

New normal? Dam releases help offset drought's low flows

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The impact of climate change and the health of rivers at the local level could have ripple effects – that beg the question: Are low water years the new normal in southeastern Utah?

“I could walk from one side of the river to the next,” said John Weisheit, describing his time as a guide on the Colorado and Green rivers in 2012, which was considered a below-average water year. This year many guides, visitors and locals have noticed the unusually walkable river levels again. Are they here to stay?

Weisheit, an activist and historian with an emphasis on protecting the Colorado River, does not believe so. “It should have been a low water year, but the water managers have been augmenting the flow with dam releases.”

Water managers schedule dam releases on the surface water flow measured by the United States Geographic Survey to ensure the recommended flow level is maintained for endangered fish habitats.

The volume and speed of the surface water on the Colorado River is measured in cubic feet per second using gauges put in by USGS. The system is nearly 130 years old, as John Wesley Powell began the USGS stream gauging program in 1889.

The nearby “Daily” section of the Colorado River is measured by the Cisco gauge near the Dewey Bridge which has been in operation since 1914, with sporadic records of flow dating to 1895.

According to the Cisco gauge, the annual water year flow of the Colorado River this year peaked at 8,470 cubic feet per second with a minimum daily mean of 1,890 cubic feet per second.

Chris Wilkowske, field office chief at Moab’s USGS Utah Water Science Center, cautioned the figures are preliminary. “These values are still provisional, meaning the data have not been formally approved yet. The final published values will not change much if any, however.”

Without the dam releases to protect the fish habitats, the yearly average would be significantly lower.

Low water and healthy fish

The Upper Colorado River Endangered Fish Recovery Program was established in 1988 to protect four endangered native fish species – the Colorado

pikeminnow, razorback sucker, humpback chub and bonytail chub. The recommended flow report is written in the Coordinated Reservoir Operations, a working document that carries recommendations dependent on the base flow of the Colorado River at any particular time.

Dale Ryden, a U.S. Fish and Wildlife Service biologist and project leader, explained that more water needs to be released from the reservoirs in dry years and it's oftentimes more difficult to reach the target flow.

Weisheit noted the recovery program has an "indirect benefit for increasing flow for fish (also increases it) for humans," and it also "improves the quality of water."

He added, "If it's not good enough for fish, do you want to drink this water?" Despite the positive effects of dam releases for fish habitats and water quality, the activist warned that, "If these conditions of hot and dry weather continue, they (water managers) are going to exhaust all the reservoirs."

"The Colorado River could soon be exhausted, which is bad for both the fish and people. It's like burning your furniture to stay warm."

A history of drought

The effects of consistently low precipitation and snowpack were seen before in the drought from 1999-2002. The USGS Annual Data Report for the Water Year 2002 reported a "third consecutive year of below-normal precipitation statewide," which "caused severe to extreme drought conditions throughout the state." The decreased surface water resources led to increased groundwater usage, which depleted the moisture in the soils and reservoir water.

USGS measures the flow of surface water, but the "flow rate of water through the aquifer system cannot be measured directly," said Weisheit. Various techniques, such as aquifer pumping tests and groundwater age dating are used to make an estimate. Often, a large rainfall or snowmelt is absorbed by the soil and added to the groundwater reservoir.

"A good snowmelt goes into the ground because the soil is like a sponge," said Weisheit. "The high water of 1983 was largely caused by a high amount of rain in the fall before."

The year 2018 had below-average snowmelt and precipitation. The Colorado River's tributaries stem from the snowmelt of the Rocky Mountain Range in Colorado. This past winter the Rocky Mountains received 66 percent of average snowpack, a near-historic low, according to The Denver Post.

The U.S. Climate Data for Moab estimates an average of 4.76 inches of precipitation from April to September. This year, those same months saw a below-average total of 1.51 inches of precipitation with absolutely no rainfall in June. The lack of snowmelt and rain heavily depleted Ken's Lake reservoir.

Local resident Anna Fisher noted that while wading across the reservoir in September the water was “never more than waist deep.” Earlier this month, however, the drought was briefly interrupted by intense storms from Tropical Storm Rosa, which dropped more than an inch of rain over a few days.

Will this pattern continue? Weisheit believes “the drought cycle typically breaks in four years,” but is hesitant to come to any direct conclusion, as the “best climatologists are reluctant to go beyond one year in their predictions.”

He added that the current conditions are “different and the climate scientists are not calling it a drought anymore, they call it the new normal, with persistent hot and dry conditions for the foreseeable future.”