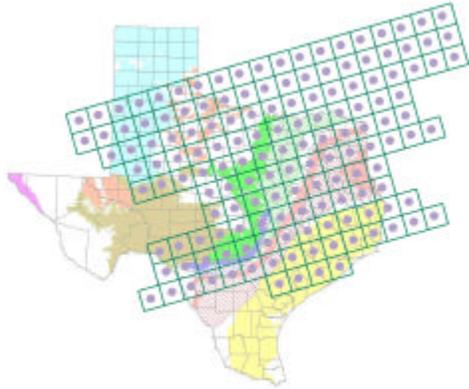


texas water development board



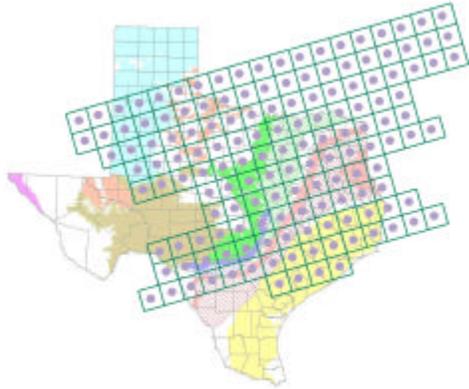
GAM

- Purpose: to develop the best possible groundwater availability model with the available time and money.
- Public process: you get to see how the model is put together.
- Freely available: standardized, thoroughly documented, and available over the internet.
- Living tools: periodically updated.

What is a Numerical Groundwater Flow Model?

- ‘The aquifer in a computer!’

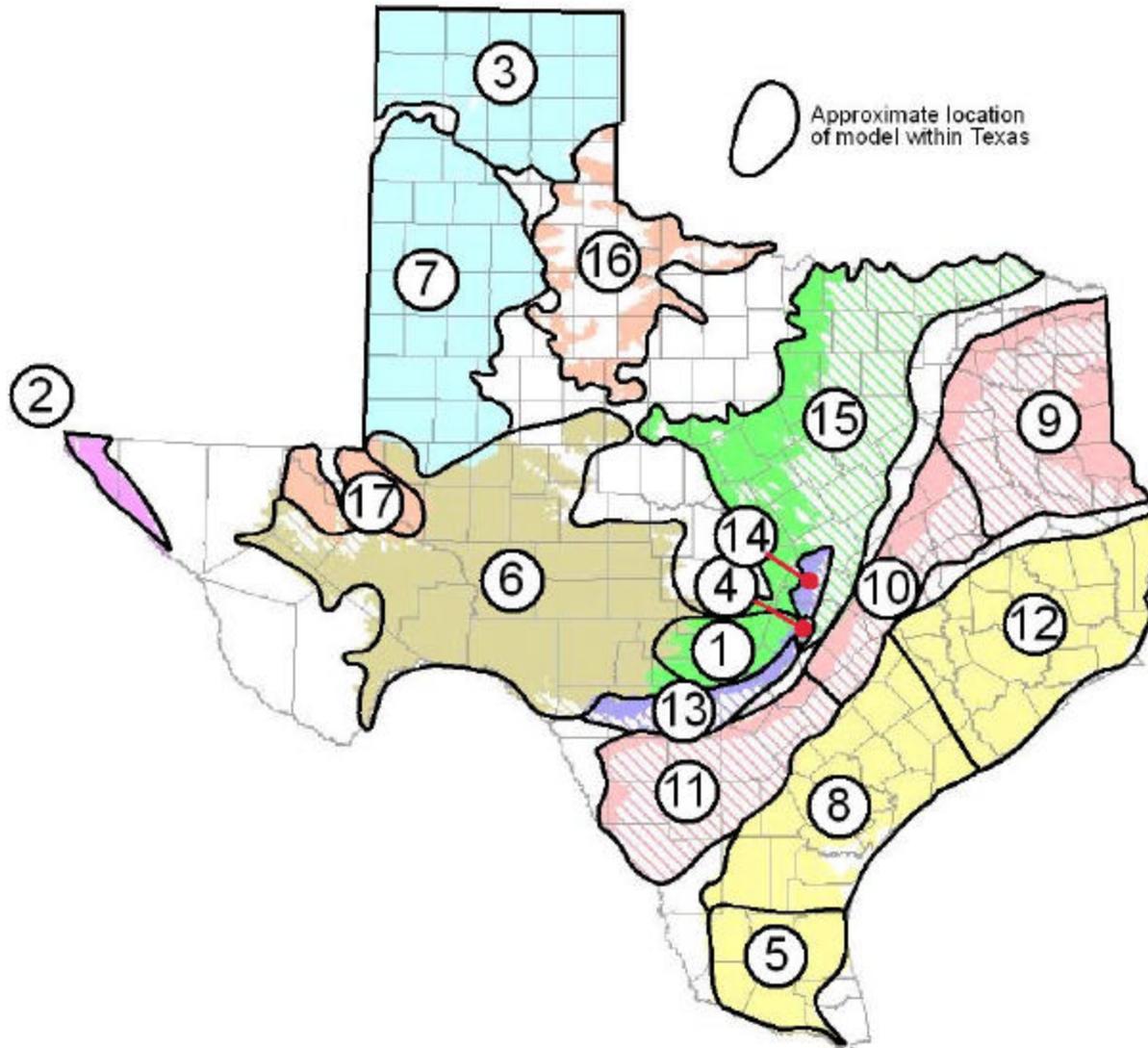




Groundwater Modeling

- Includes everything we know about the aquifer
- a regional tool to help define groundwater availability
- evaluate water management strategies
- run “What ifs...”

Location of Completed, Ongoing, and Proposed Models for GAM

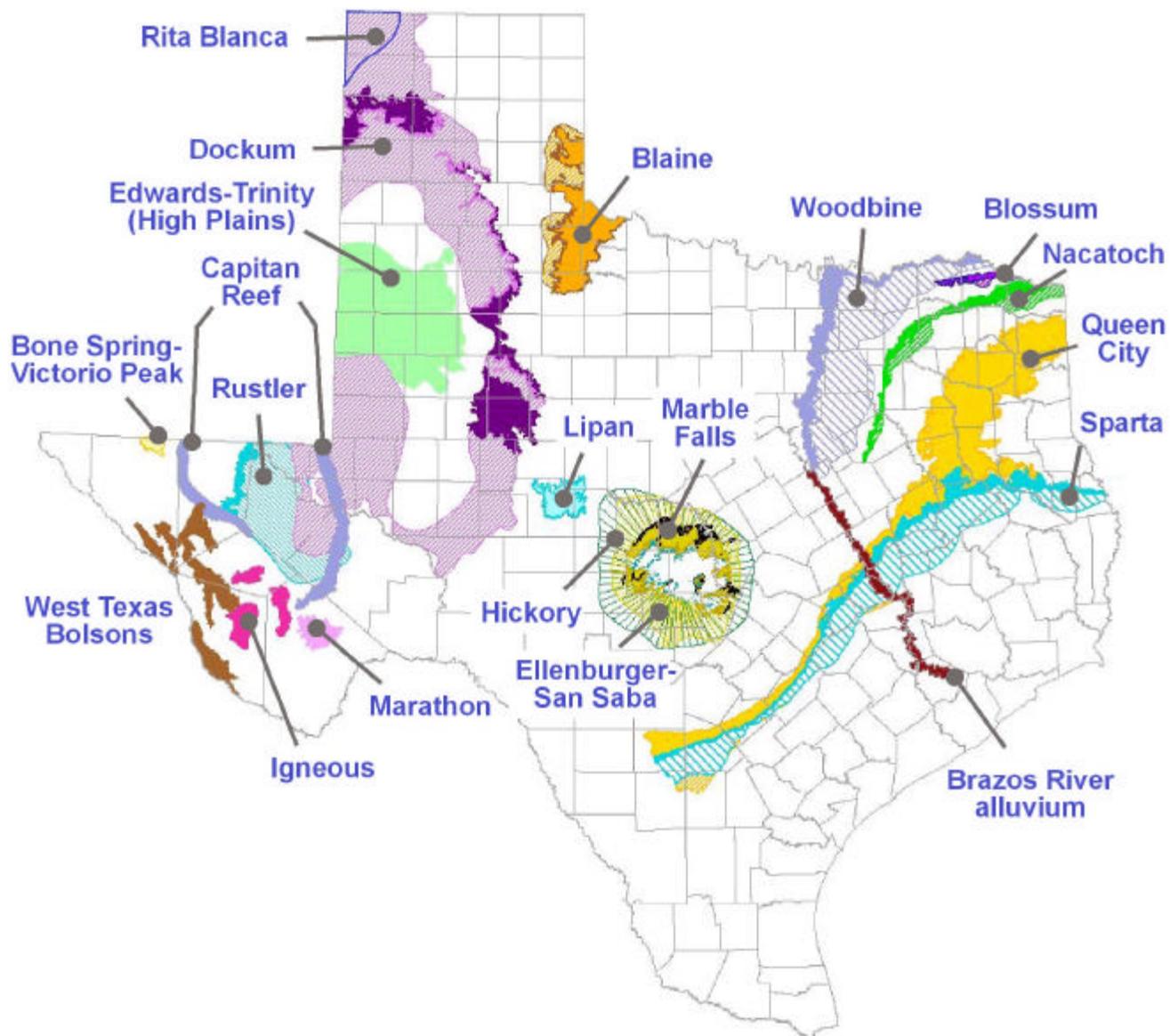


c = completed
o = ongoing
p = proposed

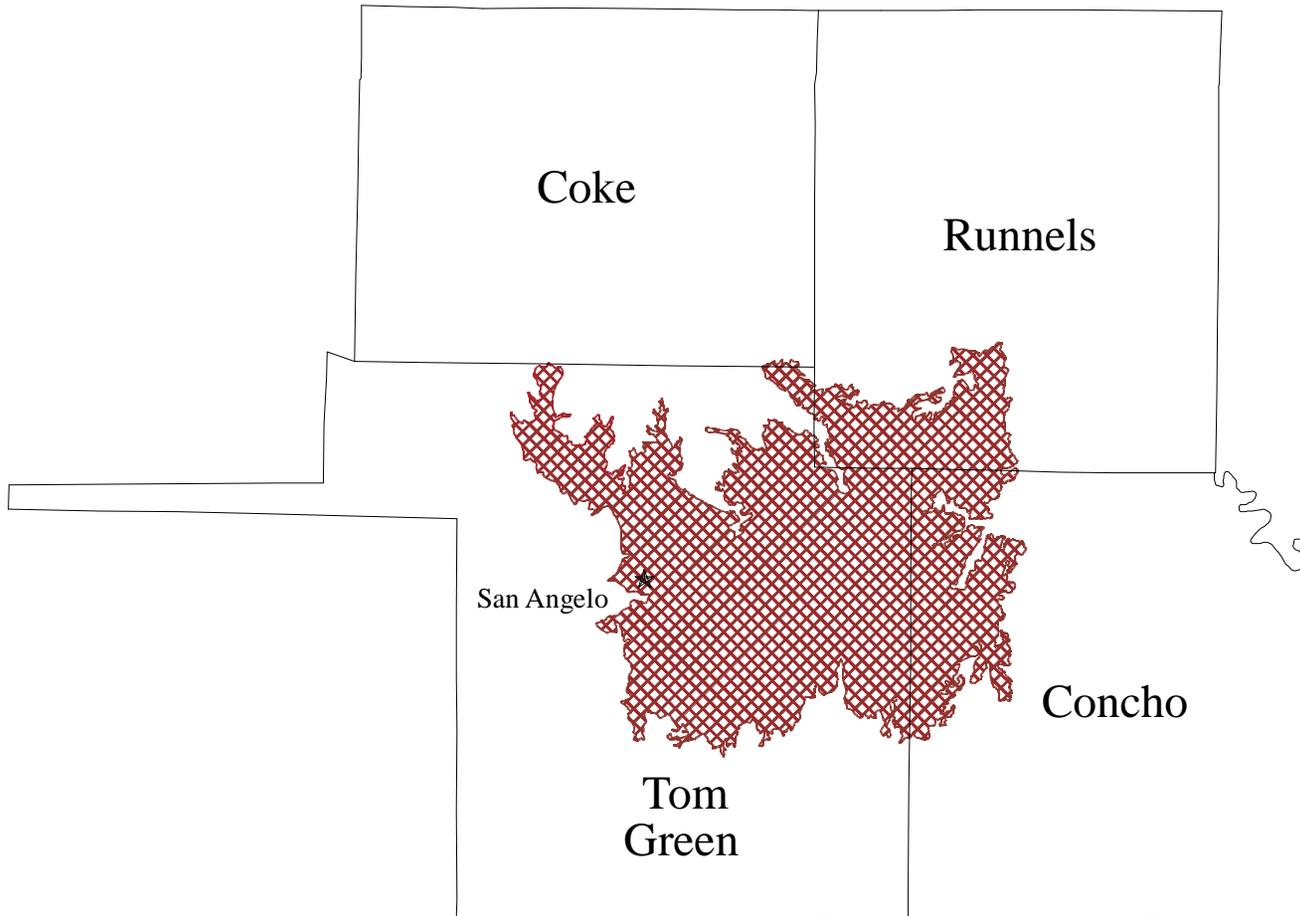
- ① Trinity (Hill Country) **c**
- ② Hueco Bolson **c**
- ③ Ogallala (northern part) **c**
- ④ Edwards (Barton Springs segment) **c**
- ⑤ Lower Rio Grande Valley **o**
- ⑥ Edwards-Trinity Plateau **o**
- ⑦ Ogallala (southern part) **o**
- ⑧ Gulf Coast (central part) **o**
- ⑨ Carrizo-Wilcox (northern part) **o**
- ⑩ Carrizo-Wilcox (central part) **o**
- ⑪ Carrizo-Wilcox (southern part) **o**
- ⑫ Gulf Coast (northern part) **o**
- ⑬ Edwards (San Antonio segment) **o**
- ⑭ Edwards (northern segment) **p**
- ⑮ Trinity (northern part) **p**
- ⑯ Seymour **p**
- ⑰ Pecos Alluvium **p**

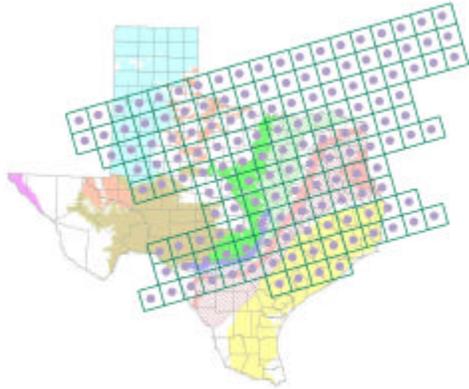
October 2000

Location of the Minor Aquifers in Texas



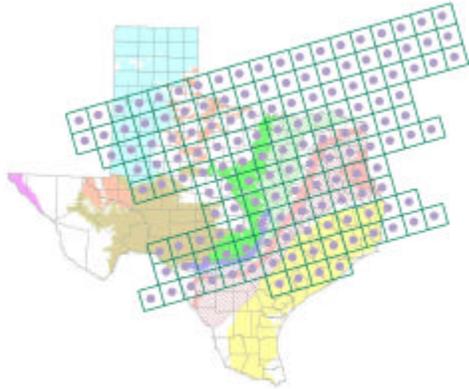
Lipan





We need your help!

- we need:
 - your guidance on the important issues
 - your knowledge on the area
 - your review of the model as it is developed



Stakeholder Advisory Forum (SAF)

- SAF will consist of knowledgeable and interested people
- will meet periodically

On March 12, 2002, the Texas Water Development Board held the first Stakeholders advisory meeting for the Lipan Aquifer Groundwater Availability Model in San Angelo, Texas. The meeting focused on a basic discussion of GAM and requirements for the Lipan Aquifer model. The following is a list of stakeholders that attended the meeting:

Attendance list:

<u>Name</u>	<u>Affiliation</u>
Ernest Michaleiz	---
Allan Lange	Lipan-Kickapoo GCD
E.C. Dodson	---
Stanly M. Cole Sr.	9 Miles
A. J. Jones	CRBWC
Jim Geeson	---
Michael Hailsche	---
Charles Hailsche	---
Alfonse schwartz	---
Will Wilde	---
Allan Standen	LBG Guyton
James Beach	LBG Guyton
Nolan Niehues	---

On March 12, 2002, the Texas Water Development Board held the first Stakeholders advisory meeting for the Lipan Aquifer Groundwater Availability Model in San Angelo, Texas. The meeting focused on a basic discussion of GAM and requirements for the Lipan Aquifer model. Some of the questions asked during the forum included:

<u>Question:</u>	<u>Response:</u>
What are the steps for making a Groundwater Model?	The first step is the conceptual phase where the modeling team will research the aquifer being modeled. They will gather information on the geology, structure, water levels, recharge, pumping tests, interactions with other aquifers, and groundwater/surface water interactions. The second step is the actually creating of the model, load in the various forms of data. Then the third step is calibration, where the modeling team will make model runs over a historical period where we have good data for the water levels and compare the results with what we know to be true. If there is a discrepancy, then the model will be adjusted so that it will perform more accurately.
Will there be money for more pumping tests during the modeling project?	Probably not, data collection is expensive, and there will not be enough money in the project for any extra pumping test.
Will the model recommend what levels should be maintained in the aquifer?	No. That is a policy issue. The model can be used to address the potential results of different strategies. Strategies themselves must be determined by groups like RWPGS, and GCDS or others.
Will the model include water quality?	No, but the report will discuss water quality. Water quality could be added to the model at a later date.
Why do we call the Lipan an aquifer?	Hydrogeologists consider any formation that provides and economically viable amount of water, an aquifer.
Discussions:	
The TWDB should consider adding the Permian formations to the model.	
At one time Grape Creek flowed almost year round but after groundwater development, it has stopped flowing.	
Water quality seems to vary with rain fall. During drought, water quality declines.	