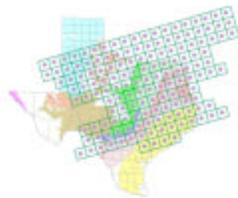


Presented by:  
Ali Chowdhury Ph.D.  
Hydrogeologist, GAM Unit

## What is a Numerical Groundwater Flow Model?

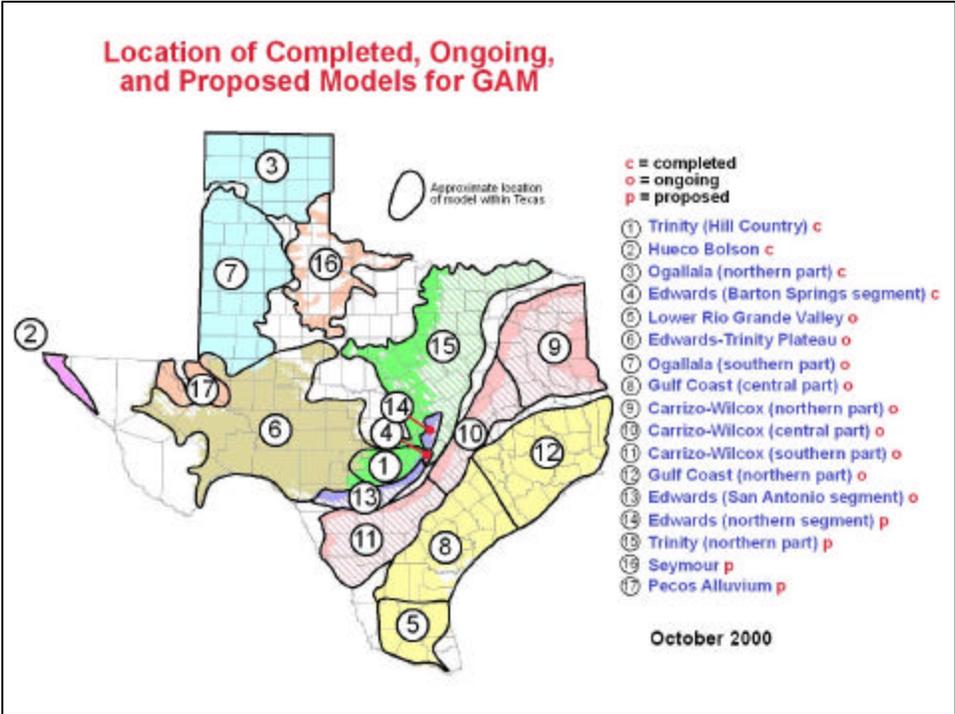
- 'The aquifer in a computer!'



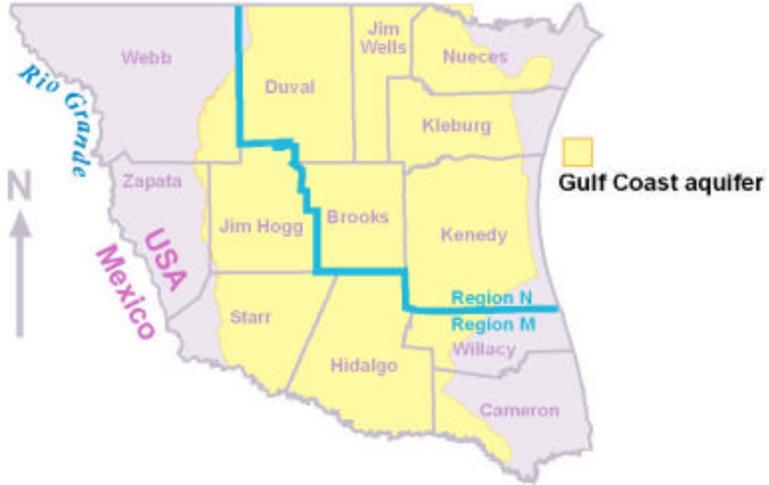


## GAM:

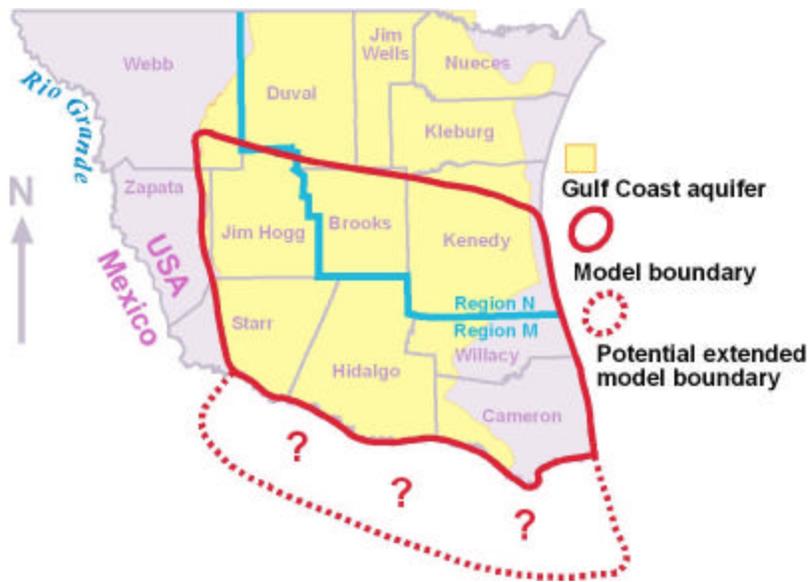
- purpose: to provide reliable and timely information on groundwater availability
- public process
- standardized, thoroughly documented, and available to public over Internet

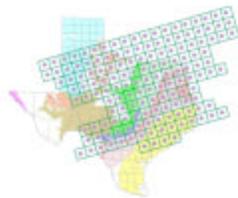


### Study area for the LRGV model



### Proposed model boundaries

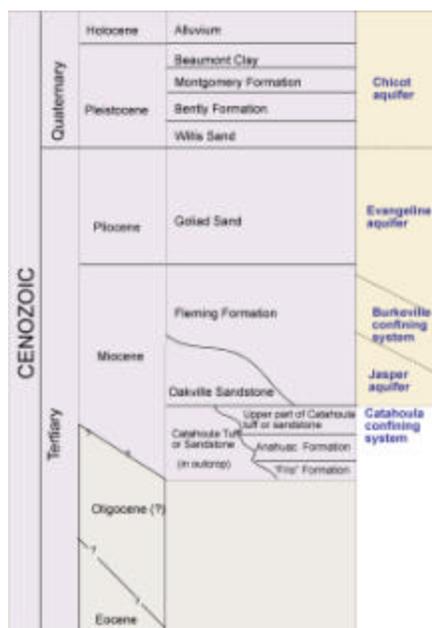




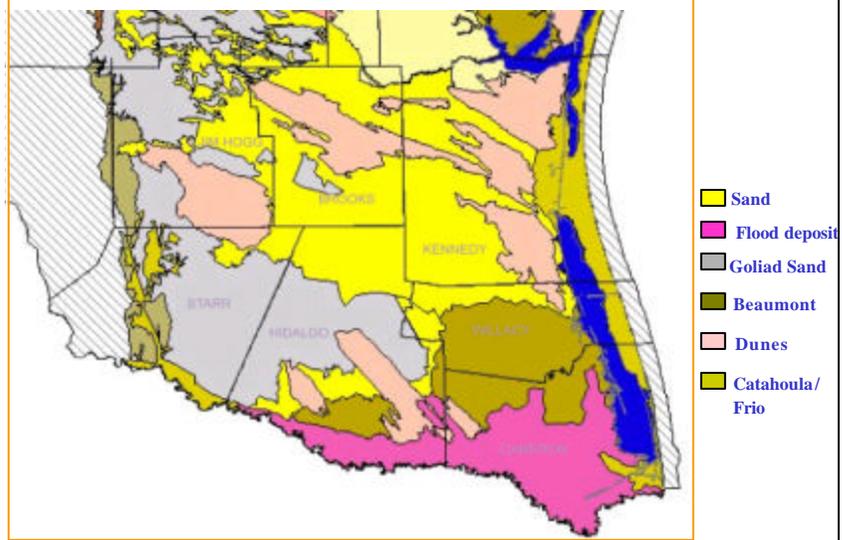
## Purpose of LRGV model:

- evaluate brackish water resources for desalinization
- evaluate fresh water resources for conjunctive use
- evaluate effects of future pumping

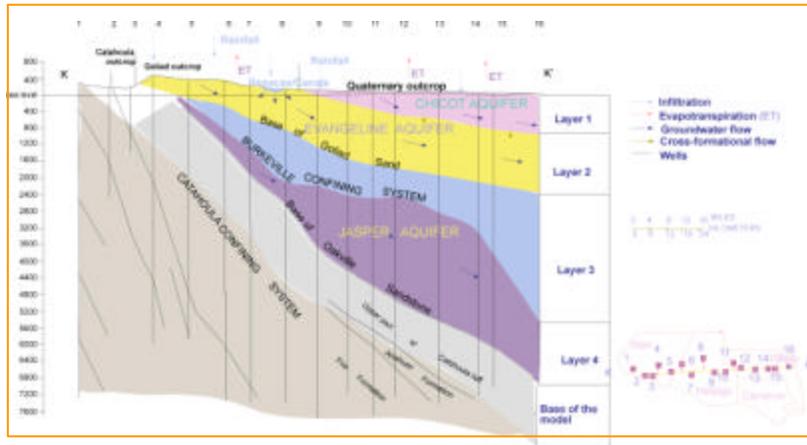
## Stratigraphic section for the Lower Rio Grande Valley

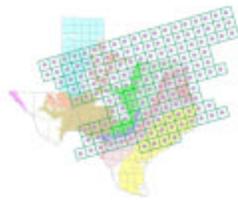


### Surface Geology of the Lower Rio Grande Valley



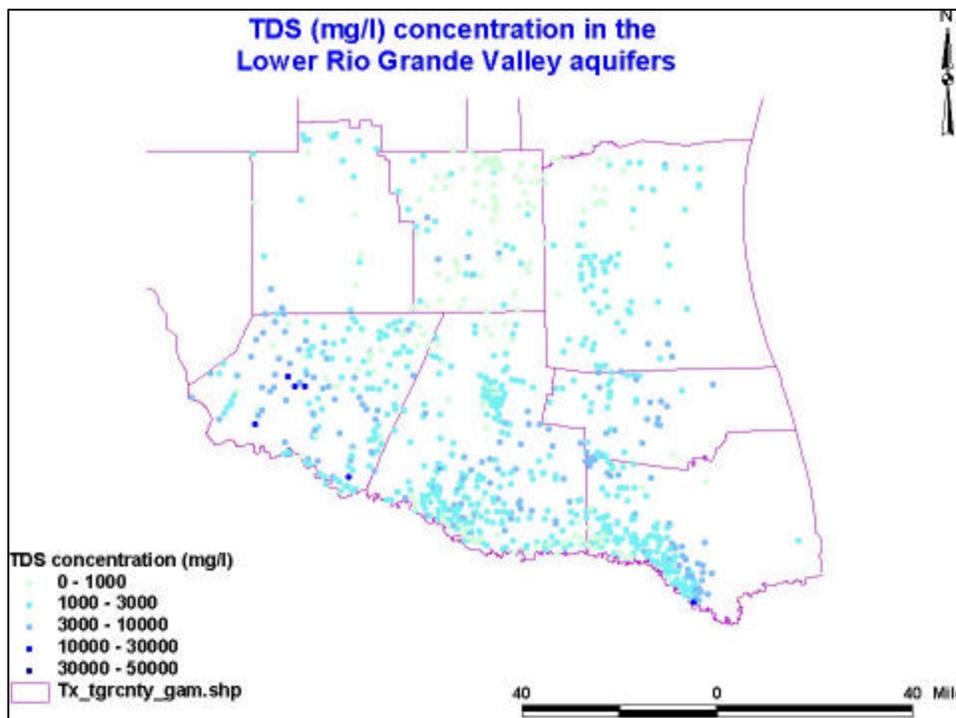
### Groundwater flow system in the Lower Rio Grande Valley

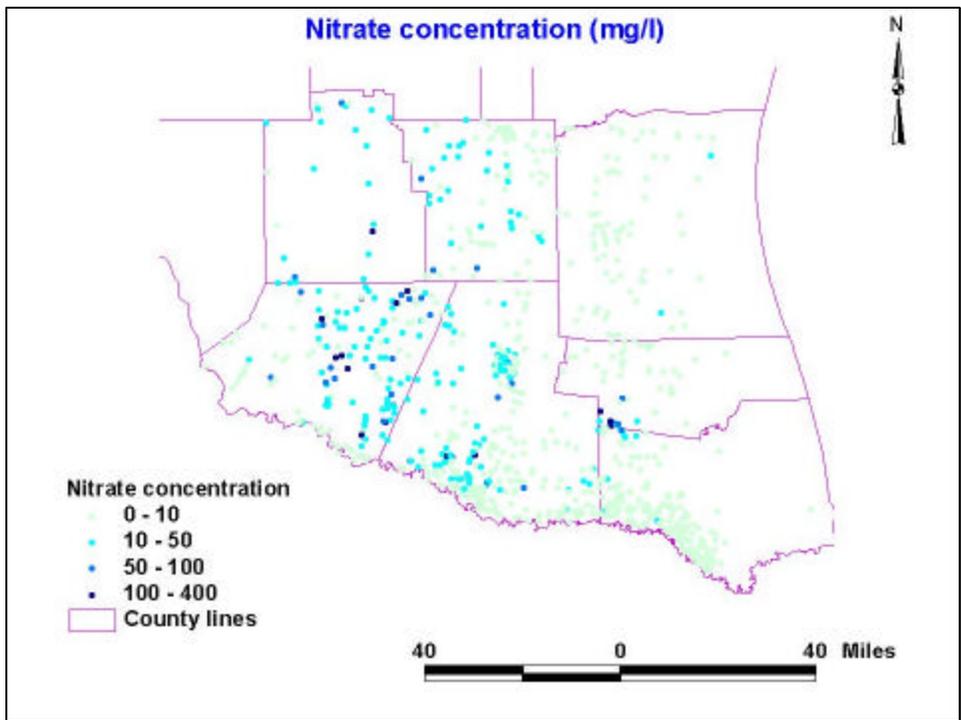
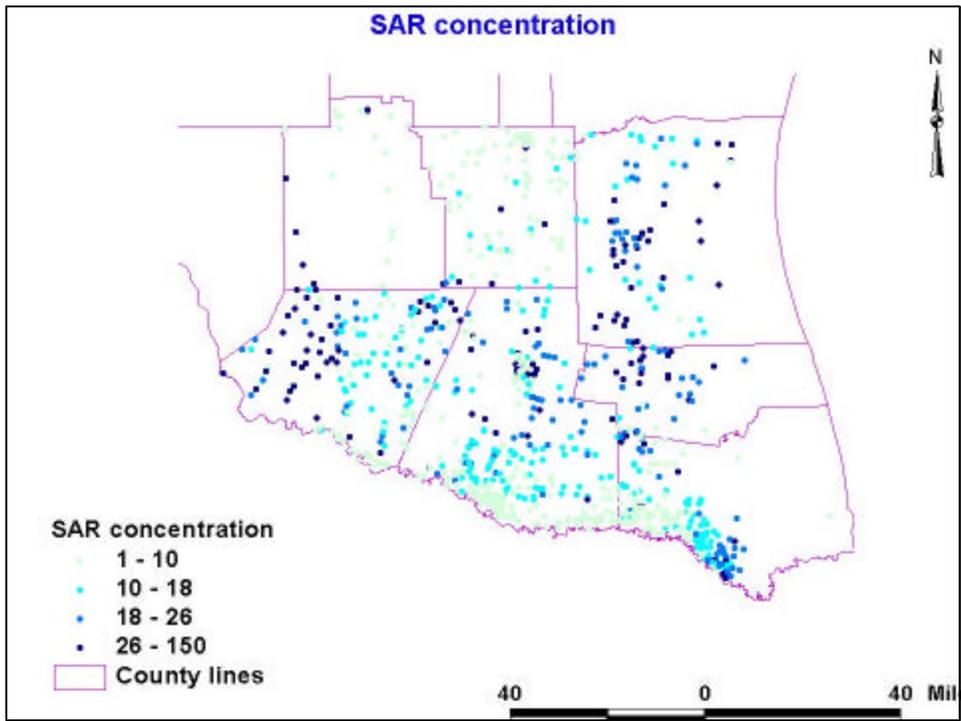


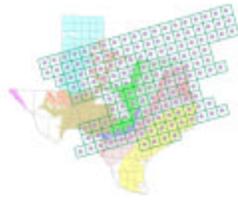


### Information needed for the model:

- geology
- water levels
- recharge
- discharge
- water quality
- aquifer properties
- surface water

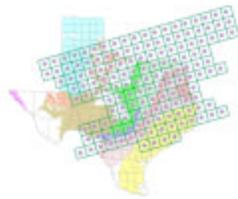






## We need your help!

- we will:
  - compile baseline hydrogeologic information
  - develop the model
- we need:
  - your guidance on the important issues
  - your knowledge on the area (aquifer, river, canals, etc.)



## Technical Advisory Group (TAG)

- TAG will consist of knowledgeable and interested people
- will meet quarterly
  - (draft report expected end of 2001)
- we need:
  - a list of people who may be interested
  - a plan for the TAG meetings (separate meetings? during or after RWPG meetings?)



<b><u>Name</u></b>	<b><u>Affiliation</u></b>
Fernando Roman	City of Laredo
Glenn Jarvis	Attorney
Roberto Gonzalez	City of Eagle Pass
Lee Kirkpatrick	Texas State Bank
Robert Fulbright	
James R. Matz	Cameron County Commissioners Court
Mary Lou Campbell	Sierra Club, Lone Star Chapter
Nadira Kabir	Turner, Collie and Braden
Ray Prewett	Texas Citrus Mutual
Charles Browning	North Alamo Water Supply Corporation
Jesus Leal	NRS Engineers
James Elium	Olmito Water Supply Corporation

Discussion at the Stakeholder Advisory Forum for the southern Gulf Coast aquifer Groundwater Availability Model, January 17, 2001

Question: Whether there was enough data available to build a computer model of the flow system in the southern gulf coast aquifer?

*Response: Yes, but more data is always better. Control points for generating many of the surfaces were shown as examples of data availability that were to be input into the model. Ideally, data for every grid cells is preferable but is an exception rather than the norm. Where data is not available, we interpolate between two known data points using well-established algorithms.*

Question: How will you determine the recharge rate?

*Response: The recharge rate will be determined based on rainfall distribution and base-flow data in the river basins. We will take a percentage of the distributed rainfall to calibrate the model.*

Question: Is there water quality data available for different depths of the aquifer?

*Response: Yes. We have data for most of the water quality parameters at different depths of the aquifer. We are working on water quality assessment of the various aquifers in the valley. Once the study is completed, we should be able to determine water quality distribution spatially and at various depths and assess geo-chemical evolution of these waters.*

Question: Will there be any work done as a follow-up of the UT-BEG geophysical investigation?

*Response: We would like to pursue this but we do not know the exact dates as to when the drilling will commence. It would very much depend on the availability of funds.*