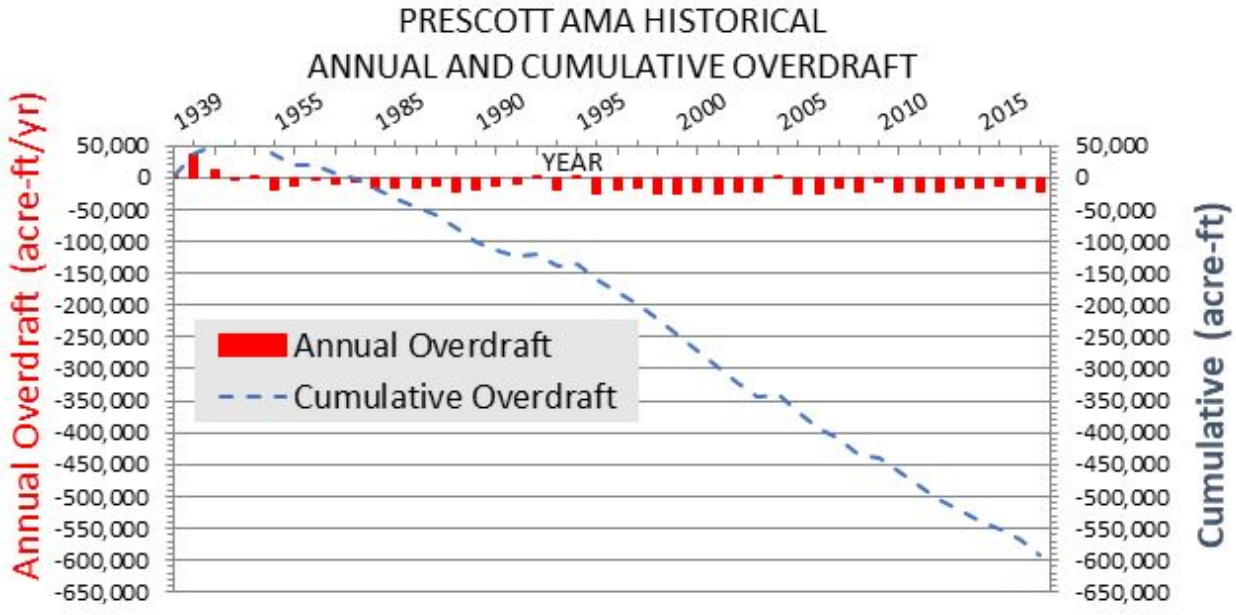
# Talk of the Town: Future groundwater availability in the Prescott Active Management Area

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For almost a quarter century, residents of the Prescott region have heard that the groundwater supply for the Prescott Active Management Area (PrAMA) is dwindling. The 1980 Arizona Groundwater Management Act directs the Department of Water Resources (ADWR) to manage this precious resource by requiring water providers who pump groundwater to demonstrate a 100-year supply to serve their customers. ADWR has issued four 10-year management plans, which promote efficient use and an equitable allocation of available water supplies. A fifth management plan is currently in draft form, and the Citizens Water Advocacy Group (CWAG) has filed highly critical comments with ADWR.

The goal of the ADWR plans is for the PrAMA to achieve by 2025, and thereafter maintain, safe-yield, which is the long-term balance between the extraction of groundwater from the aquifer and recharge to the aquifer. However, within the PrAMA during most years, we are overdrafting the aquifer because we continue to pump more groundwater than is recharged, which has resulted in declining water levels in almost all of our wells. In fact, the PrAMA has the highest percentage of overdraft in the entire state, and achievement of safe-yield remains only a dream.

In order to determine the extent of our overdraft, scientists can directly measure certain water budget components, for example groundwater pumping and streamflow recharge rates. Other components must be estimated, such as mountain-front recharge, flood recharge, underflow at groundwater basin boundaries, evapotranspiration and stream seepage. In order to analyze all this data, ADWR relies on mathematical regional groundwater flow models.

An added complication is that the ADWR groundwater pumping regulations apply only to the approximately 200 municipal wells in the PrAMA. These wells are commonly drilled deeper than 500 feet where the aquifer is plentiful. The regulations require that groundwater flow models show that over the next 100 years, pumping from any of these municipal wells will not adversely affect any of the neighboring municipal wells.

But what about the nearly 12,000 rural families who use water from shallow domestic wells for their homes? Their wells are exempt from ADWR regulation and generally drilled to less than 400 feet deep. What does the future hold for these residents and their wells? These questions will be the focus of the May 14 CWAG program where I will discuss groundwater changes that may occur over the next 20 to 100 years, using results from groundwater flow models. Will the PrAMA reach safe-yield by 2025, or ever?

See May 14 CWAG program details under “Next Meeting” at www.cwagaz.org .

*Peter Kroopnick, PhD is a hydrogeologist who retired to Prescott in 2009 and is currently chair of the CWAG Science Committee. He received his PhD in Earth Sciences from the Scripps Institution of Oceanography, University of California, San Diego. His specialty is the numerical simulation of ground and ocean water circulation.*