

# Expected spring runoff into Colorado River plunges after dry April



The lower-than-expected runoff into Lake Powell is raising the possibility that a water shortage could be declared for the Colorado River by 2022.

Mark Henle / The Arizona Republic 2013

A dry April caused the expected spring-summer runoff into Lake Powell to plunge dramatically, with the water-flow forecast down the Colorado River declining as much in one month as Tucson Water customers use in 10 years.

May's monthly runoff prediction for the April-through-July

period was 65% of average, or 4.6 million acre-feet. That's 1 million acre-feet less than the April forecast predicted. Tucson Water customers typically use close to 100,000 acre-feet a year.

While low runoff this year is highly unlikely to trigger the river's first major shortage as soon as 2021, it raises the possibility of one in 2022. A shortage would fall particularly hard on Central Arizona farmers. Flows of water into Powell that would be low enough to cause a shortage in 2022 are likely to occur about 10% of the time, said the U.S. Bureau of Reclamation's most recent study of its reservoir operations, published in mid-April.

"This could be the start of a multi-year drought. Last year was a wet year, so one year like this we can handle," said Eric Kuhn, a retired general manager of a northern Colorado water district and author of a recent book on the river. "One dry year doesn't usually make a difference if we start in good shape. Two dry years or three dry years is a concern."

The dry April weather wiped out the benefits of a robust winter snowpack in Upper Colorado River Basin states, federal forecasters said this week. Until now, this year's forecast had been relatively stable, ranging from 74% to 82% of average runoff since January.

"In Western Colorado, the winter wasn't all that bad," Kuhn

said. "When the ski areas closed down in March due to COVID-19, the skiing conditions were good, and great in some places."

But Brenda Alcorn, a hydrologist for the federal Colorado Basin River Forecast Center, said that if the dry spell continues, the eventual runoff could well end up lower than what's now predicted.

It could possibly fall as low as or lower than the 2018 runoff of 36% of normal, "if we have extreme dryness through the rest of the spring," Alcorn said.

Since the mid-2010s, the Colorado's spring-summer runoff has done "a lot of yo-yoing," Alcorn said.

The runoff rose sharply in 2017, fell sharply in 2018 and soared to 145% of the average runoff in 2019.

While these fluctuations have staved off the shortages that most water experts now view as inevitable, the river is clearly more vulnerable to shortages than it was in 2000, when both Lakes Mead and Powell were full or nearly full.

Today, Lake Mead is 44% full, and Lake Powell is at 48%.

The latest low runoff forecast comes shortly after publication of a new study that warned the Southwest is in an emerging "megadrought" that is shaping up to be one of

the worst long-term droughts known.

The study, led by Columbia University researcher Park Williams, used computer models and tree-ring reconstructions of summer soil moisture to show that the period from 2000 to 2018 was the driest 19-year span since the late 1500s and the second-driest since 800 A.D.

## **Trend toward megadrought**

“This appears to be just the beginning of a more extreme trend toward megadrought as global warming continues,” the study said.

A megadrought occurs when a drought stretches over several decades. While researchers have hesitated to say that the Southwest is in a megadrought, there’s increasing consensus that we will be heading toward one if current weather patterns continue.

The new study concluded that human-caused trends involving temperature, precipitation and relative humidity accounted for 47% of the severity of the 2000-2018 drought.

This latest bad spring-summer river runoff forecast, however, stemmed largely from dry, not hot weather, the Colorado Basin River Forecast Center said.

"April precipitation was generally below to much below average across the Colorado River Basin and Great Basin," the center said in a report on its latest forecast. "It was exceptionally dry over northern Utah and southwest Colorado."

A number of sites that measure snowpack in Utah and southwest Colorado showed their lowest April precipitation since officials started recording it up to 35 years ago.

April river flows neared record lows in parts of the Gunnison, Dolores and San Juan river basins in the two states.

April temperatures across the basin were generally near the average. Temperatures fell below average for the first three weeks of the month.

In Tucson, April's average temperature of 69.6 degrees was 2.6 degrees above normal. Its rainfall, at 0.07 of an inch, was 0.24 of an inch below normal.

From now through mid-May across the river basin, continued warm and dry weather is likely, with "no real indication of a major pattern change toward cooler/wetter spring weather," the forecast center said.

Normally dry June "is not far away, and time is running out to change course on an already quiet dry spring season," the forecast center said.

Contact reporter Tony Davis at 806-7746

or [tdavis@tucson.com](mailto:tdavis@tucson.com). On Twitter:

@tonydavis987

## Be the first to know

Get local news delivered to your inbox!



[Tony Davis](#)

### Reporter

Tony graduated from Northwestern University and started at the Star in 1997. He has mostly covered environmental stories since 2005, focusing on water supplies, climate change, the Rosemont Mine and the endangered jaguar.