

GAM run 03-14

by Shirley Wade

Texas Water Development Board
Groundwater Availability Modeling Section
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REQUESTOR:

Mr. James Parks, Region C Water Planning Group

DESCRIPTION OF REQUEST:

Mr. Parks requested the following information from the Northern Carrizo-Wilcox aquifer Groundwater Availability Models (GAM) for Henderson, Navarro, and Freestone counties:

- Total water availability based on 100% of recharge,
- With results broken out by county and basin.

METHODS:

To address the request, we:

- Ran the predictive (2000-2050) model for the Northern Carrizo-Wilcox aquifer Groundwater Availability Model (Fryar and others, 2003) and queried the budget files for the Carrizo and Wilcox aquifer layers in the following county-basins:
 1. Navarro-Trinity
 2. Henderson-Trinity
 3. Henderson-Neches
 4. Freestone-Trinity
 5. Freestone-Brazos
- Recharge values were extracted for the drought of record (2049) and average recharge conditions (2045).

PARAMETERS AND ASSUMPTIONS:

None: Data request.

RESULTS:

The results are presented in table 1. Estimates of drought of record supply from the 2002 Region C Water Plan are also shown for reference in Table 1 (Texas Water Development Board, 2002).

REFERENCES:

Fryar, D., Senger, R., Deeds, N., Pickens, J., Jones, T., Whallon, A. J., and Dean, K.E., 2003, Groundwater Availability Model for the Northern Carrizo-Wilcox Aquifer: Final Report prepared for the Texas Water Development Board.

Texas Water Development Board, 2002, Region C Water Plan in Water for Texas – 2002, Volume 3.

Table 1. Recharge for the Northern Carrizo-Wilcox aquifer model in acre-feet per year.

Aquifer Layer	Navarro-Trinity	Henderson-Trinity	Henderson-Neches	Freestone-Trinity	Freestone-Brazos
Average Recharge GAM Run					
Carrizo	0	1,736	115	6,269	0
Upper Wilcox	0	12,723	843	40,202	4,457
Middle Wilcox	1,859	7,781	75	26,675	9,794
Lower Wilcox	5,296	4,370	0	19,097	4,899
All	7,155	26,610	1,033	92,243	19,150
Drought of Record GAM Run					
Carrizo	0	1,642	86	2,735	0
Upper Wilcox	0	11,607	599	18,251	2,749
Middle Wilcox	1,177	6,215	53	11,370	5,214
Lower Wilcox	2,580	3,098	0	5,179	1,137
All	3,757	22,562	738	37,535	9,100
State Water Plan – Drought of Record Conditions					
Carrizo-Wilcox	9,172	4,258		82,511	10,946

Notes:

1. The numbers are rounded to the nearest 1 acre-ft.