

HYDROLOGICAL CHARACTERIZATION OF VERNAL POOLS IN THE LOWER COASTAL PLAIN OF EAST TEXAS

A McIntire-Stennis supported project



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Home to five of the United States' fastest growing cities, Texas has seen a drastic rise in land conversion and urbanization, oftentimes threatening or destroying critical ecological habitat. Vernal pools, once abundant throughout the lower coastal plain of the state, provide valuable hydrologic functions, but are currently not protected under the Clean Water Act, resulting in increased vulnerability to the effects of urban sprawl.

Researchers at SFA's Arthur Temple College of Forestry and Agriculture are working within the Houston metroplex to expand the understanding of these lower Gulf coastal plain vernal pools located within the Piney Woods forest ecosystem. To date, these vernal pools have not been extensively studied.

Groundwater monitoring wells, as well as chemical analysis of water present will provide critical information on how these disappearing systems function and perhaps provide additional justification for their conservation.



About McIntire-Stennis

The McIntire-Stennis program, a unique federal-state partnership, cultivates and delivers forestry and natural resource innovations for a better future. By advancing research and education that increases the understanding of emerging challenges and fosters the development of relevant solutions, the McIntire-Stennis program has ensured healthy resilient forests and communities and an exceptional natural resources workforce since 1962.



COLLABORATION

The study site is owned by The Earth Partners who help private companies and government agencies develop solutions for their wetland and stream mitigation needs.



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Graduate student research projects supported in this study.

IMPACT

The vernal pools being studied provide flood mitigation, groundwater recharge, and pollutant uptake and transformation for more than 6 million Texans.



57%

Of Texas' water supply is located in the Pine Woodlands ecoregion.



17%

Projected increase in Texas water demand from 2020 to 2070.



28.3 million

Texans benefit from ecosystem services provided by wetlands and other hydrologic features.