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San Juan water dries up for first time in 40 years

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Earlier this year, the New Mexico Sailing Club's marina at Heron Lake was surrounded by grass and weeds due to the low water level of the lake. The lake, 6 miles west of Tierra Amarilla in Rio Arriba County, is the main storage reservoir of the San Juan-Chama Project. (Eddie Moore/Albuquerque Journal)

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By [John Fleck / Journal Staff Writer](#)
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The San Juan-Chama Project, which delivers water from the mountains of southwest Colorado to central New Mexico, had the first shortfall this year in its four-decade history after three consecutive years of bad snowpack.

Water managers say the impact on Rio Grande Valley water operations was small, but the implications are significant – a demonstration that a supply once seen as dependable backup to a faltering Rio Grande might not be as reliable as once thought. Albuquerque and Santa Fe pull San-Juan Chama water from the Rio Grande for their local water supplies.

“It’s one of those things that was always a theoretical possibility, but nobody thought it would come to pass,” said David Gensler, water manager for the Middle Rio Grande Conservancy District, which serves farmers.

The first-ever shortfall comes just a year after a federal study warned that climate change would mean less reliable supplies from the project as temperatures warm during the 21st century.



People park and fish at the Ridge Rock Recreation Area at Heron Lake in June. When the lake was full, this area was underwater. (Eddie Moore/Albuquerque Journal)

Albuquerque, the biggest user of San Juan-Chama water, had plenty of extra water in storage to make up for the shortfall, said John Stomp, chief operating officer for the Albuquerque Bernalillo County Water Utility Authority, which provides drinking water to the metro area.

The primary impact is on the utility’s ability to share water with others, Stomp said. With significant water conservation reducing metro area demand, Albuquerque’s stockpile of water in upstream reservoirs has become the go-to source for others in need. That’s especially true for the U.S. Bureau of Reclamation, which has been buying some of the surplus water to support the endangered Rio Grande silvery minnow.

For the Conservancy District’s farmers, however, the shortfall is a reminder that carryover storage going into the winter of 2014-15 is exhausted.

“We’ve drained all of our savings,” Gensler said.

With most of its farm water coming from the Rio Grande rather than the San Juan-Chama Project, the impact this year was minimal, about 1 percent of overall supply, Gensler said. But during dry years, San Juan-Chama water can provide a critical surge of late-season water for farmers.

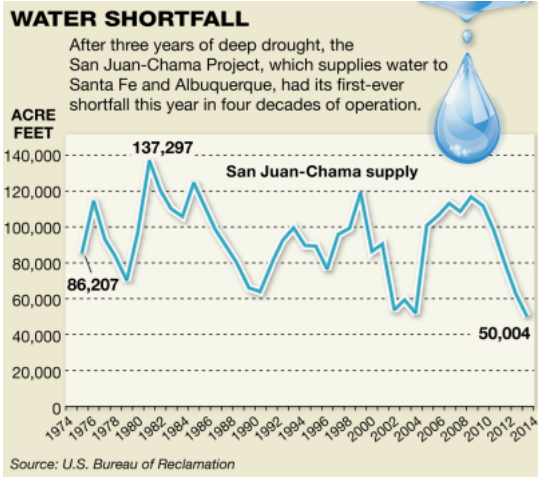
The shortfall came in the third year of what is the driest three-year stretch since the San Juan-Chama project was completed in the early 1970s. Three small diversion dams – on the Blanco, Navajo and Little Navajo rivers – capture water that is diverted through three tunnels beneath the Continental Divide.

The water emerges from the final tunnel into a tributary of Rio Chama, where it is stored in Heron Reservoir and divided up among Rio Grande water users, where it supplements their supplies of native Rio Grande water.

The tunnel system allows New Mexico to use more of its share of water from the Colorado River Basin, water that otherwise would flow into Lake Powell for later use downstream by Las Vegas, Nev., Phoenix and the farms of the Arizona and California deserts.

The project depends on winter snow that falls in the San Juan Mountains of southern Colorado, and that snowpack has been increasingly unreliable in the past decade, according to Greg Smith of the National Weather Service’s Colorado Basin River Forecast Center.

Over the past decade, the San Juan headwaters have seen a string of unusually dry springs, Smith said during a briefing for water managers earlier this month. The result has been runoff that has been consistently below expectations, Smith said.



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Scientists are not ready to blame the shortfall on climate change, but they point out that the pattern seen in recent years is consistent with last year's U.S. Bureau of Reclamation study of the risks to the San Juan-Chama Project posed by climate change.

Studies using tree rings to estimate long-term water supplies showed there were risks of shortfalls even without climate change, said hydrologist Dagmar Llewellyn, the study's lead author.

"It isn't just climate change," she said in an interview.

But the warmer temperatures in recent decades can add to problems caused by a lack of winter snow, Llewellyn said. With a longer growing season and greater evaporation, less of the rain and snow that does fall makes it into the region's rivers.

"The difference is it's hotter," she said. "For the same precipitation, you're going to have less water."

Llewellyn's study concluded that, by the 2020s, the previously unheard of possibility of a San Juan-Chama Project shortfall could happen on average once every six years.

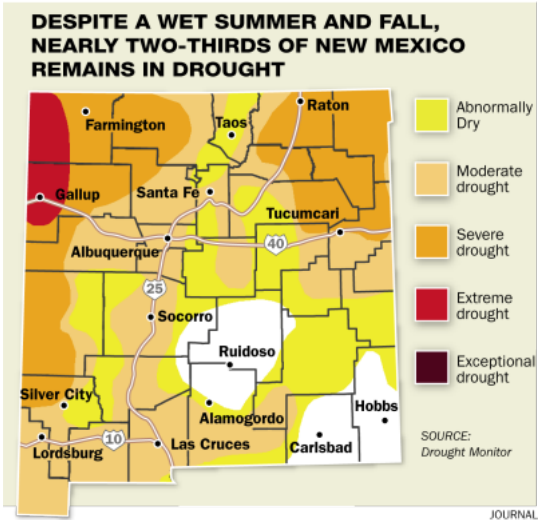
A pattern of early-season snowmelt in recent years, with more water coming off of the mountains in March and April and a decline in runoff later in the year, also matches the projections in Llewellyn's climate change study.

In past years, the San Juan-Chama Project avoided shortfalls in part by storing surplus water during wet years for use during dry years. But after the driest three consecutive years since the project began, there is no such option heading into 2014-15, said bureau water operations supervisor Carolyn Donnelly.

"Now there's no cushion," she said.

While it is early in the snowpack season, the numbers through mid-December are not promising. The current snowpack points to runoff in the San Juan headwaters nearly 40 percent below average, according to a preliminary analysis done Dec. 17 by the Colorado Basin River Forecast Center.

But the longer-range forecast favors extra snow in New Mexico and southern Colorado during the first few months of the new year, offering a chance to make up some of that deficit.



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