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The Colorado River in Utah: Past, Present, and Future

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Looking at a state map of Utah, it appears that the Colorado River exists only in the southeastern portion of the state near Moab. Yet when talking about the Colorado River in the context of Utah's water supply, we must also talk about the Green River, one of the Colorado's main tributaries, which begins in Wyoming's Wind River mountains and Utah's Uinta mountains and then flows through the Flaming Gorge Dam and eastern Utah to join the Colorado River at Canyonlands National Park before flowing into Lake Powell.

Colorado River in Crisis

The health of the Colorado River affects the livelihood of all Utahns. From closed boat launch ramps at Lake Powell and low flows in tributary mountain fishing streams to possible water restrictions for agriculture, manufacturing, and residents, the Southwest's 23-year “megadrought” and resulting low mountain snowpacks, warmer temperatures, shorter winters, drier soils, and poor water quality affect all Utahns.

Utah's Reliance on the Colorado River

Utahns have been drinking water from the Colorado River and farms have been irrigating with Colorado River water for decades. The Colorado River makes up approximately 27% of Utah's current water supply, providing water to approximately 60% of Utah's population through an intricate network of aqueducts, pipelines, and reservoirs. Streams in the high Uinta Mountains are collected and diverted away from the Colorado River drainage into tunnels to the Great Basin. A tunnel constructed in the 1930s and 1940s brings water from the Duchesne River to the upper Provo River, where it is stored in Deer Creek Reservoir and transported to the Wasatch Front through a 69-inch underground aqueduct. Other tunnels constructed in the 1970s through the 2000s carry water to Strawberry Reservoir, where it is then delivered to Wasatch, Utah, and Salt Lake counties.

The Colorado River Compact of 1922 divided the river into two basins: the Upper Basin (Colorado, New Mexico, Utah, and Wyoming) and the Lower Basin (Arizona, California, and Nevada). The Compact established a 7.5 million acre-feet allotment for each basin to develop and use, but it required the Upper Basin to guarantee delivery of the Lower Basin's 7.5 million acre-feet supply. Unfortunately, the 1922 Compact was negotiated during a period of unusually high flows. When the flow estimates were decreased, the 7.5 million acre-feet delivery obligation of the Upper to the Lower Basin was not reduced. Further, Native American and Mexican rights to Colorado River water were essentially unaddressed in the 1922

Compact.

In 1948, the Upper Basin states agreed to the Upper Colorado River Basin Compact so they could start developing and using their share of water. They divided their water by percentages rather than by acre-feet to account for uncertainty in drier water years as well as their delivery obligation. Under the 1948 Compact, Utah's allocation is 23% of the Upper Basin water. And like the other states, Utah plans to keep developing its Colorado River allocation.

The Concern

According to hydrologists and climatologists who have correlated measured precipitation and snowmelt with ancient tree-ring data, droughts in the Colorado River basin have become more widespread and severe over the last 50 to 90 years. These scientists report that the last 23 years of dry conditions and declining hydrology in the basin constitute the worst drought in 1,200 years.

The Bureau of Reclamation (“Bureau”) operates the large dams on the Colorado River. Water is released from Lake Powell to Lake Mead to supply water users in the Lower Basin, who have not reduced their demands for water despite the continuing megadrought. As a result, Lake Powell has dropped precipitously during the megadrought, from the full-capacity level of 3,700 feet above sea level to 3,529 feet, more than a 170-foot drop despite the Bureau's release of water from Flaming Gorge Reservoir to augment Lake Powell. This is concerning for many reasons. The Bureau established a target elevation of 3,525 feet at Lake Powell to provide a 35-foot buffer above 3,490 feet, the elevation required for electricity generation. Several Utah cities and towns depend on electricity generated at Lake Powell and revenue from power sales is used to pay for operations at the dams. If Lake Powell drops below the dead pool elevation of 3,370 feet, water could not be delivered from Lake Powell to the Colorado River, the Grand Canyon, or Lake Mead below the dam.

The Colorado River Authority and Issues on the Horizon

In 2021, the Utah Legislature created the Colorado River Authority of Utah to protect, preserve, conserve, and develop Utah's Colorado River water. Gene Shawcroft is the Colorado River Commissioner of Utah and the Chair and CEO of the Authority. He represents the state on all Colorado River issues. Amy Haas is the Executive Director of the Authority. The Authority's board members represent regions of the state with tributaries flowing to the Colorado River. Notably, the 2022 Utah Legislature authorized appointment of a Native American representative to the Authority Board to ensure Utah's Native American Tribes are represented in policy decisions related to the Colorado River.

Looking forward, the ongoing megadrought in the Colorado River Basin and the plummeting hydrology of the Colorado River will continue to dominate headlines. Against this backdrop, the Colorado River Basin states and the Bureau of Reclamation must renegotiate several critical operating guidelines that expire in 2026. Work has already begun on this

monumental task, which is made more difficult and complex by the continued drought in the region.

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