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## EAA protecting today's water and tomorrow's

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The Edwards Aquifer Authority was created by the Texas Legislature in 1993 and began operation in 1996. Responsible for managing, enhancing and protecting the Edwards Aquifer, the EAA has regulatory jurisdiction in all of Uvalde, Medina and Bexar counties and portions of Atascosa, Caldwell, Comal, Guadalupe and Hays.

The EAA has several initiatives aimed at protecting the resource, including water quality and water quantity initiatives designed to ensure long-term stability.

In partnership with the city of San Antonio, the EAA conducts geologic assessments and performs annual easement inspections related to the city's Edwards Aquifer protection program. The city's efforts have resulted in protecting more than 150,000 acres of recharge and contributing zone lands in Uvalde, Medina, Bexar and Comal counties. The value of this program is the certainty it provides in maintaining historical recharge and water quality conditions on these properties.

The EAA is also exploring a new initiative designed to restore the water holding capacity of the land surface across the region — especially in riparian areas. This initiative centers on simple land management techniques that retain and enhance soil profiles on the land surface. When performed correctly, the result is a reduction in overland runoff and associated sediment loss, with a concurrent increase in the amount of water per acre the soil can hold. This stored water is then more likely to slowly infiltrate or runoff into the aquifer or adjacent streams without transporting unwanted sediments. Another potential benefit is the potential to sequester some amount of carbon as organic matter in the soil.

Other initiatives that address the maintenance of water quality in the system include registration of wells drilled into the Edwards Aquifer as a measure of aquifer protection. By knowing well locations and well completion details, EAA staff can better inform our stakeholders in the event of an emergency, such as a spill of hazardous materials. The same initiative also focuses on identification and assessment of abandoned wells in the region. When located, abandoned wells are rated for their risk to water quality, and then prioritized for plugging.

Wells that are abandoned and in poor repair or that are improperly completed provide a direct conduit for contaminants to enter the aquifer and need to be properly plugged and abandoned to protect water quality in the system.

EAA staff are also developing a pathway to inform first responders on recognition of sensitive karst features to proactively prevent potential contamination from hazardous material spillages or firefighting activities.

While first responders are charged with addressing the needs of the injured or controlling fires, the EAA is working to find ways that may lead to increased awareness of highly sensitive features sometimes found on the recharge zone of the aquifer. The goal is to reduce threats to water quality through cooperative education about the sensitivity of karst environments, like the Edwards Aquifer Recharge Zone.

Another program that helps includes mandated conservation measures designed to maintain springflows during times of drought. As part of the habitat conservation plan, the EAA has several measures that mandate cutbacks on aquifer withdrawals — with the size of the cutbacks dependent on the aquifer pool.

They are triggered by 10-day average water levels at Uvalde County Index Well J-27 for the Uvalde Pool, and by the levels of Bexar County Index Well J-17 or flows at Comal and San Marcos springs for the San Antonio pool.

The EAA maintains other programs designed to maintain aquifer levels and springflows such as the Voluntary Irrigation Suspension Program and Aquifer Storage and Recovery.

You can find out more about those at the EAA website, [edwardsaquifer.org](http://edwardsaquifer.org).

Finally, the EAA has an active research program focused on providing sound scientific information to policy makers. For example, over the next several years, research staff are focused on developing a better understanding of how the Trinity and Edwards aquifers communicate in the subsurface. Staff are also working to understand more about potential groundwater impacts from wastewater effluent that originates from septic tanks, anaerobic spray systems and organized treatment systems.

Studies like these require significant resources and time and are expected to require years before being substantially complete. Other components of the EAA's research efforts include various data collection components related to aquifer levels and water quality testing throughout the region, principally aimed at assessing aquifer health.

The EAA also conducts groundwater and watershed modeling work to understand how the aquifer might respond to severe drought. Future research is planned to assess the benefits of land management practices describe earlier and how those practices might be implemented in the most efficient and effective manner, for the benefit of the region.