



# Brackish Resources Aquifer Characterization System

The Brackish Resources Aquifer Characterization System (BRACS) program was established in 2009 to map and characterize the brackish portions of Texas aquifers. The program is designed to provide useful information and data to regional water planning groups and other entities interested in using brackish groundwater as a water supply.

Groundwater contains dissolved minerals, measured in units of milligrams per liter, and can be classified as fresh (0–999 mg/L), brackish (1,000–9,999 mg/L), or saline (greater than 10,000 mg/L).

Brackish groundwater is abundant in Texas—current estimates are over 3.2 billion acre-feet—and public entities in the state are presently desalinating brackish groundwater to produce drinking water.

## BRACS Studies

The TWDB has completed or contracted 16 BRACS aquifer studies and three ongoing studies. There are six remaining aquifers that need to be characterized by December 1, 2032. An additional 12 aquifers are ineligible for brackish groundwater production zones (BGPZs) that will also be characterized after 2032

### Completed Studies

- Eastern portion of the Sparta Aquifer (2023)
- Hill Country Trinity Aquifer (southern portion of the Trinity Aquifer) (2022)
- Southern portions of the Queen City and Sparta aquifers (2022)
- Central portions of the Carrizo-Wilcox, Queen City, Sparta, and Yegua aquifers (2020)
- Northern Trinity Aquifer (2018)
- Lipan Aquifer (2018)
- Blossom Aquifer (2017)
- Nacatoch Aquifer (2017)
- Blaine Aquifer (2016)
- Southern portion of the Carrizo-Wilcox Aquifer (2016)
- Gulf Coast Aquifer (2016)
- Rustler Aquifer (2016)
- Queen City and Sparta aquifers in McMullen and Atascosa counties (2014)
- Gulf Coast Aquifer in the Lower Rio Grande Valley (2014)
- Gulf Coast Aquifer in the Corpus Christi Aquifer Storage and Recovery Conservation District and surrounding counties (2012)
- Pecos Valley Aquifer in West Texas (2012)

## Ongoing Studies

- Edwards-Trinity (Plateau) Aquifer
- Eastern portion of the Queen City and Carrizo-Wilcox aquifers
- Woodbine Aquifer

## Legislative Background

In 2015, Texas Water Code §16.060 tasked the BRACS program with designating brackish groundwater production zones that could potentially produce for 30- and 50-year periods. Texas Water Code §16.060 also directed the TWDB to conduct studies to identify and designate brackish groundwater production zones in four specific aquifers by December 1, 2016, and all eligible aquifers by December 1, 2022.

To date, a total of 31 brackish groundwater production zones have been designated. In 2016, the TWDB designated eight brackish groundwater production zones in the Carrizo-Wilcox, Gulf Coast, and Rustler aquifers—no zones were designated in the Blaine Aquifer. In March 2019, the TWDB designated an additional 23 production zones in the Blossom, Nacatoch, and Northern Trinity aquifers—no zones were designated in the Lipan Aquifer.

Also in 2019, the 86th Texas Legislature extended the deadline to complete zone designations from December 1, 2022, to December 1, 2032, and passed Texas Water Code §36.1015 that established a permitting framework for developing water supplies from TWDB-designated brackish groundwater productions zones.

## Recent BRACS Contracts

Contract studies nearing completion include a study of the Maverick Basin and the incorporation of 2D-seismic data

within the western portion of the Edwards-Trinity (Plateau) Aquifer. A new contract has been started to conduct a survey of upcoming brackish groundwater development projects. These projects will be scored using a rubric in order to select one that will receive funding for data collection recommended for brackish groundwater development. Data collection funding is limited to borehole logging, water quality sampling, and aquifer pumping tests.

### How can we use the information?

Completed studies estimate 3.2 billion acre-feet of total brackish groundwater volume, with total dissolved solids concentrations between 1,000 and 9,999 mg/L. This refined estimate is much more than the initial estimate of 2.5 billion acre-feet that came from a 2003 contract study.

The scientific work conducted in BRACS studies and House Bill 30 zone designations maps and characterizes entire aquifers using all publicly available water well reports, geophysical well logs, and aquifer data. This useful information helps stakeholders better understand the potential for brackish groundwater resources in their areas of interest—and within designated brackish groundwater production zones, they can apply for production permits with their local groundwater conservation district.

### More Information

For more information about the TWDB's BRACS activities, visit [www.twdb.texas.gov/groundwater/BRACS](http://www.twdb.texas.gov/groundwater/BRACS) or contact Kristie Laughlin at [kristie.laughlin@twdb.texas.gov](mailto:kristie.laughlin@twdb.texas.gov) or 512-475-1748.