



Farm transfer a paper-water loss, but a wet-water gain

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If water rights at the Top of the World Farm near Costilla are successfully transferred downstream, it would be a significant loss of paper water rights for Taos County. Those precious rights are key to support opportunities like increasing agriculture or accommodating new development.

On the flip side, the transfer could actually mean more wet water in Taos County's aquifer and R'o Grande Gorge.

Santa Fe County and four neighboring Indian Pueblos are asking the State Engineer to approve the transfer of 1,722 acre-feet of Top of the World water rights so they can take water from the R'o Grande 80 miles downstream to serve a water supply system. That transfer would mean Top of the World could no longer pump water from the Sunshine Valley aquifer.

For many Taos County water advocates, the political and cultural implications of the deal work against those up north. The county government's water advisory committee unanimously voted Monday (April 6) to recommend the county commission formally protest the transfer. It's almost certain the commissioners will do the same.

But environmentally, some scientists suggest the transfer could actually help the nearby ecosystem. They also point out that well-pumping in the Sunshine Valley is already just a shadow of its former self, and the tangible effects of shuffling paper water rights might not be obvious on the ground.

"I've never really understood what the drama was over transferring those water rights out of the county," said Peggy Johnson, principal hydrologist with New Mexico Tech, in an interview with

The Taos News. "If you were to transfer more of those rights, retire 1,700 acre-feet and it ultimately goes back in the river, it just means a healthier river corridor. Wetlands adjacent to the channel would maybe come back and find new life."

Critics point out the notion that turning off the pumps would immediately put the same amount of water back in the river is a gross oversimplification. Scientists like Johnson acknowledge there are plenty of unknowns, but most who've studied the area believe the theory isn't too far-fetched, though it is more nuanced.

When the first irrigation wells in the area were drilled back in the late '40s and early '50s,

farmers tapped into an incredibly prolific water layer. Field notes from a 1959 U.S. Geologic Survey study give a clear indication of the well's productivity. The comments read simply: "Water cascades from well." One well at Top of the World could reportedly produce an astounding 3,000 gallons a minute.

Geologists suspect the bountiful water comes in part from runoff sweeping off the western slope of the Sangre de Cristos into relatively shallow gravel layers that are easy to tap.

That same study concluded the amount of groundwater pumped at Top of the World and neighboring farms was roughly equal to the amount of water that would have otherwise seeped back into the R'o Grande.

Tony Benson is a co-author of a recent study of water levels in Sunshine Valley wells over the last 50 years.

During peak pumping in the mid-'50s, Benson says the water table in parts of the valley was 30 feet lower than it is today. No doubt, that was a combination of frantic well pumping (more than a billion gallons of water were pumped in 1955 alone) and the effect of brutal drought that gripped the area for years.

Since that low point, Benson says well measurements show the water table rebounded during the '70s and '80s — decades that generally enjoyed above-average precipitation. "It looks like the big factor is long-term climate change, big swings in precipitation every 10 or 20 years," Benson said.

Well-pumping also appears to have an obvious connection to aquifer levels. Benson says in one case, the water level in one well jumped 10 feet in a single year after it stopped pumping. That suggests runoff from the nearby Sangre de Cristos is able to recharge the shallow aquifer fairly quickly, and that recharge eventually trickles down through lower layers and into the river.

Techniques to "date" water (determine how long it's been underground) show water reentering the river is a mixture of "young" (a few decades old) to "ancient" (thousands of years). That young water would be the source to more quickly replenish whatever has been taken out by wells.

According to Johnson, the effect of well-pumping probably goes beyond just the water that comes from the ground.

With wells in the Sunshine Valley lined up north-south between the western flank of the mountains and the river, Johnson says the drawdown from the wells is going to intercept groundwater as it moves west along its natural course toward the gorge. Each well creates a cone of depression that traps water that would otherwise be working its way into the river. In fact, if there's enough pumping from the well, Johnson said it could actually lower the water table and draw water from the R'o Grande.

"The cumulative drawdown is going to be extreme," Johnson said. "It doesn't take very long to reduce discharge that way."

Johnson said that might explain why a research team in 2008 found the stretch of the R'o Grande adjacent to the Sunshine Valley was actually losing, instead of gaining, steam. Johnson said that came as a surprise.

“Their theory at the time was that it was because of the transient effects of the historic Top of the World pumping,” Johnson said. “The water table just hasn’t recovered.”

If pumping from the wells in the Sunshine Valley were to cease permanently, however, those cones may fill in with recharge and the flow would return to normal in a matter of decades, she said.

If the 1,700 acre-feet that could conceivably be pumped at Top of the World were left underground, Johnson said it equals about 2.5 cubic-feet per second of flow in the R'o Grande all year.

For a river the size of the R'o Grande, it's not a huge increase. But because much of the water gets back into the river via springs and seeps in the gorge, reduced well-pumping could revitalize wetlands that relied on those springs.

In some ways, that might already be happening. Benson says he's found most of the well-pumping in the Sunshine Valley has long since been discontinued.

That fact isn't likely to quell much of the controversy the movement of water rights outside the county has already generated.