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FEATURED

As Lake Powell woes worry West, experts call for yet more reduced use

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A longer walk from the dock to the water is in store for boaters at the Elk Creek marina, Blue Mesa Reservoir. Blue Mesa is being drawn down to feed critically low Lake Powell, as continued dry weather and rising demand deplete the Colorado River.

(Courtesy photo/National Park Service)

Aspinall Unit operations

Releases from the Aspinall Unit were decreased from 1,675 cubic feet per second (cfs) to 1,610 cfs on Aug. 7 to bring flows in the lower Gunnison River closer to the baseflow target while still providing the additional release volume under the emergency provision of the Drought Response Operations Agreement (DROA). The April-July runoff volume for Blue Mesa Reservoir came in at 47% of average.

Flows in the lower Gunnison River are currently above the baseflow target of 890 cfs. River flows are expected to stay

If the Colorado River were a bank account, it would be running toward the red.

The river, the lifeblood for several Western states, is being squeezed by overuse and plunging supply — as temperatures stay on the upswing year after year, and thirsty soils rapidly absorb the bulk of moisture from a dwindling annual snowpack.

The conclusion is “inescapable,” Colorado River District Manager Andy Mueller said Monday.

“The inescapable truth is that the Colorado River system is seeing declining flows and for the foreseeable future, is likely to continue on that trend. So we have to adjust expectations and water use accordingly,” he said.

at levels above the baseflow target for the foreseeable future.

Pursuant to the Aspinall Unit Operations Record of Decision, the baseflow target in the lower Gunnison River, as measured at the Whitewater gage, is 890 cfs for August and September.

Currently, Gunnison Tunnel diversions are 1,040 cfs and flows in the Gunnison River through the Black Canyon are around 660 cfs. After this release change Gunnison Tunnel diversions will still be around 1,040 cfs and flows in the Gunnison River through the Black Canyon will be near 600 cfs. Current flow information is obtained from provisional data that may undergo revision subsequent to review.

This scheduled release change is subject to changes in river flows and weather conditions. For questions or concerns regarding these operations contact:

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The Colorado River feeds Lake Powell, the main water storage impoundment for the Upper Basin states of Colorado, New Mexico, Utah and Wyoming.

The river also feeds Lake Mead, the main water storage for the three Lower Basin states of Arizona, California and Nevada.

Allocations of river water are governed by the 1922 Colorado River Compact, which among other provisions accords each basin 7.5 million acre feet of water and 1.5 million acre feet to Mexico.

Year after year of dry conditions hammered the river and, this year, dropped Powell so low that Blue Mesa Reservoir and others in the Upper Basin had to release water to keep Powell's power turbines turning.

"It's our water balance. Last year and this year have been terrible," said Anne Castle, former assistant Secretary of the Interior for Water and Science during the Obama Administration, during an Aug. 5 webinar hosted by the Colorado River District. Castle is currently senior fellow at the Getches-Wilkinson Center for Natural Resources, Energy and the Environment at the University of Colorado law School.

Given climate science predictions, the poor water years have not been a surprise, she said — but Powell dropped 50 feet last year, equating to 4 million acre feet of water no longer available. The reservoir is projected to drop within six months to the dreaded 3,525 feet elevation, the baseline for power generation and meeting the river compact requirements.

"We're facing a very difficult problem right now," Castle said, adding the decreasing supply is putting the squeeze on use and stored water is depleting.

On top of it, the compact prohibits the Upper Basin from depleting more than 75 million acre feet over 10 years (so that it can deliver an average of 7.5 million acre feet a year to the Lower Basin)—a

“guarantee,” as far as the Lower Basin sees things, while the Upper Basin’s perception is Lower Basin states are vastly overusing their water.

Under that rolling 10-year average, the Upper Basin has delivered 92 million acre feet, which is well above its obligation, but that is projected to drop to 82 million over 10 years and, if poor hydrology continues, could plunge even further, which stands to put the Upper Basin below its obligations.

“I think it’s going to be a big shock,” said Steve Wolff, executive director of the Southwest Water Conservation District.

Upper Basin water users are already suffering and have been most every year, no matter the elevation of Powell and Mead, he said.

“We are so dependent on what Mother Nature brings in snowpack each year and every year. Our water users are suffering this year because water supply was not available to them at their head gates in the spring.”

Lake Powell not only provides a “savings account” to meet the Upper Basin’s compact obligations, but generates hydropower that is used throughout the basin, Wolff said.

That hydropower in turn generates revenue, which flows back to the Upper Basin for infrastructure, Endangered Species Act compliance programs and salinity control.

“Powell is important in a lot of aspects,” Wolff said.

Water users in both the Upper Basin and Lower Basin states are attempting to adjust demand, although they disagree over critical elements of the compact and attendant legal agreements.

“But we don’t have much control over the supply. The thing we have our fingers on the lever of is demand. It’s just like a checking balance,” Castle said.

The inflows are like income and the outflows are expenditures — a savings account will help a person weather fluctuations, but when outflows outnumber the inflows, that’s clearly a problem, Castle said.

“That’s where we find ourselves right now. I think we have to think about reducing demand overall in the system,” she said.

Although the Lower Basin states have cut use, there is much more that needs to be done, considering Powell lost 4 million acre feet in the past 12 months, she also said.

“When you modify one component, it’s like putting your finger on a spider web. Everything else starts to ripple,” said Castle.

Changing the rules will have ripple effects on both users and the economy, she said. Although the Upper Basin sees overuse by the Lower, the Lower Basin says it has cut use; is doing what the compact allows, and that the Upper does not have a plan for demand management, she also said.

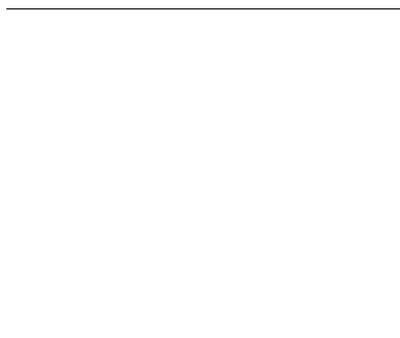
“Everyone’s got their grievances and their legal theories. ... There’s not enough water for any of the lawyers to be right 100%,” Castle said.

The task is to equitably manage use — and that means reducing it, she said.

Powell is sitting at 32% full and Mead, at 35% full, Mueller said.

“No one wants to see their bank account that low. It’s a really frightening situation in the Colorado River Basin.”

How frightening? More than 40 million people depend on the Colorado River for water, as do 4 million acres of irrigated agricultural land, he said. Most water in the Colorado River Basin comes from the Upper Basin — and 70% from the Western Slope.



“It is a very productive zone that we happen to live in and operate in the river district,” said Mueller.

The Colorado River Compact accords to the Lower Basin an additional 1 million acre feet. The Upper Basin’s argument is that this is supposed to account for use from the Gila River, a tributary. The 1.5 million acre feet to Mexico under treaty is to be provided from surplus, unless there is a shortage on the river.

What constitutes a shortage is a point of contention between Upper and Lower Basin states, but Mueller said it's the Upper Basin's position that the Lower Basin is undercounting its consumptive use.

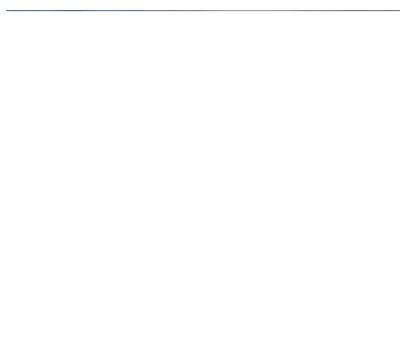
The Upper Basin uses 4 million to 4.5 million acre feet per year, well below its allocation, while the Lower Basin and Mexico (most years) use their full allotments.

The Lower Basin has use of 2 million to 2.5 million acre feet in tributaries and loses another 1 million to 1.3 million acre feet in federal reservoir evaporation or loss during transit.

Mueller said that evap is not accounted for in the Lower Basin's consumptive use, which even without it is at 7.5 million acre feet. Evaporation from the Upper Basin's reservoirs, including Blue Mesa, is counted as consumptive use, and the Upper Basin is still only using 4.5 million acre feet of its allocation, Mueller said.

"The question for us today is what's driving the river into crisis," he said — and that's the twin issues of supply and demand.

Through reservoir evap, transit losses, system losses, Lower Basin tributary consumption (excluding Mexico deliveries), species conservation and purported inefficiencies having to do the groundwater storage in Arizona, more than 1.1 to 1.3 million acre feet a year is being lost. Taking the low end of those estimates, over 10 years, more than 11 million acre feet of water would be available in the system had the overuse been addressed, Mueller said.



"Frankly, it would keep the system from being in shortage today. Right now, there would be a surplus to deliver to Mexico," he said Monday.

Climate change and rising temperatures concern everyone in the Southwest, he also said.

"It's not a political statement from me. It's a fact we're seen that temperature increase," Mueller said Aug. 5, referring to data between 1895 - 2018.

For every 1 degree rise in temperature, streamflow in the Colorado River system decreases 3 to 8%, he said, citing U.S. Geological Survey data.

“The bottom line is, we have seen and should expect to continue to see decreasing flows in a system that is already stressed,” Mueller said.

“It amounts to a year like this, where we have had really poor hydrology, snowpack in the Upper Basin; extremely high temperatures and really dry soil conditions leading into last winter.”

For the Upper Basin, such parched conditions in areas that don’t operate below large federal reservoirs mean a cut in consumptive use – or even near-cessation. Upper sub-basin ranchers and farmers on direct flow ditches don’t have water.

“We’re taking shortages on a regular basis in the Upper Basin, just based on hydrology,” Mueller said.

The Uncompahgre and Grand Valley systems do have some reservoir storage above them and can continue to produce.

“But overall that availability and consumption of water is greatly increased,” Mueller said.

Farmers and ranchers have been feeling the pinch for the past two decades. They cull herds because there is insufficient water for cattle and/or to grow their feed.

“We’ve seen increasingly difficult economic situations for our producers in our area. It’s a real problem,” Mueller said.

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