

## **An Update on Brackish Groundwater Mapping in Texas with Current Woodbine Aquifer Study**

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The Brackish Resources Aquifer Characterization System (BRACS) is a program of the Texas Water Development Board (TWDB) tasked with mapping the distribution and quality of brackish groundwater in the state of Texas to aid in the exploration and development of this resource for inland groundwater desalination.

The objectives of a BRACS study are to collect, analyze, and interpret publicly available well data and geophysical well logs (often numbering in the thousands). The collected data is used to map the relevant geologic boundaries, distribution of total dissolved solids, distribution of key chemical parameters of interest for desalination, and the net sand distribution of the aquifer. The results are then utilized to estimate the volume and distribution of fresh and brackish groundwater water in the aquifer. Information created during the study process is incorporated into the publicly available BRACS Database and GIS datasets. A peer-reviewed report is prepared and published to share study findings. To date, the TWDB has completed 16 brackish aquifer studies.

Additionally, the TWDB will map brackish groundwater production zones (BGPZs) in eligible major and minor aquifers of the state by 2032. BGPZs are portions of an aquifer that have moderate to high availability and productivity of brackish groundwater over 30- and 50-year horizons without significantly affecting freshwater resources and existing domestic, agricultural, and public supply wells. Furthermore, the BGPZs are mapped to avoid injection and disposal wells and their associated injectate. To date, the TWDB has designated a total of 31 brackish groundwater production zones, with four additional zones currently undergoing a review process.

The TWDB is currently working on three brackish aquifer studies, including the Woodbine Aquifer. The Woodbine Aquifer is a minor aquifer located in northeast Texas consisting of sandstone interbedded with layers of shale and clay. The in-house Woodbine Aquifer study is scheduled for completion in winter 2024, and covers an area of approximately 15,000 square miles, including both unconfined and confined portions of the aquifer.