expectation of our relationship with our place now." My colleague Carly Sauvageau [wrote about](#) how longer and more extreme summer fires — and the smoke that arises from them — are affecting quality of life and recreation in Northern Nevada.

In a historic move, federal land managers announced a deal to co-manage Bears Ears National Monument with five Native American tribes, the [Salt Lake Tribune's Brian Maffly writes.](#)



NASA imagery shows the distribution of extreme heat in Las Vegas on June 10, 2022. (NASA/JPL-Caltech)

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Our self-imposed water crisis signals a need for change

Michael Schaus

June 26th, 2022 at 2:00 AM

Opinion

SHARE



Water stored at Lake Mead has dropped to such a low elevation that the first intake is now visible above water. (Courtesy of the Southern Nevada Water Authority. 2022.)

Given our water crisis in the West, it's difficult to imagine a time when the Colorado River overran its banks on a regular basis.

When the river flooded in 1905, it resulted in the creation of California's largest lake — the [Salton Sea](#). And during the Great Depression, to limit floods and encourage population and economic growth in the American Southwest, the federal government began construction on what was, at the time, the largest dam ever built — and eventually named after President [Hoover](#).

Today, the Salton Sea is an [environmental disaster](#) as its inflows have trickled down to virtually zero — a visual reminder of the devastation drought can bring to a region. Similarly, on the Nevada-Arizona border, Hoover Dam is now holding back [less water](#) than any time since it first became operational in the 1930s.

Clearly things have changed dramatically since the early 20th Century.

As the dwindling shoreline of [Lake Mead and Lake Powell](#) reveal long-lost [submerged artifacts](#), the federal government has instructed the seven states belonging to the Colorado River Compact to [cut a dramatic 2-4 million acre-feet](#) of water from their usage or face draconian federal intervention.

And it's not just this main waterway in the West that is facing such challenges. The story is much the same throughout the entire region. Even underground aquifers are approaching historically low levels.

Just last week, the [Nevada Supreme Court gave the greenlight](#) for Eureka County irrigators to move forward with an emergency plan to address the sustainability of groundwater. The contentious conservation plan was [noteworthy for its departure](#) from the traditional way water rights have been handled — and it underscores the degree to which the West is, quite simply, in need of changing how we approach water supply.

It also demonstrates just how responsible government is for the crisis in the first place.

Certainly, there are plenty of factors playing into the water shortage facing the West — climate change, population growth and the region's historically arid environment among them. However, government has [over-allocated water rights](#) for generations, leading to much of today's scarcity.

In Diamond Valley just outside of Eureka, for example, state officials have long allowed irrigators to pump more than *twice* the amount of water that is sustainable from aquifers. Likewise, the Colorado River Compact was negotiated at a time [when river inflows were at historical highs](#) — and the changes to the agreement that have been adopted since then pale in comparison to the changes seen in the yearly snowpack levels of the Colorado Rockies.

Making matters worse, the world of water rights is largely one of centrally-planned bureaucracy and legal frameworks — not exactly the kind of regulatory landscape that encourages innovation, adaptability or the type of market-flexibility seen in other areas of the economy.

Indeed, unlike most commodities or resources, there simply isn't a working "[market](#)" for water or water rights. For example, rights holders who are lucky enough to have more water than they need, are rarely free to sell or transfer that excess water without permanently forfeiting their right to it in the future. Likewise, water that isn't put to a predetermined "beneficial use" is at risk of being taken from rights holders — creating a "[use it or lose it](#)" set of incentives, even as the region struggles with lack of conservation.

It doesn't take an economic prodigy to realize that such policies put further strain on water supplies by creating an environment where, as population grows, so too does the overall demand for "new" water supplies.

Unfortunately, much of the traditional structure for water regulations is based on similarly counter-intuitive frameworks. Rights holders even face restrictions and prohibitions on *recharging depleted*

aquifers throughout much of the west. [in California](#), using surface water for such a worthwhile purpose is not, on its own, considered a “beneficial use” and is therefore not a legally valid way for one to use the water to which they might otherwise have rights.

Even where attempts have been made to introduce *new* supply into our water market, as opposed to merely cutting back on current usage, governmental red tape has managed to frustrate progress. An ambitious attempt to harness proven desalination techniques to keep water flowing in California was recently shutdown by authorities [after more than 20 years](#) of regulatory scrutiny and a hundred million dollars in private investment.

Such absurdly prohibitive regulatory hurdles hardly create a robust market for brave new innovations — leaving entire communities to keep draining the same finite water supplies in the meantime.

At the heart of much of our water woes is the intractable and overbearing manipulation, if not outright control, of the market by central planners and political interests. Even prices — the simplest of all market forces — have long been mismanaged by local authorities.

Utah, for example, [has the highest per-capita usage of water in the nation](#) — despite the fact that it faces the same dire drought-induced shortages faced by the rest of us in the West. Unsurprisingly, it also has some of the cheapest water rates nationwide, thanks to heavy subsidization by local governments — resulting in little economic incentive to adopt the kind of conservation practices seen in water efficient cities like [Las Vegas](#).

Allowing [water markets more flexibility](#) to respond to population, usage and environmental changes should be considered a crucial component of addressing the slow-motion crisis of water scarcity. And while the [Nevada Supreme Court’s recent decision](#) regarding groundwater in Diamond Valley will undoubtedly generate its share of critics, at least it indicates a willingness to scrutinize some of the inflexible ways we have traditionally handled water throughout the region.

For many, the environmental disaster of the Salton Sea and the receding shorelines of Lake Mead are among the many uncomfortable visual reminders that a lot has changed along the Colorado river and throughout the West in the last 100 years. However, if we expect to refill those lakes, reservoirs and aquifers any time soon, we’re going to have to do more than simply wait for snowmelt from the Rockies or install new low-flow showerheads.

Reducing our dependence on those who have so badly mismanaged our water in the past, while [freeing up the market](#) for new ways to appropriate it moving forward, seems like a pretty good place to start.

Michael Schaus is a communications and branding consultant based in Las Vegas, Nevada, and founder of Schaus Creative LLC — an agency dedicated to helping organizations, businesses and activists tell their story and motivate change. He is the former communications director for Nevada Policy Research Institute and has more than a decade of experience in public affairs commentary as a columnist, political humorist, and radio talk show host. Follow him at SchausCreative.com or on Twitter at @schausmichael.

Red Flag Warning Is In Effect



Reno Fire Department reminds community of Truckee River safety



By [Karlie Drew](#)
Published: Jun. 28, 2022 at 8:22 AM PDT

RENO, Nev. (KOLO) -It’s a week of hot temperature and you might be looking for a way to cool off. Before people think about floating the river, there are some things to keep in mind.

The [Reno Fire Department](#) mentioned even with these low water levels, rapids can still be dangerous. Have a floatation device for children and those who can’t swim. Always float, swim, or boat with a friend.

It’s important to also tell someone where you’re going and when you’ll be back. Water temperatures are still cold so wear proper clothes.

RFD has been responding to mainly trips, slips, and falls, so protective footwear is highly recommended. When it comes to kayaking or canoeing—always wear a helmet.

Eric Lieberman is the Fire Suppression Captain & a Water Entry Technician for RFD, he shared what to look out for as the holiday weekend brings more people to the Truckee.

“When people are having trouble in the river, when they are struggling to swim, they often don’t make any noise at all, so that’s called silent drowning, so it is important to keep an eye on one another, use the buddy system and make sure everybody is well looked after,” Captain Lieberman said.

Reno fire also says to save drinking any alcohol after your trip down the river.

The City of Reno has a full list and videos to make sure you are safe on the Truckee River, to view them click [here](#).

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Most Read

[Wife of comedian performing in Reno area wins \\$1.4 million slot jackpot](#)



People: John Zimmerman named general manager Truckee Meadows Water Authority



John Zimmerman

[Tuesday, June 28, 2022](#)

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After a national, five-month recruitment process, the Truckee Meadows Water Authority board of directors approved John Zimmerman as the utility company's next general manager.

Since 2016, Zimmerman has been instrumental in developing water policy through collaboration with federal, state, local, and tribal governments on behalf of TMWA.

He has extensive experience in water law, with applicable expertise regarding operation of the Truckee River system. Hired on as TMWA's water resources manager in 2016, Zimmerman has been serving as assistant general manager since June 2021.

With a successful record of navigating complex water issues and initiatives for TMWA, Zimmerman will replace Mark Foree, who was appointed as general manager in 2009 and is set to retire October 2022.

Zimmerman is also a published author on the topic of water allocation and serves on the commission to study water adjudication for the Nevada Supreme Court. He also serves on the board of advisors for the National Judicial College's Dividing the Waters' program, which seeks to help prepare judges for the effective and efficient adjudication of water-related cases.

Red Flag Warning Is In Effect



TMWA program helps curb wasteful water use



Truckee Meadows Water Authority Water Watchers Program

By [Crystal Garcia](#)
Published: Jun. 29, 2022 at 5:59 PM PDT



RENO, Nev. (KOLO) - It’s a program that operates during the summer months, in conjunction with [Truckee Meadows Water Authority](#)’s ongoing conservation initiatives. The Conservation Consultants Program, also known as the Water Watchers Program is aimed at helping the community understand ways to conserve water.

“We’re out and about we’re looking for water waste, wrong day watering...We are trying to conserve the water we have by making sure everyone is watering the correct days right times. We’re here to help the community, a lot of people aren’t aware of what’s going on with the irrigation system, our main goal is to help the customer and save water...” said Jose Vera, Water Conservation Consultant with TMWA.

Water Watchers drive around town, looking out for broken sprinkler heads, busted water systems that can cause water to flow out onto the street, and/or people watering on days that they aren’t supposed to be watering. For example, Monday is a no-watering day for everyone.

“We are not trying to embarrass or fine people, we want to educate people. Once we help somebody conserve water it helps them also conserve on their water bill, it helps them reduce the amount of money they’re paying out each month,” said Chuck Swegles, Conservation Coordinator at TMWA.

TMWA even has its own Water Waste Hotline, to access it, click [here](#).

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Most Read

Wife of comedian performing in Reno area wins \$1.4 million slot jackpot



Desert Sun.

LETTERS | Opinion *This piece expresses the views of its author(s), separate from those of this publication.*

Windmills could help pump water from Mississippi River to Colorado

Reader submissions

Published 5:30 a.m. PT July 3, 2022

Regarding the letter by Don Siefkes, of San Leandro, "Let's fill Lake Powell in less than a year via Mississippi aqueduct."

As long as we are dreaming up solutions, the aqueduct should be terminated along the Colorado River in Colorado. The pipeline to the Arizona lakes is already in place ... via the Colorado River.

Once the Arizona lakes are full, a lower flow is needed to maintain levels. Excess water can be pumped to near the origin points of the other major rivers in Colorado, e.g. the Platte, the Rio Grande, and the Arkansas.

Power to pump the water could be generated by windmills along the route.

Ross Thacker, Colorado Springs, Colorado

Forget pipelines and aqueducts. We need to conserve!

I came across the opinion piece from Don Siefkes concerning filling Lake Powell with a pipeline from the Mississippi River. Hoo boy. Lots to unpack.

The issue is this does absolutely nothing to solve for drought conditions that will continue to get worse. It is going to get hotter. We need to adjust our water use, or else his plan is nothing more than a bandaid to a gaping wound.

Not to mention building a massive 1,400 mile pipeline across multiple states to flow how much water he thinks is viable per second would cost in the hundreds of billions. And what

happens if the East hits a massive drought? What then?

Don's plan would do nothing to conserve. We have to adjust our water use in the West, but so many people don't want to hear or act on this until it will be too late.

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Ryan Cottrell, South Jordan, Utah

We are destroying this beautiful valley at a rapid pace

We have one of the most ecologically diverse deserts in the world. All creatures large and small live from 235 below sea level at the Salton Sea to 10,834 feet above sea level at Mount San Jacinto.

One of the largest creatures are humans who moved here to enjoy the exceptional beauty and clean desert environment. We are destroying this beautiful valley at a rapid pace — surf parks, warehouses in the heart of our valley are not appropriate, practical, or environmentally healthy.

Interstate-10 on the way to Arizona would be a much better and practical location for warehouses and shipping. Our air quality does not meet AQMD standards. Our council members and city planners are going to be replaced if their only concern is generating revenue. We the people care about our desert and planet. Let's reverse this destructive trend.

Kerry Berman, Palm Desert

Water is about more than lawns, it's about food

Seems there is finally some interest in a water pipeline from flooded places to those suffering a drought.

Of course water pipelines would not be as lucrative as oil pipelines, but the benefits would more than repay the cost. It is not just a matter of keeping our lawns green, it is a matter of keeping us fed. If there is no water for the food crops there is no food. And I believe that we can all agree that food is more important than oil.

Yes, we need gasoline to fuel the trucks that distribute the food, but alternate means for powering vehicles are already available. So far we have not found an alternate for food.

Ruth Lindemann, Palm Springs

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Lake Tahoe Clarity Report for 2021

Past 20 Years of Data Indicate Evolving Threats for Lake Tahoe

by Kat Kerlin | July 06, 2022



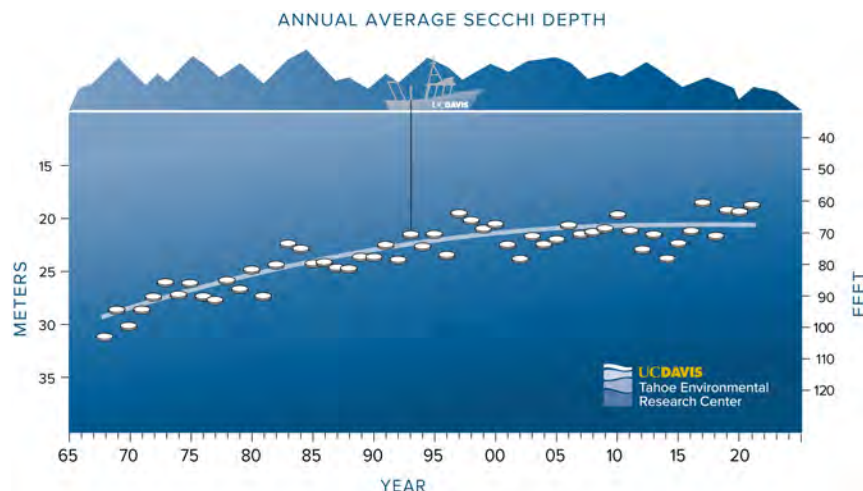
Summertime at Lake Tahoe. (Getty)

T

he cobalt blue waters of Lake Tahoe were about as clear in 2021 as they were in 2020. But a broader look at clarity measurements shows there is no pattern of consistent clarity improvement over the past 20 years. The lake also has not fully recovered from a spike of fine particles that flowed into its waters after the extremely wet year of 2017.

That's according to the [data collected through 2021](#) by the University of California, Davis, Tahoe Environmental Research Center. UC Davis has measured clarity and other health indicators at Lake Tahoe since 1968, helping to inform policymakers and stakeholders on strategies to protect the lake and stabilize the decline in clarity that dates back to the region's development boom in the 1960s.

([Download clarity infographics and charts in our press kit.](#))



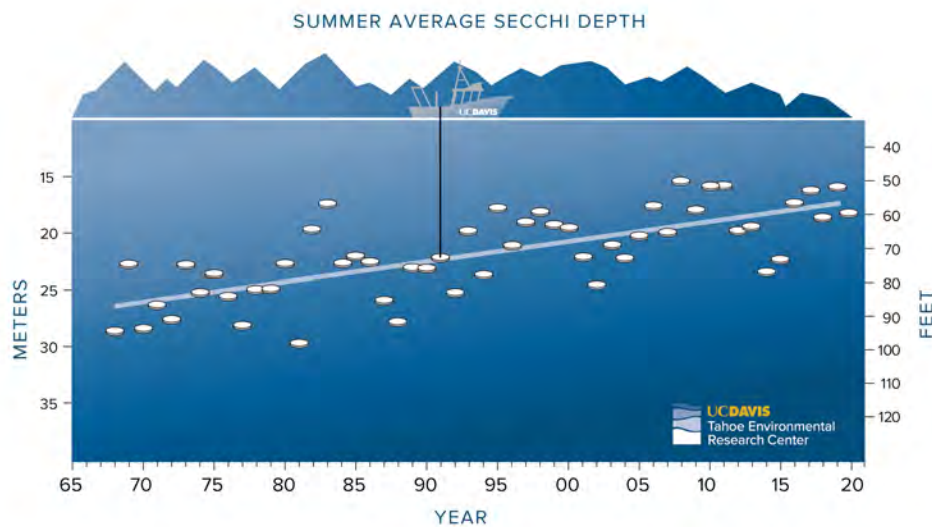
Average annual lake clarity from 1968 to 2021. (UC Davis Tahoe Environmental Research Center)

Recent years have presented evolving and new threats to Lake Tahoe as climate warming, floods, droughts and wildfires impact the lake in ways

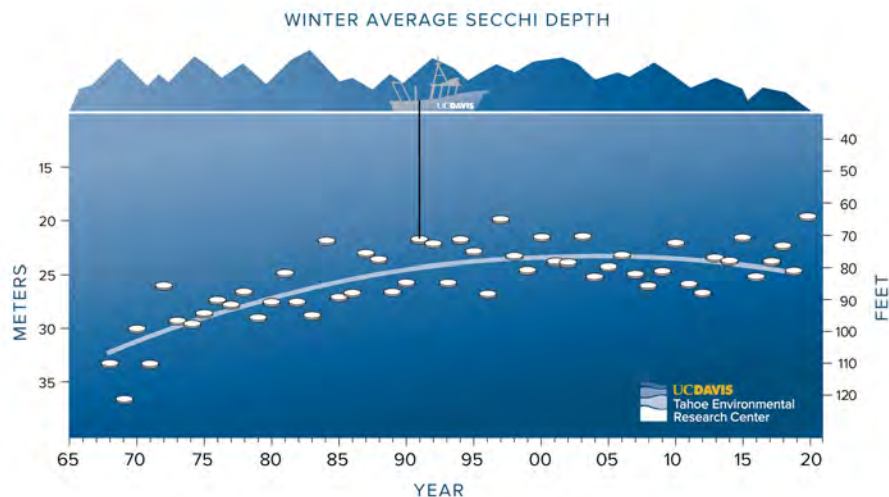
“The lake itself is changing internally, and the external inputs that impact clarity and lake health are changing at the same time,” said Geoffrey Schladow, director of the UC Davis Tahoe Environmental Research Center. “We are working with other researchers at Lake Tahoe and with agency partners to not only keep track of clarity, but to adapt management approaches for improving clarity in future years.”

A perplexing pattern

Lake Tahoe’s average annual clarity in 2021 was 61 feet compared to 63 feet in 2020. Summer measurements were 54.8 feet, while winter averages were 71.9 feet.



While clarity in winter months is invariably better than during the summer, the trend from the past two decades indicates that neither summer nor winter clarity levels are improving over time.



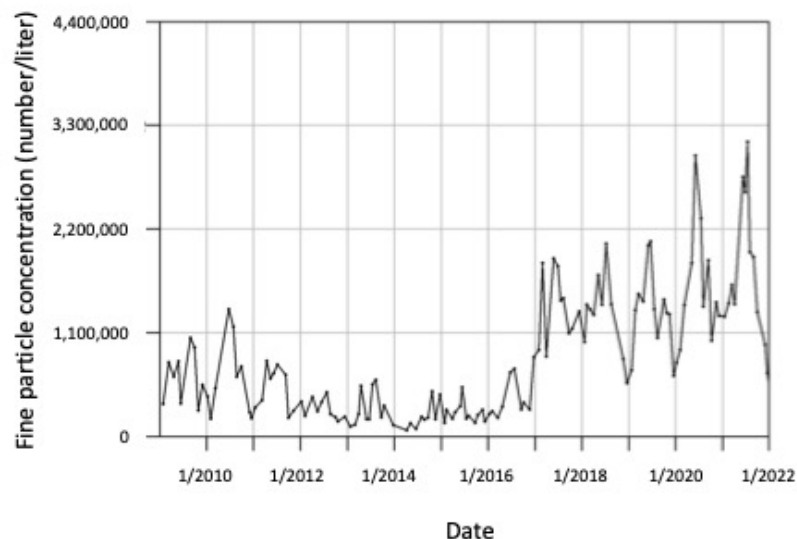
Particle problems



Decades of research led to the development of the Lake Tahoe Total Maximum Daily Load, or TMDL, the science-based plan to restore the lake's historic clarity. TMDL science identified fine particles and tiny algae as playing a large role in determining lake clarity. Currently, these are responsible for up to 70% of clarity loss.

Public and private investments in water quality improvements over the past 25 years have significantly reduced fine particles and algae-feeding nutrients entering Lake Tahoe, and TMDL pollutant load reduction targets are being met.

However, fine particles have remained elevated since 2017, [when unprecedented winter storms contributed to the worst clarity](#) on record at Tahoe. Fine particles in Tahoe's streams increased by fourfold that year and have remained above the historic mean since that time. Fine particles in the lake have similarly increased and have yet to return to their earlier concentrations.



UC Davis scientists plot the average fine particle concentration in Lake Tahoe monthly. Note the spike in 2017, with average concentrations elevated to the present day. (UC Davis Tahoe Environmental Research Center)

Schladow notes that some of the lake particle readings were likely influenced by smoke deposition from the past several years of wildfires that have blanketed the basin. The precise role of wildfires on lake clarity and overall lake health is the subject of a Tahoe Science Advisory Council and multi-institutional study, the results of which are expected later this year.

“Extreme weather events and changing lake dynamics are making our investments in water quality even more important,” Tahoe Regional Planning Agency Interim Executive Director John Hester said. “With strong partnerships in the Tahoe science community, we will continue to increase our understanding of how climate-driven changes could be impacting the plan to restore lake clarity.”

A clear history

Clarity is measured as the depth to which a 10-inch white disk, called a Secchi disk, remains visible when lowered into the water. In 2021, UC Davis scientists took 22 individual readings at Lake Tahoe’s long-term index station. View the historic clarity readings from 1968-2021 at tahoe.ucdavis.edu.

Using a range of technologies beyond the Secchi disk, researchers continue to refine their understanding of the interactions of lake physics and ecology to determine the evolving causes of clarity change. In 2021, underwater autonomous gliders were added to the instruments now focusing on clarity changes in the lake.



Katie Senft, a researcher with the UC Davis Tahoe Environmental Research Center, lowers a Secchi disk to measure lake clarity in June 2021. Center researchers take dozens of such measurements throughout each year. (Alison Toy/UC Davis TERC)

The states of California and Nevada, which share a border at Lake Tahoe, are actively working to restore lake clarity to its historic 97.4 feet.

More than 80 organizations, including government agencies, nonprofits and research institutions are working collaboratively with scientists to improve Lake Tahoe’s water clarity and ecological health under the Lake Tahoe Environmental Improvement Program, or EIP, which is one of the most comprehensive, landscape-scale restoration programs in the nation. EIP partners are helping meet TMDL reduction targets by reducing pollution through improved roadway maintenance and erosion control on roadways and private properties.

Science partners will continue to research climate and clarity changes in Lake Tahoe and to inform policymakers of strategies to restore the lake’s historic clarity. The Tahoe Science Advisory Council, an independent

group of research institutions, including UC Davis Tahoe Environmental Research Center, also conducts an annual analysis of lake clarity. The

council's report on 2021 clarity conditions is available at

tahoesciencecouncil.org.

Media Resources

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[Press kit: Download images and figures.](#)

Primary Category

Science and Climate

Secondary Categories

Environment

Tags

Red Flag Warning Is In Effect

When in doubt, stay out: Nevada's drought could worsen outbreaks of toxic algae

Nevada's drought could worsen outbreaks of toxic algae

By [Freixys Casado](#)

Published: Jul. 5, 2022 at 10:28 PM PDT

RENO, Nev. (KOLO) - As many of us are enjoying water activities this summer, scientists are warning about the potential for harmful algal blooms.

When temperatures climb and the summer sun beats down, conditions are ripe for the flourishing of toxic algae.

The bright, blue-green scum is common during this season, but experts say climate change is escalating outbreaks and increasing the level of toxicity.

"The water evaporates and then it gets smaller, the nutrient load increases gives the cyanobacteria more to eat," said Lucia Ross, chief marketing officer at [BlueGreen Water Technologies](#), a tech company that provides solutions to toxic algae blooms. "It forms a mat. That mat of cyanobacteria increases the heat in that water body, and it gets in a cycle, a loop."

Ross explains in our area wildfires add another layer.

"The nutrients in the ash, the nutrients in the smoke and then that blankets the water... you have global warming and that's raising the temperature of the water but then the wildfires are also raising the temperature of the water, especially right around the surface area," said Ross. "Just a helpful environment for cyanobacteria."

Last week a warning sign was posted at Indian Creek Reservoir after concentrations of toxic algae exceeded the danger level. The Alpine County Public Health Department believes this is a consequence of last summer's Tamarack Fire.

Californians should be aware about Harmful Algal Blooms (HABS) when recreating at rivers & lakes. HABS are algae or cyanobacteria growths that can cause harm to animals & people. HABS advisory just issued at Indian Creek Reservoir. HABS incident map: <https://t.co/g5yCd8LoRM>
[pic.twitter.com/lsiEXfxnhi](https://t.co/g5yCd8LoRM)

— State Water Board (@CaWaterBoards) [July 2, 2022](#)

Exposure to cyanobacteria can cause a mild skin rash or serious gastrointestinal illness in humans and can be lethal for pets. Signs of harmful algae include rotten smell, paint-like consistency, and bright colors like green, white, brown, and red.

"We need to have more monitoring of water systems, using our satellite technology, really getting a handle on blooms before they start," said Ross.

She adds toxic algae is like a bacterial infection in water that needs to be treated and believes legislation needs to be put in place.

To protect your family and pets this summer, check for advisories before heading to the lake and avoid contact with the water when warnings are posted. Most importantly, when in doubt, stay out.

The [Nevada Division of Environmental Protection](#) says it has not received any reports of harmful algae this year. Last month Regan, El Dorado and Kiva beaches in Tahoe reported outbreaks.

To report a suspected bloom, call 1-800-331-6337.

To report human illness, call the [NV Department of Health and Human Services](#) at 1-775-400-0333, and to report an animal illness, call the [NV Department of Agriculture](#) at 1-775-353-3709.

According to a press release, BlueGreen Water Technologies is the first and only company in the world to develop, obtain regulatory approval for, and commercialize a technology suite that reverses the effects of climate change in water bodies and drastically reduces greenhouse gas levels.

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Lake Tahoe's Clear Water is Getting Murkier: Report

By **NBC Bay Area staff** • Published July 7, 2022 • Updated on July 7, 2022 at 11:47 pm



Lake Tahoe summer views across the lake

A new study shows Lake Tahoe's famously clear water is getting murkier.

[UC Davis' annual study](#) shows the lake's water clarity was at an average depth of 61 feet in 2021, two feet shallower than the year before.

Researchers have been doing this research since 1968, when the lake's clarity was between 85 and 100 feet.

A warming climate, drought, wildfire and microscopic algae is to blame for the change.

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CALIFORNIA

Drought-stricken Lake Mead's receding waters reveal a sunken WWII-era vessel



A surplus World War II-era landing craft is revealed by falling water levels near the Lake Mead Marina last week in Boulder City, Nev. (L.E. Baskow / Las Vegas Review-Journal)

BY CHRISTIAN MARTINEZ | STAFF WRITER

JULY 8, 2022 8:12 PM PT

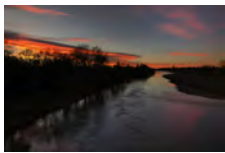
**Los Angeles Times****SUBSCRIBE****LOG IN**

In recent months, falling water levels at Lake Mead have revealed [multiple bodies](#), including the skeletal remains of a [probable homicide victim](#) found in a barrel, and sunken pleasure boats.

Now, the receding waters have exposed a sunken World War II-era vessel — a Higgins boat used for beach landings, according to the National Park Service.

The landing craft had at one point been so far underwater that the park service sent divers to the site beginning in 2006. The Associated Press reported that the craft had long been 185 feet below the surface.

Photos show the boat now only half-submerged, listing onto its side.



CALIFORNIA

California deepens water cuts to cope with drought, hitting thousands of farms

July 7, 2022

“The NPS suspects that this WWII surplus craft was put into service on the lake for various reasons and then partially salvaged before it sank in its current location,” the park service said in an email. “Whether it sank by accident or was purposely sunk to get rid of a vessel no longer of use is unclear.”

Details about how the vessel ended up at Lake Mead are limited.

“The surplus nature of the craft highlights an earlier era of the Lake when Las Vegas and Lake Mead were much more remote and removed from much of the United States, where relatively inexpensive WWII surplus could be pressed into duty for new peaceful purposes in the park,” the park service said.

The uncovering of the boat, while likely to draw the attention of Lake Mead visitors, is also a reminder of the effects climate change and severe drought have taken on the Colorado River reservoir between Nevada and Arizona.



'It's such a strange thing to see': Photos show Lake Mead on the verge of becoming a 'dead pool'

July 1, 2022

Lake Mead, the nation's largest reservoir, was at about 27% of capacity Friday, inching perilously [closer to "dead pool" levels](#), federal officials said. At that point, about 150 feet below its current level, the lake would drop below its lowest intake valve, which could cripple water supplies in the western United States.

The lake is forecast to drop more than 26 feet by next July.

In response to the plummeting levels at Colorado River reservoirs, the federal government is [seeking emergency cuts](#) to the amount of water that California and six other western states take from the river in coming months.

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Christian Martinez is a Metro reporter covering breaking news at the Los Angeles Times. He previously wrote for the USA Today network of newspapers including the Ventura County Star, where he covered the Thomas and Woolsey wildfires and the Borderline mass shooting, the Spectrum & Daily News in Utah and the Lansing State Journal in Michigan. He was born and raised in Southern California and attended Saint Mary's College of California.

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2022 Is California's Record Driest Year, So Far, NOAA Says

weather.com meteorologists

Published: July 11, 2022

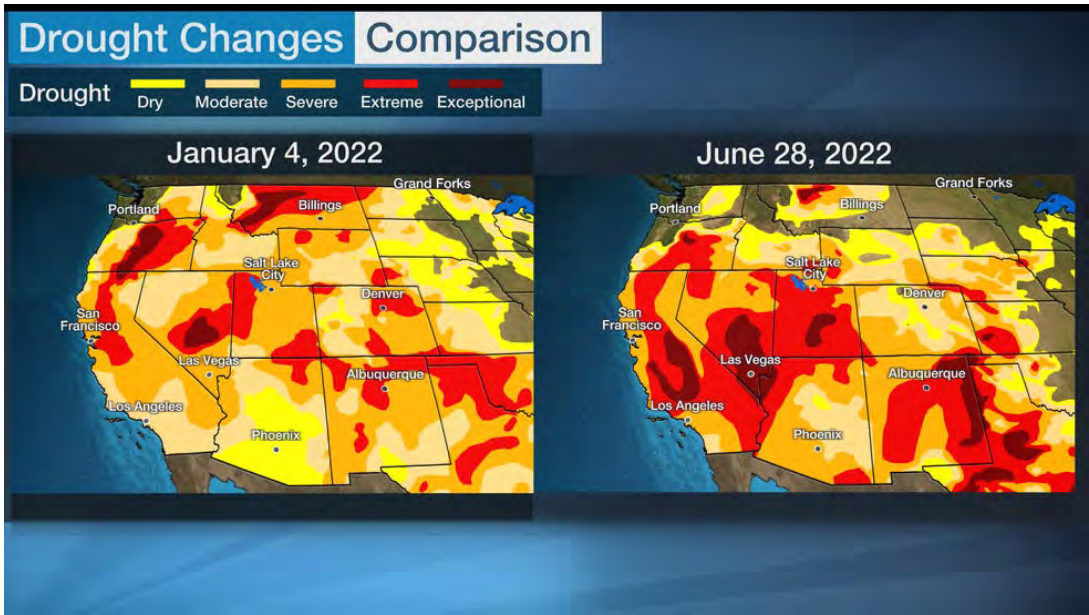
2022 is California's driest first half of any year on record, according to a just released government summary.

In data released on Monday, NOAA's National Centers for Environmental Information found that over the period from January through June precipitation in the state was the lowest on record dating to 1895.

Elsewhere, Nevada had its second lowest precipitation tally, Utah its third least and Arizona its ninth lowest over the same period.

Drought conditions had improved significantly at the end of 2021 as California received record snowfall in the Sierra. (<https://weather.com/safety/winter/news/2021-12-27-california-rain-sierra-snow-new-years-week>)

After a dry start to the year and now the dry season in place, drought conditions have worsened yet again. The dry conditions also are increasing forest fire concerns as we head into late summer.



NOAA also found Alaska had its record driest and ninth warmest June, leading to worsening drought and wildfires.

The state exceeded one million acres burned from wildfires on June 18, the earliest occurrence in 32 years. As of the time this article was published on July 11, 2.7 million acres had been burned.

Some areas near the Canadian border, however, were record wet in 2022's first half.

Grand Forks, North Dakota, and International Falls, Minnesota, both recorded record wet conditions from January through June.

Grand Forks recorded 14.53 inches of precipitation, which is 4.86 inches above average for the time period. International Falls recorded 21.38 inches of precipitation, which was almost double their average of just under 11 inches.

This repeated soaking, both in heavy winter snow and spring rain erased any drought in North Dakota and northern Minnesota.

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Boise, Payette and Weiser basins officially out of drought status, state hydrologist says

by Angela Kerndl, CBS2 News Staff

Monday, July 11th 2022



Anderson Ranch Dam (Courtesy: Bureau of Reclamation)

BOISE, Idaho (CBS2) — Three of Idaho's river basins are technically out of drought status, a state hydrologist tells CBS2.

On Monday, the Idaho Department of Water Resources says the Boise, Payette and Weiser river basins are now in the clear, due to a cool, wet spring and plenty of storage in the reservoir system.

in good shape getting through this irrigation season.

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"We're going to come out of a dry year with carryover in the reservoir system. That's amazing," said David Hoekema, hydrologist with the Idaho Department of Water Resources.

Water experts and farmers had been bracing for a tight water year. But after a dry Jan. 8 through March 8, temperatures stayed cool and we got more precipitation.

"On March 8, the system just, you know, it turned around. Temperatures stayed really cold," Hoekema said.

That cool weather shifting the snowmelt this spring by about a month.

"It really delayed the irrigation season. It delayed the crop demand, and so just now we're starting to get normal crop demand and we're just finishing off the snow melt," Hoekema said.

He says that means there's a pretty good chance there'll be extra carryover in the reservoirs at the end of the year.

"The excess carryover on the Boise system is really valuable," Hoekema said.

That's because we've had two back to back La Niñas and a third coming. Historically, he says consecutive La Niñas get drier, and these last two have already been dry. So if the third one follows that pattern, he says we could head toward a record setting drought next year.

"Everybody knew we were coming into a drought situation, and so everybody is really, you know, set to conserve this year, and it's a good idea because we don't know what next year is going to bring," Hoekema said. "We are looking at the potential of being in a multi year drought cycle."

He says if you use a ditch irrigation system, continuing to irrigate is actually a good thing.

"There's not going to be a shortage of water, so just keep the water coming down the ditch. Irrigate as normal because that'll provide some incidental recharge to the aquifer," Hoekema

87°

102°

101°

But if you're using the city system of a well "That's where conservation gives us the most bang
Search Site we can
limit the amount of water we're pulling from the aquifer, that keeps the aquifer healthy."

It's a different picture in Eastern Idaho - they're still in a drought. Hoekema says farmers there may have just enough water to scrape by, but they'll likely end up with a completely depleted or almost depleted reservoir system.

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AP PHOTOS: Extremely low levels at Lake Mead amid drought

By **JOHN LOCHER**

July 11, 2022



- An abandoned old power boat juts upright from the
U.S. News **World News** **Politicstone.** Its epitaph might read: Here lay the waters of Lake
Mead.

The largest U.S. reservoir has shrunk to a record low amid a punishing drought and the demands of 40 million people in seven states who are sucking the Colorado River dry. The megadrought in the U.S. West has been worsened by climate change. Wildfire season has become longer and blazes more intense, scorching temperatures have broken records and lakes are shriveling.





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A sign marks the water line from 2002 near Lake Mead at the Lake Mead National Recreation Area, Saturday, July 9, 2022, near Boulder City, Nev. (AP Photo/John Locher)

Receding waters of Lake Mead National Recreation Area have revealed the skeletal remains of two people along with countless desiccated fish and what has become a **U.S. News World News Politic**anded watercraft.

Houseboats, sailboats and motorboats have been beached, creating a surreal scene in an otherwise rugged desert landscape. A buoy that once marked a no-boat-zone sits in the dirt, not a drop of water anywhere in view. Even a sunken World War II-era craft that once surveyed the lake has emerged from the ebbing waters.

Nature did not create this still water paradise for fishing, camping and kayaking. The mighty Colorado River that divides Nevada from Arizona once flowed beneath the walls of Black Canyon until the Hoover Dam was erected in 1935 for irrigation, flood control and hvdropower.

The reservoir is now below 50 percent of capacity. Its level has dropped 17.5 feet (5.3 meters) since reaching a high-water mark in 1983, leaving a bright white line of mineral deposits on the brown canyon walls that looms over passing motor boats as high as a 15-story building.

Most of the boat ramps have been gated and marina docks moved into deeper waters. A sign that marks the water level in 2002 inconceivably stands above a road that descends to boat slips in the distance.

The dropping water levels have consequences not only for the cities that depend on the future source of water but for boaters who have to navigate shallow waters and avoid islands and sandbars that lurk below the surface before emerging.

Craig Miller was motoring around on his houseboat last month when the engine died and he floated to shore. Within days, the knee deep water where his boat came to a rest was gone.

“It’s amazing how fast the water went down,” Miller said. “I was landlocked.”

He bought pumps and tried to dredge the sand around the boat to create a channel to the water but couldn’t stay ahead of the receding waters. A tow from shallow waters, ballooned to a \$20,000 salvage job when he became

U.S. News World News Politic

Miller spent three weeks on the beached boat, spending much of it soaking in the water to stay cool in the triple-digit heat. The day before he was told by park rangers that he had to get the boat off the sand, Dave Sparks, a social media personality known as Heavy D, who had seen a video about Miller’s plight, showed up with a crew to pull the boat from the shore and tow it to a marina.

Visitors have flocked to the dried lake bed for selfies in the haunting landscape or against the backdrop of what looks like a colossal ring around a bathtub.

A small school of dead fish have been propped on their tails and arranged in a circle.

As the sun sets to the West over Las Vegas, the light illuminates the translucent hollowed-out body and empty eye socket of one fish. Its mouth is open as if it is trying to breathe.

The Associated Press receives support from the Walton Family Foundation for coverage of water and environmental policy. The AP is solely responsible for all content. For all of AP's environmental coverage, visit <https://apnews.com/hub/climate-and-environment>

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We are experiencing signal outages in the Bishop/Mammoth Lakes area. We are looking into the cause and hope to have signal restored soon.



Mountain West News Bureau

KUNR Public Radio is a proud partner in the Mountain West News Bureau, a partnership of public media stations that serve Nevada, Colorado, Idaho, Montana, New Mexico and Wyoming. The mission is to tell stories about the people, places and issues of the Mountain West.

Three fastest-warming cities in the U.S. are in the Mountain West

KUNR Public Radio | By [Kaleb Roedel](#)

Published July 12, 2022 at 4:29 PM PDT



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D Smith / Flickr Creative Commons

People cool off in the Truckee River near downtown Reno, Nev., on June 14, 2022.

Since 1970, summer temperatures in Reno, Nevada, have risen 10.9 degrees, making it the nation's fastest-warming city, [according to Climate Central](#), a nonprofit research group.

Ranked second is Las Vegas, Nevada, which has seen an increase of 5.8 degrees. Boise, Idaho, follows in third at 5.6 degrees.

Stephanie McAfee, Nevada state climatologist, says a contributing factor to the warming is urban growth. Those three Mountain West cities, she explains, are expanding quickly, turning undeveloped land into new homes and roads.

"A light-colored bit of ground, sand or concrete or something is going to be cooler than a black asphalt roadway," McAfee said. "As we have darker colored materials in the city, they can absorb more heat."

and low 50s to the high 50s and mid-60s, according to McAfee.

This phenomenon is known as the “[heat island effect](#).”

As a result, she says, air conditioning is becoming a bigger part of people’s budgets. That’s at a time when U.S. consumers are dealing with the [highest inflation in 40 years](#).

This story was produced by the Mountain West News Bureau, a collaboration between Wyoming Public Media, Nevada Public Radio, Boise State Public Radio in Idaho, KUNR in Nevada, the O’Connor Center for the Rocky Mountain West in Montana, KUNC in Colorado, KUNM in New Mexico, with support from affiliate stations across the region. Funding for the Mountain West News Bureau is provided in part by the [Corporation for Public Broadcasting](#).

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Kaleb Roedel

Kaleb is an award-winning journalist who joined KUNR as a reporter in November 2021.

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Mountain West In Climate Crosshairs As 2020 Heats Up

Beau Baker, October 21, 2020

Drought, wildfire and record-breaking heat are all part of the current climate landscape in the Mountain West. It's a triple whammy that's expected to...

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Extreme heat or heat waves occur when the temperature reaches extremely high levels or when the combination of heat and humidity causes the air to become oppressive.



Children

More males than females are affected



Older adults



Outside workers

WHERE:



Houses with little to no AC



Construction worksites

HOW to AVOID:



Stay hydrated with water, avoid sugary beverages



Stay cool in an air conditioned area

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Heat Stroke Can Strike During Extreme Heat In Reno

Anh Gray, July 28, 2016

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Five Things to Know About Drought in the American West

A new climate is re-writing the story of America's drylands.



The largest saline lake in the western hemisphere, the Great Salt Lake dropped to a record low in 2022 as a result of a hot drought that increased evaporation and decreased water flows. Photo © Brett Walton/Circle of Blue

By Brett Walton, Circle of Blue – July 14, 2022

Harsh and unrelenting. But also transformative?

The dry conditions blanketing much of the American West are setting records nearly every week. Lakes

Mead and Powell, the country's largest reservoirs by capacity, dropped to new lows this year. The Great

Salt Lake did, too. This spring, New Mexico endured its largest ever wildfire. Even with those distinctions, more are likely on the way. The hottest months of the year are still to come.

Shortened time frames are now the norm. Water cuts that were once nearly unthinkable even in the long term in the Colorado River basin are now being implemented in a matter of months, not years or decades. Still, some see opportunity in calamity, a chance to reposition the region for trials to come.

"While the situation is objectively bleak, it is not in my view unsolvable," John Entsminger, the general manager of the Southern Nevada Water Authority, told a Senate panel on June 14. Basin officials are steeling themselves for short, intense negotiations.

It amounts to a season of potentially long-lasting change for some of the country's fastest-growing states and biggest economies.

Here are five things to know about how the drought is re-writing the story of America's drylands.

1) It's a Hot Drought

The drought is not just a failure of precipitation. Rising temperatures due to global warming are also depleting the region's rivers.

The mechanisms are easy to understand. Extreme heat bakes the land surface. Warmer, drier air holds more water. Parched soils then gobble rain and melting snow before the water reaches rivers and reservoirs. A thirsty atmosphere evaporates or sublimates its share. Together, they are a powerful one-two punch.

With increasing temperatures, "we're seeing places that do have drought, the intensification is more rapid," says Roger Pulwarty, a senior scientist in the physical sciences laboratory at the National Oceanic and Atmospheric Administration.

The Colorado River basin illustrates the impacts of a hot drought. According to the Colorado Basin River Forecast Center, precipitation in the watershed above Lake Powell since October was 94 percent of the 30-year average. In other words, just a tick below normal. Snowpack peaked at 83 percent of average. Yet only a fraction of that water made it into Lake Powell. Runoff into the lake this summer is just 56 percent of average. A hot drought is a stealthy thief.



Boats crowd a marina in the shrinking Lake Powell. Photo © J. Carl Ganter/Circle of Blue

2) Drought Has a Long Reach

When water stops flowing, difficult days are ahead.

Forests become tinder boxes, a spark removed from calamity. Already there have been massive disruptions. U.S. Forest Service staff lost control of a prescribed burn in Santa Fe National Forest in April, resulting in the 341,000-acre Hermits Peak-Calf Canyon fire, the largest wildfire on record in New Mexico.

"Drought, extreme weather, wind conditions and unpredictable weather changes are challenging our ability to use prescribed fire as a tool to combat destructive fires," wrote Randy Moore, the chief of the U.S. Forest Service, in an incident assessment.

Hydropower is weakened. With less water in reservoirs, generators crank out fewer megawatt-hours, raising the cost of electricity and increasing the risk of summer blackouts. In California last year, hydropower generation was nearly half the 10-year average. This year, Glen Canyon Dam is operating at just 60 percent of its maximum electrical generating capacity due to the drying of Lake Powell.

There are human health consequences when lakes are depleted. Earlier this month, the Great Salt Lake dropped to its lowest point since record-keeping began in 1847. Receding shores expose more lakebed salts and dust, which become a respiratory hazard during windstorms — and can hasten snowmelt in the mountains.

Ecosystems — and the birds and fish that depend on them — are also under stress. Utah regulators have identified high numbers of toxin-producing algae in the southern reaches of Utah Lake, a water body notorious for summer algae outbreaks. In California, sampling carried out in June by the Environmental Protection Department of the Big Valley Band of Pomo Indians revealed algal toxins in Clear Lake that were higher than state advisory levels. These hazardous outbreaks typically worsen deeper in the summer.

3) Cutbacks Are Inevitable

When supply ebbs and reservoirs are near record lows, authorities have one durable tactic: reduce demand. _____

In fits and starts, that is happening. California regulators passed an emergency order in June that took small steps to address the supply-demand imbalance. The order prohibits businesses, industries, schools, churches, and other institutions from watering “non-functional” grass with potable water. What’s non-functional? Grass that covers median strips and office parks.

Cities and farms that are customers of the two major canals in California — one state and one federal — already had their allocations substantially reduced as a result of below-average reservoirs. With less water, irrigators will fallow more land.

The largest cuts, however, will be in the Colorado River basin. Camille Touton, the commissioner of the Bureau of Reclamation, said in June that the states would have to reduce their draw on the river by two million to four million acre-feet in the next year.

Entsminger of the Southern Nevada Water Authority called the proposed cuts “a degree of demand management previously considered unattainable.”

Their plan is due next month.

4) Drought Is Political

The right to use water in the western states is subject to arcane laws, court decrees, and precedents, some of which date to the era of colonial settlement.

Persistently dry conditions and a reckoning with historical inequities are forcing residents and lawmakers to reassess the established way of doing business.

In June, the Nevada Supreme Court upheld a groundwater management plan for Diamond Valley irrigators that abandons long-held principles of state water law, such as the priority system that privileges senior water rights and “use it or lose it” requirements.

Activists in Arizona are gathering signatures to put groundwater regulation on the ballot. Their citizen’s initiative would ask voters to approve two Active Management Areas in Cochise and Graham counties, places where big farming operations have dried up shallow wells and caused the ground to fracture, damaging highways.

“Dams Not Trains” billboards dot the highways of California’s Central Valley, a plea by the region’s biggest farmers for legislators to redirect their spending preferences. At the same time, a budget proposal in the California Legislature would direct \$1.5 billion to buy senior water rights from farmers in order to keep more water in rivers.

A relatively recent development is the political muscle of the region’s Indian tribes. Acting as dealmakers, tribes have emerged as key players in water supply negotiations, particularly in Arizona, where the Gila River Indian Community has leased water to cities and pledged to conserve 129,000 acre-feet this year to boost water levels in Lake Mead.

5) Drought Is Probably the Wrong Word

To some researchers and advocates, we shouldn’t even be calling this a drought.

Drought, they say, implies a temporary condition, a deviation from normal.

But what is happening in the Colorado River basin and other western regions is a shift toward a drier climate.

Even though precipitation in this two-decade period is anomalously and historically low, climate modeling suggests that the region is not going to snap back to the wetter periods of a generation ago.

To describe this new era, they prefer a different term: aridification. Clunky, perhaps. But more accurate.

A collective of respected Colorado River scholars argued in a 2018 paper that language change was necessary and could possibly induce behavioral change on the scale required to meet the challenge.

“A very modest starting point,” they wrote, “is to admit words such as drought and normal no longer serve us well, as we are no longer in a waiting game; we are now in a period that demands continued, decisive action on many fronts.”



Brett Walton

Brett writes about agriculture, energy, infrastructure, and the politics and economics of water in the United States. He also writes the Federal Water Tap, Circle of Blue’s

weekly digest of U.S. government water news. He is the winner of two Society of Environmental Journalists reporting awards, one of the top honors in American environmental journalism: first place for explanatory reporting for a series on septic system pollution in the United States(2016) and third place for beat reporting in a small market (2014). He received the Sierra Club’s Distinguished Service Award in 2018. Brett lives in Seattle, where he hikes the mountains and bakes pies. Contact Brett Walton



Red Flag Warning Is In Effect

x

Sisolak launches Climate Series 2022 talking with Reno students about wildfires



By [Freixys Casado](#)
Published: Jul. 13, 2022 at 11:54 PM PDT | Updated: 9 hours ago
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RENO, Nev. (KOLO) - Gov. Sisolak kicked off the [Nevada Climate Series 2022](#) with a visit to a destructive fire site in Reno.

Guided by sixth-grader Tilli Allen, Sisolak got to tour the Pinehaven Fire burn scar. The 2020 wildfire, destroyed and damaged multiple homes.

“It was my first fire that I ever had to evacuate for and it burned down five houses and it was very traumatizing for a lot of my classmates and me,” said Allen.

Although it was later determined to have been caused by power lines, Allen created the Caughlin Ranch Climate Action Collective to write 150 letters to Congress. She even spoke to the Nevada State Legislature urging leaders to take action against climate change

“There are a thousand ways to that,” said the student organizer during her speech. “Planting trees, paving only as much road as we need to, not any more than that.”

“When I heard about the climate club that Tilli and her friends put together, it’s absolutely remarkable,” said Sisolak. “They noticed certain things like the ski season has gotten shorter because of the climate change, and they see the trash in the ditch and they can’t go in the Truckee River without seeing Mountain Dew cans and the Red Bull cans and that’s a problem.”

After the site visit, the Governor met with more members of the club and heard stories from them about their goals to help educate and protect the environment.

Towards the end of the roundtable, Sisolak gave each student a certificate for their work. He then announce the climate series meant to bring awareness about the impact of wildfires.

“We’re going to focus on several areas that relate to climate,” said Sisolak. “Water quality, the drought that we’re facing, we’re gonna talk about air quality.”

The series includes a [preparation and resource guide](#) for those in areas at high risk for wildfire. Topics range from how to harden your home to how to create defensible space.

Allen's club had about 14 members. She will be starting a new chapter at Swopes Middle School and hopes to leave the branch at Caughtlin alive.

"If you have the resources to make a difference, you should take advantage of them," she said.

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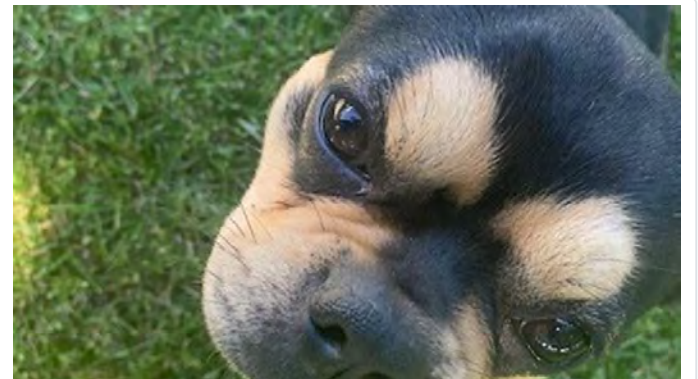
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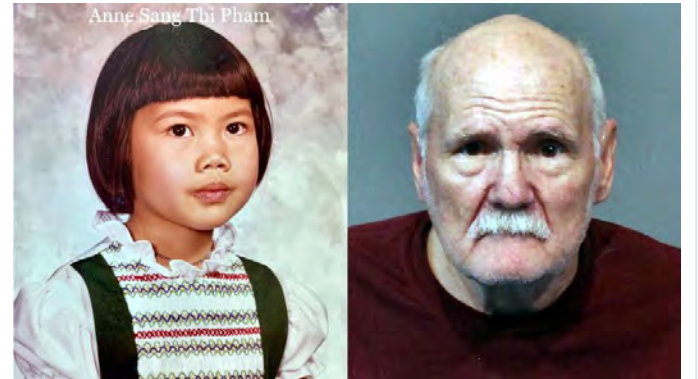
Man arrested after family found living at Children's Museum



Local rescue takes on 35 dogs from a puppy mill near Modesto



Reno man charged with 1982 murder of girl on way to kindergarten



Names released of nine men arrested in human trafficking operation



TMWA: Community well prepared for drought



By [Ed Pearce](#)
Published: Jul. 14, 2022 at 5:19 PM PDT | Updated: 18 hours ago
[f](#) [✉](#) [t](#) [p](#) [in](#)

RENO, Nev. (KOLO) -The western US is gripped in a sustained drought. Images of nearly empty reservoirs and word of severe cutbacks in water service elsewhere. are common and concerning.

But ow worried should we be? Look around. Things don't seem alarming. Big and deep, Lake Tahoe hides drought well and the Truckee, our main source of water, is still flowing. It may look a little different later this summer, but there's no expectation it will run dry.

And among longtime residents and those who manage our water supply, there's no sign of panic. We live in the desert. Drought is a frequent part of our lives. We've been here before.

"We're always in it," says Andy Gebhardt of the Truckee Meadows Water Authority. "That's"how I would put it. When people come in and say 'how come you're not doing conservation.' We are. We're always doing conservation. We've been doing it for 40 years and we're going to continue to do it."

And so, Gebhardt says, we're well prepared for years like this. Wet or dry, we follow a long-established routine.

A drought amidst the building boom of the 1980's led to scheduled watering days, twice a week at first. "A lot of them were already watering three days a week. So when we went to three days a week in fact water usage went down because people thought 'Oh, I only have two days a week to water, I'd better flood irrigate.'"

Finally, after years of debate and some controversy, in 2014, water meters, which had long been required in new developments, were made mandatory everywhere.

"And what it did is it really helped people understand what they'd been using If you're just paying a flat rate there's no incentive to fix your leaks."

Those habits and routines are by now well established and, Gebhardt says, the reason we can face our droughts with confidence. We can do this.

"The community is already aware that water is a precious commodity. It's a precious resource. We should do what we can to conserve it, to only use what you need. So we feel pretty good about that and if we continue to do that, I feel really comfortable."

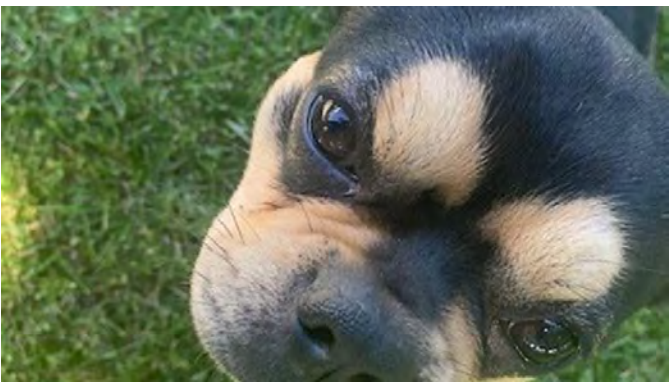
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▶ Man arrested after family found living at Children’s Museum



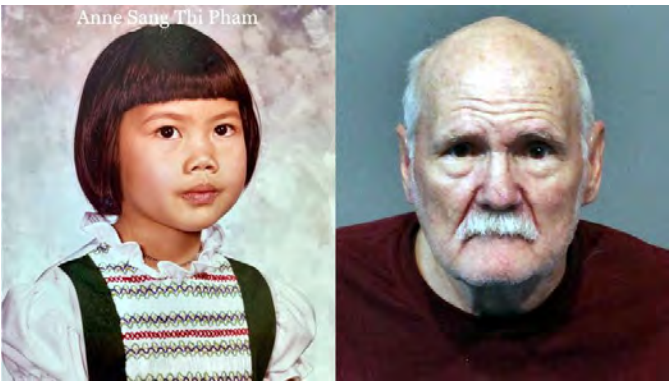
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Names released of nine men arrested in human trafficking operation



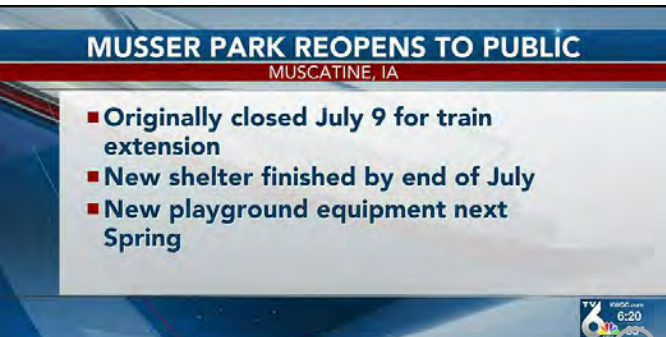
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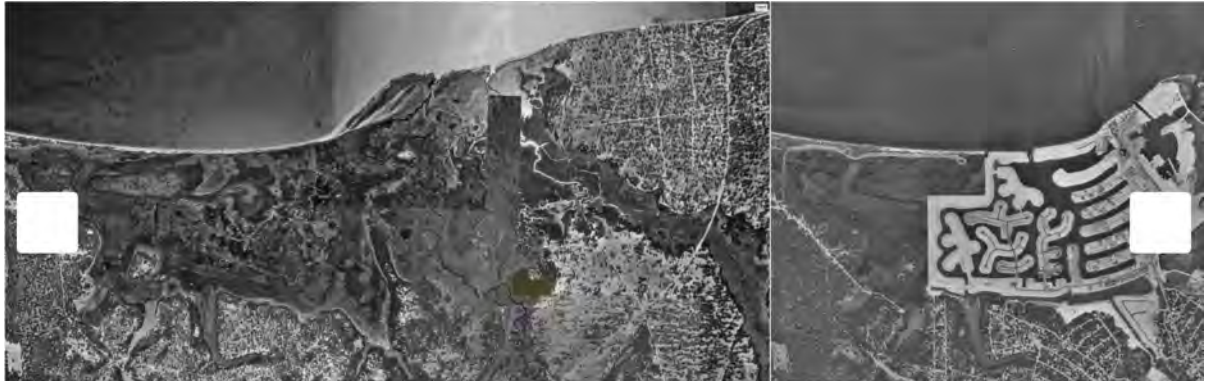


Stuart Roll and Scott Carroll with the California Tahoe Conservancy stand next to one of the new channels they built on the Upper Truckee River in South Lake Tahoe. Courtesy photo

News

Tahoe Conservancy's marsh restoration making progress

By [Tahoe Daily Tribune](#)



An aerial photo of the Upper Truckee Marsh in the 1940s. Courtesy photo

An aerial photo of the Upper Truckee Marsh today.



Laney Griffio

SOUTH LAKE TAHOE — The California Tahoe Conservancy is nearing completion of the second stage of a project to restore the Upper Truckee Marsh, which is just a piece of the plan the state agency has been working on the last 20 years to bring the marsh back to its former glory.

The Upper Truckee Marsh sits just east of Tahoe Keys and north of Highway 50, where the Upper Truckee River meets Lake Tahoe on the south shore.

An aerial photo of the marsh from the 1940s shows a very different marsh than the one that's there today. The Upper Truckee River split into multiple channels and lagoons and the water flowed through the 1,600 acres of marsh before

entering Lake Tahoe.

The history

The lush, green marsh provided habitat for many creatures, including song birds. It also helped with water quality, as it acted as a giant filter for water entering Lake Tahoe.

"As the water would come down through here, it would move through the vegetation and it would stop and slow down and drop a lot of sediment; a lot of nutrients would be picked up," said Stuart Roll, senior environmental scientist for the California Tahoe Conservancy.

Loggers and ranchers upstream manipulated the river to straighten it out so water flowed through faster. In the 1960s the Lake Tahoe Golf Course was built, further changing the shape of the river.

Then, when the Tahoe Keys were built, the lagoon was destroyed and marsh bifurcated, cutting it down to about 500 acres, less than half of its original size.

"As part of the Tahoe Keys development, the channel was channelized into this straight ditch. What that did was it helped get the water around the Keys and get the water out but it had quite a few negative impacts," Roll said. "A lot of the water now stays in the channel, it doesn't spread out over the marsh, and it's deep so it's dried out the marsh."

An aerial photo from 1969 shows a much different marsh, one that's baron and has no meandering water channels.

The area of the marsh directly east of the Keys was also slated to become developed, so it was filled with dirt and according to Roll, there was also talk of a golf course on the marsh.

In the late 1980s a lawsuit prevented the development from moving forward and the California Tahoe Conservancy purchased some of that land.

"That was a great opportunity because a lot of the land had been filled for development but also presented an opportunity to bring back the wetlands," Roll said.

Stage 1

Work didn't begin until the early 2000s. Conservationists started with pulling 8,000 truck loads of misplaced dirt out of the marsh, which was then used for various road construction projects around the area.

There were very few native plants left in the area, so native plants were brought in, such as willow.

"Willow is a restorer's best friend," said Scott Carroll, senior environmental planner for the conservancy. "It's very fast growing. I can basically go cut a willow branch down and throw it on the ground and if it gets a little bit of water, it'll just grow."

The willow only takes about three to five years to reach its full height, so it wasn't too long until that part of the marsh looked like an actual marsh.

Carroll said he can now use that area as an example of what the current project will look like in a few years.

Even since completing just that first stage, there have been ecological benefits, including water and soil quality. One benefit that both Roll and Carroll were excited about was the return of wildlife, especially the willow flycatcher, an endangered songbird.

Stage 1 was followed by 15 years of planning for the start of Stage 2, which began in 2021.

Stage 2

There are two major project areas included in two Stage 2, one of which is just east of the Tahoe Keys.

The marina had once built a sailing lagoon, which was about 3 acres, that became filled with aquatic invasive species. Conservationists disconnected that lagoon from the marina and filled it in with dirt taken from the area once slated for development.

When filling the lagoon, they used a method that dumped the dirt directly onto invasive weeds. This choked them out.

There were also several large trees on the dirt lot that had to be cut down. California Tahoe Conservancy used the large part of the trunks and roots as barriers in a different project area of the marsh and chipped the rest to lay down where the new plants would be planted next to the Keys.

"What we tried to do was keep everything internal to the project site," Carroll said.

In 2021 planting of native flora began, many of which were cut from the previous project area.

In the new planting area, conservationists created several different plains of different elevations to simulate the historical dune environment.

Low areas near water will have different vegetation than higher drier areas.

The plants were planted in rows, similar to crops, which Carroll said he has heard concerns about from people who frequently walk the path in the marsh. However, because of the way those plants grow out, they will eventually all connect and it won't resemble crop rows anymore.

This summer the California Tahoe Conservancy has about 30,000 more plants to plant.

There are also plans to rebuild a popular walking path through the marsh and make it wheelchair or stroller accessible.

California Tahoe Conservancy has been working with the Washoe Tribe throughout the project and the tribe is going to help develop educational signs to be placed around the path.

The second part of Stage 2 includes creating new water channels further east into the marsh.

The California Tahoe Conservancy dug new channels and lined them with the trees taken from the other project area. They are also putting more water flow into Trout Creek.

"We're just getting water to those channels then we'll let mother nature dictate ... this type of wetland is very rare and it's very dynamic; the river changes a lot. That's a good thing for habitat, wildlife and marsh quality and that's what we're trying to promote," Carroll said.

The new channels connect to historical channels.

"Before the project, the middle marsh would only get water during really large rain and snow events," Roll said.

He added that with the new channels the area can receive water during a traditional snowmelt event.

Through both of these project areas the conservancy will be creating 12 acres of new wetland.

Roll said there will be ecological benefits of rewetting the marsh, including water quality improvements and creating more habitat.

"There's also climate benefits that are important. Understanding that we're going to have longer droughts, more extreme precipitation events — a lot of our restoration is really focused on that to make sure this area can be wetter during longer droughts," Roll said. "We're also doing greenhouse gas sequestration down here because well-functioning meadows actually sequester a lot of greenhouse gasses, similar to a rainforest, while an impaired one can actually be a source of greenhouse gasses."

These two components are just a piece of restoration of the whole 9 miles of the Upper Truckee River. Work is soon slated to begin at Lake Tahoe Golf Course to restore the stretch near there.

While the conservancy isn't part of that project, all the projects work in tandem to restore the area. The CTC has worked with the city of South Lake Tahoe, Tahoe Resource Conservation District, the Forest Service and California State Parks and they've received funding from 13 different sources, including five different grants.

However, Carroll said one of the benefits of these types of projects is that once the area is established, it should require little to no maintenance.

"We have an array of objectives but the way we look at it is we're starting under this overall umbrella of, 'we want to restore the ecosystem,'" Carroll explained. "Our strategy is trying to put mother nature in its best position to succeed."

To learn more about the project visit tahoe.ca.gov/upper-truckee-marsh.

Printed in the July 18, 2022 edition on page A3 | Published on July 18, 2022 |

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Last Modified on July 15, 2022 at 2:14 pm

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NEWS

Declines in Lake Tahoe's clarity have been halted; scientists ponder what's next

**Amy Alonzo**

Reno Gazette Journal

Published 7:20 a.m. PT July 16, 2022 | Updated 10:14 a.m. PT July 18, 2022

Declines in Lake Tahoe's overall clarity have largely plateaued, according to recent measurements. And that's a win, for some Tahoe scientists.

"I'm cautiously optimistic," said Alan Heyvaert, associate research professor at Reno's Desert Research Institute. "The fact that we arrested the decline in clarity – that's amazing that we've done that."

But work to restore the lake's clarity to levels not seen in more than 50 years is moving slowly.

Measurements show two diverging trends: Summer clarity continues to decline at just under 7.5 inches per year, while winter clarity is generally holding steady.

Last year, average clarity in the lake measured just 61 feet, according studies by the University of California, Davis Tahoe Environmental Research Center and the Tahoe Science Advisory Council. The number marks a drastic decrease in clarity from when levels first were measured in 1968, when average clarity was 102.4 feet.

It has Tahoe scientists scratching their heads at what the next steps are to reverse decades of declining clarity.

More development, more runoff

Fine particles and tiny algae are responsible for up to 70 percent of the loss of clarity in Tahoe.

The particles come from a variety of sources including road runoff, atmospheric dust and wildfire smoke deposits.

"They (fine particles) are so small they don't actually sink very fast. They can stay suspended in the water column for a long time, and that's what causes the decline in clarity," according to Joanna Blaszcak, assistant professor at the University of Nevada, Reno.

The decline in Tahoe's clarity dates back to a 1960s building boom in the basin.

In 1960, the first-ever-televised winter Olympics were held at Palisades Tahoe – then known as Squaw Valley – on the north shore of the lake. That same year, developers on the east shore subdivided a parcel in the new town of Incline Village into 1,700 lots. By 1968, more than 3,000 houses had been built in Incline Village.

In 1961, Homewood Ski Area on the west shore was developed. Heavenly Valley, which opened in 1955, expanded its resort into Nevada in 1968.

And for years, Tahoe's wastewater was channeled into the lake.

The mantra during the 1950s and '60s was “dilution is the solution to pollution,” according to Heyvaert.

But people started to notice impacts on the lake, and by the mid-1970s, wastewater treatment facilities had been constructed in the basin.

“Without that, we wouldn’t even be talking about restoring the lake at this point,” Heyvaert said. “That prevented a catastrophe.”

As steps were taken to limit wastewater impacts on Tahoe, population continued to grow around the lake.

Between 1960 and 1980, Tahoe’s population grew from 10,000 people to 50,000. Now, in addition to a growing year-round Tahoe community, about 15 million people visit the lake annually.

The increases in development and population led to more urban pollution and runoff. It became clear by the 1990s that more concerted efforts were needed, Heyvaert said.

A long road to recovery

In 2011, a plan requiring local governments and highway departments to limit clarity-harming pollutants that wash into the lake was implemented. The goal: Restore Tahoe’s clarity to 97.4 feet, a level that hasn’t been seen since 1970.

But the lake is slow to change, Hayvaert said. It hasn’t recovered from a deluge of fine particles that flowed into it during heavy storms and floods in 2017.

That year marked the worst clarity ever recorded at Tahoe. The average annual clarity level in 2017 was 59.7 feet, a 9.5-foot decrease from 2016. Prior to that, the worst clarity was measured in 1997, also a flood year, when visibility was only 64.1 feet.

Fine particles in the streams that feed Tahoe increased four-fold in 2017 and have remained elevated since then, despite less water flowing into Tahoe with drought conditions.

“It’s like a battleship instead of speedboat. It doesn’t change direction quickly,” Heyvaert said of Lake Tahoe.

The elevation in fine particles despite less runoff is counter to what scientists think should be happening, according to University of Nevada, Reno associate professor Sudeep Chandra. With less water flowing into the lake, less particles should be transported into it, leading to some improvements in clarity.

Despite the mystery of why summer clarity is still decreasing, Heyvaert thinks the glass is half full.

“The jury is still out on whether we are on pace to hit the clarity target in 2076, but there is progress in simply having arrested the long-term decline in lake clarity at this point,” he said. “Now we have a more difficult job of ultimately restoring the clarity to historic conditions, which means reversing that trend.”

Amy Alonzo covers the outdoors, recreation and environment for Nevada and Lake Tahoe. Reach her at aalonzo@gannett.com. Here's how you can support ongoing coverage and local journalism.



NEWS

Across the US, towns warn of toxic PFAS chemicals in drinking water. Here's what to know.

In June the EPA released health advisories for chemicals PFOS and PFOA, which have been linked to cancer and other ailments, leaving many Americans to wonder if they're in danger.



Kyle Bagenstose
USA TODAY

Published 6:00 a.m. ET July 16, 2022 | Updated 9:25 a.m. ET July 18, 2022

The U.S. Environmental Protection Agency in June issued nationwide health advisories for four PFAS chemicals commonly found in drinking water. Short for per- and polyfluoroalkyl substances, the quartet are part of a larger class sometimes referred to as “forever chemicals,” due to their strength and failure to degrade in the environment.

The EPA's new advisories startled many observers because the safety levels for two of the chemicals -- perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) -- are extremely low. Thousands of drinking water utilities across the country likely have PFOA or PFOS in their system above the EPA's new advisories. Studies have linked the chemicals to serious health effects like cancer, low birthweight babies and immune system effects.

In the wake of EPA's action, cities such as Mobile, Alabama, sent notices to their customers confirming the presence of PFAS in drinking water and alarming many residents.

If you're concerned about PFAS in your drinking water, here's what to know:

How dangerous are PFAS?

There are thousands of PFAS chemicals, hundreds of which are used in the U.S. for things like nonstick coatings and waterproofing in products such as kitchenware, clothing, furniture and food packaging.

The chemical industry argues that it has phased out the varieties of PFAS known to be hazardous, such as PFOS and PFOA, and replaced them with safer alternatives. But environmental groups and some scientists say the common characteristics of PFAS make them all dangerous.

More: What are PFAS? A guide to understanding chemicals behind nonstick pans, cancer fears

The potentially toxic effects of most PFAS chemicals have not received robust research. But large studies have found links between PFOA and PFOS and a variety of health effects, including high cholesterol, ulcerative colitis, thyroid disease, testicular cancer, kidney cancer and pregnancy-induced hypertension. Many researchers also worry about reproductive and developmental harms, such as low birthweight and decreased immune response.

Exactly how much PFOA or PFOS it takes to harm someone is unknown. PFAS chemicals do not cause sudden illnesses like a poison would. Instead, they accumulate in the body over time, where scientists say they can begin to impact systems. The EPA says its new advisories are designed to protect even pregnant women, young children, and the elderly over a lifetime of constant exposure.

“This means that these advisory levels are very conservative, or protective, of your health,” the EPA told USA TODAY in an email.

How do I know if I or my family are in danger?

Scientists say there is little anyone can do to assess individual risk. In highly contaminated communities, people have had blood tests to determine how much PFAS they've been exposed to, which can then be compared with national averages. But blood tests are expensive, can be difficult to obtain, and will not definitively tell someone what danger they face, health experts say.

Instead, many scientists assess the potential health impacts of PFAS at a population-level. Most recently, researchers estimated that exposure to some PFAS may have played a role in about 6.5 million deaths in the U.S. from 1999-2018, primarily those caused by cancer and heart disease. Annually, that's about the same mortality rate as COVID-19.

More: Do you know what's in your blood? New EPA docs show widespread risk from common chemicals

But virtually all Americans have some level of PFAS in their bodies, and the blood levels of the most problematic chemicals, PFOS and PFOA, have declined ever since an industrywide phaseout over the past two decades. In one way, that means the EPA advisories for PFOS and PFOA are part of an effort to further drive down a risk that has already been decreasing for many Americans.

How do I know if PFAS is in my drinking water?

At present, there is no national rule to test for PFAS in public drinking water, and many water utilities do not. Some, like Mobile, have tested and notified the public even when PFOA and PFOS are found in small amounts, just above the level that can be detected by advanced equipment.

Other states have tested water utilities across their jurisdiction. A Chicago Tribune investigation published this week reviewed state data that showed PFAS in water utilities across the state, with at least one PFAS chemical detected in water supplies collectively serving 8 million people, about 62% of the state's population.

Private testing in North Carolina has found PFOA and PFOS in the water sources for dozens of utilities across the state. Officials in Raleigh, Durham and Chapel Hill confirmed the presence of the chemicals above the EPA's new advisories, adding that they are studying the problem, the Raleigh News & Observer reports.

While the EPA is planning on sampling thousands of water authorities across the country for PFAS in the years ahead, there is no official, central database where the public can check every system.

Residents can inquire with their water supplier or state environmental agency about whether testing has been performed on their system. The Environmental Working Group, a national environmental nonprofit that advocates for strict limits on PFAS, maintains a map of all known locations where PFAS have been found in drinking water.

The American Water Works Association, a nonprofit representing water utilities nationwide, told USA TODAY its members “want to make the right decisions to quickly and efficiently reduce potential exposure to PFAS through water and protect their communities.”

But the association said members questioned the “scientific underpinnings” of the new advisories and the timing of their release and worry they create pressure for water utilities to

make the “wrong investments.” They also want regulators to do more to find PFAS polluters and halt the contamination of water sources.

Regardless, the group said it is urging transparency among members.

“We encourage our members to speak openly and honestly with their communities about PFAS, discussing both what they know and do not know,” said Steve Via, director of federal relations for the association. “Although there’s a great deal of uncertainty out there, the act of having that conversation can be helpful in strengthening public trust.”

What is being done about this?

The EPA's new advisories are not formal regulations. The agency says it plans to announce draft regulations this fall, which, if approved, would then likely take effect in coming years.

Until then, action will continue to vary from community to community and state to state. In some places, such as highly contaminated towns in southeast Pennsylvania, officials adopted “zero tolerance” plans in which they installed carbon filtration systems to remove PFAS entirely from drinking water. But such plans can cost tens of millions of dollars for a typical water utility to implement.

Other cities have adopted a wait and see approach, reluctant to make such investments before seeing what the EPA's regulations might be.

Individuals can install filters in their homes, which can protect an entire house or can go under the kitchen sink to remove most PFAS from water used to cook and drink. Scientists say PFAS do not readily pass through the skin, making showering and bathing safe.

The Environmental Working Group says individuals can also lower their exposure to PFAS by purchasing commercial products that are PFAS-free.

The EPA offers a guide on reducing exposure to PFAS and recommends that those with concerns or questions about PFAS in commercial products contact the Consumer Product Safety Commission. The agency also promotes its own Q&A page around the new health advisories and says it has released the first \$1 billion of \$5 billion in funding to help water utilities address PFAS contamination.

Kyle Bagenstose covers climate change, chemicals, water and other environmental topics for USA TODAY. He can be reached at kbagenstose@gannett.com or on Twitter @kylebagenstose.

California burning: How wildfires are threatening the West's water

Drought is already imperiling water supply in the West. More wildfires could spoil the water that's still around.



Brian Dabbs [@BRIANDABBS](mailto:BRIANDABBS)

July 20, 2022, 6:22 p.m.

TAHOE NATIONAL FOREST, Calif.—In 1960, the Donner Ridge Fire ripped through roughly 44,000 acres in the Tahoe National Forest.

Sparked inadvertently by a crew building the 80 interstate, the fire scorched the earth north of Truckee, California and all the way to the Nevada border just months after the Winter Olympics at nearby Squaw Valley.

Then the Forest Service—using a program that leverages philanthropic funds—embarked on a major reforestation project to plant millions of lost trees.

More than 70 years later, large swathes of the area are perilously overstocked with highly flammable, densely packed Jeffrey pines and sagebrush. Local experts say the reforested area has grown out of control, creating an environment where wildfires could sweep through the region and threaten lives, homes, and businesses.

And a local water utility is also sounding the alarm, arguing that a wildfire there, below the towering Sierra peaks that store water in snowpack, poses real risks for water supply and quality. The Truckee Meadows Water Authority is helping to foot the bill for a forest-thinning project called Ladybug in the reforested area just east of Stampede Reservoir, where the utility stores water.

“This is an example of a forest that’s overgrown. There’s a lot of underbrush and a lot of dead material that’s low that would create fuel for fire,” Stefanie Morris, the water-resources manager at TMWA, said on a hot, dry day in late June from the edge of the Ladybug project site.

Forestry crews and machines haven’t arrived to cut down the trees to sell it to timber companies or [biomass power plants](#) or otherwise dispose of it. The project isn’t expected to be complete until 2025.

“If there were to be a large fire on this downslope that runs into the reservoir and all this underbrush was burned, there would be a lot more sediment and organic material running into the reservoir” after rain returns in the fall and winter, Morris said.

California is battling an epic, decades-long drought, helping to create prime conditions for wildfire. This year is so far the driest in record books that date back to the 19th century, [according](#) to the federal National Integrated Drought Information System. Four of the 20 [largest fires](#) in California history took place last year.

Now, water utilities in the state—and across the Western U.S.—are increasingly offering up money to help implement forest-management projects that aim to mitigate the risk of catastrophic fire.

The fall and winter rains send deluges of sediment and debris through burned forests, which can no longer absorb the material, and into reservoirs like Stampede. That prompts water utilities to foot big filtration, treatment, and debris-removal costs that can be passed on to consumers. And the turbid water, even with extensive treatment, poses potential health risks.

“The chemistry of the water changes, not in a positive way, and they have to deal with that. That does have costs, operational costs, that require more chemicals to be able to use things to filtrate out the [sediment] and end up with a clean product,” said Association of California Water Agencies Executive Director Dave Eggerton. **“The reality is that’s going to be largely cost that would be borne by their ratepayers.”**



A forest near Stampede Reservoir is less susceptible to fire after forestry crews recently stripped out dead wood and underbrush. BRIAN DABBS

The Truckee Meadows Water Authority, which services the Reno-Sparks area downstream on the Truckee River in neighboring Nevada, is contributing \$500,000 for the Ladybug project over the next two years. The National Forest Foundation, a national nonprofit partner to the Forest Service [chartered by Congress](#) in 1990, is implementing the project with the help of the Forest Service and other groups.

“It’s going to be much cheaper to be proactive about it than to clean it up,” Morris said.

Some water experts say the health impacts of consuming heavily treated water are still unclear. In 2014, the [King fire](#) torched 50,000 acres in one day and nearly 100,000 acres total in and around Eldorado National Forest southwest of Lake Tahoe. Andy Fecko, general manager of the Placer County Water Agency, said the utility ponied up \$5 million in dredging on the Rubicon River system after the fire.

Still, the utility faced water-quality challenges. Fecko said the water **had a foul odor and a “smokey,” “earthy” taste to it.**

“We don’t think this water is detrimental to your health. But there isn’t a lot of science on it, either,” he said. “As far as we know, we’re delivering clean water to people’s homes. But there’s a lot of uncertainty to that.”

Fecko said the post-King fire dredging will have to continue on a long-term cycle.

For those fine materials that infiltrate water supply, treatment strategy involves disinfection with chlorine, chloramine, or other chemicals that can, through complex chemical reactions, create byproducts potentially hazardous to human health.

Since the late 1990s, the Environmental Protection Agency [has regulated disinfection byproducts](#), including trihalomethanes and haloacetic acids. Both byproducts have been proven to cause cancer in **laboratory tests on animals, meaning they’re likely carcinogenic for humans.**

A small group of academics have been diving into the wildfire connection to disinfection byproducts over recent months. David Hanigan, a professor at the University of Nevada, Reno, says some evidence shows the amount of disinfection byproducts increased following the 2021 [Caldor fire](#). And they appear to be sticking around longer than normal, he said.

“As long as the treatment facility stays below the EPA regulated guidelines, then they can still distribute that water. But my concern would be that they actually can’t somewhere in the future,” Hanigan said.

Hanigan is hoping the National Science Foundation sponsors more grant research on the connection.

“Everybody realizes now that, with wildfires over a million acres that are happening pretty much every year now, that we’re going to have to learn more,” he said. “There’s not all that much information on the effects of drinking-water quality yet.”

The EPA, according to spokesperson Tim Carroll, **“is currently** conducting analyses to further evaluate” the regulations on disinfection byproducts, including potential new rules for unregulated byproducts like chlorate and nitrosamines.

Throughout the West, water utilities are growing more and more active in wildfire prevention and response. The New Mexico state government [warned residents](#) to not drink local water in the wake of **the Hermits Peak/Calf Canyon Fire that’s burned nearly [350,000 acres](#)** since April. The fire is still active northwest of Albuquerque. And fires are vexing utilities in Colorado, which has endured a [huge uptick](#) in acres burned in recent years.

The National Water Resources Association is spearheading a campaign to get more federal wildfire resources to utilities from Washington state to Texas. Christine Arbogast, the former president of the NWRA who still chairs the federal-affairs committee, said the wildfire threat to water supply and quality is growing.

“It’s going to be much cheaper to be proactive about it than to clean it up.”

STEFANIE MORRIS, WATER RESOURCES MANAGER AT THE TRUCKEE MEADOWS WATER AUTHORITY

“As we’ve seen fires become so commonplace and be any time of the calendar year, not just wildfire season, the constant threat to the water **supply has risen in the priorities for the western water community**,” said Arbogast, speaking on the phone from Durango, Colorado, where she, as a water lobbyist representing the Ute Mountain and Southern Ute tribes, met with EPA Regional Administrator Kathleen Becker.

A federal appropriations [bill](#) signed into law in September last year gave the Forest Service \$700 million to recover from recent fires in national forests across the West.

In February, the Forest Service delivered \$79 million to the Routt, White River, Arapaho, and Roosevelt national forests in Colorado after that region was hit by major fires in 2020. And just weeks ago, the Forest Service shut down roads in the Arapaho forest to [aerially drop mulch](#) on 8,000 burned acres to prevent runoff. The utility Northern Water participated in that operation.

Still, Arbogast said the federal government needs to put up much more money for post-fire recovery, along with fire-prevention projects like Ladybug in California.

“The [post-fire] mitigation piece needs work. It’s crying out for work,” she said. Arbogast also represents the city of Greeley, Colorado, which [collaborated](#) with other stakeholders to sanitize the water supply after the 2020 fires.

Meanwhile, the Forest Service included a long stretch of the Colorado front range, from south of Colorado Springs to the Wyoming border, in its [first tranche](#) of more than \$3 billion in wildfire funding from the bipartisan infrastructure law passed last year. The forest-management projects there target 36,100 acres to the tune of \$170 million.

On Wednesday, President Biden announced \$2.3 billion for the Federal **Emergency Management Agency to fund infrastructure that’s** resilient to extreme weather like drought and fire, along with pledges to expedite wind-energy projects that don’t emit climate-change-causing greenhouse gasses.

“[Climate change] is literally, not figuratively, a clear and present **danger,” Biden said at a former coal-plant site in Massachusetts**, before referencing the [\\$145 billion price tag](#) for weather-related damages in the U.S. last year.

“This is an emergency. And I will look at it that way,” Biden said. The administration has so far resisted calls from lawmakers and activists to formally declare a climate emergency, a move that could deploy **more federal resources to increase clean energy**.

Biden’s remarks came in the wake of the [collapse](#) last week of climate negotiations in a budget-reconciliation bill.



A view of Donner Lake from the Rainbow Bridge west of Truckee, Calif. BRIAN DABBS

Back in California, the Yuba Water Agency, which controls the water in the New Bullards Bar Reservoir on the edge of the Tahoe National Forest, is helping to pay for forest-management projects as part of the North Yuba Forest Partnership. The [North Yuba River landscape](#) in the Tahoe is also among the first recipients of the wildfire infrastructure funding.

The Yuba Water Agency, which provides agricultural water to the region around Sacramento, is contributing \$8 million to the forestry work in the Yuba watershed. Willie Whittlesey, the general manager, hopes that money will help create healthier forests that retain water and prevent catastrophic fires so the utility continues to serve water to farmers and ranchers for decades.

“Our irrigators should be interested in the sustainable amount of water we will have in our watershed long-term,” Whittlesey said. **“If they’re thinking of planting an orchard for, you know, \$30,000 an acre ... that lasts 40 or 50 years, are they going to have water supply in year 20?”**

“It’s a really, really crude example. But they should be interested in our long-term viability,” he said, sitting on a dead log on a beach at the New Bullards Reservoir just 20 miles away from where he grew up in Grass Valley. His two black Labradors swam in the reservoir with boats anchored in the distance.

After seeing the fallout from the King Fire in Placer County, Whittlesey said the decision to get involved in fire prevention was clear.

“We just looked to them and said, ‘Oh my god, we don’t want that.’ So let’s try and fix the problem before it happens,” he said.

This is the third story in National Journal’s four-part series, “California Burning,” which explores the federal strategy to tackle wildfires ravaging the Western U.S.



The Humboldt River flows near Elko on Tuesday, Feb. 6, 2018. (Jeff Scheid/The Nevada Independent)

Indy Environment: Natural Resources acting director on collaboration, drought, smart-from-the-start planning

Good morning, and welcome to the Indy Environment newsletter.

As always, we want to hear from readers. Let us know what you're seeing on the ground and how policies are affecting you. Email me with any tips at daniel@thenvindy.com.

If you received this from a friend, [sign-up here](#) to receive it in your inbox.

With hundreds of full-time employees, the Department of Conservation and Natural Resources is one of the state's largest agencies, responsible for a wide array of activities, from overseeing state parks and wildland fire crews to regulating industrial pollution and managing water rights.

Earlier this month, the agency got a new leader. Gov. Steve Sisolak appointed Jim Lawrence, who has worked at the agency since 1998, to serve as the acting director. The move followed the departure of Brad Crowell, who was picked to serve on the U.S. Nuclear Regulatory Agency. The leadership change comes at a time when the state — and the region — face a number of ongoing interconnected environmental issues, including a prolonged drought that has strained water supplies, pressures on public land, increasingly risky wildfire behavior and extreme heat.

Last week, we spoke to Lawrence about his priorities and the challenges confronting an agency that has to balance a number of legislative mandates within limited resources and tight budgets.

In an interview, Lawrence emphasized a need for collaboration, both with outside groups and across state government. He noted, for instance, the intersection between transportation and land management in ensuring that recreation areas are used in ways that minimize impacts.

“Even though transportation isn’t within [the agency], when I think about recreation and the movements of people, how do you do that sustainably so we’re not enjoying the outdoors but increasing our greenhouse gas emissions? **And how do you do that in a way to ensure that you have equal access?**,” asked Lawrence, who has served on the Tahoe Regional Planning Agency governing board, which often weighs issues related to transportation and recreation.

The federal government manages about 85 percent of all the land within Nevada. Although the U.S. Bureau of Land Management oversees most of that land, several federal agencies are also involved with public land. These agencies include the U.S. Forest Service, the U.S. Fish and Wildlife Service and the Department of Defense, which manages testing ranges. This can make the state's ability to intervene with public land issues somewhat limited.

At the same time, the state's natural resource agency is actively involved in a number of public lands issues through environmental permitting, decisions about water rights and a responsibility to protect habitat for critical species. Over the past several decades, public lands have faced a number of increasing pressures ranging from development for mining and energy, large-scale wildfires and drought — worsened by a changing climate — and a greater recreation footprint.

Elected officials have worked to position the state as a hub for the global energy transition.

Nevada is rich in sunlight to power solar panels, untapped geothermal steam to produce a 24/7 energy resource and lithium deposits to fuel the batteries needed in electric cars. But solar arrays, geothermal plants and lithium mines are often placed on public land — often in places that conflict with cultural sites and land set aside for habitat conservation.

Some conservation groups and policymakers have pushed for “smart-from-the-start” planning, a comprehensive effort to direct and incentivize development on lands that previously have been developed, such as brownfields and old mines, or in areas where there are fewer conflicts. Last year, the State Land Use Planning Advisory Council [released a letter](#) endorsing this approach.

Lawrence, who has a master's degree in urban and regional planning, said he generally backs that approach. He said he is “sensitive to statewide planning efforts if it steps on the toes of local government and gets in the way of what they need to do.” But he said “having a comprehensive look regarding mineral development, transmission lines and how we can best utilize and protect our public lands, given the multiple pressures on it, requires statewide coordination.”

That said, he noted that there are rarely easy answers, even with a comprehensive plan in place. At the end of the day, he said “there still has to be uncomfortable discussions.”

Lawrence said the state can also play an important role in water planning. The most recent U.S. Drought Monitor map reports that about [75 percent of Nevada is experiencing](#) drought. Although the state regulates water rights, water governance is dispersed in most watersheds and groundwater basins, with many different officials making decisions. **Still, he said the state could work to provide updated data on water availability.**

“You need the best, most-recent scientific data in order to make the best management decisions within the confines of the law,” Lawrence said last week. “And I think some of our hydrologic data is about outdated at this point in time. I think that is something that is a high priority as water is going to continue to be more and more of an issue.”

Lawrence said he also plans to focus on staffing and retention. Currently, the agency employs about 780 people in permanent positions and an additional 217 people as seasonal employees. But like many agencies, Lawrence said some divisions in the agency have not fully recovered to the staffing levels they had before the Great Recession.

Of all the issues facing the agency and natural resource management, Lawrence identified a structural problem as one of the most pressing: communication and collaboration. Just as ecosystems are intertwined and interconnected, Lawrence argued that so too should be the state's approach to natural resource management, one that considers a wide range of voices.

“It has to be all hands on deck because these are very complicated issues we're working on,” he argued. “And those are going to be the most sustaining solutions — when you have everybody working across jurisdictional lines. That is the biggest challenge I think about on a daily basis.”



Lithium carbonate at Lithium Americas' testing facility on Wednesday, July 21. (David Calvert/The Nevada Independent)

Here's what else I'm watching this week:

In a unanimous vote Tuesday, the Clark County Commission **approved a 600 square-foot size restriction on new pools**, a measure meant to save water and reduce per capita water use. It's one of the latest efforts by the Las Vegas Valley Water District to conserve Colorado River water as water managers across the West look for ways to reduce their use of the river. The quote that stood out to me was this one from the water district's top manager, John Entsminger: **"Nobody questions building codes to survive hurricanes in South Florida. Nobody questions building codes for earthquakes in San Francisco. Water scarcity is our natural disaster in Southern Nevada."** [More on the new rules](#) from the *Las Vegas Review Journal's* Colton Poore.

- **What will the Colorado River cuts look like and will the federal government take action on its own?** Those are the two big questions facing the Colorado River Basin. *KUNC's* Luke Runyon looks [at what the states — or federal government — might do](#).
- The *L.A. Times's* Ian James looks at [how the Colorado River got to a crisis point](#) —and the **scientists and the water experts who have been raising the alarm for decades**.
- "The Southwest's thirst for the drying river is pushing a challenged aquatic environment further out of whack," [writes](#) the *Arizona Republic's* Brandon Loomis, who is reporting on the **threat that nonnative fish species pose to threatened fish in the Grand Canyon**.

Lithium Americas, the company developing the Thacker Pass mine in Humboldt County, opened a **30,000 square-foot technology facility in Reno Wednesday**. The facility is aimed at helping the company refine its process for turning ore into lithium carbonate, a product used within the batteries needed for electric vehicles. Gov. Steve Sisolak, UNR President Brian Sandoval and a representative from Rep. Mark Amodei's office spoke. A council member of the Fort McDermitt Paiute and Shoshone Tribe, Arlo Crutcher, also attended the event with members of his family.

Several conservation groups and the Reno Sparks Indian Colony have challenged the federal permit for the mine, arguing that an environmental analysis was rushed and did not fully consider the project's impact on imperiled wildlife and cultural sites. The [lawsuit is ongoing](#). A federal judge is expected to rule on the merits of the case later this year.

The People of Red Mountain, a coalition of Fort McDermitt Paiute and Shoshone tribal members who are opposed to the mine, held an event on Saturday in Reno highlighting a billboard campaign, as [This is Reno's Eric Marks reported](#). The People of Red Mountain consider the land around Thacker Pass, known as *Peehee Mu'huh*, to be sacred.

This week brought repeated days of extreme heat [at home](#) — and [abroad](#).

“A transformer exploded Tuesday at Hoover Dam, one of the nation’s largest hydroelectric facilities, producing a thick cloud of black smoke and flames that were quickly extinguished,” Ken Ritter and Felicia Fonseca [reported for the AP](#). ICYMI: Here’s a [video of the explosion](#).

Four miners were trapped in Nevada Gold Mines’ underground Meikle mine at Goldstrike for six hours on Tuesday, [The Elko Daily Free Press reported](#). The company said the incident was due to a “ground fall.” Safety crews were able to rescue all four workers without injuries.

Federal officials are completing an **environmental analysis to transfer thousands of acres of land from the Air Force to West Wendover**, [The Elko Daily Free Press’ Tim Burmeister writes](#).

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