

Study gives 50-50 odds Lake Mead will dry up by 2021



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The largest man-made reservoir in North America and the source of 90 percent of Southern Nevada's water supply could be sucked dry by overuse and climate change in 13 years or less, a new study warns.

The report unveiled Tuesday by the University of California-San Diego's Scripps Institution of Oceanography places Lake Mead's chances of running dry by 2021 at 50 percent, better than your odds of winning at any casino.

According to Scripps researchers, there is also a 50 percent chance that reservoir levels will fall low enough to shut down power generation at Hoover Dam by 2017, and a 10 percent chance the lake could be dry by 2014.

But the study's co-author, Tim Barnett, said those doomsday dates aren't as important as the overall message.

“The point is this is coming in 10 years, not 20 or 30 or 40. We’re looking it in the face now,” said Barnett, a research marine physicist who wrote the paper with climate scientist David Pierce.

Their work is the latest — and among the most specific — in a line of studies predicting drier conditions and mounting water shortages across the Southwest as a result of climate change.

The peer-reviewed paper titled “When Will Lake Mead Go Dry?” will be published later this year in the journal Water Resources Research.

More than 20 million people, including nearly everyone in the Las Vegas Valley, depend on water from Lake Mead.

The study assumes that by 2050 the Colorado River will experience a 10 to 30 percent drop in the amount of runoff it receives from snow that falls and melts on the western slope of the Rocky Mountains.

If that occurs and water use continues at its present level, the chances become “vanishingly small” that Lake Mead and its upstream twin, Lake Powell, will ever refill, Barnett said.

But not everyone agrees with his conclusions.

Terry Fulp is area manager of Boulder Canyon Operations for the U.S. Bureau of Reclamation, which oversees water deliveries and hydropower output at Hoover Dam.

Fulp puts the chances of Lake Mead running dry at almost zero, namely because the federal government and the seven states that share the Colorado would never let that happen.

“In my lifetime, I don’t expect to ever see it,” he said. “It isn’t in

anyone's interest to see Lake Mead drained down to dead pool.”

Southern Nevada Water Authority officials declined to comment on any of the report's specific findings because they have yet to read the document.

Generally speaking, though, authority spokesman Scott Huntley said the paper raises some important issues.

“I think that same concern is shared by all the states in the Colorado River system. That was really the genesis for the shared-shortage agreements that were signed by the secretary of the Interior and the seven states in December,” Huntley said.

Those new guidelines spell out a series of increasing shortages each state must take as Lake Mead falls toward a surface elevation of 1,000 feet above sea level.

It also requires another round of negotiations among the seven states as the lake approaches the 1,025 mark. From those talks will come “a more difficult plan” for managing the shrinking river, Huntley said.

Farms will almost certainly bear the brunt of that second round of shortage talks, since 80 percent of the water diverted from the Colorado goes to crops, not cities.

“It's not just urban conservation that's needed. We need to conserve it across the spectrum of all water uses,” Huntley said.

“The problem is one that is going to strike very, very hard at agriculture in California and Arizona.”

Barnett said the shortage guidelines actually prompted the Scripps study because the new rules for the river failed to address the impacts of climate change.

As a result, the agreed-upon shortages will buy water managers no more than a couple of years, he said. “It’s going to do nothing.”

Fulp said a panel of climate scientists did weigh in on the guidelines before they were signed. The problem is with the climate change models themselves, which range wildly when it comes to the river, he said.

Some models point to increased flow, while others predict runoff to decline by as much as 40 percent.

Rather than “just pick a number” to represent the impact of climate change, Fulp said architects of the new shortage guidelines opted to plan for a general increase in the variability on the Colorado.

Ultimately, he said there is nothing new about the findings in the Scripps study. Such “doom and gloom” predictions have been circulating for years now.

“Given his assumptions, I won’t quibble with his conclusions,” Fulp said of Barnett. “I think the real question is, are these the right assumptions?”

The surface of Lake Mead has dropped almost 100 vertical feet since 1999. It now stands at 1,117 feet above sea level, its lowest level since 1965, when water was withheld upstream to fill Lake Powell for the first time.

Without new turbines, Hoover Dam can’t generate electricity once the reservoir drops below 1,050 feet.

Elevation 895 is considered “dead pool,” when the water is too low to be released through the dam without the use of pumps.

Roughly 2 million acre-feet of water would remain in the lake at that point, but only the Southern Nevada Water Authority would have access to it thanks to a new intake pipe now being planned.

The so-called third straw, slated for completion in 2012, will draw water from the old river channel at the deepest part of the lake.

“This probably underscores why we need to be in front of the state engineer like we are today, asking permission to draw upon unused, available supplies of groundwater that are separate and apart from the Colorado River,” Huntley said.

Authority officials are in the midst of a two-week state hearing on their plans to tap groundwater across Eastern Nevada and pipe it to Las Vegas.

Critics of the multibillion-dollar project argue that the water cannot be removed safely from rural Clark, Lincoln and White Pine counties — areas that are just as susceptible to drought and climate change as the Colorado is.

Barnett said his findings cast doubt on the ability of Las Vegas, and the Southwest as a whole, to grow at anywhere close to the present pace.

“You have to ask yourself, do you have the water? This is where the word sustainability comes in,” he said.

“Smarter people than me will have to give you the answer to that. I can at least raise the question.”

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