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Study: Colorado River water supply safe through 2026

Researchers say climate change, river management pose greatest threat

SAM MORRIS / LAS VEGAS SUN file

A seven-state agreement signed 80 years ago gives Nevada 300,000 acre-feet of water each year from the Colorado River.

By *Mary Manning* (contact)

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There's a bit of good news in a new study of warmer climate conditions along the Colorado River, especially when it comes to Lakes Mead and Powell.

There's enough water currently stored in the river, especially in the two largest man-made reservoirs of Lake Mead and Lake Powell, that the chances of draining the Colorado's delivery system are slim through 2026. That's a few years later than some other projections.

Even under the most extended drought possible, threats to the river supplying water to roughly 30 million people in California, Nevada and Arizona won't be felt soon, said Balaji Rajagopalan, lead author on the study from the University of Colorado.

"There's a tremendous storage capacity on the Colorado River that helps with the reliability of supply over periods of a just few years," Rajagopalan said.

Lakes Mead and Powell can store up to 50 million acre feet of water alone, he said, which is the vast majority of the 60 million acre feet that can be stored in the entire Colorado River.

As a result, the risk of draining the reservoirs remains low through 2026, even with a 20 percent stream flow drop from climate change.

But between 2026 and 2057, current river management practices will pose a greater threat to the lakes becoming dry than increasing population pressures, Rajagopalan said.

"On average, drying caused by climate change would increase the risk of fully depleting reservoir storage by nearly 10 times more than the risk we expect from population pressures alone," Rajagopalan said. "By mid-century this risk translates into a 50 percent chance in any given year of empty reservoirs, an enormous risk and huge water management challenge."

The Colorado River is enduring its 10th year in a drought that began in 2000, the study says.

Fortunately, the river entered the drought with its reservoirs at about 95 percent full. The reservoirs have 59 percent capacity left -- about the same amount as last year, Rajagopalan said.

Water managers should re-think current water management practices before more serious effects of climate change appear, Rajagopalan said.

The severity of the risk depends on the extent of climate drying and on the types of water management and conservation measures established, the study says.

By combining water conservation and small pre-planned delivery shortages tied to dropping reservoir levels, the risk of draining the lakes dry can be reduced, said Ken Nowak, a graduate student who participated in the study and is one of its authors.

"But the more severe the drying with climate change, the more likely we will see shortages and perhaps empty reservoirs despite our best efforts," Nowak said. "The important thing is not to get lulled into a sense of safety or security with the near-term resiliency of the Colorado River basin water supply. If we do, we're in for a rude awakening."

The study is in press in the American Geophysical Union journal, Water Resources Research.

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