



ALERT EDITOR'S PICK

TUCSON OPINION

Local Opinion: The water buffalo in the room

Richard C. Brusca Special to the Arizona Daily Star Aug 4, 2022



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The following is the opinion and analysis of the writer:

The Colorado River supplies water to more than 40 million inhabitants in the American Southwest. Larger municipalities relying on the river's water are Los Angeles, San Diego, Phoenix, Tucson, Las Vegas, Denver, Salt Lake City, Albuquerque and Tijuana.

But about 70% of the water from the Colorado River is used for agricultural irrigation. This is the water buffalo in the room.

Today, a regional water supply crisis is occurring because of two things: (1) decreased precipitation caused by warming climates (we are now in year 22 of a drought in the Southwest), and (2) legal and water management policies that allow systematic overuse.

By the end of 2022, combined storage in Lake Powell and Lake Mead, the two largest reservoirs in the United States, will have declined from 95% full in 2000 to about 25% full. The only way to reverse this trend and stabilize reservoir levels is to reduce water use to match diminished runoff.

The cornerstone for river water use is the 1922 Colorado River Compact; an agreement among seven states that divides the watershed into two parts, a Lower Basin that includes portions of Arizona, Nevada, and California, and an Upper Basin that includes portions of Colorado, New Mexico, Utah, Wyoming, and a small area in northern Arizona.

Here's where the water goes:

The Compact apportions 7.5 million acre-feet per year to each basin and specifies the division between them as Lees Ferry in northern Arizona. Also, 1.5 MAF/year is guaranteed to Mexico. This is a total of 16.5 MAF/year of river water allocation. (One acre-foot of water is the amount of water that would cover an acre of land 1 foot deep.) The region is also home to 30 recognized Native American Tribes that hold senior legal rights to divert substantially more water than they currently use.

However, the allotments are now greater than the water actually in the river.

The 20th century natural flows at Lees Ferry averaged only 15.2 MAF/year, and since 2000 the average natural flow dropped to just 12.3 MAF/year.

In recent years, the Upper Basin has used only ~3.7 MAF/year, while the Lower Basin and Mexico have used their full allotment of 9 MAF/year. Add to this an estimated loss of 2.4 MAF/year in evaporation, and you get a total of 15.1 MAF/year — a whopping 2.8 MAF/year more than the river has.

It's no wonder the levels of Lake Mead and Lake Powell have plummeted. It is clear that a great deal more water is legally allocated than exists, or is likely to exist in the near (and possibly long-term) future.

This year, laws and agreements triggered for the first time require a reduction in water allotment to the Lower Basin of 13.5% (1.213 MAF/year). And if Lake Mead storage declines to 6.0 MAF (23% of capacity), which is likely, then the reductions would reach 21.9% (1.975 MAF/year). A loss of 22% of our already over-committed Colorado River allotment will have large impacts on urban and agricultural water use in Arizona, Nevada, and California.



While we can always do more in the area of urban water conservation (e.g., banning grass lawns, requiring all golf courses to use only recycled water, more efficient capture of rainwater to recharge our water tables), it is clear that we must reduce the amount of water that we put on our crops.

Cash receipts from Arizona's crops are around \$2.3 billion, or less than one percent (0.6%) of the state's overall GDP. The state often computes the value of its agriculture at 10 times this, or \$23.3 billion, by adding in various associated employment and revenues, around \$14 billion of which would come from crops. But even using this exaggerated number, crops would provide only 3.4% of the state's overall GDP. And yet, Arizona agriculture uses 72% of the state's water.

It is time Arizona began switching away from water-binging crops like cotton (~560,000 bales annually) and alfalfa (over 300,000 acres), and to less water-intensive agriculture. However, it will likely take more political courage than exists in Arizona to push this issue. Agricultural sales in the Lower Basin (think Arizona) are more than three times that of the Upper Basin.

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