

GAM run 05-07

by **Roberto Anaya**

Texas Water Development Board (TWDB)
Groundwater Availability Modeling Section
(512) 936-2415
Feb. 11, 2005

REQUESTOR:

Darlene Shahan, Kinney County Groundwater Conservation District (GCD).

DESCRIPTION OF REQUEST:

The Kinney County GCD asked TWDB to calculate the recharge areas for:

1. Edwards (Balcones Fault Zone [BFZ]) recharge zone in Kinney County.
2. Edwards-Trinity (Plateau) recharge zone in Kinney County in the Nueces River Basin.
3. Edwards (BFZ) and the Edwards-Trinity (Plateau) recharge zones in Kinney County.

METHODS:

Geographic Information Systems (GIS) analysis was used to calculate the recharge areas based on TWDB Major Aquifers boundaries and TWDB Major River Basins boundaries available online from <http://www.twdb.state.tx.us/mapping/gisdata.asp>.

PARAMETERS AND ASSUMPTIONS:

The GIS aquifers and basins data were projected into the GAM coordinate system, an Albers Equal-area projection with parameters optimized for the State of Texas. The recharge zones were defined from the TWDB official 1:250,000 major aquifers and 1:500,000 major river basins delineations. Areas for the recharge zones were calculated using GIS analysis functions.

RESULTS

The calculated areas are listed in Table 1 and shown on the map in Figure 1.

Table 1. Calculated areas for recharge zones in Kinney County.

Recharge Zone	Area (mi ²)
Edwards (BFZ) recharge zone in Kinney County	118
Edwards-Trinity (Plateau) recharge zone in Kinney County in the Nueces River Basin	160
Edwards (BFZ) and the Edwards-Trinity (Plateau) recharge zones in Kinney County	469

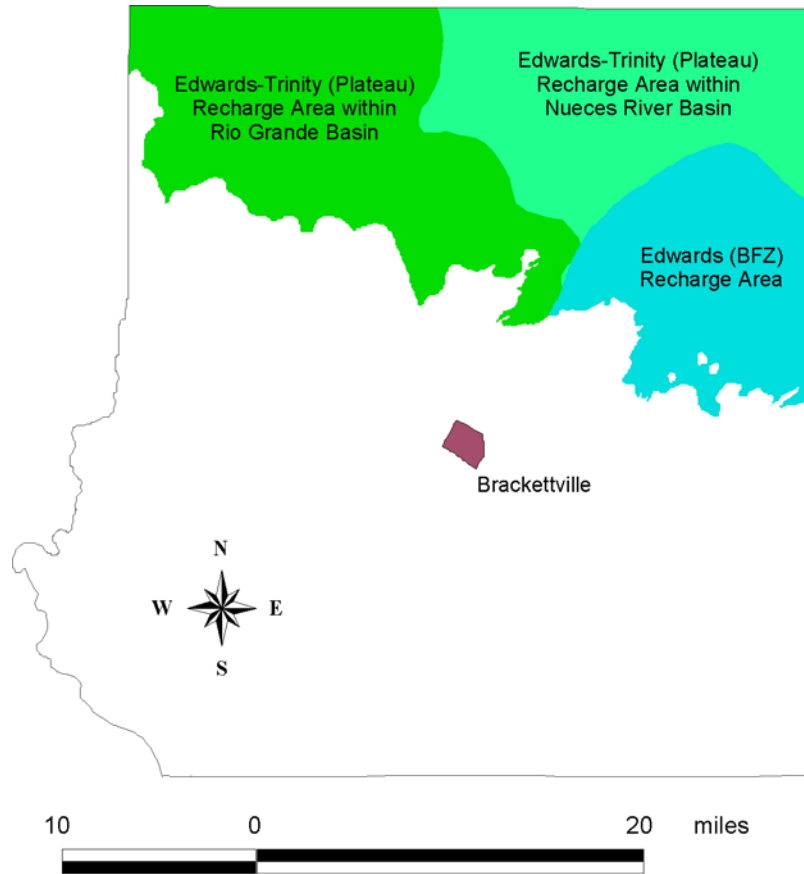


Figure 1. Map of recharge zones for the Edwards (BFZ) and the Edwards-Trinity (Plateau) aquifers in Kinney County.

LIMITATIONS

None.

REFERENCES:

- TWDB, 1990, Major Aquifers of Texas, digitized from 1:250,000 Geologic Atlas Sheets:
<http://www.twdb.state.tx.us/mapping/gisdata.asp>
- TWDB, date unknown, Major River Basins of Texas, originally digitized by US Geological Survey from 1:500,000 USGS topographic map series:
<http://www.twdb.state.tx.us/mapping/gisdata.asp>