

## Upstream Storage

Dick Kreiner, retired engineer, US Army Corps of Engineers

Rob Leutheuser, Leutheuser Consulting

Susan Kelly, Assoc. Director, Utton Center, UNM School of Law

With the increasing pressure on our water resources in the Rio Grande Basin, we need to do everything feasible to be efficient in the management of our water. Soon there will be additional opportunities to conserve water for the Middle Rio Grande by storing more of it in upstream reservoirs.

The Albuquerque Bernalillo County Water Utility will soon be continuously diverting their San Juan-Chama (SJC) water from the Rio Grande to conserve the underground aquifer. This new strategy will reduce Albuquerque's need for part of its storage space in Abiquiu Reservoir.

New Mexico delivers Rio Grande Compact water to Texas at Elephant Butte Reservoir each year. There is no current water management strategy that limits this delivery to only that amount required by the Compact. If New Mexico delivers more than required, the over-delivery is retained as a credit. It's like a bank account. The problem is that the account is in the wrong bank. The average evaporation rate in Elephant Butte Reservoir is about 50 percent higher than in Abiquiu Reservoir (6.5 feet vs. 4.3. respectively).

Can this water "service charge" be reduced? Most of the Compact water is delivered during the snowmelt runoff (May and June). In many years Compact water could be skimmed off the top during the runoff and a portion of it could be held at Abiquiu and delivered, if needed, in November and December. This conserves water in a couple of ways. The late-year transportation losses to Elephant Butte are far less than during May and June when the river evaporation and riparian transportation are high. The water in Abiquiu would suffer less evaporation for 4 months and it would be delivered at a time when the delivery losses are lower. Also, if the water is not needed for that year's obligation, it can be held in Abiquiu until needed in subsequent years.

Storing Compact credit water below the Middle Rio Grande (in Elephant Butte) also limits water management flexibilities. Under certain circumstances, the Compact allows New Mexico to relinquish credit water to Texas in exchange for storing water in El Vado Reservoir, or at times Abiquiu, but this requires the approval of Texas. If the credit water was stored in Abiquiu, such approval

would not be needed and New Mexico could deliver the Compact water in a manner that would maximize hydrologic and environmental benefits.

These conservation savings will not be available every year, particularly during years of drought. But we need to be in a position to take advantage of the opportunity when it exists. Although the concept appears fairly simple, the implementation will be complicated. Issues such as ownership of storage rights in Abiquiu, water accounting, and management decisions would have to be negotiated by federal, state, and local agencies. The impact on irrigators and operations for the Rio Grande silvery minnow would need to be assessed. These and many other issues would have to be worked out amongst all the agencies that have a stake in the water resources that we have available in the Middle Rio Grande Valley.

It's imperative that we find a way to work together to take advantage of any and hopefully all opportunities that can conserve this precious resource. We truly have a limited supply and it is our responsibility to manage it as wisely as possible.