

No solid plan to stabilize reservoirs as water levels plummet



A sunken boat recently appeared near the Wahweap Marina in Lake Powell as the water level continued to drop.

Courtesy of Cindy Stafford
alert top story

Back in February, a small, light brown metallic “bump” surfaced on the northern edge of Lake Powell. By April, the “bump” was four times bigger and had revealed itself as a mineral-crusting hulk of a long-submerged houseboat.

The houseboat’s reappearance symbolizes changes and threats confronting Lake Powell as it approaches its 60th

year of existence. The boat reappeared because the lake has fallen — 9 feet since the first of this year, 40 feet since a year ago and 77 feet since April 2020. Last week, Powell stood at 3,522 feet elevation, only 32 feet above the level at which the Glen Canyon Dam could no longer generate electricity.

A grislier symbol of Lake Mead's concurrent decline appeared just last week. A body of a man who was shot to death was found inside a barrel discovered in a newly exposed bottom area there, the Associated Press reported.

To stem Powell's decline, the U.S. Bureau of Reclamation and its parent agency the Interior Department have tried a number of measures and are about to try a couple more. Each will help stabilize the lake for at least a year or two. For Lake Mead, officials of the Lower Colorado River Basin states of Arizona, California and Nevada have approved major agreements in 2019 and 2021 aimed at slowing the decline of water levels at the U.S.' biggest reservoir.

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But nothing has been done to stabilize either lake for the long term.

Powell is only 24 percent full now, and Mead is 31 percent full. Both reservoirs were nearly full at the turn of the 21st century.

Virtually everyone — state and federal officials, researchers and other academics, environmentalists and business interest groups — agrees that to stabilize both reservoirs, more must be done soon to cut water use far more than what's been done to date.

But even the shorter-term measures that have been proposed or approved most recently are moving slowly, at best. An effort by Arizona and the two other Lower Basin states to save 500,000 acre feet through compensated, voluntary compensation to raise Lake Mead, for instance, has netted only about 338,000 in commitments to conservation, more than four months after what's called "500-plus" began. About 40,000 acre feet of those savings were actually agreed upon before 500-plus was approved, although Central Arizona Project officials say they still belong in the 500-plus plan for several reasons.

The 500-plus program could gain another 100,000 acre feet of savings this year — but not because of voluntary conservation. It would be because the severe California drought is now forcing mandatory cuts in water use — cuts that could save up to that much Colorado River water from being used in Southern California.

In the Upper Basin, a separate program called Demand Management to compensate farmers and other water users for temporarily curtailing their water use is on hold. Some

Upper Basin officials say it may take years to get a plan going, although Chuck Cullom, director of the Upper Colorado River Commission, said he expects approval of a plan by the end of 2022.

Last year, the bureau released 161,000 acre feet from two reservoirs in the river's Upper Basin to Powell. Early this year, the agency held back 350,000 acre feet in Powell that it had planned to release downstream to Lake Mead.

Not long afterward, the bureau announced it would spend \$2 million in the upcoming year to study the feasibility of finding a way for the Glen Canyon Dam to generate power at 3,390 feet, 100 feet lower than its "minimum power pool" level of 3,490 feet.

'Just pushing the pain somewhere else'

Just last week, the U.S. Interior Department signed off on two more measures to prop up Powell. One will hold back 480,000 acre feet in Powell including what's already been held, that would have gone to Mead. The second will release another 500,000 acre feet into Powell from Flaming Gorge Reservoir upstream at the Utah-Wyoming border. These actions alone should raise the lake 16 feet, the Bureau of Reclamation says.

But many water experts, including Utah State University

researcher Jack Schmidt and former Colorado water district leader Eric Kuhn, agree that absent a sudden change in our climate from the hot, dry weather of the past 20 years, it's inevitable that Powell will fall below 3,490 feet without a significant amount of water-saving measures in both basins.

Agreeing is Jeffrey Kightlinger former general manager of Southern California's Metropolitan Water District, now interim general manager for Pasadena Water and Power, a municipal utility.

He called holding back water from Powell "just a temporary stopgap. You're just pushing the pain somewhere else. This is really tough. We've gotta start making tough decisions. It's pretty clear that holding 300,000, 500,000 acre feet at Lake Powell is just buying time."

As for the Powell cutback's impacts on the Lower Basin, Kightlinger added, "If it's a short term measure, it would be fine. If they did it year in, year out, it would be a concern. We're supposed to get a certain amount of water every year. We need to be able to count on that."

The bureau and the four Upper Basin states of New Mexico, Utah, Colorado and Wyoming recognized the fragility of the river's condition last month when they drew up their Drought Response Operations plan for releasing the 500,000 acre feet from Flaming Gorge to Powell, in hopes of minimizing

the risk of Powell falling below 3,490.



Boats float on Lake Powell, a vast reservoir of Colorado River water situated near the Utah-Arizona border. A white "bathtub ring" on the lake's shores shows how much water levels have dropped during a decade of severe drought.

Luis Sinco, Los Angeles Times

The plan also calls for possible releases this fall and winter from Blue Mesa Reservoir in Central Colorado and from Navajo Reservoir in northwest New Mexico. But if dry conditions persist or worsen, the amount of water available to release from upstream reservoirs may not be enough, the plan said.

"As such, Drought Response Operations may be ineffective and therefore futile," the plan said.

Push for water conservation

Since 2013, New Mexico journalist-turned water researcher John Fleck has written repeatedly that when people have less water, they use less.

Now, that theory is getting its acid test in the river's Upper and Lower Basins, as authorities push programs for temporary, voluntary, compensated water conservation.

The Lower Basin program, called 500-plus, began last December when the bureau and the Lower Basin states approved it at a Colorado River Water Users Association conference in Las Vegas. The plan envisions saving 500,000 acre feet a year for at least two years, raising Mead 8 feet a year.

To induce participation by cities, farms and tribes, officials agreed to pay them \$200 million a year.

But since last December, the 500-plus program has netted only about 295,000 acre feet worth of new, committed voluntary water savings a year. That includes about 218,000 acre feet from irrigation districts, tribes and Phoenix-area cities in Arizona, an estimated 66,000 acre feet from two Southern California irrigation districts and about 11,000 acre feet from Las Vegas-area communities. Also, the Coachella Valley Irrigation District's governing board has approved a

program to roll out a conservation program for valley farmers over the next two years, although details haven't been approved yet. The district operates in the Palm Springs area.

Central Arizona Project officials also count another 43,500 acre feet of water savings as part of 500-plus, although the savings were in the works before last December. That's because those savings "were developed concurrently with the 500-plus plan and are considered additive actions for Lake Mead," said Patrick Dent, an assistant CAP general manager. Another 4,685 acre feet of savings were approved last December, around the time the 500-plus plan was adopted.

There's a good chance another 100,000 acre feet will be saved for Mead. But that would result from mandatory, not voluntary conservation, triggered by another water crisis tied to California's even more severe drought. California Gov. Gavin Newsom last month told the State Water Resources Control Board to adopt emergency regulations by May 25, ordering urban water agencies to require water cutbacks of up to savings of 20% from current levels.

Based on past history, "we might take 100,000 (acre feet) less than we currently planned to take from the Colorado River, if conservation kicks in at these levels," said Bill Hasencamp, the district's Colorado River Resources manager. "Any reduction in demand for Colorado River water

is part of the 500-plus plan."

Managing water demand is 'tricky'

The Upper Basin's four states and the Upper Colorado River Commission have spent three years working on a Demand Management program. It, too will rely on "voluntary, compensated" conservation, paying water users to save up to 500,000 acre feet a year,.

The program stems from the 2019 Upper Basin drought contingency plan, which aimed to save enough river water to significantly prop up Powell.

But so far, no commitments have been signed to conserve water. And in March, Colorado's Water Conservation Board, a state agency, put its work on the plan on "a hard pause," until other states can "catch up," said Jaclyn Brown, the board's chairwoman.

"What we committed to do is to get our own house in order, to support agricultural water user needs and protecting our rivers and the environment," Brown said. "What we don't do is make interstate policy, That's what the Upper Colorado River Commission does and what our (state's) commissioner does.

"Demand management is tricky. It walks a line between

those things," said Brown, noting that it also feeds into "the bigger questions on the big river."

A primary concern expressed about demand management is that many farmers believe it will disproportionately affect agricultural producers on the state's west slope, said Anne Castle, a former Assistant Interior Secretary for Water and Science, now a University of Colorado senior fellow.

Because farmers' water supplies generally have a lower value than municipal supplies, their fear is that "farmers will be the target and pay the bulk of the price for bringing Colorado into balance with supply and demand," Castle said.

There's also tension between owners of farm water rights and municipal providers because many of the cities have much newer lower priority rights compared to those of farmers, said Castle, of the university's Getches-Wilkinson Center for Natural Resources. While many farmers' rights date back a century or more, the cities are served by pipelines and tunnels built from the 1930s into the 1950s and '60s and even later, she said.



A houseboat rests in a cove at Lake Powell near Page. Federal water officials have announced that they will keep hundreds of billions of gallons of Colorado River water inside Lake Powell instead of letting it flow downstream to southwestern states and Mexico. U.S. Assistant Secretary of Water and Science Tanya Trujillo said last week that the move would allow the Glen Canyon Dam to continue producing hydropower while officials strategize how to operate the dam with a lower water elevation.

Rick Bowmer, Associated Press 2021

“There is a concern about insuring that municipal water providers here share in the burden of demand management . . . that individual rural communities not be disproportionately affected.

“What that means is there needs to be some mechanism for spreading out the affected water rights that would become part of a demand management program, so the impact is felt

across the whole state, that it isn't concentrated in particular communities that could then be devastated economically by loss of agriculture production," Castle said.

Board chair Brown added that Colorado farmers "say don't want to see water leave the state and not be available to Coloradoans in the future. There's (also) some concern as to how much of that water will actually get to Lake Powell."

Many people outside the Upper Basin don't understand how farmers and other users there get river water, she said. Unlike the Lower Basin, where cities and farmers pull water from Mead via centralized aqueduct systems like the Central Arizona Project, many Upper Basin users divert water directly from the Colorado and its tributaries upstream of Powell, she said. So it's not always easy to trace where the water goes.

Steve Wolff, general manager of the Southwest Water Conservation District, which serves nine Southwest Colorado counties, said he's not sure he agrees that other states need to "catch up" to Colorado, adding the other Upper Basin states are working hard on the program. But he foresaw a tough road ahead before a program is running.

"Demand management — it's hard and complex, and I don't think a program will (start) in one or two years — maybe five or 10," said Wolff. "I think there are other pressing issues we

need to deal with first."

First, over half the Upper Basin's farmers and ranchers who use river water have no access to its long-term storage reservoirs, making it hard to trace the connection between the river and its users, Wolff said. It's not like you can just hold water back and not deliver it to people like you can do from Lake Mead, he said.

"If in the Upper Basin, someone conserves water upstream, you have to track that water downstream, shepherd it by other users and account for it in Powell. You have to look at the the environmental impacts. There's a whole list of issues to sort out. We haven't gotten there yet," said Wolff in a virtual talk for the University of Arizona's Water Resources Research Center.

At the same talk, in March, Denver Water CEO and Manager Jim Lochhead recalled that a few years ago, his agencies worked with the Central Arizona Project, the Bureau of Reclamation and water agencies serving Southern California and Southern Nevada to spend at least \$11 million on various pilot, voluntary conservation programs to reduce Upper Basin water use.

"It generated significant interest, positive and negative among the agricultural community in the Upper Basin," Lochhead said.

While that program generated both positive and negative reaction from Upper Basin farmers and ranchers, it also revealed difficulties in quantifying, tracking, managing and administering water moved from an area above a reservoir like Powell to Powell itself, he said.

Beyond all that, Brown said she wonders if Powell is the right reservoir to be adding water to "in the middle of the desert."

"Asking water users to forgo water use to see it evaporate (at Powell) is problematic as well," Brown said. "I'm not making a comment, 'Should we not store water there?' I'm asking a question about the big scheme of what's going on. It's a personal question I ask myself, because I don't know the answer and I don't know how I feel about it."

At the same time, "I don't want to get beat up as an environmentalist," said Brown, who lives in rural Oak Creek, Colorado, lying in the Yampa Valley south of Steamboat Springs and west of Rocky Mountain National Park, with a population approaching 1,000.

Water researcher and author Fleck said the slow progress in water saving in both basins makes him concerned "that we appear to be running up against the limits of our ability to conserve and use less water.

"If the Lower Basin 500-plus plan can't come up with 500-

plus, and if the Upper Basin seems unwilling to engage in concerted efforts to put more water in reservoirs, there's no third basin to turn to," said Fleck, former director of the University of New Mexico's Water Resources Research Program.

In Colorado, the environmental group Save the Colorado said demand management faces a likely if not certain demise unless the federal government steps in and condemns farm water in Colorado, Wyoming, and Utah to force it downstream into Lake Powell. The group, which favors the draining of Lake Powell and restoration of Glen Canyon upstream of it, has long argued it doesn't make sense to spend hundreds of millions of dollars or more to buy out farm water rights to save the lake.

Regarding the Colorado Water Conservation Board decision to put demand management program on hold, Daniel Beard, Save the Colorado's treasurer and a former U.S. Bureau of Reclamation Commissioner, said, "It seems as if common sense has trumped wishful thinking. The reality of climate change and drought will speed the demise of Lake Powell and the abandonment of Glen Canyon Dam."

'A little bit of cautious optimism'

Other water officials are less concerned about the slow pace of conservation.

Regarding 500-plus in the Lower Basin, Nevada water official Colby Pellegrino noted that California's situation is "incredibly challenging" now, because its State Water Project is running so dry, making it hard for many of its customers to also save Colorado River water.

"It's midyear. We're still working with folks. We have a little bit of cautious optimism that we are going to see some additional conservation in all 3 states," said Pellegrino, deputy general manager for resources for the Southern Nevada Water Authority, a regional agency that delivers river water across the Las Vegas area. "The 500-plus came about pretty quickly. We learned it takes awhile to come up with stuff, to conserve.

"I'm confident. Probably I'm comforted by the fact that everyone is still at the table saying this is what we need to do," Pellegrino said.

Arizona officials "will continue to work with water users and the funding parties to meet towards the conservation objectives," said Patrick Dent, assistant general manager over water policy for the Central Arizona Project, which delivers water via a 336-mile-long canal to cities and farms in the Tucson and Phoenix areas and Pinal County. Besides securing conventional agreements simply to conserve water, officials are also working on arrangements in which some water that users have stored in the lake but have the right to

withdraw would be left in the lake.

“Those efforts (to conserve more water) are ongoing and will continue to generate water for Lake Mead,” Dent said.

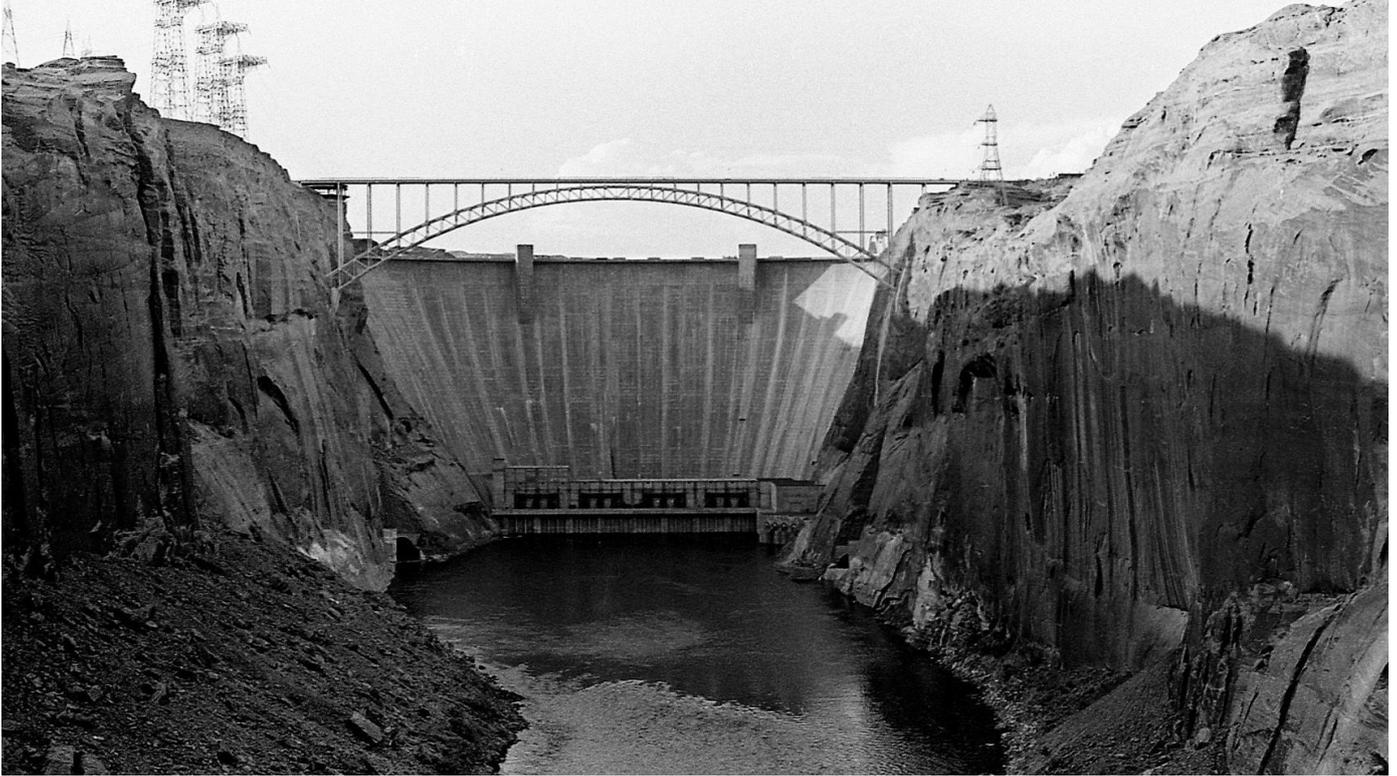
In the Upper Basin, Upper Colorado River Commission Director Cullom said he’s confident about the demand management program’s future.

Colorado’s decision to put its demand management on hold is “appropriate,” as it waits for the commission to finish a study it’s conducting with the bureau, consultants and all Upper Basin states to fully evaluate a program’s positive and negative effects, Cullom said.

“The study is scheduled to be finished this summer. We anticipate we will have decisions on demand management by the end of 2022,” Cullom said. “The folks have been thoughtful in all the Upper Basin states, to consider the full range of impacts.”

Photos: Glen Canyon Dam dedicated in 1966 after years of construction

Glen Canyon Dam



Glen Canyon Bridge and Glen Canyon Dam during the official dedication of Glen Canyon Dam near Page, Ariz. on Sept. 22, 1966.

Mark Godfrey / Tucson Citizen

Glen Canyon Dam



Interior Secretary Stewart Udall, right, with Ladybird Johnson during the official dedication