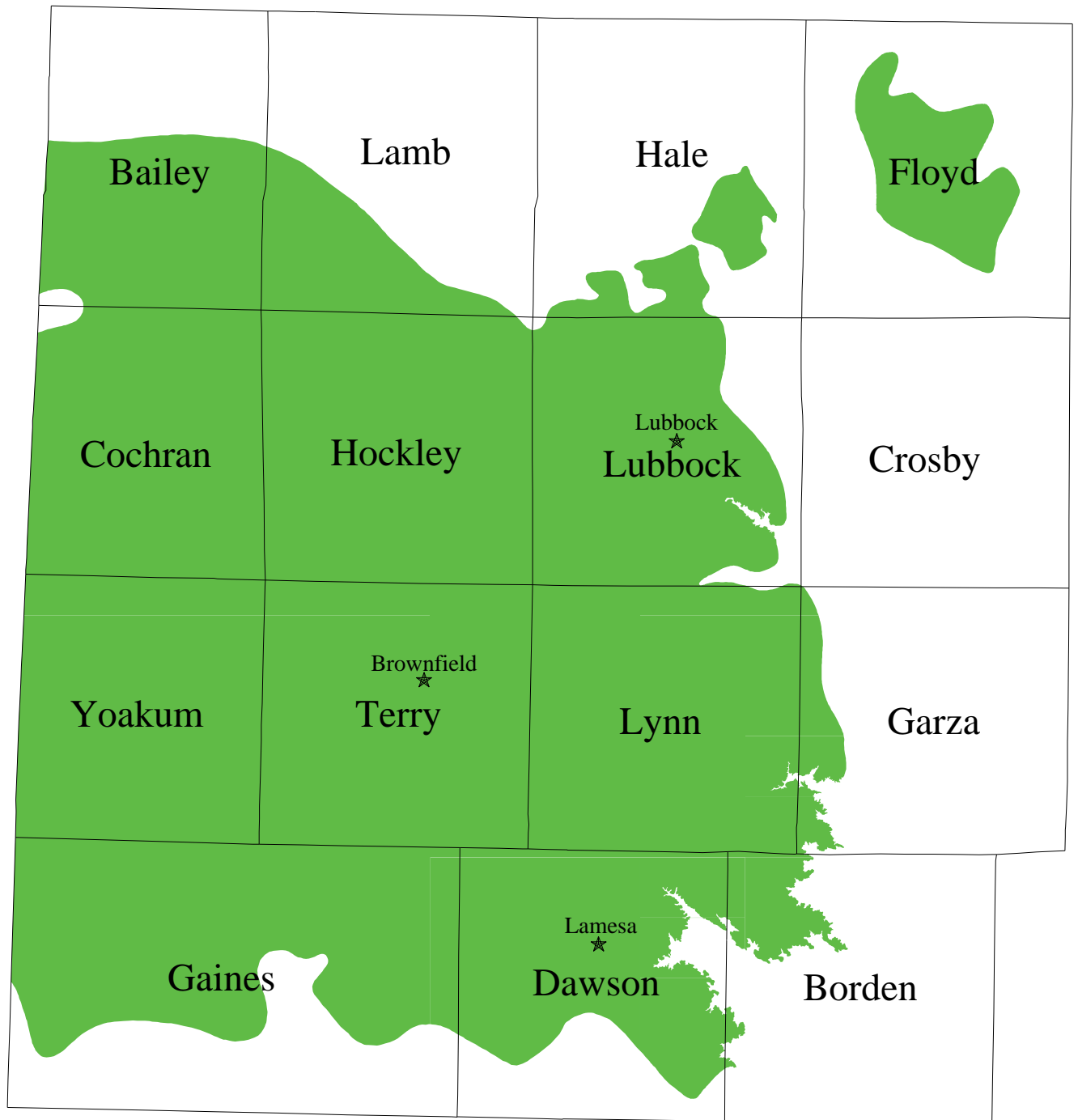


Edwards-Trinity (High Plains)



Edwards-Trinity (High Plains) Aquifer

The Edwards-Trinity (High Plains) aquifer includes Cretaceous age water-bearing formations of the Fredericksburg and Trinity Groups. These formations underlie the Ogallala Formation in the south-central part of the Texas High Plains and extend westward into New Mexico. The majority of the wells completed in the aquifer provide water for irrigation and yield 50 gal/min to 200 gal/min.

Two distinct ground-water zones occur in the aquifer. One occurs in the basal sand and sandstone deposits of the Antlers Formation (Trinity Group) and is usually under artesian pressure. The other water-bearing zone occurs primarily in joints, solution cavities, and bedding planes in limestones of the Comanche Peak and Edwards formations. In much of the area, this zone is hydrologically connected to the overlying Ogallala aquifer. Recharge to the aquifer occurs directly from the bounding Ogallala Formation along northern and western parts of the subcrop and by downward percolation from overlying units at other locations. Upward movement of ground water from the Triassic Dockum into the Edwards-Trinity is also believed to occur in Lynn County.

Ground-water movement is generally to the southeast. In many places, the ground-water potentiometric surface in the Edwards-Trinity aquifer is higher than in the Ogallala aquifer, resulting in the upward migration of water from the Edwards-Trinity. In these areas, the Edwards-Trinity has a significant impact on the water level and quality of the Ogallala. Wells drilled into the Edwards-Trinity are usually completed also in the overlying Ogallala. Water-level declines of up to 30 feet have occurred in such wells in western Gaines County.

Water in the aquifer is typically fresh to slightly saline and is generally poorer in quality than water in the overlying Ogallala aquifer. Water quality deteriorates in areas where these formations are overlain by saline lakes and the gypsiferous Tahoka and Double Lakes formations.

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