



TMWA Board Meeting

Thursday, May 18, 2023

Press Clippings

April 8, 2023 – May 10, 2023



Fleish Hydro Spill Shoot



LEMMON VALLEY AND SWAN LAKE FLOOD PREVENTION MEASURES

by Bethany Drysdale | Mar 9, 2023



Washoe County Community Services Department (CSD) has enacted various stages of its flood mitigation plan for Swan Lake and the surrounding area, including constructing berms, installing pumps, and placing barriers.

“We have a plan. The work we did a month ago was to prepare us for today,” Assistant County Manager Dave Solaro said. “What we’re doing today is to protect us for a month from now.”

The National Weather Service has forecast an atmospheric river in the Reno-Tahoe region beginning Thursday. This is expected to bring heavy rainfall on top of a significant snowpack and full creeks and ditches. Washoe County has been preparing for winter weather, monitoring conditions and proactively initiating preplanned responses in known trouble areas.

Since 2017, Washoe County has developed a proactive flood management plan and monitors the lake levels and surrounding snowpack, and implements certain responses dictated by the conditions and lake levels. CSD follows mandated priorities for flood response: Top priority is life safety, then to maintain clear access for emergency vehicles and to protect public infrastructure. Protections are in place to minimize the impact on the public.

Lemmon Valley

Over the last two months Washoe County has implemented protection measures in and around Swan Lake in response to increasing water levels. Current lake water levels are at 4919.4 feet—or more than 4 feet below the highest water levels recorded in 2019. This can be viewed in real time on the [Swan Lake camera](#).

The protective measures that have been installed recently are located in areas away from roadways and residences to minimize impact to the community. This approach removes the necessary barrier protections from the edge of major roadways, eliminates pipe crossings along Lemmon Drive, and keeps the intersection of Lemmon Drive and Idaho Street open. More specifically some of these protections are as follows.

- Washoe County has prepared for rising Swan Lake water levels by constructing protective berms in certain areas around the lake and installing high flow pumps to manage water that flows down from the surrounding areas.
- Berms have been constructed in the Pompe Way and Jean Way areas in the north area of Swan Lake.
- Berms and protections have been installed in the southern areas of the lake, near Palace Drive, along with the installation of pumps to manage flows coming from Lemmon Drive.
- Crews have also made improvements to the areas along the eastern side Swan Lake to protect roadways and residences.
- Crews have also inspected the berms and protections in place near Compton Blvd. And will install pumps at the appropriate time if water levels rise in that area.
- The protective berms and access road around the Lemmon Valley Wastewater Treatment plant are still in place and fully functioning if water levels dramatically rise.

Residents should be aware that there will continue to be on-going field activities and that there will be people and equipment in the area as work continues in anticipation of further increasing Swan Lake water levels.

Personal Preparedness

The Washoe County Regional Emergency Operations Center (REOC) is monitoring the storm and working with all partners to ensure complete situational awareness of the storm. If necessary, the REOC will be activated to respond and deploy resources.

Residents who have previously experienced localized flooding should take precautions and sandbag their property now. There are more than a dozen sandbag locations maintained by Washoe County, and numerous additional locations by the City of Reno. Sand is for noncommercial use only.

Truckee Meadows Fire and Rescue is activating a crew to assist with sandbagging.

Ditches have been cleared, but garbage blowing into drainages areas can clog drains and create unnecessary flooding. Residents are asked to be diligent to remove garbage and debris from their properties and to remove garbage from empty roadside ditches if they see it. However, CSD warns everyone that walking into standing water or a flooded ditch is dangerous. Please call Washoe County to report clogged drains, and let CSD handle the flooded areas.

As a standard practice, residents should stock a three-day supply of food, water, batteries, and personal necessities.

“Washoe County has done everything it can to minimize the impact of flooding on residents, but we know that heavy rain on top of heavy snow will cause water levels to rise and low elevations to flood,” Washoe County Emergency Manager Kelly Echeverria said. “We must each take responsibility to prepare and protect our homes and our families.”

Washoe County will respond to emergencies and flooded areas in unincorporated Washoe County. To report a problem, please call Washoe 311 at 3-1-1 or 775-328-2003. Service

requests can also be made [online here](#).

To report a problem within the City of Reno, please call [Reno Direct](#) at 775-344-INFO (4636).

To report a problem within the City of Sparks, please call 775-353-2231 or download the city's new [My Sparks app](#).

Electricity

Heavy snow can damage trees, which in turn can damage power lines. If you suspect damage to a power line, do not go anywhere near it. [Report downed power lines](#) to 9-1-1 and NV Energy's emergency line: 775-834-4100.

NV Energy has information on how to prepare for possible power outages [here](#). Residents can also report street light issues [here](#).

Traffic Signals

To report traffic signal issues, call 775-335-7623.

Travel

Check the [Nevada Department of Transportation roads webcams](#) or call 1-877-NV-ROADS for real-time road conditions and be prepared for possible delays.



Bethany Drysdale

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Understanding the Watersheds That Provide Our Drinking Water

A complex web of factors impacts the health of these important water sources.

April 3, 2023 • TrueElements

This is the second of a three-part series designed to help readers understand the watersheds they depend on for drinking water and to provide easy-to-understand information on water quality. [Read Part I of the series here.](#)

According to the National Oceanic and Atmospheric Administration ([NOAA](#)), a watershed is “a land area that channels rainfall and snowmelt to creeks, streams and rivers, and eventually to outflow points such as reservoirs, bays and the ocean.” Because your drinking water comes from your local watershed, [the quality of water in that watershed impacts the safety and reliability of your drinking water.](#)

While drinking water utilities work hard to ensure the water they provide is safe to drink, the measures they take are partially determined by the water quality in watersheds.

Organizations such as the American Water Works Association ([AWWA](#)), National Association of Water Companies ([NAWC](#)), Association of State Drinking Water Administrators ([ASDWA](#)), [American Rivers](#), [US Water Alliance](#) and others support drinking water utilities in efforts to keep watersheds clean.

Residents can help drinking water utilities by understanding key factors that positively or negatively impact water quality and getting involved in organizations that support the health of their local watershed.

FACTORS THAT IMPACT WATERSHED HEALTH

Since the passage of water quality legislation in the 1970s, water quality in the United States has improved significantly. Still, approximately 50 percent of water bodies in the U.S. are currently considered “[impaired.](#)”

The [Clean Water Act passed in 1972](#) improved water quality in our nation’s waterways by limiting water pollution and setting discharge regulations.

The [Safe Drinking Water Act passed in 1974](#) aimed to protect drinking water supplies such as lakes, rivers and reservoirs. It also set national standards for drinking water safety. Water quality is directly impacted by the land activity surrounding watersheds. Agricultural, industrial and urban runoff during heavy precipitation can contaminate watersheds and reduce the aquatic life that sustains healthy watersheds. Even individual actions such as overuse of pesticides and fertilizers on lawns or pouring toxic household chemicals down the drain can contribute to impaired watershed health.

While many things influence watershed health, some key factors that are essential for good watershed health include:

- Riparian buffers
- Native land vegetation
- Undisturbed floodplains
- Intact native habitat to support plant, animal and aquatic life
- Fully functioning headwaters

These attributes require concerted, collective effort to preserve, restore and maintain the land surrounding watersheds.

THE VALUE OF HEALTHY WATERSHEDS

Healthy watersheds mean healthy ecosystems, which in turn provide water filtration, flood and erosion control; promote biodiversity; and reduce vulnerability to invasive species and the impacts of climate change.

Healthy watersheds are not just good for ecosystem health. They also improve human health. Studies show that routine exposure to green space and waterways produces:

- Lower illness rates
- Decreased stress levels
- Improved cognition and attention
- Higher likelihood of exercise
- Lower health-care costs

Because the interaction between water and land dynamics is complex, it is difficult to translate the above benefits into economic terms, but a strong body of research supports the idea that healthy watersheds are associated with [improved mental and physical health](#).

There are also [economic benefits to supporting good water quality](#). Healthy watersheds reduce treatment and infrastructure costs for drinking water, reduce flood mitigation costs, increase property values, and generate revenue from tourism and recreation.

UNDERSTAND DRINKING WATER QUALITY WITH TRUE QI SCORES

[True Elements](#) developed True Qi scores to provide government leaders and constituents with information to support decision-making, help prioritize action and promote greater collective water stewardship.

True Qi scores are set within a 70- to 100-point range, as they are intended to provide greater clarity into water quality for non-water professionals. Please note that the drinking water data used to calculate True Qi drinking water scores indicates whether water meets safe drinking water standards set by the Environmental Protection Agency (EPA).

Here is how True Qi scores are created:*

True Elements captures publicly available data from more than 900 consumer confidence reports (CCRs) from water providers serving 75,000 customers or more and, where possible, state drinking water quality data

(Pennsylvania and Florida) to create True Qi drinking water scores. Each CCR may include a single public water system or multiple systems. True Elements aggregates this data into a single platform, then translates the data into easy-to-understand scores and visualizations, down to the ZIP code level.

Consumer Confidence Reports (CCRs) are reports the EPA requires community drinking water providers to issue to its customers once a year. CCRs provide valuable information about drinking water quality. More information about CCRs can be found [here](#).

True Qi drinking water scores are based on levels of 78 contaminants** identified in the [National Primary Drinking Water Regulations](#). Scores are calculated by deducting points from a score of 100 for each contaminant found to be above the EPA's Maximum Contaminant Level Goal (MCLG). For any contaminant detected, points are deducted based on the contaminant's concentration and the EPA's description of potential severity of impact on human health*** (more points are deducted as the potential health impact increases). The score reflects a total weighted deduction based on EPA monitoring protocols, contaminant-specific health goals and maximum allowable levels.

If you are concerned about the quality of your drinking water, contact your water provider. If you do not know your water provider, you may be able to find it [here](#). You may also contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Click on the map above to access True Qi drinking water scores in your area or anywhere in the U.S.

Click [here](#) for a brief video demonstrating how to find a True Qi drinking water score for your specific location.

**See ["What You Should Know About Drinking Water Quality"](#) for frequently asked questions and answers.*

For more information about True Elements or True Qi drinking water scores, please [contact us](#).

Next week, read Part III of the *What's in Your Water? What You Should Know and Why* series that covers why an understanding of water resources is critical for a water resilient future for all.

** Although Acrylamide, Cryptosporidium, Epichlorohydrin, Fecal Coliform and E. coli, Giardia lamblia, Heterotrophic plate count (HPC), Legionella, total coliforms, turbidity, and viruses (enteric) are included in CCRs (and shown on True Elements' platform), they are not factored into True Qi drinking water scores due to reporting and normalizing complexities.

***More information on health impacts as specified by the EPA National Primary Drinking Water Regulations can be found [here](#).

Tags: [Water and Sewer](#), [Environment](#)

TrueElements

True Elements transforms water and data complexity into clear, easy to understand insights for fully informed, effective decision making.

News

Mar 14, 2023

Addressing the U.S. EPA's new PFAS Maximum Contaminant Levels

What you need to know about the US EPA's new PFAS drinking water MCLs

By Kyle Hay, PE and Dr. Jim Claffey, PE | 3 Minute Read



-
- Who is impacted?
 - What is the timeline?
 - What can utilities do now?
 - How can BC help?
 - Contact an expert

Additional Resources

[US EPA News Release: Biden-Harris Administration Proposes First-Ever National Standard to Protect Communities from PFAS in Drinking Water](#)

[Learn more about PFAS and the water cycle](#)

[Learn more about BC's PFAS testing and treatment solutions](#)

[Learn more about how BC is helping clients to develop PFAS strategies and evaluate options](#)

On March 14, 2023, the U.S. EPA released their proposed drinking water Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLGs) for select *per-* and *polyfluoroalkyl substances* (PFAS). These draft MCLs will go through the formal approval process and are expected to become promulgated by the end of 2023, at which time they will be finalized to become enforceable standards by the end of 2026. These regulations will potentially create major requirements for drinking water utilities and other regulated parties nationwide.

Who is impacted?

The new MCLs will likely have far-reaching effects for facilities involved in any part of the water cycle. Primarily, these MCLs will be enforced for community water systems and non-transient, non-community water systems. The proposed regulations for these drinking water systems are:

Compound	Proposed MCLG	Proposed MCL
PFOA	0	4 ppt
PFOS	0	4 ppt
PFNA	Hazard Index <1.0*	Hazard Index <1.0*
PFHxS		
PFBS		
HFPO-DA (Gen X)		

*The Hazard Index calculation for the sum of these four compounds should not exceed a ratio of 1 based on individual health-based water concentrations.

Brown and Caldwell

These regulations will also likely effect public municipal clients, private sector industrial clients, and other organizations that manage the impacts of regulated contaminants to groundwater and surface water resources through site remediation programs, or wastewater and stormwater operations regulated under the Clean Water Act, NPDES permitting, and other programs.

What is the timeline*?



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What can utilities do now?

Initially, drinking water utilities should sample their raw water and finished water to determine current PFAS levels. Due to the high potential for cross contamination, it is important to follow PFAS sampling standard operating procedures to promote sound data quality. If the results show a potential exceedance of the new MCLs, utilities will want to determine the desired course of action to address the exceedance.

Utilities should also evaluate the timing of the compliance window versus the anticipated time to enact your selected mitigation measure, as well as determine which funding mechanisms are appropriate for your situation. The solution that is right for your utility will depend on the exceedance amount, influent water quality, future capital improvement plans, and capital funding budgets, among other factors.

Additional actions a utility may consider include:

- Developing a proactive communications plan
- Creating an expanded monitoring program
- Blending available sources of supply
- Finding alternative sources
- Piloting/designing treatment systems

How can BC help?

Our team is ready to help you adapt to what's emerging, from strategic planning to baseline sampling and trend analysis to bench and pilot testing of effective treatment technologies. We can help you navigate the complexities of PFAS compliance with appropriate offramps to avoid expensive treatment upgrades when possible.

For our utility clients, if treatment is the desired or necessary path, our engineers and scientists can work with you and our [in-house treatability testing laboratory](#) to perform [bench- and pilot-scale testing](#) to help you make informed

decisions with the potential to reduce the cost and risk of facility design, construction, and operation. BC has made major investments in advanced testing and monitoring equipment to offer our clients access to conventional and [innovative treatment technologies](#) to meet their needs.

BC has communications experts who can assist in developing an outreach plan to help communicate these regulations and implications in a reassuring way to your drinking water customers. We can also help with identifying and applying for grant and loan opportunities related to PFAS treatment.

Together, we can help unlock your PFAS solutions with long-term reliability and sustainability in mind. Contact our PFAS experts below to learn how we can work together to address these new challenges.

About the experts

Kyle Hay, PE is a Senior Engineer at Brown and Caldwell focused on advising clients on drinking water quality and water treatment needs, as well as per- and polyfluoroalkyl substances (PFAS) response efforts. He has years of experience serving as a project manager, design manager, and project engineer on a variety of multi-year, multidisciplinary municipal projects. He co-leads BC's [PFAS](#) services with an eye towards assisting utility sector clients as they work to respond to a rapidly evolving landscape.

Dr. Jim Claffey, PE, is a National Technology Innovation Leader at BC with over 30 years of environmental consulting industry experience. He has expertise in the management of emerging contaminants, including [PFAS](#) in drinking water, wastewater, groundwater, biosolids and other media. Dr. Claffey co-leads BC's PFAS team and focuses on identifying and developing technologies that effectively sequester or destroy emerging contaminants.

FEATURED NEWS GOVERNMENT

Feds give \$2.5 million for Pyramid Lake's Marble Bluff Dam

By: **Kristen Hackbarth** April 6, 2023

Aurora captured in a long exposure over Pyramid Lake in Nevada Nov. 4, 2021. Image: Trevor Bexon / This Is Reno

Nearly \$2.5 million in federal infrastructure funding was awarded today to improve and maintain the Marble Bluff Dam, which regulates the flow of water from the Truckee River into Pyramid Lake. Senators Jacky Rosen (D-Nev.) and Catherine Cortez-Masto (D-Nev.) both advocated for the funding, which will be sent to Nevada through the Bureau of Reclamation.

Funding for the dam will help Nevada's tribal communities improve water storage and build greater drought resiliency.

Marble Bluff Dam is nearing 50 years of service – it was completed in 1975 – and stops erosion within the Pyramid Lake Paiute Tribe's reservation. It also controls water used by the Pyramid

“I was proud to secure these federal dollars to ensure our communities and Tribes in Nevada have access to clean, reliable water, and I’ll continue fighting to combat the ongoing drought and make sure Nevada gets its fair share of resources to protect our water supply,” Sen. Cortez Masto said.

[Click here to learn more.](#)

The Nevada State Railroad Museum is a cultural resource dedicated to educating visitors and the community about Nevada railroad history. Sponsored by Nevada State Museums.

Rosen agreed.



“As our state continues to face extreme drought, it is critical that we keep taking steps to protect Nevada’s water infrastructure,” she said.

Marble Bluff Dam is a 22-foot-high earthfill structure that extends 1,622 feet at its crest. It can control up to 19,700 cubic feet of water per second through the spillway.

AN ELITE CAFEMEDIA PUBLISHER

IndyExplains: How a new BLM rule could make conservation a higher priority in the West



Gabby Birenbaum

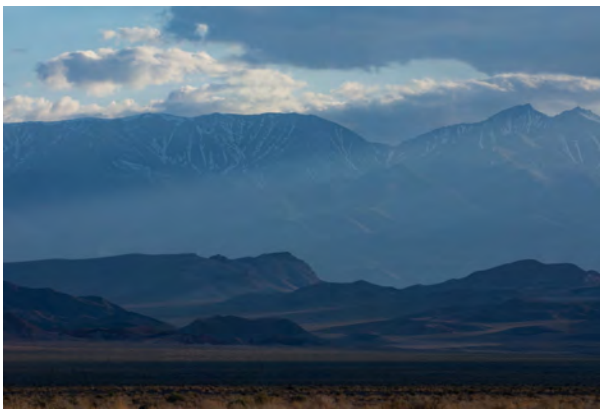
April 9th, 2023 at 2:00 AM

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Mountains outside Tonopah on Sunday, May 9, 2021. (David Calvert/The Nevada Independent)

The U.S. Department of the Interior proposed a new rule last week that would give conservation priorities equal weight in public land use decision-making — a change experts say constitutes one of the most significant land management policy moves in decades.

The proposed [Public Lands Rule](#) represents the culmination of decades of efforts to push the U.S. Bureau of Land Management (BLM) toward prioritizing conservation, as the organization’s ethos has traditionally focused on facilitating economic development on the vast amount of land it manages in the West.

The proposed rule would significantly affect Nevada, a state where the federal government administers more than 85 percent of the land. The BLM alone manages about 67 percent — or 48 million acres — of Nevada.

Under the proposed rule, the BLM would elevate conservation to be on equal footing with other permitted uses for federal land — such as mining, grazing, or oil and gas permitting — that have historically taken precedence. It denes conservation as pertaining to both the protection and restoration of public lands.

The rule also helps the agency advance conservation through leases to third parties, such as environmental groups or energy companies that seek to use a parcel of public land for protection or habitat conservation.

“As pressure on our public lands continues to grow, the proposed Public Lands Rule provides a path for the BLM to better focus on the health of the landscape, ensuring that our decisions leave our public lands as good or better o than we found them,” BLM Director Tracy Stone-Manning said in a statement.

The [proposed rule](#) — which will go through a notice and comment period before a final rule is proposed and adopted — was welcomed by conservation groups nationally and in Nevada, while drawing criticism from [ranching industry trade groups](#), [oil producers](#), and the Nevada Cattlemen’s Association, which raised concerns that the new rule could be abused to the detriment of livestock grazing.

Though most of Nevada’s congressional delegation did not comment on the proposed BLM rule, Rep. Susie Lee (D-NV), a strong supporter of renewable energy, was hesitant about how the rule change could affect permitting energy projects on public lands.

“Washington needs to be able to walk and chew gum at the same time when it comes to advancing both conservation and our transition to a clean energy economy,” she said in a statement to *The Nevada Independent*. “Conservation must absolutely remain a priority, but I’m concerned that this proposed BLM rule could slow appropriate clean energy development at precisely the time when we need to be speeding it up.”

Advocates say the proposed rule will boost the Biden administration’s broader conservation agenda, including restoring and conserving 30 percent of federal lands by 2030 (often referred to as 30X30).

“In a state like Nevada where extractive interests have taken priority, BLM’s new Public Land Rule promises to flip the switch, providing equitable access and protecting public lands for generations to come,” Jose Witt, the Mojave Desert landscape director at The Wilderness Society, a conservation group, said in a statement after the proposed rule was released.

Below, *The Nevada Independent* explains the history of the BLM’s land use management policies, how the proposed rule would work and why conservation advocates say it will make a difference.

When the BLM was formed in 1946, its guiding mission was “managing private access for economic development of public lands,” said Bret Birdsong, a law professor at UNLV who studies public lands and worked for the Interior Department in the Obama administration.

Its domain over public lands was codified in the 1976 Federal Land Policy and Management Act (FLPMA), which clarified that the BLM would oversee multiple uses of the “leftover” federal lands, Birdsong said, beyond designated national parks and forests. And managing for multiple uses has often skewed toward economic development.

The vast majority of land in Nevada is part of the public estate belonging to the American people. BLM estimates that it manages [67 percent](#) of land in the state, from grazing lands and mines to the Black Rock desert in Northern Nevada, where the Burning Man Festival is held.

In post-FLPMA Democratic administrations, Interior appointees in the Clinton and Obama administration led efforts to elevate conservation among the department’s balance of multiple land uses, including protecting biodiversity.

Under President Bill Clinton, then-Interior Secretary Bruce Babbitt championed the creation of National Conservation Lands, granting special status for the BLM to promote conservation as the dominant use in those areas. During the Obama administration, the Interior Department used existing policies to pair conservation efforts with new extractive projects, and crafted resource management plans that promoted conservation.

But the Biden administration’s proposed rule is the first attempt to use the rulemaking process to put conservation on what the department refers to as “equal footing” with other uses of land.

“[The BLM is] going to really think about achieving conservation goals from the get-go, and not sprinkling them on like salt and pepper on a dish that’s fully baked of oil and gas, and solar development, and rights of way for roads and highways,” Birdsong said.

In Nevada, Birdsong said the rule could bolster existing state programs, such as the [Nevada Conservation Credit System](#), which allows companies to earn and trade credits for engaging in rangeland practices beneficial to protecting vulnerable sage-grouse populations.

The BLM also leases lots of land across Nevada for energy development and extraction. That includes leases for hardrock mining, oil and gas developments in Battle Mountain, solar energy projects in Clark County and geothermal power projects in Washoe County.

Rather than decreasing the amount of future permitting, experts said they expect the new BLM rule to force both private companies and the agency to be more intentional about conservation in their planning. The Biden administration continues to emphasize its goal of permitting renewable energy on public land across Nevada. The administration has also backed lithium projects in Nevada that could help to boost electric vehicle production.

“There’s a pretty strong recognition from the Biden administration that we need to be providing for a clean energy economy,” said Ken Rait, public lands director at the pro-conservation Pew Charitable Trusts. “This just gives BLM a chance to be smart from the start.”

Lee, though, is worried the proposed rule could hamper efforts to incentivize clean energy companies to set up shop in Nevada – and she plans to use her perch on the House Natural Resources Committee to ask Interior Secretary Deb Haaland about her concerns later this month.

The rule directs BLM to promote mitigation — efforts to reduce or offset the impacts of development — in its leasing processes. Birdsong anticipates BLM compelling companies to pay mitigation fees or conduct mitigation projects to aid in biodiversity conservation.

The conservation leases are aimed at giving the proposed rule longevity. Under existing policy, one of the limited means BLM had for advancing conservation was to designate a parcel of land as an Area of Critical Environmental Concern (ACEC) during the land use planning process. But a subsequent administration could easily remove that designation, opening up the land to other uses.

The proposed rule would create a 10-year time frame for conservation leases, which would ensure mitigation and restoration efforts continue beyond changes in administrations.

As an example, Birdsong said a company wanting to build a solar farm on public lands in Nevada would first acquire the right of way to the land from the BLM, which typically lasts 40 years. With the interest in conservation baked into the new rule, the BLM could mandate the company engage in a mitigation effort.

Federal land managers could, for instance, ensure the solar farm is built on more durable land, or they could sell a 10-year conservation lease to the company on a separate parcel of land to preserve habitats and offset the potential impacts of the solar farm.

Martin Paris, the executive director of the Nevada Cattlemen’s Association, said while he understands that the intent of the rule is not to prioritize conservation as the agency’s preeminent land use priority, he is nonetheless concerned that the new rule will damage grazing, a land use that already gets “the short end of the stick.”

In particular, he is worried the leases will further restrict grazing if parcels of land are dedicated for conservation only, despite grazing — so long as land is not overgrazed — can be a biodiversity strategy itself.

“Appropriate grazing is conservation,” Paris said. “Hopefully BLM will recognize that. Usually, when it comes to these decisions of what uses are compatible with other uses or not, livestock grazing is the first thing that goes ... We’re a little fearful that this provides a tool to further that end to reduce livestock grazing or chip away at it.”

Beyond the conservation leases, the new rule also creates procedures for identifying and evaluating ACECs, and for creating minimum land health standards for all BLM lands.

The danger of setting policy through the regulatory process is that a future administration could be hostile to the rule’s goals and revoke it.

The Biden administration, for example, spent much of its first year identifying Trump-era environmental regulations it wanted to revoke, and then going through the rulemaking process to do so. But innovations such as the conservation leases could last into future presidential administrations if they hold up under expected litigation. The leases could operate much like those held by oil and gas companies, which have ongoing legal rights to the land.

Rait said public opinion is on the BLM’s side. In a [Colorado College 2023 poll on conservation](#), 87 percent of Nevadans supported the Biden administration’s 30X30 goal, and 72 percent said they preferred that leaders “place more emphasis on protecting water, air, wildlife habitat and recreation opportunities over maximizing the amount of land available for drilling and mining.”

“They want protected lands nearby that they can go to enjoy, to recreate, to go hunting on,” Rait said. “This rule change really speaks to all of the uses that Nevadans enjoy – not just development.”

Most lawmakers have yet to comment on the rule, which was released on Thursday right before Congress adjourned for two weeks. Sen. Jacky Rosen (D-NV) told reporters in Carson City that she would have to review the rule more when asked Tuesday, and Sen. Catherine Cortez Masto’s (D-NV) office declined to comment.

And Rep. Mark Amodei (R-NV), Nevada’s lone Republican in Congress, said he was disappointed he did not receive a heads up from Interior officials — an issue Paris echoed, saying he was not aware of Interior consulting stakeholders in Nevada before drafting the rule.

Some Western Republicans, including Sens. [Kevin Cramer](#) (R-ND) and [John Barasso](#) (R-WY) have come out against the proposed rule. Kaitlynn Glover, the executive director of the ranching industry trade group Public Lands Council, called the proposed rule a radical shift made without transparency.

“The covert manner in which the rule was developed and announced has left permittees feeling like the rule is either a capitulation to the extremist environmental groups who want to eradicate grazing from the landscape, or a concerted effort to develop rules that preclude ranchers’ input,” Glover said.

Amodei said he plans to further study the rule, but that he is suspicious of its potential to be used as a means of dragging out permitting decisions to the detriment of burgeoning industries, such as lithium mining.

He said he favors using the existing National Environmental Protection Act process for identifying conservation concerns when the BLM offers permits and allotments, and worries that the rule will inject greater uncertainty into how conservation is defined, making it easier for officials to shut down important projects.

“I hope this isn’t just another nail in the coffin of the multiple use doctrine, which I think has overall — in any objective sense — served us well,” Amodei said.

The rulemaking process will likely extend into 2024, starting with a 75-day comment period that began in early April. The Nevada Cattlemen’s Association plans to comment on their fears over how boosting conservation could hurt livestock grazing. Paris said the group is also worried that the language around ACECs could be abused.

Other groups — both supportive conservation ones and critical industry and trade groups — are sure to follow in providing comment, given the historic nature of the rule.

“The idea that they’re even doing a rule on conservation is really remarkable,” Birdsong said, citing the fact that the agency has existing rules for managing oil and gas, timber, grazing and other uses. “To do one for conservation is emblematic of the regard that this administration holds for this – not forgotten, [but] uncared for – part of the BLM’s mission.”

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- Susie Lee – \$4,120
- Bret Birdsong – \$1,150



Gabby Birenbaum

Gabby is a staff reporter based in Washington, D.C.

Lake Tahoe's Clarity the Best It's Been Since 1980s

The Return of Native Zooplankton Aided Tahoe Clarity Efforts in 2022

by Kat Kerlin | April 10, 2023



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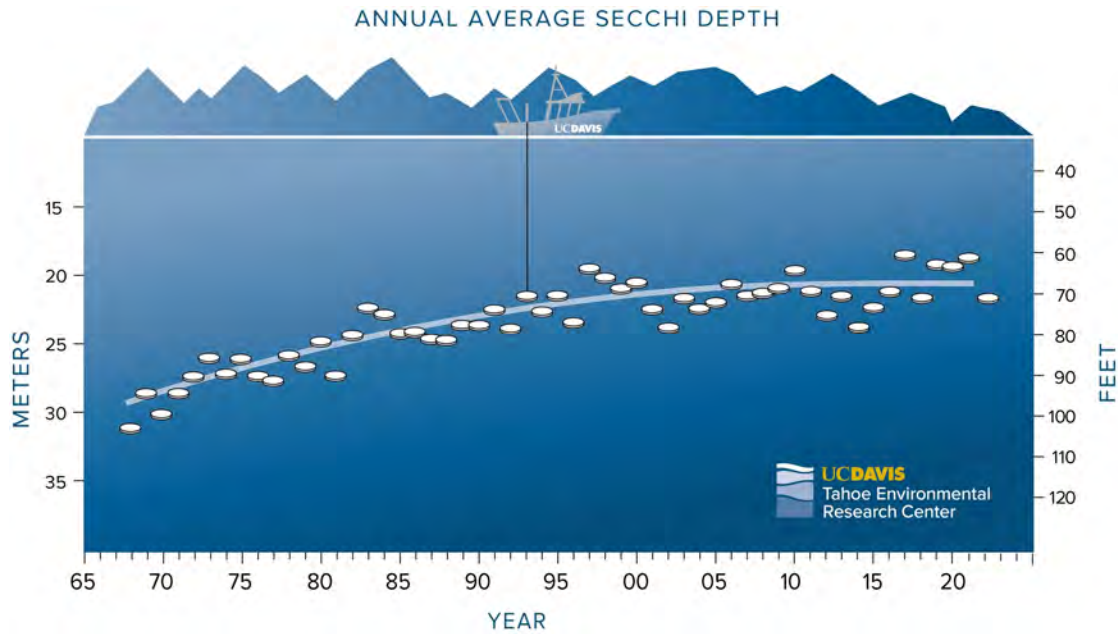
or the last five months of 2022, Lake Tahoe was the clearest it has been since the 1980s. That is due in part to a resurgence of the lake's native zooplankton. They've provided a natural clean-up crew to help restore the lake's famous blue waters.

The findings are reported in the "[Lake Tahoe Clarity Report 2022](#)," released today from the UC Davis Tahoe Environmental Research Center, or TERC, for the Tahoe Regional Planning Agency.

Clarity sinks in

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 2022, Lake Tahoe's average annual clarity was 71.7 feet compared to 61 feet in 2021. The key finding from 2022 was the great improvement in lake clarity from August through December, when the average Secchi depth was 80.6 feet. This coincided with the highest numbers of the zooplankton *Daphnia* and *Bosmina*.



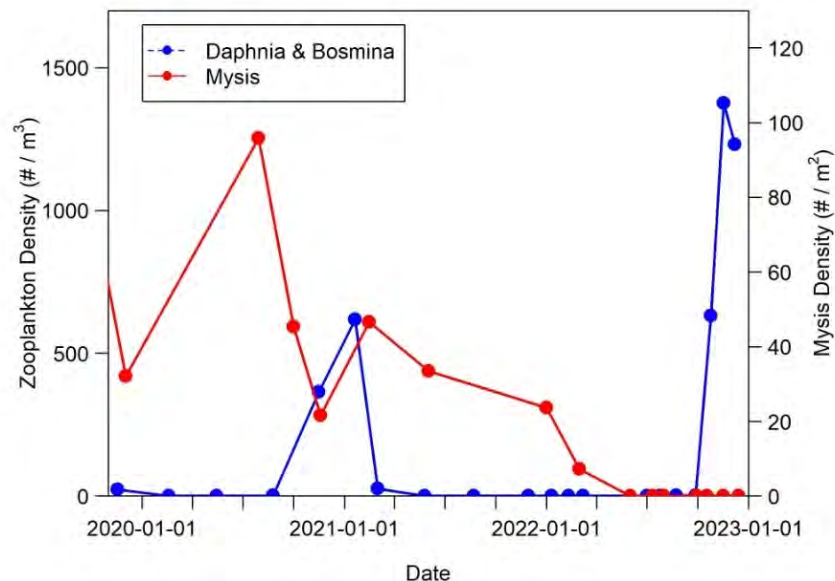
The states of California and Nevada, which share a border at Lake Tahoe, are actively working to restore lake clarity to its historic 97.4 feet.

Zooplankton a clear factor

The primary factors affecting lake clarity are the concentration of particles in a specific size range, such as silt and clay, and tiny phytoplankton, or algae. The phytoplankton *Cyclotella*, a single-celled alga, is in this size range and has impacted clarity in most years.

Zooplankton are small, microscopic animals. Some zooplankton, particularly *Daphnia* and *Bosmina*, are specialized to consume particles in that critical size range.

“*Daphnia* and *Bosmina* largely disappeared from the lake after they were grazed down following the introduction of the *Mysis* shrimp in the 1960s,” said Geoffrey Schladow, director of the UC Davis Tahoe Environmental Research Center. “In late 2021, the *Mysis* population unexpectedly crashed, and it took 12 months for the *Daphnia* and *Bosmina* to build up their numbers and start their natural cleansing.”





Tahoe zooplankton from left to right: *Daphnia*, *Bosmina*, *Diaptomus*, *Epischura*, and *Mysis*. (Illustrations by Sarah Adler)

Other factors are known to influence year-to-year changes in clarity. These include the magnitude of the runoff, the warming of the lake

For a limited time only

The researchers emphasize that the process is still in its early stages, and they expect the clarity improvement to continue through 2023.

“We expect the impact of *Daphnia* and *Bosmina* to grow over 2023, and clarity may return to 1970s levels — despite the expected large runoff from this year’s record snowpack,” TERC boat captain and Secchi disk observer Brant Allen said. “These events support the hypothesis we put forward several years ago that the food web is a major factor in controlling lake clarity.”

However, the assistance provided by *Daphnia* and *Bosmina* may be only short-term. *Mysis* shrimp populations are expected to rebound. As they consume *Daphnia* and *Bosmina*, clarity will return to what we have seen in the past 20 years.

“Future management actions should explicitly look at incorporating ways of controlling the *Mysis* population,” Schladow said. “We have a brief window of time to monitor the lake in the absence of *Mysis* and then

track the impacts of their return on lake clarity.”

This would be in addition to the strenuous efforts that are taking place to keep fine particles and nutrients out of Lake Tahoe. Management

agencies in the basin report more than 500,000 pounds of fine sediment and other clarity-harming pollutants are being kept out of the lake every year through roadway maintenance and erosion control projects.

TERC scientists are currently monitoring zooplankton communities through donor funding. They are also working with local fishing guides to monitor changes to fish. Kokanee salmon, for example, are expected to be larger in 2023, as *Daphnia* are their preferred food source.



A buoy with scientific instruments bobs in the wintry water of Lake Tahoe. (Brant Allen/UC Davis TERC)

Protecting 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.

In 1969, the states of Nevada and California created the Tahoe Regional Planning Agency, or TRPA, to lead the collaborative effort to protect and restore Lake Tahoe and better manage growth and development in the region. TRPA Executive Director Julie Regan says the emerging trend is welcome news for Lake Tahoe at a time when the ecosystem is experiencing more extreme storms, wildfire, and warmer temperatures.

“The lake’s resilience must continue to be supported by regional investments in water quality, forest health and aquatic invasive species prevention and control,” Regan said. “We will continue to work with regional science partners to better understand the role native species play in promoting clarity.”

In 2022, UC Davis scientists took 28 individual readings at Lake Tahoe’s long-term index station. [View the historic clarity readings from 1968-2022.](#)

The clarity report is funded by the Tahoe Regional Planning Agency.

[Subscribe to the Science & Climate newsletter](#)

Media Resources

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[Press kit: Photos, graphs and data](#)

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NevadaToday



Most of the state of Nevada is no longer in drought due to large amounts of precipitation throughout the winter.

Nevada Drought Update for April 2023

Drought was alleviated across much of Nevada

Science & Technology (<https://www.unr.edu/nevada-today/news/science-technology>) | April 10, 2023

Michelle Werdann (<https://www.unr.edu/nevada-today/about/authors/michelle-werdann>)

*Benjamin Khoh is a geography and environmental science undergraduate student working in the Nevada State Climate Office with Associate Professor of Geography and Nevada State Climatologist Steph McAfee. Khoh recently prepared an update about Nevada's drought which was shared through the **Living with Drought (<https://livingwithdrought.com/>)** program and is published below. Living with Drought is a collaborative program that provides information to help Nevadans prepare for, respond to and recover from drought. More information about flood safety will be provided in the April Quarterly Report, which will be available this week.*

There were dramatic reductions in drought across much of Nevada. Much of the state is now drought-free and potentially at risk for flooding. Drought lingers in far southern Nevada.

Current drought conditions in Nevada and across the West

Until March all of Nevada had been in some sort of drought or at least Abnormally Dry (D0) since October 2020. This winter has brought much needed precipitation (and then some) to the region. Areas of western Nevada adjacent to the central Sierra Nevada and parts of Eureka, Elko and White Pine Counties emerged from March with no drought or Abnormally Dry conditions on the [US Drought Monitor \(https://droughtmonitor.unl.edu/DmData/DataDownload/ComprehensiveStatistics.aspx\)](https://droughtmonitor.unl.edu/DmData/DataDownload/ComprehensiveStatistics.aspx) map. Nye, Lincoln, and Clark Counties are still on a Drought Watch per state guidelines. Across the rest of the state, conditions are still improving with a one-class drought improvements over much of the state and two-class improvements in areas of western, northeastern, and southern Nevada. As of March 28, 2023, only 5% of the state is classified as D2-Severe Drought, a substantial decrease from just a month ago when 51.35% of the state was D2-Severe Drought.

In the western US, D4-Exceptional Drought and D3-Extreme Drought remain only in eastern Oregon and in far eastern Wyoming, Colorado and New Mexico. That deep drought in the east is the western edge of significant drought centered over Kansas and Oklahoma. Moderate to Severe drought remain in northern Idaho and Montana, as well. Due to record-setting rain and snowfall, there were widespread one or two drought class improvements over California. Most of the coast, Central Valley, central and southern Sierra are not in drought.

March Temperature, Precipitation and Snowpack

March delivered vast amounts of precipitation across the state in a series of [atmospheric rivers \(https://research.noaa.gov/article/ArtMID/587/ArticleID/2926/Atmospheric-Rivers-What-are-they-and-how-does-NOAA-study-them\)](https://research.noaa.gov/article/ArtMID/587/ArticleID/2926/Atmospheric-Rivers-What-are-they-and-how-does-NOAA-study-them). Areas up and down the state received precipitation amounts approaching 200% of usual for March. Parts of Elko County saw precipitation amounts that were closer to what is typically observed, while northern Pershing County and Clark County were somewhat drier than normal.

In what has seemed like an endless winter, March also brought colder than normal temperatures statewide. Much of the state was 4° - 8°F cooler than normal. The Las Vegas area was slightly cooler than normal.

Snowpack in the Great Basin and much of the Sierra were at least 220% of usual for this time of year. A notable outlier located in the Sierras is the Mono-Owens basin, which has recorded a snowpack nearly 400% of its normal snowpack.

Snowpack in the Upper Colorado, which feeds Lakes Powell and Mead, is also above normal. By late March, it was the highest since 1986 (which is as far back as the Natural Resources Conservation Service Interactive charts go). As of late March, snowpack ranged from 119% of normal in the north to over 500% of normal in the Lower San Juan watershed of southern Utah. The overall basin snowpack was at 158% of normal at the end of the month.

In the Walker River basin, there are about 60 inches of water stored in the snowpack, about 10 inches more than previously recorded by SNOTEL stations in the basin. Further east in the Lower Humboldt basin, the snowpack is not record-breaking, but it is still about twice the usual for this time of year and in the top 5%. Perhaps more critical, the snowpack wasn't yet showing substantial melt, which normally starts in late March.

Soil Moisture

The heavy precipitation has led to much wetter than normal topsoils and wet subsoils throughout much of the Sierras, southeastern and central Nevada. Both surface and subsoils are drier than normal across the northernmost part of the state. Although subsoils are wet in southern Nevada, subsoils remain drier than normal from Clark County through western Nye County.

Water Resources

Water levels for many reservoirs throughout the Sierras are near or above normal for March. Boca Reservoir in particular is at 134% of its usual March amount. Rye Patch Reservoir is still low at 6% capacity, just 22% of its normal amount at this time. Some reservoirs may be below normal to have space when the record snowpack melts in the coming weeks and months or to accommodate other planned water storage.

Critical forest-restoration efforts help protect Little Truckee River headwaters

Apr 13, 2023 | PROJECT HIGHLIGHTS



Webber Lake is the headwaters of the Little Truckee River, the single largest tributary to the Truckee River and a source of water to the Feather River and the California State Water Project. Forest restoration efforts in the dense, over-crowded forests surrounding the lake and popular recreation area will help protect the region from damaging wildfires. *Photography: Truckee Donner Land Trust.*

Forest and watershed protection are two major goals outlined in California's Wildfire and Forest Resilience Action Plan, which is why the environmental and economic benefits of Truckee Donner Land Trust's restoration project in the Webber Lake Basin will percolate across the entire state.

"This project will reduce wildfire risk, as well as wildfire severity, which is of particular importance," said Daniel Joannes, forest and restoration coordinator for the Truckee Donner Land Trust. "Reducing stand density and meadow encroachment will also reduce water uptake and protect a functioning meadow system, both of which are important for water supply on the Little Truckee River, a key tributary of the middle reach of the Truckee River."

The 220-acre Webber Lake serves as the headwaters of the Little Truckee River, which is the single largest tributary of the Truckee River, a critical water source in both California and northern Nevada. In addition to serving Californians in eastern Sierra and Nevada counties as it meanders its way to the Truckee River, a portion of the Little Truckee River is also partially diverted into the Middle Fork of the Feather River, which flows into the Sierra Valley and the California State Water Project.

Both phases of Webber Lake project help protect forest and water

resources

To help maximize forest health and protect this vital area from disturbances, such as drought and wildfire, The Sierra Nevada Conservancy (SNC) funded the Truckee Donner Land Trust in 2019 to complete the Webber Lake Little Truckee River Headwaters Forest Management Phase Two project. The work, which wrapped up in the fall of 2022, thinned 174 acres of wildfire-prone tree thickets in an area adjacent to Webber Lake and removed pine trees encroaching into Upper and Lower Lacey Meadow. By reducing dangerous fuel loads in the area, the project greatly reduces the threat of a high-severity fire, which can destroy forest habitat and result in future flooding and high sedimentation intake into Webber Lake and the Little Truckee River.

Fire hazard severity zones around Webber Lake, mapped by CAL FIRE, illustrate the need for restoration efforts to help reduce the threat of large, damaging wildfires to the area.

These efforts complement Phase Three of the project, also funded by the SNC as part of California's recent and historic investment in wildfire-risk reduction, which will continue thinning 300-plus acres of dense forest on the western side of Webber Lake (Phase One, funded by the SNC, created the Timber Harvest Plan that outlined the restoration efforts for both subsequent phases). Due to the overgrown conditions, both Phase Two and Phase Three locations have been deemed very high fire hazard severity zones by CAL FIRE.

Fortunately, Phase Two was successful and Phase Three is on track to start this summer.

“The hopes and goals of this project are very much being met. Phase Three is on schedule for completion in 2025. After this project is completed, there are two more sections of forestry work planned to round out the forest restoration of the Webber Lake property,” Joannes said.

Land acquisition leads to long-term stewardship and expanded recreation

While both phases help to achieve the goals of [California’s Wildfire and Forest Resilience Action Plan](#) and the [SNC’s Watershed Improvement Program](#), there are other benefits to these projects, as well.

With the help of a \$1 million grant from the SNC, the Truckee Donner Land Trust was able to purchase Webber Lake and Upper and Lower Lacey Meadows from private ownership in 2011. Roughly 3,000 acres in total, the acquisition of this property by the land trust not only ensures this popular tourist destination remains open to the public, complementing [California’s Outdoor Access for All](#) goals, but also that it will be managed to maximize the environmental and recreational benefits well into the future.

“At Truckee Donner Land Trust, we say protecting open space is only the beginning of our work, with a high priority set on stewardship and restoration,” Joannes said. “Particularly in a landscape fractured by a checkerboard ownership pattern, acquiring open space creates larger landscape-scale opportunities for stewardship and restoration. The Land Trust would like to thank Sierra Nevada Conservancy for their integral support in making this happen.”

To help boost recreation opportunities, the Truckee Donner Land Trust added campgrounds, host cabins, rest rooms, trail systems, and is currently restoring a historic hotel on site. A critical habitat for several threatened and endangered species, and a landscape rich in biodiversity and history, the area has become a sought-after venue for a variety of organizations conducting outdoor science camps and field trips, such as the [Headwaters Science Institute’s Girls Summer Research Camp](#).

“Webber Lake has long been a well-loved campground by locals and visitors alike. Fuels reduction and restoration on the site serves as a benefit for all, ensuring the protection of this site for years to come,” Joannes added.

For nearly three decades, the Truckee Donner Land Trust has protected and managed more than 37,000 acres of conservation lands in the Truckee Donner region. Since 2011, this includes Webber Lake and adjacent, critical meadow ecosystems.

The SNC is proud to invest in partners like the Truckee Donner Land Trust and projects like the Webber Lake Little Truckee River Headwaters Forest Management, which ensure that the state’s cherished natural resources will continue to be successfully stewarded for the benefit of all Californians.

More Project Highlights

[← Historic state budget investments protect communities, watersheds, and hospital](#)



KNPR's State of Nevada

Several bills, even from northern lawmakers, focus on Nevada's water

By **Paul Boger**

Published April 13, 2023 at 7:41 AM PDT

LISTEN • 13:48



Paul Boger / KNPR

State Sen. Pete Goicoechea (R-Eureka) and a Senate aid look at a proposed amendment during the 82nd Nevada Legislature, Wednesday, April 12, 2023.

State lawmakers are trying to do something about Nevada's dwindling water supply, with 19 bills under consideration.

Unlike previous years, though, concerns aren't just for southern Nevada, which relies heavily on Lake Mead for its water supply. Northern Nevada lawmakers are also concerned.

One person who thinks much about water use, especially in rural areas, is Republican Senator Pete Goicoechea of Eureka. He's the primary sponsor of Senate Bill 176, a measure that would create a program allowing the state to purchase water rights in basins where they're over-appropriated.

"The statutes say you're not supposed to mine water, but we're doing it in over half the basins," Goicoechea told KNPR's *State of Nevada*.

"If we can get the money available, then it tells the state engineer that he's going to have to walk into these basins... [that are] a critical management area [and] say, 'Okay, if it's over pumped and over appropriated, and it's still declining in 10 years, then you've got to curtail.'"

The costs of buying the water rights and the funding for the program are still unknown. One thing is clear, no one will get rich.

"You have to be in an over-pumped, over-appropriated basin," Goicoechea said. "So it wouldn't be a case of going out here and making some wealthy landowner wealthier."

SB176 will also continue to support the state's priority water laws, which allow those with the oldest water rights to draw their allotment first. He says if lawmakers were to change that precedent, it would cost the state dearly.

"There's a lot of people that do have huge pieces of water rights, particularly mining," Goicoechea explained. "They bought a lot of ranches in eastern Nevada. They have some senior water rights. I guarantee you they will sue if [lawmakers] change the law. Rightfully so, we're talking billions of dollars [from them]."

Goicoechea represents a vast swath of rural Nevada. His district extends from Jackpot, on the Idaho border, to Primm.

Paul Boger

Paul serves as KNPR's producer and reporter in Northern Nevada. Based in Reno, Paul specializes in covering state government and the legislature.

[See stories by Paul Boger](#)

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From Wastewater To Drinkable Water: A New Water Banking Project For Northern Nevada

April 18, 2023

By Vanesa de la Cruz Pavas



Krishna Pagilla, PhD., environmental engineering program director at UNR, holds a bottle of advanced purified water as an example of what OneWater Nevada can achieve. Credit: Vanesa de la Cruz Pavas.

OneWater Nevada's new regional facility will provide advanced purified water to the Truckee Meadows region as early as 2029

The water you drink is not new; it is not being fabricated from scratch. It has passed from Earth's atmosphere back to the rivers, plants, and animals many times before ending up in your drinking cup. Drinking what once was wastewater, then, should not sound so strange; it has been shown to be of the best quality when properly treated. The project OneWater Nevada (<https://onewaternevada.com/>) is designing and creating an advanced purified water facility that will allow Northern Nevada to have underground storage of high-quality drinkable water as early as 2029.

As a project that does not judge the water by its history but by its quality, OneWater Nevada developed a system over the last five years for biological filtration of wastewater. Now, they are designing a large-scale facility that will start construction in 2024 and produce up to 2,000,000 gallons of advanced purified water per day — enough to supply a small community.

The project is a partnership between the Truckee Meadows Water Authority (TMWA); the cities of Reno and Sparks, the University of Nevada, Reno; Washoe County; the Western Regional Water Commission; and Truckee Meadows Water Reclamation Facility.

Although the region has quality water sources and enough reservoirs and underground storage, it is still an arid and drought-prone state. “What we want is to take the water that we already have and use and purify it back to drinking water quality, and put it in the ground and store it for future use for the region to be water resilient,” said Krishna Pagilla, Ph.D., environmental engineering program director at UNR. “It is like having money in the bank.”



A team from the University of Nevada, Reno led the evaluation and testing of OneWater Nevada’s demonstration program, which was done in trailers equipped with advanced water purification technology. Credit: OneWater Nevada.

The technology is ready

After years of testing and a smaller pilot study located in North Valleys, the team achieved water quality that meets the national and state drinking water regulations stated in the **Safe Drinking Water Act** (<https://www.epa.gov/sdwa/drinking-water-regulations-and-contaminants>) against natural and man-made contaminants.

To do so, **they tested a new treatment technology.**

(<https://onewaternevada.com/wp/wp-content/uploads/OneWater-Nevada-Advanced-Purified-Water-Demonstration-Final-Report.pdf>) “That is why our project is so unique,” said Lydia Teel, Ph.D., emerging resources program administrator at TMWA.

“Cities located close to the coast use membranes such as reverse osmosis to purify the water, but that generates brine steam that is then sent to the ocean. We do not have that luxury in Nevada, being an inland community.”

Their approach has also been shown to be more complete than merely reverse osmosis. It is called ozonation followed by biologically active carbon filtration, or BAC, and it has been demonstrated in **research studies**

(<https://www.sciencedirect.com/science/article/pii/S0043135411007561>) to improve the treatment of wastewater.

“We use technologies such as ozonation where we add a strong oxidant which is similar to what is added in purified bottled water, and we use a biological method called biological filtration, where bacteria will remove any contaminants that may be present at very low concentrations, to non-detect levels, or of magnitude lower than any harmful effects they might pose,” said Pagilla.



Dissolved air flotation equipment used by OneWater Nevada on a pilot study to test and evaluate water treatment design. Credit: OneWater Nevada.

Next Steps

The Advanced Purification Facility will be located in the North Valleys. The Water Reclamation Facility, where water will be stored underground, will be located at American Flats. The resulting water is pure enough to drink, but it will be injected into the ground for additional natural treatment and future storage.

One remaining challenge will be in educating the public that advanced purified water is okay to drink.

“We have a lot of public outreach to do,” Teel said. “We’re not worried about the technology as we know it can be treated to the point of drinking water, and it’s safe and reliable. But we want to make sure that people understand that it is safe. The next step is for us to educate the public.”

At the end of the day, all water is recycled as part of its natural cycle. “It’s not like our regular water is coming from outside of the planet,” Pagilla concluded.

Vanesa de la Cruz Pavas is a graduate student in the Media Innovation program at the Reynolds School of Journalism. She is a student in the News Studio: Science Reporting class, and a reporter for the Hitchcock Project.

A Boom Year for Sierra Nevada Snow



April 1, 2022

April 6, 2023

JPEG

Today's story compares the 2022 and 2023 snowpack in the Sierra Nevada. To see changes in the snowpack since 2006, visit our [World of Change series](#).

After three years of busts, 2023 was a boom year for snow in the Sierra Nevada. Precipitation from a deluge of atmospheric rivers blanketed the California mountain range with a historic amount of snow.

Many parts of central California received 200 percent or more of expected precipitation this water year, which started on October 1. Eleven moderate-strength atmospheric rivers hit the southern Sierra Nevada this year, which is twice the average number. Precipitation from these storms contributed to a breach of the Los Angeles Aqueduct, the re-emergence of Tulare Lake in the San Joaquin River Valley, and heaps of snow on the range.

The natural-color satellite images above, acquired by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite, show the stark difference between the snow cover in the Sierra Nevada on April 6, 2023 (right) compared to April 1, 2022 (left).

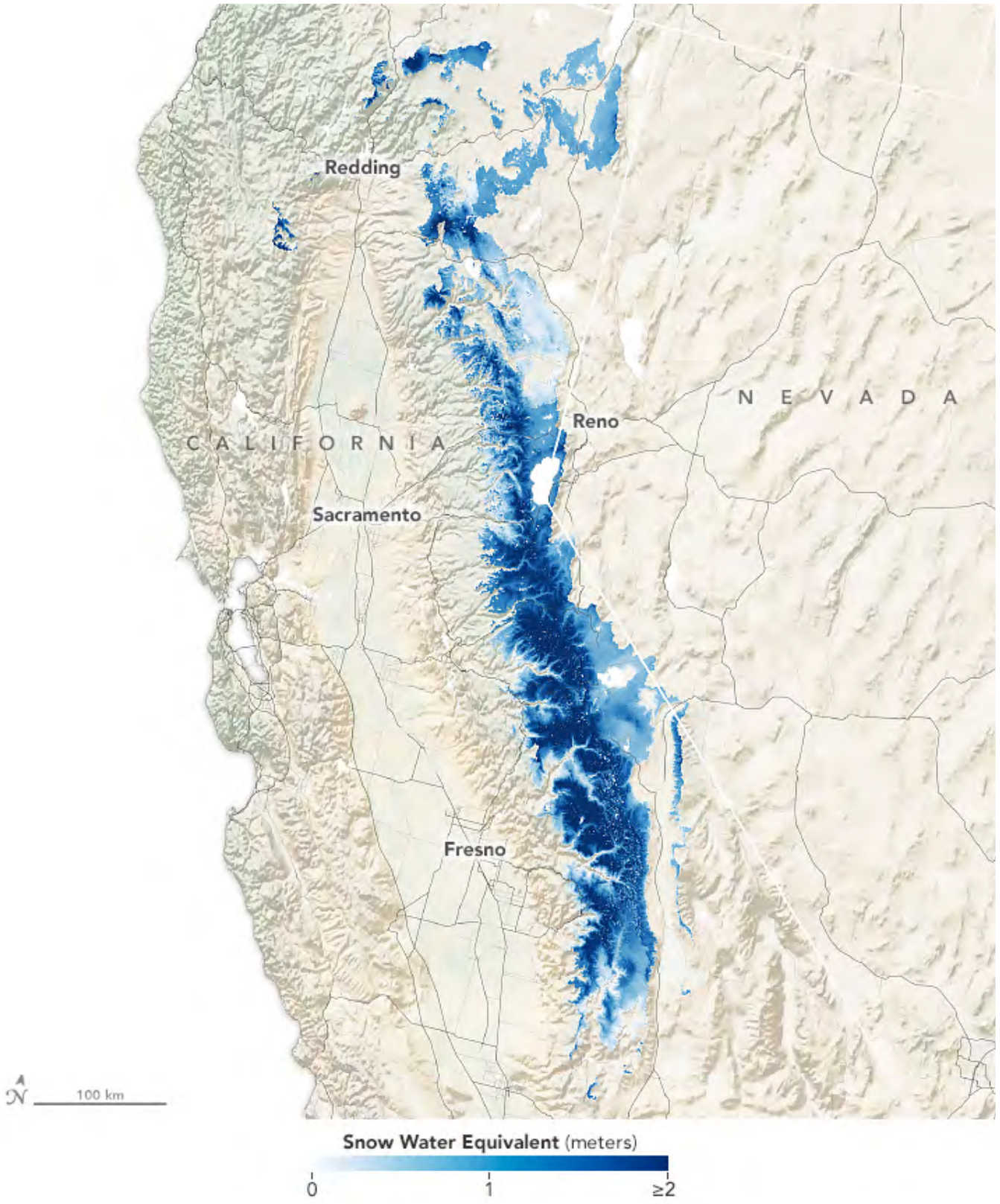
“Not only was this year wet, it was also unusually cold,” said Noah Molotch, a mountain hydrologist at the Institute of Arctic and Alpine Research (INSTAAR) and NASA's Jet Propulsion Laboratory. Parts of the central coast experienced the coldest winter since 1978-1979, according to the National Weather Service. “This has contributed to an anomalously high snowpack in both the southern Sierra Nevada Mountains and at lower elevations along the range.”

Molotch and colleagues at INSTAAR have been using satellite data to track snowpack along the range every two weeks. Their analysis on April 1—which is typically the date of peak snowpack—confirmed that the season was a boom. “This is the greatest amount of snow water content we have seen in the Sierra Nevada since our record began in 2000,” Molotch said.

The map below shows snow water equivalent (SWE)—a measurement of how much water you would get if all of the snow in a given area melted at once. The measurement was particularly high in the southern Sierras: four times (439 percent) the average for April 1, according to Molotch's analysis. Mountains in the central part of the range were at 284 percent of normal, and slopes to the north were 271 percent of normal.

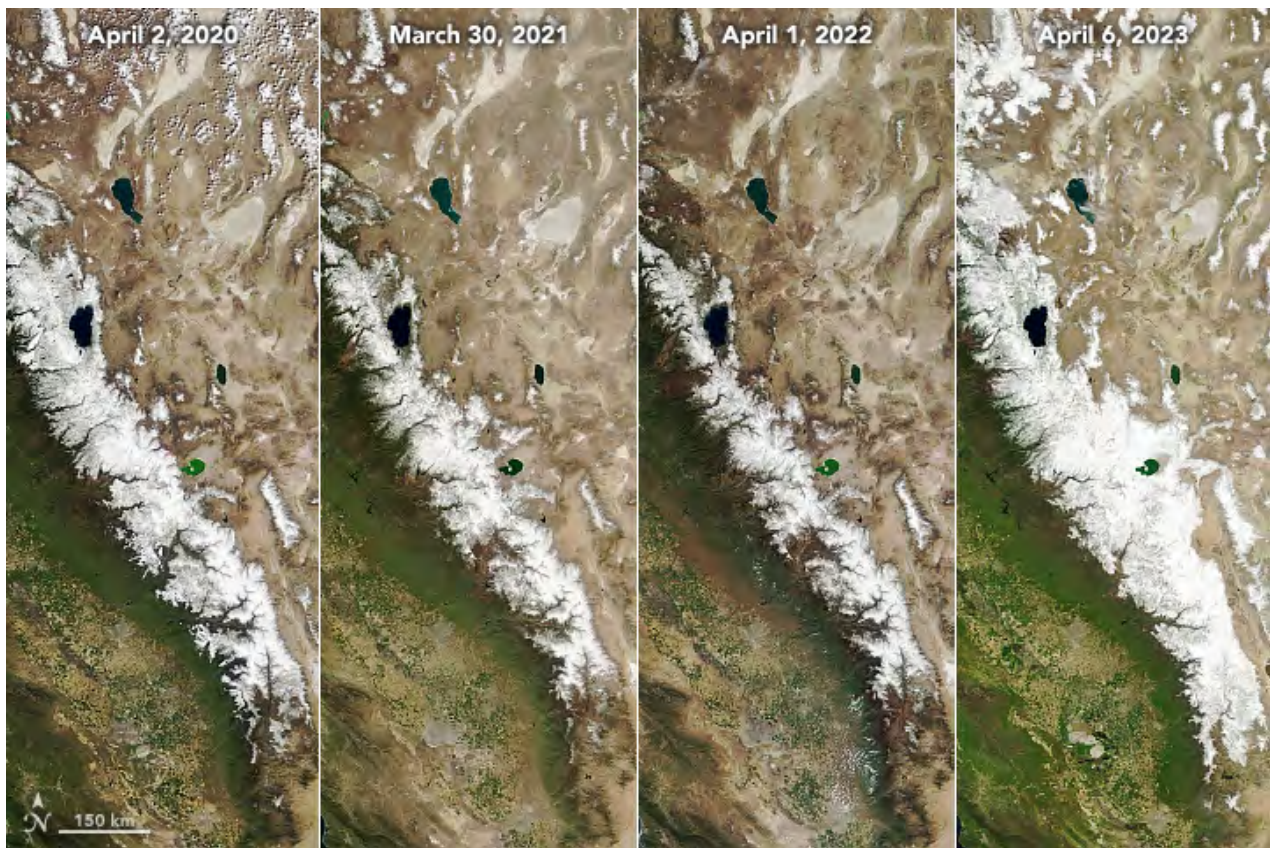
The near real-time analysis of snow in the range relies on 20 years of data from the MODIS instruments on NASA's Terra and Aqua satellites. NASA's Shuttle Radar Topography Mission (SRTM) data on topography, among others, are also used to model mountain conditions.

Using ground-based measurements, the California Department of Water Resources (CA-DWR) also found that this year's snowpack is one of the largest. Their survey of 130 ground-based snow sensors throughout the state indicated that the snow water equivalent on April 3 was 61 inches (1.55 meters), or 237 percent of average for that day. “This year's result will go down as one of the largest snowpack years on record in California,” said Sean de Guzman, manager of CA-DWR's Snow Surveys and Water Supply Forecasting Unit, in a press release. The only other time snowpack was this high was in 1952, but the system for measuring snow was different, making it difficult to make comparisons.



April 1, 2023

JPEG



April 2, 2020 - April 6, 2023

Snow that falls in the Sierra Nevada each winter is a natural reservoir that slowly melts and flows down into the river valleys in spring and summer. In a typical year, this snowpack accounts for about 30 percent of California's water supply. This year, some reservoirs are so full that water managers are having to release water to make room for more snowmelt. This year's exceptionally high snowpack was preceded by three years of extreme drought in the western U.S.

Data provided by Molotch and INSTAAR colleagues Leanne Lestak and Kehan Yang provide a detailed picture of snowpack across the range and at different elevations, which helps CA-DWR and other water managers better forecast snowmelt. Funding for the product was originally provided by NASA's applied sciences program, and it is now supported by CA-DWR.

NASA Earth Observatory images by Lauren Dauphin, using MODIS data from NASA EOSDIS LANCE and GIBS/Worldview and snow water equivalent (SWE) data courtesy of the University of Colorado Boulder Institute of Arctic and Alpine Research. Story by Emily Cassidy.

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Wet winter's silver lining: Most of Nevada no longer in drought



Drought monitor shows 23% of Nevada experiencing drought conditions

By [Colton Lochhead](#) Las Vegas Review-Journal

April 19, 2023 - 7:00 am



Updated April 19, 2023 - 1:01 pm

Less than one-quarter of the nation's driest state remains in drought, thanks to a [deluge of storms that swept across](#) the Western U.S. this winter.

Just 23 percent of Nevada was experiencing drought conditions as of April 11, according to the U.S. Drought Monitor — an extraordinary turnaround for the state that was completely under drought designations less than three months ago. The area around Las Vegas stands as the only remaining spot of “severe drought.”

“We sometimes say that the fastest way to end a drought in Nevada is with a flood,” said Steph McAfee, Nevada’s state climatologist and a professor at the University of Nevada, Reno.

For more than two years, the entire state of Nevada had been classified as experiencing some level of drought, ranging from “moderate” to “exceptional.” That trend finally broke in early February, and conditions have only improved since.

It’s not unusual for drought conditions to dissipate relatively quickly in Nevada, even in periods in which those droughts stretch on for years, McAfee said. But this year’s change was “especially fast,” she added.

“This was a [very wet winter](#),” McAfee said. “That does give us a buffer and a little bit of a break next year in terms of water resources.”

Some parts of Nevada have seen record levels of precipitation this winter, including [the western edge of the state](#) near the Sierra Nevada range, as well as points near Ely and along the Utah border.

Unlike recent years, that snowpack isn't expected to melt off right away, either.

"This is really nice. We've had some nice, uniform cooler-than-normal temperatures across the region, which is going to help the snowpack hang around," Dave Simeral with the Reno-based Western Regional Climate Center said Tuesday during a webinar to discuss the drought conditions.

But that immense amount of snowfall brings with it other concerns, most notably the elevated risk of flooding.

McAfee, the state climatologist, also cautioned that while this year has been far wetter than most, the long-term trend for Nevada and the West has been a move toward a hotter and drier climate.

Back in late 2010, Nevada completely shed all of its drought conditions. But by the winter of 2012, nearly the entire state already had fallen back into drought conditions.

"We are a dry state, and there will always be another drought," McAfee said. "We do get these wet reprieves, but that doesn't mean we shouldn't always be thinking about reasonable and prudent [water conservation](#)."

Contact Colton Lochhead at clochhead@reviewjournal.com. Follow [@ColtonLochhead](#) on Twitter.

How PFAS are entering America's water supply

PFAS are chemicals used to make a variety of industrial and consumer products.

By [Amanda Hernandez](#) and [Mark Nichols](#)

April 21, 2023, 3:01 AM



Fighting for water equity in Fayetteville, North Carolina

Fayetteville, North Carolina, resident Carrol Olinger talks about the PFAS pollution in her tap water, saying: "I didn't know I..."

[Read More](#)

Synthetic chemicals are being detected in [America's water supply](#) at a rapid rate, potentially affecting millions of people over the past two decades, according to a data analysis by ABC News.

Researchers say that when people are exposed at high levels, these chemicals can increase certain health risks.

Per- and polyfluoroalkyl substances, also known as [PFAS or forever chemicals](#), are a group of approximately 12,000 chemicals used to make a variety of industrial and consumer products such as nonstick pans, food packaging and firefighting foam.

Researchers are still studying the potential health impacts, but exposure at high levels have been linked to various health problems, including kidney and testicular cancer, high cholesterol and reduced response to vaccines, according to Jamie DeWitt, a professor of pharmacology and toxicology at East Carolina University.

MORE: EPA announces limits on some 'forever chemicals,' but just a fraction are covered

The ABC News analysis of reported PFAS water contamination found that 43% of U.S. ZIP codes have had at least one water source where PFAS contamination was detected over the past 20 years.



A view of the Cape Fear Memorial Bridge over the Cape Fear River and the downtown area of Wilmington, N.C., Feb. 26, 2016.

Lance King/Getty Images, FILE

The data, collected by ABC News from federal and state environmental agencies, show the number of new detections in water sources each year rose from 753 in 2013 to 2,321 in 2021.

That equates to at least 143 million Americans who have been possibly drinking, bathing and cleaning with contaminated tap water during that period. Additionally, millions more who may have been exposed to PFAS through contaminated water supplies at military installations, airports, manufacturing plants and other sources.

Researchers say that although most people in the U.S. have some level of PFAS in their blood, the health risks are greatest for those that have the highest exposure.

Last year, the National Academies of Sciences, Engineering and Medicine put out [medical guidelines](#) suggesting that people whose blood contains a high level of PFAS (more than 2 nanograms per milliliter) should get additional screening for high cholesterol, cancer and other potential health risks. People with lower levels of PFAS in their blood "are not expected to have adverse health effects," according to the committee.

An ABC investigation found significant disparities in PFAS exposure in the U.S.

While PFAS contamination is widespread, contaminated water sites are more prevalent in ZIP codes that are poorer and more racially diverse than the national average, the analysis also found.

Of the ZIP codes where PFAS was detected in water sites, 49% were in ZIP codes where the median household income was below the 2020 national average of \$67,521.

One in six ZIP codes with PFAS-contaminated water sites have a higher proportion of non-white population than the national average of 42.2%.

"(Contamination) is sprinkled in every single state in the country. It's sprinkled in communities small, large, rural, urban, suburban. It's all over the place," Erik Olson, the senior strategic director for health at the Natural Resources Defense Council, told ABC News.

The 191-mile Cape Fear River, which runs through the region, is the most industrialized in the state – lined with manufacturing and agricultural plants. It is a drinking water source for more than 1.5 million residents in the region.

A North Carolina newspaper first reported in 2017 that a former DuPont chemical plant had dumped PFAS chemicals into the Cape Fear River for nearly 40 years.

DuPont owned the facility that polluted the river from 1968 until 2015, when it spun-off its PFAS business to a separate business, the Chemours Company.

Because Chemours was operating the facility at the time contamination was discovered in the river, the state of North Carolina investigated and fined the company \$12M for violating clean water laws – part of a consent order the company agreed to in order to avoid further litigation.

DuPont officials would not respond to interview requests from ABC News. They were not charged with any wrongdoing because they had sold the company prior to 2017.

Although the Chemours Company declined to speak to ABC News for this story, they did provide an emailed statement saying, "We have and continue to implement state-of-the-art technologies, including a thermal oxidizer completed in December 2019 that destroys over 99.99% of PFAS air emissions."



Geologist Ryan Bennett with the Illinois Environmental Protection Agency collects samples of treated Lake Michigan water in a laboratory at the water treatment plant in Wilmette, Illinois, July 3, 2021. An

analysis of the samples detected a pair of toxic PFA che
Tribune News Service via Getty Images, FILE

[Show more](#)

The company says it does additional work to treat the "legacy pollution" and reduce PFAS compounds from reaching the Cape Fear River.

Still, there's an ongoing impact from PFAS contamination on residents in the region.

"North Carolina is kind of ground zero for unlocking and understanding where we are right now with PFAS contamination, especially with drinking water," Emily Donovan, co-founder of Clean Cape Fear, told ABC News.

"It was kinda like a slow, rolling nightmare. Like a nightmare that you can't wake up from," Donovan said.

Blood tests performed between 2020 and 2021 on hundreds of residents in New Hanover and Brunswick counties in the Cape Fear region show almost all had levels of 44 different PFAS chemicals in their bodies.

The median blood level for PFAS chemicals in residents of New Hanover and Brunswick counties was 6 parts per trillion — far above the national average.

In nearby Cumberland County, Carolyn McDonald, a lifelong area resident, is convinced PFAS contamination has contributed to her health problems.

She used to love the taste of well water straight from the ground. But when she heard the groundwater was contaminated, she began to worry.

"I've been drinkin' groundwater from the well all my life," she said.

Now, McDonald, and her family, who live in the Fayetteville, North Carolina, area, buy bottled water twice a month.

June 5 will mark five years since she began kidney dialysis treatment. She wakes up at 3 a.m., three times a week, to travel about 30 miles to her dialysis center.

McDonald said she was shocked when she was diagnosed with kidney disease.



The Chemours Company's PPA facility at the Fayetteville Works plant near Fayetteville, N.C. where the chemical known as GenX, a PFAS, is produced is shown June 15, 2018.

Gerry Broome/AP, FILE

While impossible to prove PFAS was the cause of McDonald's illness, [research studies](#) say that PFAS contamination increases the risk of kidney disease.

She says she also has nephews, a niece, brothers and friends who also lived in the area and drank the well water – who also suffer from kidney-related problems.

When she learned the contaminated groundwater could be a contributing factor for kidney disease, she says it all made sense.

"All these illnesses, all (of) us ... drinkin' the water. There's gotta be a connection between the illness and the water," she said.

The Environmental Protection Agency is responsible for monitoring PFAS contamination across the U.S. In October 2021, the EPA released its plan for addressing the problem, but by early 2023, it had only issued a few advisories and missed key deadlines.

This past March, the EPA [proposed the first federal limits on six forever chemicals in drinking water](#). The proposal includes setting a limit of 4 parts per trillion, the lowest level that can be accurately measured, for two types of PFAS chemicals called PFOA and PFOS.

EPA Administrator Michael Regan said his strategy is to "hold corporate polluters accountable and work towards regulations that make it very clear what is safe and what is not safe."

ABC News investigative producer Evan Simon contributed to this story.

April 25, 2023

CORTEZ MASTO ANNOUNCES \$2.1 MILLION IN WATER CONSERVATION FUNDING FOR PROJECTS ACROSS NEVADA

Washington, D.C. – U.S. Senator Cortez Masto (D-Nev.) announced that projects in Las Vegas and Reno will receive over \$2.1 million in funding from the U.S. Department of the Interior for water conservation and efficiency projects. This funding, delivered in part by the Bipartisan Infrastructure Law Cortez Masto helped pass, will support upgrades for the Truckee-Carson Irrigation District and help install over 1.5 million square feet of artificial turf at Las Vegas high schools.

"When it comes to combatting drought, I'm working to make sure Nevada has the resources it needs to continue its all-of-the-above approach," **said Senator Cortez Masto.** "From modernizing our water infrastructure to encouraging drought resistant landscaping, these grants will help us increase our water conservation and keep water in the Colorado River."

The Southern Nevada Water Authority will receive \$2 million to help install over 1.5 million square feet of water-efficient artificial turf on 22 fields at 11 high schools within the Clark County School District. The Truckee-Carson Irrigation District will receive \$129,941 to upgrade turbines for the 26 Foot Drop Power Plant. This project will help the plant generate more renewable energy.

Senator Cortez Masto has been a leader in the Senate working to combat drought. Cortez Masto fought to deliver \$4 billion to combat drought in the states bordering the Colorado River in the *Inflation Reduction Act*. She helped

pass the Bipartisan Infrastructure Law, which will continue to make a historic amount of funding available for water and wastewater infrastructure improvements across the country over the next five years. Cortez Masto also championed a \$450 million competitive grant program for large-scale water recycling projects across the Western U.S.

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EDUCATION SCIENCE FEATURED

DRI: Climate change impacting stream flows

By: **ThisIsReno** April 25, 2023

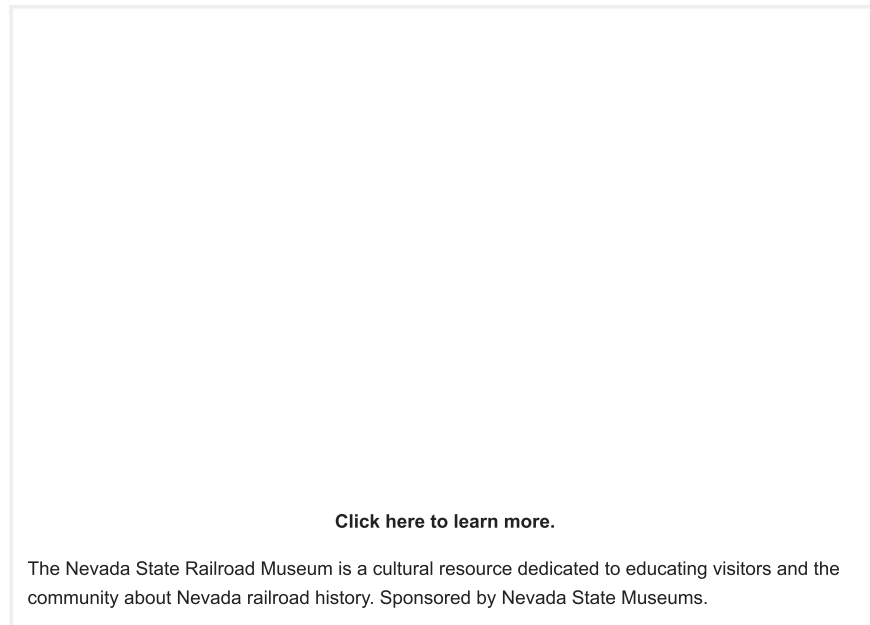
An existing path along a section of Truckee River east of Reno between Larkin Circle and Mustang Road. Image: Ty O'Neil

Submitted by the Desert Research Institute

Climate change is here, and scientists continue to discover new ways that the world around us is changing. In a new study published in the May issue of the *Journal of Hydrology*, DRI researchers show that altered weather patterns are impacting stream flows across the country, with implications for flooding, drought, and ecosystems.

Led by Abhinav Gupta, a postdoctoral fellow at DRI, the research examined how day-to-day variations in streamflow changed in more than 500 watersheds in the U.S. between 1980 and 2013.

important, the researchers say, for helping water managers adapt to climate change's impacts.



"We wanted to understand how climate change has impacted the hydrological balance across the U.S. based on the observed data," Gupta said. "Once we understand how climate change has impacted stream flows in the recent past, we can figure out what kind of changes we might see in the future."



Streams receive water from a variety of sources, including fast, direct input from rainfall, and groundwater that gradually seeps through springs and soil. To understand how climate change is altering stream flows over time, the authors needed to differentiate between normal variability, like seasonal changes, and longer-term trends.

To do this, they broke down stream inputs into events that occur at different timescales, like hourly and daily (rainfall), vs monthly and annual (groundwater). Then, they looked at trends for each timescale to see how they changed over time.

"Once we understand how these trends are evolving, we can make educated guesses about what exactly is changing in the watershed – whether it is snowmelt, surface runoff, base flow, or one of many other factors," Gupta added. "Without studying streamflow in this way (what is called streamflow statistical structure) it's not possible to study all of these components together, at once."

Their results show that snow-dominated watersheds across the country are receiving more precipitation as rain than historically. This means that streams now have more water coming in short bursts from rainstorms, rather than the slow trickle of melting snow. The shift to short-term

“In the past, streamflow changed very slowly over time,” Gupta explained. “But now, because of climate change, we have faster fluctuations in streamflow, which means that we can have a lot of water in a very small amount of time and then we can have no water for a long period of time. These extreme swings are occurring more and more.”

Although the researchers found increased temperatures and changes in rainfall in all watersheds, differences in local climate dictate how this influences streamflow. In humid locales like Florida and the Pacific Northwest, storm inputs decreased, as higher temperatures caused more evaporation, leading the soil to absorb more rainwater.

In the Great Plains and Mississippi Valley, contributions to streams from slow, long-term inputs like groundwater are very low, likely also due to high evaporation rates. Arid watersheds saw an increase in the number of days each year without rainfall over the study period, as well as a significant increase in winter temperatures, making streamflow more sporadic.

More research is needed, the study authors said, to understand what is driving changes in streamflow.

If streams are increasingly dependent on groundwater, this could impact how water managers regulate groundwater pumping for human use.

“That’s the kind of thing we need to know moving forward, in terms of how we manage our water resources,” said Sean McKenna, study co-author and director of hydrologic sciences at DRI. “Can we pump more groundwater, or do we need to be more careful because if we do, we could lose streamflow?”

Gupta said that he plans to build on this research.

“Based on this study, we have been able to identify watersheds across the U.S. that have changed. Now that we know which watersheds in our dataset have been affected by climate change, we can look at the future changes in those watersheds,” he added.



From 10 a.m. to 4 p.m. Saturday, April 28, artists and scientists will come together for a conversation about people, land, water and place. Image Credit: Peter Goin, "The Lady of the Lake, Cave Rock" (from "The Nature of Lake Tahoe, A Photographic History 1860-1960"), 2021.

Land, Water, Place: An Art and Science Collaborative

Scholars, curators, academics and students will present interactive discussions focused on our complex relationships with land, water and place

Arts & Culture (<https://www.unr.edu/nevada-today/news/arts-culture>) | April 25, 2023

The University of Nevada, Reno Departments of Art, Geography and the Low-Residency MFA at Lake Tahoe have joined together to host "**Land, Water, Place: An Art and Science Collaborative.**" (<https://www.nevadaart.org/event/land-water-place-an-art-and-science-collaborative/>) from 10 a.m. to 4 p.m. Friday, April 28 at the Nevada Museum of Art.

During the joint symposium, scholars, curators, academics and students will present interactive discussions and talk about different ways of perceiving and communicating the complex relationships between people, land, water and the idea of place. It is hoped that through these meaningful conversations, attendees will take away a more wholistic view of what place means to them and how ideas around our relationships to land and water may be seen

through different lenses and still share common themes.

“In proposing collective engagement in ‘Land, Water, Place,’ this event offers ways the Department of Art will work across disciplines and out in the world, engaging with Northern Nevada as a site for research and creativity,” Kelly Chorpene, chair of Art, Art History and Design, said.

“The question of where art and geography intersect is an interesting one,” Adam Csank, chair of Geography, said. “I like to think about the way that artists perceive space and the world around them as similar to the way that geographers view space. Geography after all is about connections – connections between people, connections between places, connections between people and place and connections between the environment and society. Artists and Geographers often view the world through similar lenses.”

Students and faculty in geography, art and poetry will present alongside museum curators and scholars. Presentations by students and faculty from the **University of Nevada, Reno at Lake Tahoe (Lake-Tahoe)** include Amy Smith (Poetry, Low-Residency MFA), Sarah Lillegard (Interdisciplinary Arts alumna, Low-Residency MFA) and Rick Parsons, director of the Holman Arts and Media Center. The event will also feature keynote speaker T.J. Demos, director of the Center for Creative Ecologies, UC Santa Cruz.

Related Programs

- **Department of Art**
(<https://www.unr.edu/art>)
- **Department of Geography**
(<https://www.unr.edu/geography>)
- **College of Liberal Arts**
(<https://www.unr.edu/liberal-arts>)
- **College of Science**
(<https://www.unr.edu/science>)
- **Ozmen Institute of Global Studies**
(<https://www.unr.edu/global-studies>)

In addition, Chorpene and Csank will present a case study: “Drawing in Social Space,” co-led by graduate students Betta Manalo (Geography) and Bobby Lee (Art, MFA). The inspiration behind the study comes from the remote participation of Nourredine Ezarref, an artist from Marrakech, whose work engages with hydro-politics in rural Morocco. This project received Ozmen Global Studies Faculty Research funding, and the outcomes will be shown in an exhibition that Chorpene is co-curating at **Drawing Room London** (<https://nam04.safelinks.protection.outlook.com/?>

[url=https%3A%2F%2Fdrawingroom.org.uk%2F&data=05%7C01%7Cotull%40unr.edu%7Ceb649477316f43593a3908db3ac7c750%7C523b4bfc0ebd](https://www.drawingroom.org.uk/?data=05%7C01%7Cotull%40unr.edu%7Ceb649477316f43593a3908db3ac7c750%7C523b4bfc0ebd)
September 2023.

“The Ozmen Institute for Global Studies is delighted to partner with the Nevada Museum of Art and University Departments of Art and Geography to raise awareness about the importance of water on our planet,” Sudeep Chandra, professor and director of the Ozmen Institute for Global Studies, said. “Water policy, politics and the science that goes into understanding ecosystems requires society to look at these topics from many different viewpoints. An art museum is a perfect venue for holding discussions around the topic of water because its kind of space lends itself to develop in creative discourse and dialogue.”

The symposium is presented by the University of Nevada Reno in collaboration with the Nevada Museum of Art with support from the Benna Arts Excellence Endowment.

[REGISTER IN ADVANCE FOR LAND, WATER, PLACE \(HTTPS://WWW.NEVADAART.ORG/EVENT/LAND-WATER-PLACE-AN-ART-AND-SCIENCE-COLLABORATIVE/\)](https://www.nevadaart.org/event/land-water-place-an-art-and-science-collaborative/)

Arts & Culture (<https://www.unr.edu/nevada-today/news/arts-culture>) | April 25, 2023

3

Organizer's plan to successfully reforest Lake Tahoe with Sugar Pine

By [Terri Russell](#)



Published: Apr. 25, 2023 at 3:44 PM PDT

RENO, Nev. (KOLO) - Last August in South Lake Tahoe we followed The Sugar Pine Foundation's Maria Mircheva as she collected seeds from the majestic sugar pine.

With a sling shot, she took down a couple cones and determined harvesting them would happen in about ten days. What we didn't know is, this tree, and the cones and the seeds were not just selected randomly.

They were selected because of their genetic code.

"These seedlings are special because they are progeny of rust resistant trees," says Mircheva.

Identifying such progeny seeds isn't guess work.

It happens at the U.S Forest Service Placerville Nursery in Camino located in El Dorado County.

"This is the starting point for all of the California reforestation for all 18 national forests in California.," says Wade Bell, Region 5 Nursery Program Manager.

At this nursery there is a greenhouse dedicated to identifying blister rust resistant sugar pines.

Inside it looks like any greenhouse helping make things grow. The seedlings come from sugar pine trees located in the Lake Tahoe area. They are grown, and then exposed to blister rust, a fungus which is 95% fatal.

"We expose them for the blister rust," says Supervising Horticulturist John Gleason. "We infect them with blister rust and then we, based on the symptoms they show, we can tell whether they have the resistant gene or not."

Gleason shows us which trees have the gene as they grow despite being exposed to blister rust. The other seedlings literally pale by comparison. They are brown and unhealthy.

It is the heartier sugar pines identified which will be planted on forest service land. Additionally, their originating seeds will continue to be harvested as well, as they too will survive against blister rust. Those seeds are kept in a freezer at five degrees below zero also located at the nursery. They will remain dormant until The Sugar Pine Foundation asks the nursery to start the growing process.

They are started in six-inch tall cylinders and grown in another greenhouse on the nursery grounds. Within about a year, Maria picks up the seedling and organizes various planting projects during the spring and summer months throughout Lake Tahoe.

"People really like taking part in tree plantings, creating life in the forest," she says. "It is cute baby trees. And they grow and you can visit them. And see what they look like. Did they grow bigger than you? Yea they will be bigger than you in ten years."

<https://www.sugarpinefoundation.org/calendar>

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FEATURED NEWS GOVERNMENT

Drought is over, water restrictions aren't say TMWA officials

By: **Mark Hernandez** April 28, 2023



The Lake Tahoe Dam. Image courtesy of TMWA.

With the record breaking winter northern Nevada just experienced, there is no longer any drought in the area, but does that mean that residents should forget about water conservation?

Officials at Truckee Meadows Water Authority say no.

Bill Hauck, senior hydrologist at TMWA, on Thursday said water conservation efforts are one of the ways residents can help create greater drought resilience in the community for future years when snowpack and precipitation aren't as great as this past winter.



40 years, Hauck said. By continuing to practice proper water etiquette, we are giving ourselves more water for any future dry periods or even future droughts.

[Click here to learn more.](#)

The Nevada State Railroad Museum is a cultural resource dedicated to educating visitors and the community about Nevada railroad history. Sponsored by Nevada State Museums.

“We had a tremendous snowpack at the end of February and that was followed up by record precipitation in the month of March,” Hauck said. “April 1 snowpack measurements were at an all-time high. Record amounts of water in the snowpack measured on April 1 in the Truckee River Basin actually set an all-time record.



“In fact there were many records broken all throughout the Sierra Nevada, some records going back 80 to 100-plus years. It really ended up being a tremendous, tremendous snowpack year for the region,” Hauck added.

TMWA’s tate of the Water presentation on Thursday highlighted how beneficial this last winter has been by completely resetting the region’s entire water system – from Lake Tahoe and the reservoirs all down the Truckee River. With the current snowpack at 242% of normal, the region can set aside worry about any water scarcity for the next two to three years, even if not a single drop of precipitation fell for the rest of the year, Hauck said.

The official “non-drought” designation for the region took effect on April 15, 2023. Only 23% of Nevada is in a state of moderate drought according to the U.S. Drought Monitor, mostly in the area around Las Vegas.

“The difference between our system and Las Vegas’ system off the Colorado River is they are dependent on snowpack and runoff from the Rocky Mountains,” Hauck said.



very cold, all throughout the summer, factors that should be considered when engaging in river activities.

Many of the water use practices the area has adopted have led to water efficiency and dropped the rate of water consumption per person. In the last 20 years, the gallon per person metric has gone down 30%, meaning that even with the new construction, water use is down.

“Our integrated approach to managing our water supply, we consider all of our sources of supply as part of a single system,” Hauck said. “It gives us a lot of flexibility in how we operate. Basically, any one of our sources of supply can meet customer demand alone depending on the time of year, but managed conjunctively with increased system redundancy, we created a drought resilient water supply for our customers here in northern Nevada.”

Some of the precautions residents take today have their origins as far back as 40 years starting with the voluntary restrictions of outdoor watering in the 1980s that turned into mandatory restrictions in the 1990s.

The current outdoor water restrictions, such as even and odd watering days, should be continued with no watering on Mondays and between the hours of 12 and 6 pm.

TMWA provides water services to an estimated 460,000 people in the area with the help of three surface water treatment plants and over 80 production wells of groundwater. In addition to the water, there are three operating hydroelectric plants that generate a revenue of about \$3.5 million per year.

A RAPTIVE PARTNER SITE



TMWA delivers State of the Water presentation

By [John Macaluso](#)

Published: Apr. 27, 2023 at 11:44 PM PDT | Updated: 14 hours ago



RENO, Nev. (KOLO) - [Truckee Meadows Water Authority](#) (TMWA) held its state of the water update Thursday. It's held each year and aims to share the water outlook for Northern Nevada over the next year.

In a nutshell, Northern Nevada's water supply is looking great after a big winter.

"This year, 2023, set an all time record for snow water equivalent in the Lake Tahoe Basin," said Bill Hauck, Water Supply Supervisor with TMWA. Hauck added the snowpack up there right now is 242% above normal and, because of that, we are no longer in a drought situation.

"Full river flows are forecasted through the end of the year and at November 15th, the elevation at Tahoe is projected to be 4.4 feet above the natural rim," Hauck said. "So a non-drought designation took effect on April 15th."

All other upstream reservoirs, like Stampede and Donner, are expected to become completely full as well.

The big winter also means Northern Nevada will have plenty of water over the next few years, even if we have a dry winter or two ahead.

"That water in storage and the reservoirs in Lake Tahoe, Boca reservoirs shoots to provide what's called a required rate of flow at the California/Nevada state line," said Hauck. "So that required state of flow will be met for the next two to three years just on the projected amount of storage that's coming between now and June."

That doesn't mean we should throw all caution to the wind, however. TMWA still has water conservation policies in place, namely assigned day watering.

"It's the people that came before us that set this stage for us to be in this great situation and we want to continue that so that in the future, when someone looks back and says, yeah the system is in good shape, It's been well managed," said Andy Gebhardt, Director of Distribution Services with TMWA. "One of the reasons is we have a strong conservation ethic."

People living at odd addresses can water on Wednesdays, Fridays, and Sundays. People living in even addresses can water on Tuesdays, Thursdays, and Saturdays. No watering is allowed from noon to 6 p.m.

TMWA is also hosting Smart About Water Day, which is set for Saturday, May 6th. That's happening from 10 a.m. to 2 p.m. at Idlewild Park's California building. It's a family oriented event, where people can learn how water in our region is managed. You can learn more about it [here](#).

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Truckee Meadows Water Authority Says There's Enough Water Supply to Last the Region 2-3 Years

Makayla Hardy
Apr 27, 2023

Northern Nevada has been getting a lot of water after the endless snowstorms throughout the winter. Truckee Meadows Water Authority held their annual state of the water presentation today. It's been a long and stressful winter for us this year but in the end, they say it was all worth it.

According to the Truckee Meadows authority, it has enough water that can last us the next two to three years regardless of what our next winters will look like.

Bill Hauck, Water Supply Supervisor, says, "We've had tremendous snowpack at the end of February, and that was followed by record precipitation in the month of March. April 1st snowpack measurements were at an all-time high. Record amounts of water in the snowpack measured on April 1 in the Truckee River Basin actually set an all-time record."

Hauck says that many records were broken all throughout the Sierra Nevadas. Some records dating back 80 to 100 + years. Lake Tahoe Basin set an all-time record for snowpack this year that reached 242% above normal. The streamflow runoff this spring went 250% above normal. Upstream reservoirs are expected to completely fill and Lake Tahoe almost full. According to the drought monitor we are considered to no longer be in a drought situation as of April 15th. Although we have plenty of water to continue normal water supply operations, the Truckee River Operating Agreement stills asks people to continue standard conservations protocols.

Hauck says, "So we're asking customers to once again follow their assigned day of watering schedule. For odd addresses water on Wednesdays, Fridays, and Sundays. For even addresses water on Tuesdays, Thursdays, Saturdays. No watering on Mondays, and no watering between noon and 6PM."

Hauck says that people use four times the amount of water in summer compared to winter, so make sure to use only the water you need and avoid landscape run-off.



Makayla Hardy

High Level of 'Forever Chemicals' Found in Swan Lake

Makayla Hardy

Apr 28, 2023

Residents in Lemmon Valley are being cautioned to avoid Swan Lake after elevated levels of poly and perfluoroalkyl substances (PFAS) were found in recent water samples conducted by the University of Nevada, Reno.

Washoe County, The City of Reno, Truckee Meadows Water Authority, and the Nevada Division of Environmental Protection all came together Friday to answer questions from local residents on the topic.

Kevin Dick, Washoe County District Health Officer, says, "There's been some additional sampling that's been conducted recently. preliminary results showed much lower concentrations than the sample that was collected back in 2021."

After UNR released a presentation last month on the concerning levels of PFAS in Swan Lake, locals started to become extremely worried.

PFAS are a large group of manufactured chemicals that have been used in consumer products such as non-stick pans and food packaging.

PFAS are not known to present immediate health risks, however, long term exposure may present issues such as high cholesterol, autoimmune disease, and cancer.

Dick says that the more recent samples that have been taken, carry much lower levels of PFAS than the samples back in 2021. Swan Lake is not a source of drinking water and never has been.

The City of Reno and their partners have taken additional samples in the North Valleys area and are currently waiting for results. These agencies are taking next steps to avoid the lake and keep the community informed on further updates.

Trina Magoon, City of Reno Director of Utilities Services, says, "And as our next precautionary measure the city of reno will be posting signs on city of reno prperty around swan lake notifying people the presence if pfas and to avoid contact with the water."

The Truckee Meadows Water Authority assures residents that the current drinking water is safe and meets current state and federal health standards.

For more information you can check the link by clicking here.



Officials discussed a water sample taken from Swan Lake which detected an elevated level of 'forever chemicals.'

6 Weather Alerts In Effect

Swan Lake: New worries, same distrust

People who felt burned by government reaction to Swan Lake flooding are not calmed by government assurances about PFAs.

By [Ed Pearce](#)

Published: Apr. 28, 2023 at 4:42 PM PDT



LEMMON VALLEY, Nev. (KOLO) - Lemmon Valley residents came to a meeting Friday morning with a lot of questions about a substance many had probably never heard of until recently. There were few answers but it once again revealed a lack of trust between residents and local government.

The issue this time is PFAS -- an artificial compound found in products ranging from Teflon and Scotch Guard to fire-fighting foam. It's been linked to a number of health concerns and, it was just recently learned, it turned up in elevated levels in samples taken from Swan Lake two years ago.

The meeting was called to brief residents on the issue and assure them they'd be kept informed. It's not clear anyone was reassured by what they heard. There's a long history of distrust between Lemmon Valley residents and the city and county dating back at least to the response to, and issues that led to, flooding in 2017.

"We are compassionate to what's going on out here," County Engineer Dwayne Smith said later, "but we don't know exactly what the issues are with PFAS right now. We will figure that out."

Longtime resident and Swan Lake activist Tammy Holt-Still has her doubts. "I don't think it's good faith. I think they're trying to cover their butts because they have had to have known about it for some time."

Smith says the county hadn't been testing for the compound because it's not required to, but since the concern was raised samples have shown no elevated levels in the lake or the area's wastewater treatment plant. So, the source of the PFAS remains unknown.

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Most Read

[**Suspect chased from Reno to Truckee had 60-mile Calif. chase in stolen truck**](#)

FEATURED NEWS GOVERNMENT

Officials: Swan Lake contaminated with 'forever chemicals'

By: **Mark Hernandez** April 28, 2023

Dwayne Smith with Washoe County discussing PFAS contamination in Swan Lake. Image: Mark Hernandez / This Is Reno, April 28, 2023.

Officials with local government agencies on Friday held a press conference to discuss the findings of PFAS found in lake water at Swan Lake.

PFAS, or perfluoroalkyl and polyfluoroalkyl substances, have been used for decades and are found in all kinds of products like nonstick pans and cosmetics. They are known as "forever chemicals" because they are slow to break down in the environment.

Officials said the water at Swan Lake is not a drinking water source, and the lake's water does not get used at the moment. The press conference was live streamed on Facebook and was recorded from other local news organizations as well as attended by some concerned residents.

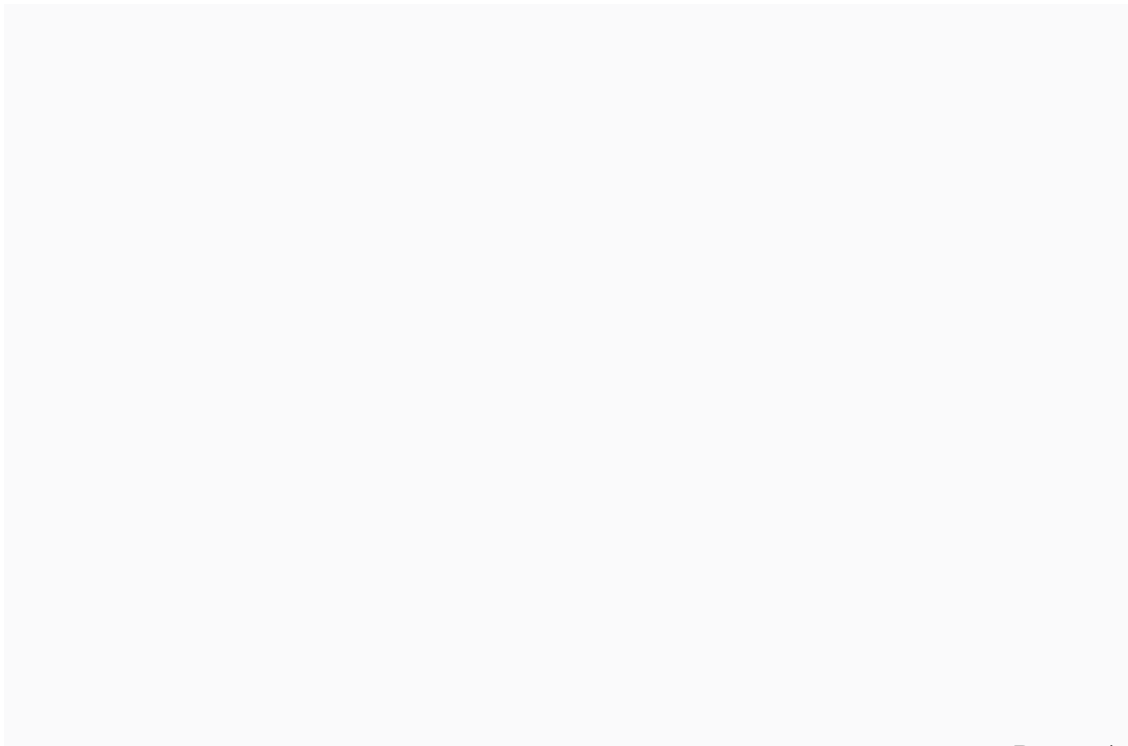


Washoe County. “We don’t know exactly about the health risks associated with PFAS compounds but we are very concerned, so we want to share our information with you.

[Click here to learn more.](#)

The Nevada State Railroad Museum is a cultural resource dedicated to educating visitors and the community about Nevada railroad history. Sponsored by Nevada State Museums.

“Please, as you come out and enjoy areas like Swan Lake we just ask you to take caution not to recreate in Swan Lake – at least not until we get more information and guidance from our health district and our state of Nevada partners.”





~~Trackee Meadows Water Authority officials said drinking water in the Reno area remains safe.~~

“The higher levels in Swan Lake indicate that the PFAS came from another source,” TMWA noted in a press statement. “To investigate further, [the Nevada Division of Environmental Protection] is working with a contractor to conduct various samplings at the lake and other targeted areas across Nevada.

“These samples, as well as recent samples taken by the City of Reno, Washoe County and TMWA, will keep residents better informed and help direct future actions at the lake. With this data, NDEP can also better collaborate with public water systems across Nevada, leveraging federal and state funding to help address PFAS concerns.”

City and county officials said any information that is discovered would be shared with the public as quickly as possible. Relevant information on drinking water can be found at TMWA’s [Smart About Water website](#).

There is no federal limit on PFAS in drinking or surface water. This has caused PFAS to be found in all areas around the globe, such as the soil, oceans and in humans.

“Multiple health effects associated with PFAS exposure have been identified and are supported by different scientific studies,” the [National Institute of Environmental Health Sciences reports](#). “Because there are many types of PFAS chemicals, which often occur in complex mixtures and in various everyday products, researchers face challenges in studying them. More research is needed to fully understand all sources of exposure, and if and how they may cause health problems.”

During the press conference, some residents voiced their concerns about the discovery of the chemicals and other water issues related to the Lemmon Valley area.

That resulted in a heated exchange between the two groups. Officials tried to answer the questions they could and keep the discussion on the PFAS rather than other water problems.

The discovery of PFAS in Swan Lake came from a [presentation](#) that was recently brought to the attention of local agencies. The study, which took place in August, tested the effluent in Swan Lake and found trace amounts of the PFAS that are lower than the limit in other states that have a threshold for the chemicals in water.

PFAS is found in treated effluent around the country.

Nevada, and the majority of other states, does not have a limit on PFAS. The federal Environmental Protection Agency [indicated last month](#) that it will be developing standards for PFAS by the end of this year.

According to the Scientific American magazine, “Scientists have found links between a number of the chemicals and many health concerns—including kidney and testicular cancer, thyroid



Swan Lake image: Mark Hernandez / This Is Reno.

A RAPTIVE PARTNER SITE

EPA Proposes Regulatory Limits for PFAS in Drinking Water

Article By

Joseph J. Rolling

David P. Ruetz

Monday, May 1, 2023

The U.S. Environmental Protection Agency (EPA) recently issued a proposal and request for public comment regarding the Agency's plans to establish regulatory limits for PFAS compounds in drinking water (see Federal Register, 88 FR 18638, 3/29/23).

The proposed EPA rule includes regulatory limits for six PFAS compounds, most notably, the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS), which are two of the most common PFAS chemicals that have been historically used in numerous manufactured products.

Specifically, the rule proposes a "Maximum Contaminant Level" (MCL) for PFOA and PFOS of 4 parts per trillion (ppt). (Note: these proposed limits are less stringent than EPA's Drinking Water Health Advisory levels, which the Agency issued in June of 2022 that recommended levels in drinking water supplies for PFOA and PFOS of 0.004 parts per trillion (ppt) and 0.02 ppt, respectively.) An MCL is the maximum level allowed of a contaminant in water that is delivered to any user of a public water system (PWS).

In addition to the regulatory limits, the proposed rule includes monitoring, reporting, and other requirements to ensure that regulated PWS meet the PFAS standards. PWS that exceed the standards may be required to take

actions to ensure safe drinking water that could include water treatment, such as use of activated carbon, anion exchange and high-pressure membrane technologies, or utilizing other uncontaminated water sources.

In a related action, in August of 2022, the Wisconsin Department of Natural Resources (WDNR) adopted regulatory standards for PFOA and PFOS in drinking water. The drinking water standards, which are set forth in Wisconsin Administrative Code Chapter NR 809, established an MCL for PFOA and PFOS of 70 parts per trillion (ppt), individually or combined. This standard applies to both "community water systems" (CWS) and "non-transient non-community water systems" (NTNCWS). A CWS is a public water system that provides at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Any public water system serving 7 or more homes, 10 or more mobile homes, 10 or more apartment units, or 10 or more condominium units is a "community water system," unless information is available to indicate that 25 year-round residents will not be served. A NTNCWS is a non-community water system that regularly serves at least 25 of the same persons over 6 months per year. Examples of non-transient non-community water systems include those serving schools, day care centers and factories.

In addition to the MCLs, the WDNR regulations require routine sampling of regulated water systems to test for PFOA and PFOS, and also requires that systems that exceed the MCL implement measures to return the system to compliance, which in some cases, could require installation of a new well or installing a treatment system. Since the federal proposed MCLs for PFOA and PFOS are lower than the state of Wisconsin's current drinking water MCLs, if the EPA's proposed rule is ultimately adopted, the WDNR will need to modify its MCL for PFOA and PFOS to be at least as stringent as the federal standards.

PFAS Background

PFAS is an acronym for per- and polyfluorolalkyl substances, which are chemicals that were widely used from the 1960s to the early 2000s in the manufacture of a variety of consumer products, such as stain resistant carpets, non-stick cookware (e.g., Teflon), firefighting foam, food packaging (e.g., microwave popcorn bags/pizza boxes), water resistant clothing (e.g., pre-2000 GoreTex), water resistant repellent (e.g., Scotchgard) and dental floss. While the manufacture of PFAS compounds has largely been phased out in the U.S., these compounds are still used in the manufacturing of many products worldwide, and products containing PFAS are still imported to the U.S. These substances, known as “forever chemicals,” have received considerable attention by federal and state environmental regulatory agencies because of their resistance to chemical breakdown due to the chemical bond between carbon and fluorine atoms in the PFAS compounds, which is one of the strongest in nature. Because of this, humans can still be exposed to PFAS long after the chemicals were released into the environment. A groundwater study in 2016 detected PFAS chemicals in the drinking water supply in over 20 states in the U.S. Further, it is estimated that the drinking water supply of approximately 16 million Americans has been impacted with PFAS chemicals. U.S. Center for Disease Control (CDC) health studies estimate that 98% of Americans likely have detectable concentrations of PFAS in their bodies, and medical studies have suggested that PFAS can cause thyroid disease, pancreatic dysfunction, hormone disruption, kidney and liver damage, and an elevated risk of cancer.

The EPA’s public comment period for the proposed PFAS drinking water rules ends on May 30, 2023, and the EPA has indicated that it hopes to issue a final rule later this year or early next year.

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LATEST LEGAL NEWS & ANALYSIS

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South Tahoe PUD to consider 9.5% rate hike for water, sewer

News [FOLLOW NEWS](#) | 19 min ago

Bill Rozak [FOLLOW](#)
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An example of an aging, burst pipe in the Rocky Point neighborhood.
Provided/STPUD

SOUTH LAKE TAHOE, Calif. — Facing aging water and sewer systems, the South Tahoe Public Utility District Board of Directors will consider raising rates.

The board will considering new rates for the 2024 fiscal year that sets the district on the path to installing \$218 million in water and sewer infrastructure improvements over the next 10 years through the Capital Improvement Program. Most of the water and sewer systems were installed in the 1960s and 70s with some water mains even older, according to the district website.

The board on May 18 will consider raising rates approximately 9.5%, which would raise the monthly cost for a typical residential customer \$4.56 for sewer and \$6.19 for water.

The monthly cost currently is \$48.03 for sewer (based on three sewer units) and \$65.11 for water (based on 6,485 gallons per month).

“The district’s complex water, sewer, and recycled water systems need ongoing maintenance, replacement and improvements,” said General Manager John Thiel in a press release. “The proposed rate increases would continue to fund the water and sewer pipeline replacement program and help keep up with escalating power, chemical, and construction costs.”

The district is a public agency that supplies water for drinking and fire suppression, and provides sewage collection, treatment, and export to protect Lake Tahoe’s delicate ecosystem. Increases to the rates are being proposed to repair and replace 50-90 year old water and sewer systems.

If approved, the new water and sewer rates would go into effect July 1.

“If the new rates are approved, our combined water and sewer rates will be 30% lower than the regional average,” Thiel said. “By investing in our system today, we will lower long-term costs, help prevent expensive emergencies, protect the environment, and ensure long-term, quality service.”

According to the district website, to comply with state law, over the past 10-plus years the district has focused its water system spending on installing water meters rather than replacing undersized and leaking watermains. The Capital Improvement Program will fund 15,000 feet of water main replacement per year, getting us closer to our annual goal of 22,500 feet per year. Replacing watermains prevents leaks, provides increased fire flows, and improves water quality.

The board will vote on rates at 2 p.m. Thursday, May 18, at South Tahoe Public Utility District's Board Room, located at 1275 Meadow Crest Drive.

For more information, visit stpud.us/customers/improvements.

Proposed Sewer Rates (Effective July 1, 2023)		
	CURRENT	ADOPTED
Monthly Sewer Rate (\$/Billing Unit/Month)	2022/23	2023/24
Single Family Dwelling	\$16.01	\$17.53
Multi Family Residences	\$15.46	\$16.93
Hotels/Motels/Timeshares	\$15.20	\$16.64
Trailer/Mobile Home Parks & Campgrounds	\$15.18	\$16.62
Non-Residential	\$16.01	\$17.53

Proposed sewer rates.
Provided/STPUD

Proposed Water Rates (Effective July 1, 2023)		
	CURRENT	PROPOSED
Monthly Base Rate	2022/23	2023/24
3/4 inch connection	\$50.20	\$54.97
1 inch connection	\$83.79	\$91.75
1 1/2 inch connection	\$167.12	\$183.00
2 inch connection	\$267.48	\$292.89
3 inch connection	\$501.87	\$549.55
4 inch connection	\$836.58	\$916.06
6 inch connection	\$1672.61	\$1831.51
8 inch connection	\$2676.31	\$2930.56
10 inch connection	\$3847.59	\$4213.11
Consumption Rate (\$/CCF*)		
Single Family Tier 1	\$1.72	\$1.88
Single Family Tier 2	\$2.62	\$2.87
Multi Family	\$1.71	\$1.87
Commercial	\$1.77	\$1.94
Non-Metered (\$/Month)		
Single Dwelling Unit	\$63.65	\$69.70
Duplex	\$105.70	\$115.74
Triplex	\$143.60	\$157.24
Fourplex	\$185.78	\$203.43
Each additional unit	\$31.13	\$34.09
Business Establishment 3/4 Inch Connection	\$92.16	\$100.92
Business Establishment 1 Inch Connection	\$139.03	\$152.24
*100 Cubic Feet (CCF) = 748 Gallons		

Proposed water rates
Provided/STPUD

Support Local Journalism

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Now more than ever, your support is critical to help us keep our community informed about the evolving coronavirus pandemic and the impact it is having locally. Every contribution, however large or small, will make a difference.

Your donation will help us continue to cover COVID-19 and our other vital local news.

Water bills advance as lawmakers from both parties back more agency funding



Daniel Rothberg May 4th, 2023 at 7:30 AM

Environment

SHARE



The Humboldt River between Lovelock and Winnemucca on Tuesday, February 25, 2020. The river is used by towns along the I-80 corridor, mines, businesses and agricultural operations in Northern Nevada. (David Calvert/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](#).

Nevada is the nation's driest state, and it's hard not to argue water is one of its most valuable resources. Water supports communities and ecosystems in countless ways — every day.

Yet the state agency most responsible for managing water rights is underfunded. At a meeting Tuesday morning, a bipartisan group of lawmakers agreed to do something about it.

During the Tuesday hearing on the agency's budget, Assemblyman Howard Watts (D-Las Vegas) made a motion to increase the governor's recommended budget for the Division of Water Resources by about \$3.1 million over the next two years to address backlogs and gaps in sta ng. The motion was unanimously approved by the budget committee.

Delays are a frequent problem for the division. Watts said a primary issue causing them was "insu they're waiting for some of these [water permits] to be processed."

The division's workforce of 109 full-time employees are charged with adjudicating, processing and managing water rights across the state, from the Las Vegas Valley to Jarbidge, from Ely to Smith Valley. Not only does the agency issue new water rights, but it is often in the middle of heated disputes over existing water rights. On any given day, the division might process maps for new subdivisions, proposals to pump groundwater for mines and plans to irrigate farmland.

Broadly, the engineers, hydrologists and experts in the division often have to weigh these plans against how they might a existing water uses and the environment — in the depletion of springs or the capture of streams. Their decisions are often appealed in state district courts.

Processing these applications takes time and resources, and the responsibilities of the division are only expected to grow in the coming years as the state works proactively to assess and adjudicate what water rights are valid in aquifers that store underground water.

Many have recognized this problem: Last year, when [The Nevada Independent interviewed](#) then-Nevada Supreme Court Justice James Hardesty, he urged the Legislature to look at the agency’s funding. His comments came after he led a commission looking at how state courts processed water cases. After receiving feedback from the commission — comprising various water interests — Hardesty came to the conclusion that the agency is “seriously underfunded.”

“I think it's imperative that the Legislature dedicate some resources to strengthen the capacity of the state engineer to hire additional engineers, to hire additional officers and experts and conduct more hearings,” Hardesty said during the November interview.

Watts’ proposal, which still needs to go through several steps to be incorporated into the budget, would do that, allowing the agency to hire 10 new employees (a nearly 10 percent increase in its workforce) and start to address a backlog in how the state processes and manages water rights.

Before voting for the measure, Assemblyman Greg Hafen (R-Pahrump) disclosed that his family operates a Nye County water utility before backing the measure. He simply said: “We do hold a number of water rights that go through the process, and I won’t disagree with Chair Watts.”



Assemblyman Howard Watts speaks to Assemblywoman Selena Torres inside the Legislature on March 20, 2023, in Carson City. (David Calvert/The Nevada Independent)

Sen. Pete Goicoechea (R-Eureka), who also owns rights and has been a leader on water issues in the Legislature for years, said “We’ve got to do it, we’ve got to stand this department up.”

Across the West, arid states have looked at increasing funding for water-related issues. Earlier this year, Utah signed off on more than [\\$500 million for water](#) conservation and development. In 2022, the Arizona Legislature backed spending of [more than \\$1 billion in water management.](#)

More broadly, both state and federal natural resource agencies have faced retention issues and staffing gaps that have created delays in processing permits. During an interview at a Society of Environmental Journalists conference in Boise last month, Tracy Stone-Manning, director of the U.S. Bureau of Land Management, said the agency was down “a couple thousand employees.”

As lawmakers weigh a budget increase for the Division of Water Resources, the Legislature is also considering several bills focused on the statutory framework around how the state should manage water. **Goicoechea, a Republican senator, and Watts, a Democratic assemblyman, have proposed laws that survived key legislative deadlines in their respective chambers:**

- **A bill to give Southern Nevada emergency powers to curb excessive water use in a drought:** [AB220](#), sponsored by Watts and backed by the Southern Nevada Water Authority, would give the water authority emergency powers to limit excessive residential water use during a shortage. The legislation also aims to transition some septic users to the municipal water system in the Las Vegas Valley. The move would conserve Colorado River water lost in those systems, but some lawmakers remain concerned that the bill will not cover the full costs of the transition. The legislation passed out of the Assembly with support from several Republicans and two Democrats voting against the measure.
- **A proposal to retire water rights:** [SB176](#), sponsored by Goicoechea, would create the Nevada Buy-Back Initiative, an effort to retire water rights in areas of the state where there are more legal entitlements to use water than there is water to go around. SB176 responds to a problem known as over-appropriation, in which policymakers in Nevada and the West permitted an unsustainable amount of water, leading to overuse. SB176, which would deposit \$5 million into the program, is exempt from legislative deadlines.
- **Creating more statutory definitions around water management:** [AB387](#), sponsored by Watts and the result of negotiations involving several major water users, would task state water regulators with using the “best available science” to make decisions, and it defines what “best available science” means. The legislation also clarifies that the use and appropriation of groundwater should not conflict with existing rights. The legislation passed out of the Assembly on a party-line vote, with Democrats in favor of the bill.
- **Enshrining “first in time, first in right” for groundwater plans:** In a split decision last year, the Nevada Supreme Court [upheld](#) a groundwater management plan for Diamond Valley, outside of Eureka, that deviated from a core principle of Nevada water law known as “first in time, first in right.” That principle states that those who claimed water first have a priority to keep using their full allocation in times of shortage. [SB113](#), brought by Goicoechea, would ensure that the principle applied to any future management plans that are meant to address unsustainable groundwater pumping. The legislation would also place more guardrails on the plans. It passed unanimously in the Senate.

In recent years, as prolonged drought has worsened, state regulators have faced increasingly difficult choices about how to use water and resolve water conflicts. **Often, the state makes a decision and the decision is appealed, leaving the courts to interpret Nevada water law.**

In an interview earlier in the year, **Watts said it is “the fundamental responsibility of the Legislature is to set some of these overarching [water] policies that we think are going to put us down the right track, and in my opinion, towards a more sustainable path.”**

During recent legislative sessions, Goicoechea said discussions around water bills were highly polarizing. This year, he said, the dynamic has been different, with groups representing a variety of interests coming together to support some of the legislation that has been proposed.

“Playing defense isn’t going to get it,” he said. “Let’s bring something forward.”



Sage grouse about 30 miles north of Austin. (Jeff Scheid/The Nevada Independent)

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

The Mining Law of 1872 and the “critical minerals” senator: Sen. Catherine Cortez Masto (D-NV) introduced legislation last week that would address the 9th Circuit’s interpretation of a 150-year-old mining law. Environmentalists and progressives in the senator’s own party called the move a giveaway to the hardrock mining industry, chipping away at a legal argument that has been increasingly effective in invalidating controversial mine permits across the West.

- The *Associated Press*’ Scott Sonner [wrote about the dynamics](#). And The *Washington Post*’s Maxine Jaselow had an [excellent piece](#) about the senator and critical minerals.

The push for a Bahsahwabee National Monument: The *Las Vegas Review-Journal*’s Jessica Hill [reports](#): “Nevada’s U.S. senators sent a letter Wednesday to the U.S. Department of Interior Secretary Deb Haaland, urging the Biden administration to support another national monument designation in Nevada: the Bahsahwahbee, or Swamp Cedars, located in eastern Nevada.”

A Nevada water company: *Grist*’s Jake Bittle offers a thorough deep dive into the context and business model behind the Vidler Water Company, which has a long and storied history in the state, from Reno’s North Valleys to Lincoln County. Last year, Vidler was purchased by the D.R. Horton, the nation’s largest homebuilder. [Bittle pulls on that thread in a long feature this week.](#)

NASA gets land in Railroad Valley: More than 22,000 acres of public land in Nye County will now be managed by NASA. That’s right: The space agency plans to use land in the high desert — in Railroad Valley — to calibrate its satellites. [The agency called the valley](#) a “national asset” because sits as “the only location in the United States with all the required qualities for satellite calibration due to the lakebed being large, flat, free of vegetation, of a consistent surface color, undisturbed, easy to access, and with good visibility from space.” Several lithium developers have proposed projects in Railroad Valley, which has also seen exploration and drilling for oil.

- 3PL, a company seeking to develop lithium in the valley, put [out a statement on Tuesday](#) criticizing the land decision, saying it **could block the full build-out of the project.**

PFAS found in lake northeast of downtown Reno: On Friday, city and county officials warned residents of high levels of PFAS, known as “forever chemicals,” that were recently documented in Swan Lake northeast of downtown Reno. PFAS belongs to a class of artificial chemicals that have been used extensively in consumer and industrial products since the 1950s and are now found widely throughout the environment. The high concentration of PFAS was first documented by UNR researchers and brought to the attention of local officials who said they are investigating both the source and scope of the issue. Swan Lake, the site of the county’s sewage treatment system, sits downstream of a former fire training area (PFAS often occurred in firefighting foam). I’ll be writing more about PFAS in Nevada. Here’s a [Twitter thread](#) I did on the press conference.

“For the third time in a decade, federal wildlife officials are **contemplating whether the bi-state sage grouse deserves protection under the Endangered Species Act,**” the *Associated Press*’ [Scott Sonner reported](#). He wrote: “The U.S. Fish and Wildlife Service said Thursday it’s doing a fresh review after a federal judge ruled last May that the [Trump administration acted illegally](#) when it withdrew the most recent proposal to list the species as threatened.”

- [A beautifully written piece](#) from the *Reno Gazette Journal*’s Amy Alonzo following a longtime Nevada Department of Wildlife biologist on a **bi-state sage grouse survey**.

The *Nevada Appeal*’s Scott Neuffer [wrote about](#) the governor’s wildfire briefing last week.

The Washoe County lands bill is back, as the *Reno Gazette Journal*’s [Alonzo reports](#).

The winter storm in Nevada could cost more than \$10 million, [via the Associated Press](#).

For the first time since 2018, federal water managers are conducting a “**high-flow experiment**” at **Glen Canyon Dam, meant to restore habitat in the Grand Canyon**. High-flow experiments are meant to move sediment downstream of the dam. *KUNC*’s [Alex Hager has more](#).

“**Things that were only in history books are now happening before our eyes.**” The *Los Angeles Times*’ Louis Sahagún [looks at the impact of a big snow year on Sierra wildlife](#).

Fires, freshwater streams and fish: Unlike severe fires, low to moderate fire might benefit freshwater habitat, according to research in California. [More from KQED’s Danielle Venton](#).

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- Howard Watts III - \$3,000



Daniel Rothberg

Daniel Rothberg is a staff reporter covering water, climate change and public land.



FEATURED TOP STORY

Smart About Water Day Informs Public on State of Water in Truckee Meadows

Sierra Mike
May 6, 2023

The community was invited to Truckee Meadows Water Authority's (TMWA) free "Smart About Water Day" on May 6, 2023, to learn more on the projects and plans that contribute to the overall state of water in the Truckee Meadows.

At Idlewild Park, the public had the chance to speak with scientists and local water planning experts from TMWA, Truckee Meadows Regional Planning Agency, Truckee Meadows Water Reclamation Facility, Desert Research Institute, and other agencies.

There were information booths, presentations throughout the day, food trucks, and interactive learning opportunities for kids.

People were able to learn about a variety of topics such as:

How water recycling in the Truckee Meadows is advancing, how our water supply stays resilient during drought cycles, what is being done to protect the river and source water in our region, and how advanced water purification processes can extend our water resources.

Sierra Mike
Digital Producer



Multiple local water agencies held 'Smart About Water Day', an event that taught attendees about water in the Truckee Meadows.

NevadaToday



The risk of major fires will likely be higher than normal by July in northwestern Nevada.

Nevada Drought Update for May 2023

Only a small portion of the state is still in drought, and Lake Mead levels are forecasted to improve. Fire risk in northwestern Nevada is likely to be higher than normal by July.

Education & Public Service (<https://www.unr.edu/nevada-today/news/education-public-service>) | May 08, 2023

Michelle Werdann (<https://www.unr.edu/nevada-today/about/authors/michelle-werdann>)

*Associate Professor in the Department of Geography Steph McAfee serves as Nevada's State Climatologist. She recently published an update about Nevada's drought, which was shared through the ***Living With Drought*** (<https://livingwithdrought.com/>) program and is published below. Living with Drought is a collaborative program that provides information to help Nevadans prepare for, respond to and recover from drought.*

Only a fifth of the state remains in drought, and the remaining drought is relatively mild. Lake Mead is still low, but lake level outlooks are more promising than they have been in a long time.

Current drought conditions in Nevada and across the West

Western US drought has been drastically reduced over the winter and early spring. Large swathes of Nevada are Abnormally Dry (D0) or even drought-free. Moderate Drought (D1) remains in Pershing County and is more widespread in southern Nevada, with a relatively small area of Severe Drought (D2) in central Clark County. At this time last year, the entire state was in Severe (D2) to Exceptional (D4) Drought.

Drought has also resolved over much of California and across the Colorado River basin. Drought does remain in eastern Oregon, northern Idaho and Montana and through eastern Wyoming, Colorado and New Mexico. Over the last month, there were one and even two category improvements in Nevada, California and Utah, as well as further north. These recent improvements contributed to two to five class improvements over much of Nevada, California and Utah.

After months of above normal precipitation, April was drier than usual. Much of the state received less than a third of its usual April rain and snow, and no part of the state had a wetter than normal month. Not that anyone was likely to complain.

Temperatures remained cooler than normal, however, over the northern two-thirds of the state. Far northeastern Nevada had average temperatures 2-3°F below normal. Temperatures were above normal in southern Nevada and scattered areas in the central part of the state.

Snowpack has remained well above normal across the Sierra Nevada, the Great Basin and the Upper Colorado River basin. In many basins, the snowpack is still two to three times the normal amount for late April. This is 200 - 300% of a lower normal than on April 1, and the snowpack has started to melt, but there is still an impressive amount of water in the mountains.

In the Carson River Basin, the snowpack held 49.7" of water on April 30. The usual peak snowpack in late March is less than half of that. The Lower Humboldt did not have a record-breaking snowpack this year. However, as of late April, there was still a bit more snow on the ground than there usually is in late March, when the snowpack is at its peak.

For perspective, the Lake Tahoe Basin's combined snowpack and lake water storage (above the rim) is more than enough to fill Tahoe to its maximum capacity.

Soil Moisture

From Esmeralda to Washoe County, in north-central Nevada, and along the eastern edges of White Pine and Lincoln counties, soils are wetter to much wetter than normal. There are apparently persistent areas of dry soils in Elko County (Elko did look pretty dry when I was there a few weeks ago) and in southern Nye and Clark counties.

Water levels in Lake Tahoe and most of the Truckee reservoirs were near or above normal for late April. Reservoirs in the Carson and Walker Basins are a bit lower than normal, but there is still a lot of snow up high in those basins. Rye Patch Reservoir remains very low at only 6% of capacity. Lake Mead is also lower than normal, but there is good news. Current lake levels are right around 1,045', but under the most likely inflow scenario, water levels are forecast to increase steadily through the spring and summer, leveling off between 1,065 and 1,070'. This would still be in shortage condition, but the less severe Shortage Condition 1. The November 2022 24-month study projected that the water level would fall to 1,025' by late summer 2023, so water levels rising around 20' by late summer is very good news indeed.

In the meantime, many streams and rivers are running very high, and the water is cold. That's a dangerous combination, so be careful. It's not a great time for river swimming— for humans or dogs, so make good choices for your furry family members.

Looking forward

The [Climate Prediction Center's \(https://www.cpc.ncep.noaa.gov/\)](https://www.cpc.ncep.noaa.gov/) May - July outlook is less informative than might be desired. All of Nevada is deemed to have Equal Chances of wet, dry, or normal amounts of precipitation and Equal Chances of cooler than normal, warmer than normal or normal temperatures. It's just a tough season for forecasting.

The remaining dot of drought in Pershing County is likely to resolve in the next three months. But drought will probably remain in southern Nevada, given the current drought conditions and the fact that there aren't strong indications that the monsoon will be wet.

So, do wet conditions mean that it will be a quiet fire year? The relationship between fire and drought in Nevada is complicated. If you're curious, you can [read more \(https://extension.unr.edu/publication.aspx?PubID=4950\)](https://extension.unr.edu/publication.aspx?PubID=4950) about why. But, if you just want to know how things will shake out...

The fire season is likely to get off to a slow start in Nevada. There's still quite a bit of snow around at higher elevations, which does tend to keep fire in check. The wet winter has also left soils and vegetation with ample moisture, also reducing the risk of fire. The [National Interagency Coordination Center \(https://www.predictiveservices.nifc.gov/outlooks/outlooks.htm\)](https://www.predictiveservices.nifc.gov/outlooks/outlooks.htm)

indicates normal or below normal chances of major wildfires across Nevada and California through May and into June. However, wet winters can mean lots of grass and high fire risk at lower elevations. In parts of northwest Nevada where the winter wasn't as wet, there's some remaining "carryover fuel" from last year. As a result, the risk of major fires will likely be higher than normal by July in northwestern Nevada. Fire risk may increase in other low and mid-elevation areas throughout the state as we progress into summer.

May is Wildfire Awareness Month, and [Living With Fire \(https://www.livingwithfire.com/whats-new/\)](https://www.livingwithfire.com/whats-new/) has a full calendar of events.

NEWS

Truckee River reservoirs play critical role in Reno flood prevention



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With a thick blanket of snow still covering the mountains and warm temperatures (hopefully) on their way, water managers are planning for epic runoff and high volumes of water in downstream areas.

No flooding is expected on the Truckee River this spring. Historical records show the river doesn't stand much threat of flooding after mid-February, which is good news for Reno residents.

But with all-time snowpack records across the region, expect to see extremely high water levels in area waterways well into June, as well as extremely full reservoirs.

Over the winter, the Carson and Walker basins broke snowpack records dating back to 1981. The snow water content — the amount of liquid in the snow — across the eastern Sierra and Nevada reached levels spanning from 150 percent to nearly 400 percent of normal.

And now, heading into the warm season, only about 20 percent of the snowpack at elevations above 8,500 feet has melted.

“There's so much water up there right now,” said Bill Hauck, senior hydrologist at Truckee Meadows Water Authority.

Along the Truckee River, water managers like Hauck are relying on reservoirs to not only store water, but control river flows downstream.

Keeping room in reservoirs for flood control

Federal regulations require at least 500 cubic feet of water flow per second through the Truckee River at the Nevada/California state line. This year, without any water being released from any of the upstream reservoirs, 3,000 cubic feet per second are flowing through the Truckee.

The rushing water as the snow melts means reservoir levels on the Truckee are being managed to prevent flooding. Reservoirs are only be filled to certain depths, and a portion is kept empty to manage incoming water and prevent flooding downstream.

That storage capacity is what allows water managers to confidently say there will not be flooding on the mainstem of the Truckee River this spring despite the epic snowpack.

There are five federal and two private reservoirs in the Truckee River basin. Stampede, Prosser, and Boca reservoirs are all expected to fill, which they haven't done the past few years during the drought.

"People forget we have big winters. Historically, that's how it's always been — feast or famine, at least in recorded history," Hauck said. "That's just the nature of the Sierra."

Boca and Prosser have already reached flood control levels, and Stampede Reservoir has 45,000 acre-feet of capacity left before it reaches flood control. An acre-foot is about 326,000 gallons, enough to cover an area the size of a football field with a foot of water.

The Truckee basin's upstream storage capacity sets it apart from neighboring river basins such as the Carson, where there are no sizable upstream reservoirs. There, water managers have been releasing water from Lahontan Reservoir, the only major reservoir on the river, for several weeks, as there is enough water in the basin to fill the reservoir multiple times.

Water levels at Topaz and Bridgeport reservoirs in the Walker basin have also been lowered to accommodate for the heavy snowmelt.

Tahoe will come close to filling

Of all the reservoirs to fill, or at least come close to it, the one likely to garner the most attention is Lake Tahoe.

The lake has a natural rim of 6,223 feet. The top six feet of the lake are used as a reservoir, and well into December, the lake's water level was sitting about half a foot below the 6,223-foot rim.

Now, projections show the lake getting within six inches of being "full." It's currently sitting at just over 6,226 feet deep, two feet higher than this time last year. The last time the lake filled was in 2019.

With upstream reservoirs filling so early, Pyramid Lake could even rise up to two or three feet, according to Hauck.

"It's good for everybody in a big year like this," he said.

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