

## Accounting for evaporation and system losses needs to be part of managing the Colorado River

As Lake Mead and Lake Powell's elevations continue to descend towards unprecedented low levels, the US Bureau of Reclamation has signaled it is considering more than one initiative to stabilize the Colorado River system. One of those actions is accounting for evaporation and other system losses, which would be a common-sense step in managing the River.



Evaporation occurs primarily at Lake Mead, Lake Havasu, and Lake Mohave – the largest reservoirs in the Colorado River Lower Basin. At the same time, “system losses” include water that is unavailable for use as it has been lost to seepage or consumed by vegetation. Due to a 1964 Supreme Court decision, these evaporation and system losses have never been accounted for or deducted from Colorado River water users – farms, cities, and tribes - in the Lower Basin states of Arizona, California, and Nevada.

Since evaporation and system losses are not currently accounted for, Reclamation must release extra water from Lake Mead to fulfill downstream water rights. For example, if a farmer in Yuma needs 1,000 AF to grow their crops, Reclamation may need to send 1,500 AF down the River to ensure enough water is available by the time it arrives. Multiply this example over hundreds of water users and millions of acre-feet of water in the Lower Basin, and it becomes clear that without accounting for these losses, the Colorado River is left to absorb the impact of evaporation and system losses, not the actual water users.

In the Lower Basin, evaporation and other system losses amount to an estimated 1.2 million to 1.5 million acre-feet of water each year. This is a significant amount of water – more than 10% of the total yield from the Colorado River – and a large portion of the annual releases from Lake Powell to Lake Mead. As the Colorado River produces less water due to aridification, these system losses add up. They should be factored into the volume of water available for delivery to all Lower Basin water users.

In June, Reclamation Commissioner Camille Touton declared that an additional reduction of two-to-four million is necessary to protect Lake Mead and Lake Powell. Reclamation's models show that Lake Mead and Lake Powell could reach catastrophically low levels in 2023 or 2024, drastically limiting the ability of water to flow through the dams. Factoring in the 1.2 million to 1.5 million acre-feet of evaporation and system losses is one option for Reclamation to pursue as a significant step in stabilizing the Colorado River.

The challenge for Reclamation and the Lower Basin States is to find a consensus on how to assess water users for evaporation and system losses since there is no official methodology for

assigning those losses among the different water users. Plus, those with senior water rights are strongly resistant to receiving less of their allocations, even if based on the reality of system losses, and prefer that the burden of evaporation and system losses fall completely on junior water users, like the Central Arizona Project (CAP).

To avoid potential legal challenges, Reclamation is cautiously evaluating various factors and perspectives to determine how evaporation and other system losses should be calculated. Here are a few practical factors that should be considered:

- **Factor in Location** – Evaporation and system losses should be assessed based on where water users are located. Those further downstream of Lee’s Ferry or in areas with high vegetation should be responsible for the system losses that occur for the water to reach their diversion points.
- **Factor in Water Use** – Water users, already using less water from the River, are subjecting those flows to less evaporation, seepage, and vegetative draws and should have relatively lower assessments for evaporation and system losses.
- **All Water Users Should Contribute** – All water users who draw upon the Colorado River enjoy the benefits of this water supply and simultaneously contribute to evaporation and system losses– regardless of priority. Therefore, it is reasonable and appropriate for all water users to share in the assessment of evaporation and system losses.

Water managers have long recognized that releasing enough water from our reservoirs to fulfill water demands and cover evaporation and losses has contributed to the overuse of Colorado River water in the Lower Basin. Unfortunately, addressing this problem has only been debated, not resolved.

Now, as we look for solutions, it is vital that all water users in the Lower Basin that benefit from the Colorado River be part of the solution and reduce their use to cover these losses. A critical first step is equitably assessing Lower Basin contractors for evaporation and system losses to stabilize a dwindling Colorado River, which is why we encourage Reclamation to continue to pursue implementing these assessments before it is too late.

*For 50 years, Arizona Municipal Water Users Association has worked to protect our member cities’ ability to provide assured, safe, and sustainable water supplies to their communities. For more water information, visit [www.amwua.org](http://www.amwua.org).*