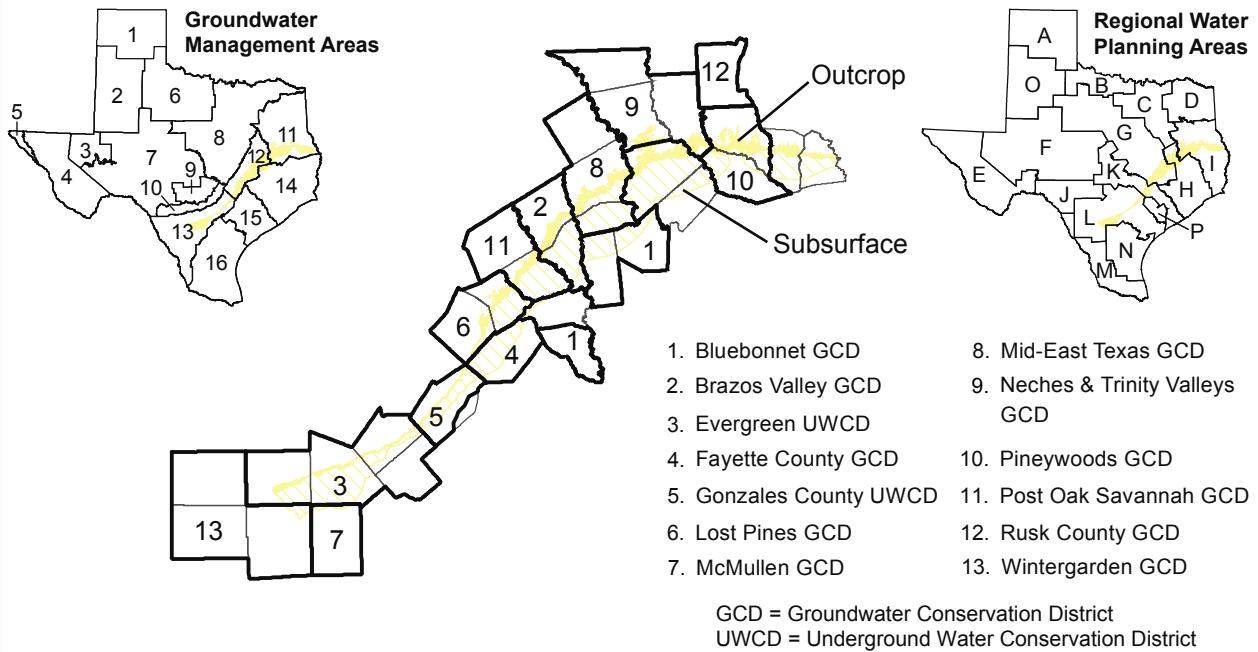


Sparta Aquifer



The Sparta Aquifer is a minor aquifer that extends across East and South Texas, parallel to the Gulf of Mexico coastline about a hundred miles inland. Water is contained within a part of the Claiborne Group known as the Sparta Formation, a sand rich unit interbedded with silt and clay layers and with massive sand beds in the bottom section. The thickness of the formation varies gradually from more than 700 feet at the Red River to about 200 feet in South Texas. Groundwater flow on a local scale in outcrop areas is controlled by topography. On a regional scale, flow is south and southeast towards the Gulf of Mexico. Water quality is commonly fresh in outcrop areas and for a few miles downdip but deteriorates with depth (beyond about 2,000 feet). Elkhart Creek Springs originates from the Sparta Sands in Houston County and flows up to 3.4 cubic feet per second. The unconfined aquifer has an average concentration of total dissolved solids of about 300 milligrams per liter, and the confined aquifer has an average concentration of total dissolved solids of about 800 milligrams per liter. Locally, iron concentrations may exceed the state's secondary drinking water standard. Water from the aquifer is predominantly used for domestic and livestock purposes, and its quality has not been significantly impacted by pumping. In some areas, such as in Houston and Brazos counties, the aquifer is used for municipal, industrial, and irrigation purposes. The planning groups recommend several water management strategies that use the Sparta Aquifer, including drilling more wells and increasing withdrawals from existing wells.

Aquifer characteristics

- Area of outcrop: 1,543 square miles
- Area in subsurface: 6,926 square miles
- Availability: 50,511 acre-feet per year (2010 to 2060)
- Well yield: 100 to 500 gallons per minute
- Proportion of aquifer with groundwater conservation districts: 70 percent
- Number of counties with available water: 25

Groundwater supplies with implementation of water management strategies

