

# Texas AgriLife – Amarillo Region A Water Planning Effort

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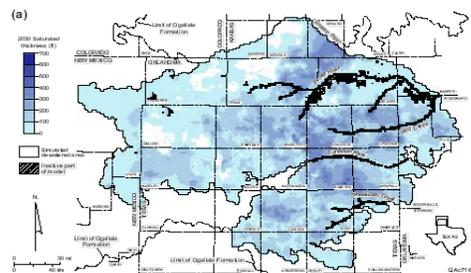
*Support provided by Texas Water Development Board through Panhandle Regional Planning Commission.*

## BACKGROUND

In Region A of the northern Texas High Plains, which consists of the state's topmost 21 counties, the majority of the water is utilized by irrigated agriculture and the livestock sector. This water sector accounts for approximately 90 percent of the region's total use. As virtually all irrigation water is supplied from the Ogallala Aquifer, an updated review and assessment of water use from the depleting supply was needed to accurately evaluate where the region would be in terms of balancing the supply versus demand in 50 years. Past projections of the state's water agency, the Texas Water Development Board (TWDB), using an annual survey method, were provided and the Texas AgriLife-Amarillo water management group had the task of reviewing and recommending adoption of the existing values or developing new estimation and use methodology for the region.

## OBJECTIVES

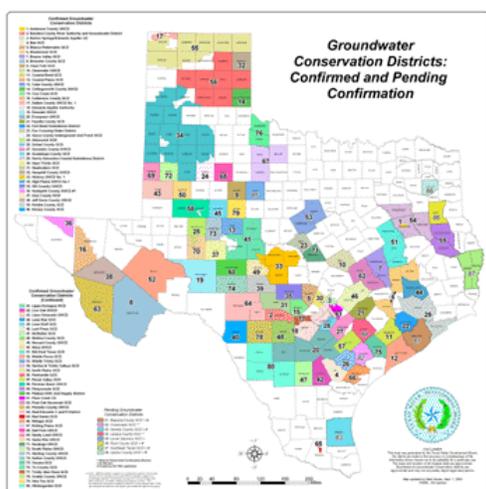
- 1) Review and assess Region A's projections of irrigation and livestock use.
- 2) Develop new water use estimation methodology for Region A, if warranted.
- 3) Provide irrigation and livestock estimation for inputs to the groundwater availability model (GAM) for Region A.



**GAM model indicating shortages in Region A based on data provided by this effort.**

## RESULTS

The Texas AgriLife-Amarillo water management group reviewed existing estimates of water use for Region A and decided that development of a new methodology was needed to more accurately reflect actual irrigation and livestock water use. The team developed a new evapotranspiration-based methodology model for the 21 counties and developed water-use estimates that agreed with average annual Ogallala well decline measurements conducted by area groundwater districts. The new methodology model was supported by ET demand data of the North Plains ET network located throughout Region A and by a sampling of actual producers' irrigated water use conducted in several of the heavily irrigated counties through the Texas AgriLife Extension Service AgriPartner program-Amarillo. The new model also utilizes Farm Service Agency acreage values, as it is the most completely reported crop acreage data from producers. Livestock numbers were updated and reflect actual livestock inventories and industry projected trends based on permitted capacity. The new methodology was supported by the regional groundwater districts and was adopted by the Panhandle Water Planning Group, the water subgroup of the Panhandle Regional Planning Commission, which was commissioned by the TWDB to conduct the regional review. The Amarillo-based team was later contracted to develop similar applicable methodology and data recommendations for the irrigated regions of the entire state of Texas under contract with the TWDB. The model is updated every five years.



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