

# The Daily Courier

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## Column: Mitigation plan should come first

By JOHN ZAMBRANO Special to the Courier

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In the Citizens Water Advocacy Group's last column, our vice president, Leslie Hoy, discussed the recent agreement among the [Salt River Project](#) (SRP), Prescott and Prescott Valley concerning the municipalities' intention to import water from the neighboring Big Chino aquifer. She noted that although the agreement called for a mitigation plan to protect the upper Verde River, it appears the public will not see a plan until unspecified monitoring "triggers" are observed. CWAG and many other parties concerned with protecting the river have called for a mitigation plan before construction of the Big Chino pipeline.

In this column, we will show how independent scientists have determined it is inevitable that pumping will over time result in a direct reduction in river flow. The premise for this determination is the particular geology and hydrology, or the configuration, of the Big Chino Basin. Specifically, there is only one outlet for groundwater flow from the aquifer and that is the Verde River. And there is no way for significant groundwater to enter the basin when pumping lowers the water level.

Some groundwater leaves the aquifer by means of plants whose roots reach below the aquifer's water table, but this amount has been considered to be relatively small. Therefore, a lowering of the groundwater table from pumping would manifest as virtually all flow reduction and very little as destruction of plant life.

The Bureau of Reclamation conducted an early investigation of the Big Chino aquifer. The bureau "was charged with the task of technically deliberating whether large withdrawals of groundwater in the Big Chino Valley would affect the surface water of the Verde River."

For its modeling effort, the bureau described the Big Chino Basin as a "bathtub" with "no-flow boundaries on all sides and in the subsurface." It determined that other than water removal through plants, the only outlet for groundwater was the Verde River. In their 1994 report, the bureau concluded that a large diversion of groundwater from any location in the Big Chino Valley would result in a depletion of flows in the upper Verde River.

Subsequent studies by the Arizona Department of Water Resources in 2000 and the U.S. Geological Survey (USGS) in 2006 similarly modeled the Big Chino Basin with the Verde River being the only outflow. The widely distributed USGS report reads, "Groundwater outflow from the Big Chino Valley occurs only as base flow in the Verde River."

The conclusion one has to make from the above studies is that withdrawing water from the Big Chino aquifer will eventually take water from the Verde River. John Hoffman, director of the USGS Arizona Water Science Center and an author of the aforementioned report, drew that conclusion

when he asked and answered the question, "Will groundwater pumpage from the Big Chino Sub-basin reduce groundwater outflow from the Big Chino Sub-basin to the Verde River? And the answer of course is 'Yes.' It is not a matter of if. It is just a matter of when."

The USGS is close to completing an expansion of its earlier work to include a numerical model of the Big Chino Valley, which will enable us to determine where and when the groundwater will decline in the Big Chino Valley. This information will be particularly useful for well owners in the valley. It also will enable us to better predict the time for the flow reductions to appear in the river, but it will not change the determination that the flow will eventually be reduced, as evident from its earlier report.

The parties to the SRP agreement seem to want to delay discussing a mitigation plan until monitoring and a numerical model either predict or measure an effect. But as our last column observed, this may be too late to be effective. The point is that "when" the effect will be seen shouldn't matter. No one is openly saying that the goal should be to preserve the upper Verde for a few decades, but then let it go dry. The parties to the agreement need to begin to outline their potential mitigation techniques and show how they can be implemented. Waiting for monitoring triggers is not necessary and is unacceptable.

Candidates for the state Legislature will answer water-related questions at CWAG's Candidate Forum on Aug. 14 from 10 a.m. to noon at Granite Peak Unitarian Universalist Congregation, 882 Sunset (two blocks behind True Value). Candidates will be available to chat before and after the forum. For more information, or to contact CWAG, visit [www.cwagaz.org](http://www.cwagaz.org) or email [info@cwagaz.org](mailto:info@cwagaz.org).

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