

US declares first water shortage on Colorado River amid historic drought; cuts expected for Arizona farmers

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The federal government on Monday declared the first water shortage on the Colorado River, announcing mandatory cutbacks next year that will bring major challenges for Arizona farmers and reduce the water allotments of Nevada and Mexico.

The declaration of a shortage by the U.S. Bureau of Reclamation has been expected for months and was triggered by the spiraling decline of Lake Mead, which stores water used by Arizona, Nevada, California and Mexico.

The reservoir near Las Vegas has fallen to its lowest levels since Hoover Dam was built in the 1930s and is still dropping after years of chronic overuse and drought. It now stands at just 35% of full capacity.

With the reservoir projected to continue dropping, state officials from Arizona, California and Nevada said they've begun meeting to talk about additional steps to reduce the risks of Lake Mead falling to critically low levels.

Federal water managers said the first shortage declaration shows how severe the drought has become and how climate change is having serious effects on the river, which provides water for about 40 million people.

"Reclamation does not take these actions lightly or do so easily. We do so because it is necessary, protecting the system and implementing the agreements we have in place," Reclamation Deputy Commissioner Camille Touton said in a news conference.

The cuts will be the largest to date on the river, shrinking the flow of water through the 336-mile Central Arizona Project Canal, which for more than three decades has supplied Arizona's growing desert cities and vast stretches of farmlands.

Farmers in part of central Arizona will face major cutbacks in water deliveries next year as a result of the shortage declaration, and they're preparing for the supplies to be shut off in 2023. The reductions will force growers in Pima County to leave some fields dry and unplanted, and the state is providing money to help local irrigation districts drill wells to pump more groundwater.

"The cutbacks are happening. The water's not there," said Will Thelander, whose family has been farming in Arizona for three generations. "We'll shrink as much as we can until we go away. That's all the future basically is."

The announcement is based on projected reservoir levels over the next two years. Even bigger cuts are possible in 2023, meaning some Arizona cities could begin to see their water deliveries slashed as well.

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The level of Lake Mead is projected to end the year at an elevation of 1,065 feet, which puts the river's Lower Basin in what's called a tier-one shortage. The government's estimates also show the reservoir probably will continue falling, possibly triggering a lower-level shortage in 2023 that would bring larger cuts.

The reductions are taking effect under a 2019 agreement called the Drought Contingency Plan, which was aimed at reducing the risks of Lake Mead falling to critical lows. But as extreme heat and drought have persisted across much of the watershed, the levels of the Colorado's largest reservoirs have fallen faster than had been expected.

With Lake Mead projected to continue dropping, some water researchers have warned that the cuts agreed to under the 2019 agreement now are not enough and that the region will soon need bigger efforts to adapt.

"I think it means that we're in an all-hands-on-deck situation. And we have to figure out how we get along with less Colorado River water coming into the state," said Sarah Porter, director of the Kyl Center for Water Policy at Arizona State University. "I would say that everything's on the table. How do we continue to have our cities and our economy and quality of life and prosperity on significantly less Colorado River water?"

The shortage next year will reduce the Central Arizona Project's water supply by nearly a third, shrinking the amount flowing through the CAP Canal to farmlands in Pinal County that produce cotton, hay and other crops.

Farmers in Pinal County will see their Colorado River allotment reduced by more than 60 percent next year. Growers have said they may have to stop irrigating about a third of the area's farmlands, leaving them dry and fallow.

Jack Dixon said his great-grandparents farmed in Oklahoma and Texas, but when the Dust Bowl set in during the 1930s, they moved to Arizona for its water. In the history of land mismanagement that contributed to the Dust Bowl, Dixon said he sees similar risks in Arizona, where dry farmland already has become one of multiple contributors to dust storms.

"That's another reason why I'm really concerned about drought, because my family lived it," Dixon said. "And we've seen what happens when you run out of water."

Growers in Pinal County have known for years that their supply of CAP water would eventually be cut off, with a 2004 settlement dictating a schedule of decreasing water deliveries between 2017 and 2030. But the 2019 shortage agreement and the deteriorating conditions at Lake Mead have meant that Pinal farmers will lose their supply of Colorado River water much sooner.

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The Colorado River provides water for cities, tribal nations and about 4.5 million acres of farmland from Wyoming to the U.S.-Mexico border. About 70% of the water diverted from the river in the U.S. is used for agriculture, flowing to fields of hay and cotton, fruit orchards and farms that produce much of the country's winter vegetables.

The watershed has been hit by one of the driest 22-year periods in centuries. Scientists describe the past two decades as a megadrought worsened by climate change, and say long-term "aridification" of the Colorado River Basin will require the region to adopt substantial changes to adapt to getting less water from the river.

In 2000, Lake Mead was nearly full. Since then, the water level in the reservoir has fallen about 147 feet, leaving a growing "bathtub ring" of minerals coating the rocky shores. The water's retreat has accelerated over the past year during months of severe drought and extreme heat.

Scientific research has shown that the Colorado River watershed is sensitive to the higher temperatures caused by climate change, which intensify dry conditions and evaporate more moisture from the landscape. In a 2018 study, researchers found the river's flow since 2000 had dropped 19 percent below the average of the past century, and that about half of the trend of decreasing runoff was due to unprecedented warming in the river basin.

In future years, the average annual water deficit in the river's Lower Basin has been estimated at 1.2 million acre-feet — the equivalent of 43% of Arizona's water allotment of 2.8 million acre-feet.

"It's going to be really hard and we're going to have to do things differently," Paul said. Paul said there are many unanswered questions about how agriculture will look in several years in Pinal County, and how growers will respond.

"We know they can go back to groundwater, but in the end, we also know that's finite," she said.

Dixon said he thinks there's still a future for agriculture in Arizona if farmers make water-saving changes, like switching to drip irrigation, planting less water-intensive crops and improving management of watersheds. Dixon said he already has drip irrigation installed on some of his cotton fields, which he leases to another farmer, and plans to convert the remaining 120 acres to a drip system to save more water.