

The Daily Courier

Monday, October 18, 2010

Talk of the Town: How long will our water last?

By JOHN ZAMBRANO
Special to the Courier

Monday, October 18, 2010

Now and then an acquaintance who knows that I follow our local water issues will ask, "How long will it be before we run out of water?"

Typically, the person is a senior citizen and lives in the [City of Prescott](#). If I sense the person wants to know if his faucet is going to run dry soon, I point to his gray hair and respond that he is not going to run out of water. I might add that if he has children or grandchildren in the area, the picture is not as clear.

A local official, trying to defend the absence of a plan to achieve safe yield -- a balance between the water entering and leaving our aquifer -referred to the size of the Prescott Active Management Area aquifer and stated that we have a long time before it is empty.

Trying to calculate how much water can be removed from our aquifer is a worthless exercise. I don't know if that official seriously thought about emptying the aquifer and whether he appreciated the problems we would encounter along the way.

The penalties for delaying safe yield include losing our water supply, more environmental damage, and increased economic consequences. "How long will our water last?" is the wrong question. The right question is "Why haven't our local officials developed a plan to achieve safe yield?"

It is important to recognize that we have about 10,000 wells drawing water from our aquifer, and all wells are not created equal. As the water table drops, a well located in a deeper part of the aquifer could be drilled deeper and produce for a longer time. A well in a shallower part of the aquifer, however, would more quickly reach its limit and go dry.

Some homeowners in the Chino Valley area have seen their once-productive wells go dry and are now hauling water. For them, the apocalypse is now. As we continue to overdraft, more homes will lose their wells and be forced to haul water. In addition to a significant lifestyle change, they will see a reduction in the value of their homes.

There are other short-term penalties that occur with lowering our water table. The process of reducing flow to the streams that depend on our aquifer for their year-round flow began when the first well was drilled many years ago. The Agua Fria River to our south now flows intermittently. The flow at Del Rio Springs has been reduced to about half of its pre-development flow. The hydrologic model for our aquifer predicts that Del Rio Springs will go dry by 2025, or in just 15 years.

These surface waters create a riparian habitat for birds and other wildlife, which many of us value. Some of that habitat has been diminished. Do we want to lose it entirely and so quickly?

Another penalty that can result from the lowering of our water table is ground subsidence. Groundwater fills the voids between the particles that fill our alluvial basins. Removal of that groundwater allows the aquifer deposits to compact and thus become thinner. Sufficient compaction can cause lowering of elevation of the ground surface.

Subsidence is not an unusual occurrence in Arizona's alluvial basins and can be accompanied by damage to building foundations, roads and other structures, with concurrent economic loss. Subsidence also can permanently reduce the ability of the aquifer deposits to hold water, which would limit restoration of the aquifer. I am not aware of any studies to estimate our risk of subsidence, but it is likely to occur well before the aquifer is emptied and it could occur before we complete actions to reach safe yield.

I haven't heard any official present a reason for waiting to develop a plan. The longer we wait, the cost to achieve safe yield is likely to increase and the damage we do will increase as well.

It has been 11 years since the Prescott Active Management Area was declared to be out of safe yield, and we still do not have a plan to eliminate the overdraft. Arizona Department of Water Resources officials want us to achieve safe yield by 2025 because they understand the damage that is being done now. Our local officials need to understand that as well.

Please submit your comments and questions to info@cwagaz.org.

CWAG and the Verde Watershed Association are hosting a forum "Recharge of Treated Wastewater To Groundwater: What Are The Risks?" on Nov. 13. Details and registration information are at www.cwagaz.org.

John Zambrano is president of the Citizens Water Advocacy Group and a retired environmental engineer.

Related Links: