

*Conference Proceedings*

# **Texas Groundwater: Yours? Mine? Ours?**

Lady Bird Johnson Wildflower Center  
Austin, Texas

March 7<sup>th</sup>, 2003



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**ENVIRONMENTAL DEFENSE**

finding the ways that work

This conference is the 3<sup>rd</sup> in a series of statewide water conferences hosted through the Texas Living Waters project. This effort, and the conference series, is made possible through the generous support from The Houston Endowment, Inc, The Brown Foundation, Inc., The Meadows Foundation, The Jacob and Terese Hershey Foundation, and the Magnolia Charitable Trust.

Cover photos: Courtesy of Texas Department of Transportation

#### Our mission

Environmental Defense is dedicated to protecting the environmental rights of all people, including the right to clean air, clean water, healthy food and flourishing ecosystems. Guided by science, we work to create practical solutions that win lasting political, economic and social support because they are nonpartisan, cost-effective and fair.

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## **Texas Groundwater: Yours? Mine? Ours?**

### **Introduction**

Environmental Defense hosted *Texas Groundwater: Yours? Mine? Ours?* in Austin at the Lady Bird Johnson Wildflower Center on March 7<sup>th</sup>, 2003. The agenda was designed to explore the complexities surrounding groundwater management in Texas, specifically those associated with marketing and our current management regime.

The conference opened with a generalized overview of the hydrological connections between groundwater and surface water. This introduction was followed by a panel discussion on varying approaches to groundwater marketing. For this panel, participants were chosen to represent the variety of perspectives involved in groundwater marketing and afford the audience greater insight into the issue as a whole. After lunch, the Honorable Robert Puente, chair of the House Natural Resource Committee, gave an update on water issues currently being addressed by the legislature. The day wrapped up with a roundtable discussion on the powers of groundwater conservation districts. Roundtable participants included representatives closely involved with groundwater conservation districts and thus able to address the strengths and limitations of the districts' authority.

Over 200 people participated in the day's forum. In addition to numerous interested individuals, attendees included representatives of 24 groundwater conservation districts, 12 river and water authorities, three municipalities, six state and two federal agencies, and over 26 different nonprofit organizations. The packed auditorium and the diversity of attendees were a great testament to the importance of this issue, and can be attributed in part to the collaboration and support of the conference co-sponsors including:

**Texas Springs Alliance    Texas Alliance of Groundwater Districts**  
**National Wildlife Federation    Texas Water Resources Institute**  
**Texas Land Trust Council    Sierra Club, Lone Star Chapter**  
**Hill Country Alliance of Groundwater Districts**

To aid the reader, definitions of some of the terms used during the conference are included at the end of the proceedings. We have also included a list of additional resources, both on-line and in publication format, that may provide more information on Texas groundwater resources and issues.

## Conference Agenda

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- 8:30 to 9:00 a.m. Registration and Coffee
- 9:00 to 9:15 a.m. Welcome and Opening Remarks  
**Laura Brock**, Water Analyst, Environmental Defense
- 9:15 to 10:00 a.m. Groundwater/Surface Water: the Underlying Connections  
**John Ashworth**, Associate, LBG Guyton and Associates
- 10:00 to 10:30 a.m. Break
- 10:30 to 12:00 a.m. Exploring Approaches to Groundwater Marketing  
Moderator: **Myron Hess**, Legal Counsel, National Wildlife Federation  
Panelists: **Lynn Sherman**, President, Water Texas  
**C.E. Williams**, General Manager, Panhandle Groundwater Conservation District  
**Mark MacLeod**, Director, State Energy Programs, Environmental Defense  
**Ned Meister**, Director for Commodity and Regulatory Activities, Texas Farm Bureau
- 12:00 to 1:00 p.m. Lunch Break (Box lunch provided)
- 1:00 to 1:30 p.m. Legislative Update on Water Issues  
The **Honorable Robert Puente**, Chair, House Natural Resources Committee, State Representative, San Antonio
- 1:30 to 3:30 p.m. Roundtable Discussion on Groundwater District Powers: Enough, Not Enough, Just Right?  
Moderator: **Mary E. Kelly**, Senior Attorney, Environmental Defense  
Panelists: **Doug Cavazos**, President, Hill Country Alliance of Groundwater Districts  
**Ken Kramer**, Director, Lone Star Chapter of the Sierra Club  
**Steve Musick**, Leader, Groundwater Planning Assessment Team, Texas Commission on Environmental Quality  
**Mary K. Sahs**, General Counsel for several Groundwater Conservation Districts, Sahs and Associates, P.C.
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## **Retrospective on Texas Groundwater**

*Laura Brock*, Water Policy Analyst, Environmental Defense

The groundwater resources of Texas play a major role in fulfilling our current and projected water demands. In 1997, groundwater supported approximately 60 percent of the water demand in the state. In some areas, meeting these demands strains aquifer resources and reduces the available supply. In fact, due to reductions in supply from aquifers such as the Ogallala in the high plains and the Hueco-Messilla Bolson in West Texas, available groundwater resources are expected to decrease almost 20 percent in the next 50 years.

Simultaneously, pressures on our aquifers are growing. In addition to the depletion of supplies, there is a new pattern of groundwater use in which rural water is proposed to be sold to urban centers. In many instances, growing cities are beginning to covet rural groundwater as a source of supply to meet projected municipal water demands. To add to this, a shift in rural economies is often making the water beneath the land a more lucrative product than what could be produced through farming or ranching on the ground surface. Unfortunately, in many cases the volume of water proposed to be withdrawn to sell to outside interests is much greater than historical withdrawals.

There are many concerns that need to be addressed as a result of the pressures from, and changes in, the use of groundwater. The presence and availability of water sustains economies and livelihoods, and is important to the economic viability of a region. From the environmental standpoint, the loss of groundwater within a system can have severe hydrological consequences such as the lowering of local groundwater levels, reduction in essential baseflow to rivers and streams, diminished spring flows, and changes to the recharge rates in a region.

These concerns also bring into question the adequacy of the state's current management regime for groundwater. The Texas legislature has established groundwater conservation districts as the preferred method of protecting and managing groundwater resources. But many districts are facing tough rulemaking and management issues. Their ability to protect local interests, such as rural communities, agriculture and ranching operations, and environmental water needs, from increased withdrawals is essential; districts must have the ability to adequately and sustainably manage the water resources within their jurisdiction.

## **Groundwater/Surface Water: the Underlying Connections**

*John Ashworth*, Associate, LBG Guyton and Associates

In Texas and elsewhere there are different laws governing surface water and groundwater, and there are different entities managing each resource separately with little

or no coordination of supply source concerns. But from a hydrological point of view, these two resources are often interrelated and where appropriate should be viewed as a single resource.

The hydrological cycle we learned in grade school oversimplifies reality. In the typical representation, the diagram does not show the often-strong connection between surface water and groundwater. In reality, surface water ---streams, lakes, reservoirs, wetlands, estuaries-- interact with groundwater. In some situations, surface water bodies receive water from underlying groundwater systems in the form of spring flow and seeps. In other situations, surface water is a source of recharge back to the underlying groundwater system. As they are an interconnected resource, the development of one affects the quantity and quality of the other. Looking at all components of river flow is one way to demonstrate this. When rainfall occurs, surface water runoff causes the river flow to spike. But what is sustaining the flow when there is no rain? In most cases, the river's base flow is sustained by inflow of new water derived from springs emitting from aquifers.

There are numerous examples that demonstrate the connection between groundwater and surface water; following are a few observations. Over fifty years ago, Texas farmers complained that flow in the Pecos River coming out of New Mexico had significantly decreased. In response, interstate compacts and laws were implemented to manage diversions from the river such that each state would get its fair share of supply from the river. However, to make up for water that they were no longer allowed to divert from the river for irrigation use, New Mexico farmers started pumping large amounts of groundwater adjacent to the river. This action resulted in limiting flow in the river. At the time, the farmers did not realize that the depletion of groundwater directly affected the natural base flow of a river. Even today, the issue of groundwater pumping in New Mexico and its affect on the Pecos is being contested.

Another good example of the connection between groundwater and surface water can be viewed at Comanche Springs in Pecos County. Like many springs that occur in the arid regions of far west Texas, Comanche Springs owes its origin to relatively shallow groundwater. Unfortunately, the source of groundwater for the springs has been diverted for irrigated agricultural use and, in response, the water level in the aquifer has declined such that the springs have generally stopped flowing. Today Comanche Springs only flows at low levels during winter months when irrigation wells are not in operation.

A present day water-supply scenario that provides an example of the importance of recognizing the interconnection between groundwater, springs and rivers occurs in the area of the headwaters of the Guadalupe River in western Kerr County, Texas. The city of Kerrville has long relied on both local groundwater from the Trinity aquifer and surface water from the upper Guadalupe River. Because of a growing water demand, the city is considering developing additional groundwater supplies west of the city. This supply would likely tap the Edwards Plateau aquifer, which is also the groundwater source that feeds numerous springs that contribute water to the base flow of the upper Guadalupe River. To prevent adverse affect to their surface water supply, the Guadalupe,

the city recognizes that it is imperative that any additional groundwater withdrawals not result in water level declines that starve the springs that feed the river. A study is planned to carefully analyze the connection between the Guadalupe River and the Edwards Plateau aquifer prior to pursuing additional groundwater supplies.

As has been discussed, there are numerous areas where strong connections exist between surface water bodies and underlying groundwater aquifers. However, such interconnections do not exist everywhere. By its own nature, surface water is always associated with the land surface over which it traverses and the underlying rock stratum. Groundwater, on the other hand, often exists in its own subsurface environment without regard to overlying surface conditions. Sound water-supply management decisions can only benefit from an awareness of how and where to expect source water interconnection relationships.

### **Panel Discussion: Exploring Approaches to Groundwater Marketing**

#### Panel Members

*Lynn Sherman*, President, Water Texas

*C.E. Williams*, General Manager, Panhandle Groundwater Conservation District

*Mark MacLeod*, Director, State Energy Programs, Environmental Defense

*Ned Meister*, Director for Commodity and Regulatory Activities, Texas Farm Bureau

Moderator *Myron Hess*, Legal Counsel, National Wildlife Federation

#### **Panelist Presentations**

**Lynn Sherman**, president of Water Texas, addressed the audience from the perspective of one of the leading “water marketing” operations in the state. He opened by noting how Texas has seen incredible demographic growth without significant water development since the dam building era ended in the ‘80’s. He remarked how with the decreases in federal and state funding, privately funded projects, like those proposed and supported by Water Texas, are the wave of the future. He outlined what he believes to be the three kinds of water developers: people who own the land and are interested in selling the groundwater beneath it; people who buy land for the purpose of acquiring the groundwater and selling it; and, lastly, investors that partner with landowners and help develop and market the landowner’s groundwater.

Lynn explained that Water Texas is the third type of water developer and gave insight into some of their business strategies. For instance, for Water Texas to embark on a new water development project, the project has to be feasible from a business perspective as well as protect the environmental resources of the local area. He said that he feels strongly that there should be a way to leave revenues from water sales in the community.

**CE Williams**, general manager of the Panhandle GCD and chair of the Region A Regional Water Planning Group, began his presentation by explaining that the job of groundwater districts is to balance the needs of all the individuals in the district. He

remarked that water exports are not new to the Panhandle region. For example, the city of Amarillo has been transporting water from the district since the 50's. He explained that Roberts County in particular is desirable for water production because the land is not suitable for irrigated farming, the county is sparsely populated, and it is composed primarily of large ranches.

**C.E.** then gave the history of withdrawal permits filed in late 2000 by MESA Water, the Courson Family Land Partnership, and QUIXX. The first public hearing on the MESA Water permit application was held in December 2000, and the seventh was held in May of 2002. In the end, MESA was granted a High Impact Production Permit, contingent upon the designation of an end-user. As part of the negotiations, the applicants agreed to install monitoring wells on each tract of property before they begin pumping. He explained how the applicants will provide data from those wells, including annual water level measurements and chemical analyses, to the district. They also agreed to be bound by the district's rules, as they may be amended in the future, and the district's continuing right to supervise and regulate depletion of the aquifer. *(Copies of the permits and additional information about the district are available on their website <http://www.panhandlegroundwater.org>.)*



**Mark MacLeod**, of Environmental Defense, entitled his talk “Water Marketing: Achieving the Promise, Avoiding the Pitfalls.” He began by listing some of the promises of water marketing: that it can reduce the need to increase withdrawals from Texas rivers and aquifers; that it helps avoid building costly and environmental damaging reservoirs; that sale proceeds can supplement farm income (especially as a drought management tool); and that it can be used as a conservation tool to help protect spring flows and other environmental flows of water. Mark then went on to outline some of the pitfalls: over-pumping can have adverse effects on neighboring landowners and future generations of groundwater users; there is the possibility of contamination from underlying brackish groundwater resources; possible reduction in spring flows and base flows to rivers and streams; and the potential of land subsidence.

Mark suggested that one possible solution to avoiding some of these pitfalls would be to establish overall pumping limits for each aquifer and translate these limits to individual permits for landowners. He noted that the exportable amount might need to be adjusted for loss of aquifer recharge potential. Mark stressed that for non-rechargeable aquifers, the issue is trickier given that access to the water by future generations must also be accounted for in the planning process.

Mark also said that as it is the groundwater district's charge to oversee our groundwater resources, they need sufficient resources to evaluate groundwater availability and the financial resources necessary to manage their operation. He added that districts need to

concentrate on landowner outreach and education, as that is integral to the public's understanding and support of groundwater districts in their area.

Lastly, Mark offered up what he called unsolicited advice for water marketers. He recommended that marketers work to demonstrate that marketing is one part of a sustainable future for Texas, and not just a get rich quick scheme. He advocated that they be a proponent for common sense proposals by agreeing to sensible restrictions of groundwater withdrawals including the restriction of transactions to historic use, that they recognize private holding of permits for instream uses, and that they be proponents of watermaster and well monitoring programs.

**Ned Meister**, with the Texas Farm Bureau, began his presentation by stating that agriculture in Texas was experiencing difficult times. He said that landowners are looking for opportunities to derive income so they can remain on their land. Ned explained that the Farm Bureau has developed a model groundwater lease entitled "Model Lease of Groundwater Rights with Commentary", in response to requests from it's members for information on how to deal with people contacting them about leasing or selling their water rights. He further explained that in the absence of standards for groundwater leasing, this model lease is intended to assist landowners and their legal counsel in negotiating and preparing a groundwater lease. The model is also important because Farm Bureau membership is not typically comfortable with an outright sale of water rights, but see leasing as a better alternative. *(For more information about the Farm Bureau's model lease, contact your county office of the Texas Farm Bureau. Contact information is available on-line at [www.txfb.org](http://www.txfb.org).)*



## Question and Answer Session

**Myron Hess**, of National Wildlife Federation, opened the question and answer session by asking about the potential resource inequities in brokering water deals, i.e. groundwater districts versus well-funded water marketing firms. **Lynn** gave the example of Water Texas offering to fund a resource assessment project for one county, which was turned down by the groundwater district. He believed that the district's refusal of assistance was based on fear and mistrust. **C.E.** explained that older districts have more experience and often more funds. He said that he felt the district should have let Water Texas fund their

study, in that this approach would get people to work together towards finding the right answers, possibly avoiding lengthy and pricey legal battles.

Next, the panel was asked their thoughts on using export fees as a payment to the affected communities to make up for groundwater exports. **C.E.** said that the Panhandle GCD currently uses export fees to fund additional studies and activities within the district. **Mark** added that while the idea of compensation for damages is not a new idea, it is a difficult one.

**C.E.** was asked how the Panhandle GCD answers the question of generational equity, given the district's management goal of a fifty percent depletion of the aquifer over the next 50 years. **C.E.** responded that the district is hopeful they have adequately accounted for generational equity in their depletion estimations. He conceded that they may have been too restrictive in one county and not enough in another, but that hopefully it will equal out. **C.E.** was also asked how his district deals with the fact that it is set up along county lines and not the aquifer boundary. He explained that when this is the case, groundwater districts which overlay the same aquifer are required by the state to do joint planning. He noted that problems arise when a district covers only one part of an the aquifer and there is no district on the other part.

## Legislative Update on Water Issues

**Texas State Representative Robert Puente**, Chair of the House Natural Resources Committee, gave attendees an update on the issues currently being discussed during the 78<sup>th</sup> Legislative session. He explained how the legislature has worked over the last five sessions to overhaul Texas water law and bring it to the forefront of political debate. He said that the state's regional water planning process - crafted in Senate Bill 1 in 1997 and further refined in Senate Bill 2 in 2001 - has been especially effective in finding workable solutions to our water supply issues.



With the first round of regional water planning complete, Chairman Puente explained that both the Joint Interim Committee on Water Resources and the House Natural Resources Committee spent the legislative interim looking at some of the pressing water issues and exploring ways to improve water planning. He explained that conservation is recognized as the most cost effective strategy and promoting conservation will be a key issue in this legislative session. Chairman Puente cited San Antonio as a case study of successful water conservation measures. He has filed a number of bills this session concerning conservation, including new urban irrigation system requirements, new efficiency standards for toilets and coin-operated washing machines, and audit requirements for water providers.

Chairman Puente explained that while additional statewide conservation measures will help meet our water demands, we still need to balance the need to move water around the state through water marketing, while considering the need to respond to local and environmental concerns. He explained that given the uncertainty of the regulatory and legal framework regarding water markets, it will remain an issue this session. He reviewed how Senate Bill 2 laid out an extensive framework for groundwater districts and their powers to regulate production and out-of-district transfers. Chairman Puente predicted that there will be bills introduced this session relating to districts' powers and duties, particularly some relating to water marketing and export.

## **Roundtable Discussion: Groundwater District Powers: Enough, Not Enough, Just Right?**

### Panel Members

*Doug Cavazos*, President, Hill Country Alliance of Groundwater Districts

*Ken Kramer*, Director, Lone Star Chapter of the Sierra Club

*Steve Musick*, Leader, Groundwater Planning Assessment Team, Texas Commission on Environmental Quality

*Mary K. Sahs*, General Counsel for several Groundwater Conservation Districts, Sahs and Associates, P.C.

Moderator *Mary E. Kelly*, Senior Attorney, Environmental Defense

### **Panelist Introductions**

**Doug Cavazos** is president of the Hill Country Alliance of Groundwater Districts, a coalition of the groundwater districts overlaying the Trinity Aquifer in the Hill Country. He is also Board president of the Headwaters GCD in Kerr County. Doug explained some of the difficulties faced by a small district like his, and how collaborative efforts like the Hill Country Alliance help neighboring districts work together. He also shared his concern that districts within Priority Groundwater Management Areas (PGMA's) are lacking the management tools needed to protect their water resources from exportation. He stressed that these tools are important to a viable future for the Hill Country.

**Ken Kramer**, of the Lone Star Chapter of the Sierra Club, shared his concern about our current system of managing groundwater. He explained that while the state promotes groundwater districts as the preferred means of management, there aren't districts in every area needing groundwater management. Ken then shared with the audience his "beauty parlor story" which is from his list of what he called "stellar failures" – instances where districts are needed, but are not confirmed through the election process. The setting is Washington County, where residents recently declined to be part of the Bluebonnet GCD by a vote of 82 to 28 percent. He explained how it is a common occurrence that elections are used to promote other agendas. In this case, a property owners association covered the county with signs saying: "Save Your Water; Vote NO to the Groundwater District." Ken shared how his mother had called him to talk about groundwater because all the women in the beauty parlor said a district would take away their water. Ken explained how he had to lobby hard to get his own parents to vote "yes"

for the district. He said that we need to promote districts that are up for their confirmation elections and give them the resources they need to carry out their mission. As to the state's mandate that districts be the preferred management tool, we need "to put our money where our mouth is."

**Steve Musick** is the head of the Groundwater and Planning Assessment Team of the Texas Commission on Environmental Quality (TCEQ). Steve used his introduction to outline the state and local roles in groundwater management. In regard to the state's role, Steve explained that the TCEQ does not regulate groundwater, but it does offer technical assistance and limited facilitation of districts through oversight and enforcement of district management plans. The Texas Water Development Board (TWDB) plays an important role through its water planning efforts and by collecting data on groundwater resources. The State Auditor's Office conducts district audits and the Texas Cooperative Extension Service provides public outreach and education.

But Steve said that all the action is really at the local level with the groundwater districts themselves. He explained how the districts hold the only significant authority to manage groundwater within their oversight, "which makes sense, given that aquifers are local and regional resources." He explained that local counties also have a role in that they have the ability to use groundwater availability as a factor in evaluating applications for platting.

**Mary K. Sahs**, who is general counsel for several groundwater districts and consultant to many others, said that she is seeing the public getting more and more involved in groundwater issues, with many people participating for the first time. She shared her concerns that the issues we are facing are very complex, but she thinks with so many people working on them, we'll come up with good solutions. She added that the idea of limiting the rule of capture is a recent one. She also conceded that in a democracy ruled by committee, we sometimes end up with legislation that doesn't always make the best sense. Districts sometimes face difficulties in interpreting and applying this legislation.

## **Panel Discussion**

After the introductions, **Mary E. Kelly**, of Environmental Defense, led the panel through a series of questions aimed at exploring the adequacy of groundwater district's authority to carry out their mandate of managing our groundwater resources.

*Question: Do groundwater districts, especially newer ones, have the technical capabilities to carry out necessary aquifer characterization studies and develop sustainable management policies? If not, how much help can they count on from other entities (state agencies, groundwater availability models (GAMs), academic institutes, regional water plan consultants)?*

**Doug** answered that he's about to find this out for his district, Headwaters GCD. He said it is currently going through the hearing process with the city of Kerrville, which is questioning pumping limits established by the district. As a new district in a rural area,

Headwaters is not able to conduct its own aquifer studies. But it can use the best science available, which in this case is the regional water plan and data compiled by the TWDB. Doug believes that the state funds should be made available directly to the groundwater districts to support additional studies. He said this is the best route for funding, given that the districts have the most familiarity with local conditions and groundwater use patterns.

**Steve** explained how groundwater districts primarily rely on property taxes and well production fees to support their research activities. But it is difficult for districts because these mechanisms don't always generate a lot of revenue. Steve explained that while the TCEQ tries to look at the issue of funding in considering a groundwater district application, this doesn't ensure that money is there for resource modeling and/or enforcement.

**Mary Sahs** added that a lot of districts rely on groundwater availability models (GAMS) for their data, but she pointed out that in some areas, the GAMS don't contain enough data points. In these situations, districts need to supplement the GAMS with additional data by setting up monitoring wells. She said the Bureau of Economic Geology is a good source for technical assistance, as is United States Geological Survey (USGS). She stressed that making decisions without good science behind them is bad policy. Her advice to new districts was to put available money into science and research first. She explained that districts may enact temporary rules to enact stopgap measures until sufficient data is available on which to base long term goals and strategies.

**Ken** reminded everyone that this is not a good legislative session for new funding requests. He noted that when the economy recovers, we need to look at what funding the state can provide groundwater districts to help them achieve their mission. He took the opportunity to re-emphasize the districts' status as the preferred means of management for this resource. Because of this mandate, we have to help the districts beyond their own local taxing base. He noted also, that while we are focusing our discussions today on quantity issues, the protection of water quality is also a concern for districts. There have been some groundwater contamination problems across the state, and assistance with this must also be forthcoming.

*Question: In regard to existing law, what have been the biggest legal challenges groundwater districts have faced over the past 4 or 5 years? How have districts responded? How can the state help?*

**Mary Sahs** said that without good legal assistance, districts have had problems meeting legal challenges on substantive issues. She offered the example of whether a district can require a permit for an existing well that is already in production. Apparently the statute (TWC Chapter 36) is ambiguous and she believes that it will generate litigation if districts try to enforce it. She feels another big legal issue for districts is whether they can protect water quality. Their authority to do this is not clear. Two other legal issues that Mary brought up were due process in permit hearings and the regulation of vanity ponds (were groundwater is pumped to supplant a surface water pond created primarily for aesthetic purposes.)

**Doug** added that new districts tend to try to do too much too quickly. He believes there is a disconnect between legislative intent and the groundwater districts' abilities to implement their mandate. He feels that Chapter 36 needs some level of interpretation. He explained how districts have a major problem with the vanity ponds that Mary mentioned in the Hill Country. So far, permits for these ponds in his district have been denied on the grounds that they are a waste of water, given the region's 25 percent evaporation rate. He explained how the statute (Chapter 36) is not clear on the distinction between waste and beneficial use. The district's enforcement authority in this area is also unclear. He added that his district is having a problem establishing pumping limits based on surface acreage. Another legal issue mentioned by Doug is the district's ability to establish historical use limitations on permits, which he believes may be challenged.

Lastly, **Steve** explained that while the TCEQ tries to assist districts by explaining the law, it cannot do the work for them. **Mary Kelly** added that groundwater districts should be able to submit opinion requests to the Attorney General's office, getting legal help in special cases.

*Question: Will the new designation of Groundwater Management Areas (GMAs) help or hinder cooperation among districts managing different parts of a common aquifer? Are you aware of districts where an adjoining portion of the aquifer is not regulated or is managed by a groundwater district that is not cooperating?*

**Doug** explained that he hasn't encountered barriers to cooperation due to the designation of the groundwater management areas. He sees value in their establishment, especially with single-county districts. As to the second part of the question, his district had an issue arise where a subdivision straddling the county line was exporting water out of the district boundaries. He said that installing monitoring wells helped circumvent potential problems in this case.

**Steve** said that a lot of the districts, especially those in West Texas, have formed alliances. Through these forums, they share management plans, call joint meetings to discuss common issues, etc. The designation of GMAs and the joint planning requirements associated with them are new, so he's not sure how they will work in the long run. He said that the State Auditor's office will address the issue of GMAs this next round of audits.

**Ken** revisited the example he shared earlier of the Bluebonnet GCD, which overlays a portion of the Gulf Coast aquifer, where only 3 out of the proposed 5 counties voted for the district. As it was approved, it will be difficult to manage the resource. He said that he has been seeing more and more cooperation among districts, which is a good way to get past some of their resource shortfalls. **Mary Sahs** added that she even knows of districts that share a general manager. **Ken** said that he feels there needs to be an assessment across the state of how well districts are working together.

*Question: Will export fees be enough to mitigate damages caused by the export of water? Can these fees be better managed by someone besides the groundwater district?*

**Ken** shared his concern about the use of export fees to mitigate negative impacts from groundwater transfers out of district. He said that if an area doesn't have enough water to meet future demands; there won't be schools or anything else in the area anyway. He warned everyone to not "fall into that trap." He explained how citizens may see it as bribery in an effort to convince people to give up their most precious resource. He said that if we are going to continue to rely on export fees, the fees should be used to support groundwater management purposes.

**Mary Sahs** agreed with Ken. She said that while giving funds generated by export fees to the schools sounds appealing, it's really a bad idea. Mary explained how the current law on setting fees for exports in the statute is pretty limited. She told the audience about the Farm Bureau policy that districts should have authority to set unlimited export fees. She said, however, that the Farm Bureau wants districts to use the money for mitigation purposes. Mary explained that she had represented one of the only landowners who had opposed the MESA water permit in the Panhandle. She explained how they were fighting for their land, which included sub-irrigated hay fields and spring-fed ponds. She remarked how mitigation will never be able to restore what they will potentially lose.

**Steve** said that designating the use of export fees is really a policy question. But who should decide that question is unclear.

*Question: There is a certain amount of frustration with districts' lack of enforcement. In many cases, violators must be taken to court, which is costly and can take a long time, and districts don't have the resources for this. What are their means of enforcement?*

**Mary Sahs** answered that she thinks districts can assess fine of up to \$10,000/day per violation of district rules. But she added that if the violator doesn't pay or doesn't stop, the case has to go to district court because the districts do not have injunctive powers. She added that some districts keep fines low enough to enable them to go to small claims court, where the threshold is \$5,000. The question was raised if having the services of the Attorney General available would help. Mary Sahs answered "yes."

*Question: What is the process required to set up a district located within a PGMA where efforts to set up a district through a confirmation election process have been unsuccessful?*

**Steve** explained that the TCEQ would initiate the formation process when it determines all opportunities for district creation have been exhausted. For newly designated PGMAs, the statute mandates that district creation is automatic and that the TCEQ is responsible for district creation. It is not clear, however, what the protocol is for TCEQ involvement in establishing districts in areas within previously designated PGMAs.

**Mary Sahs** said she thinks the TCEQ has had the authority to create districts in these

areas at any point in time. She clarified that the TCEQ can create districts without an election; they just cannot set up ad valorem taxes without one.

*Question: One of the major problems facing groundwater districts is the lack of budget to implement their management plans. Should districts be funded by the state? How might districts react to that?*

**Doug** said he believes that a taxing district is the way to go. When a district relies on export or pumping fees, they can become dependent on that income which is a conflict. As to the question of the state funding of districts, he admitted that district's support would probably be dependent on "the strings attached." For example would the district be able to administer the funds as it sees necessary?

### **Final Thoughts and Conclusion**

The topic of groundwater ownership and management brought together landowners, environmentalists, and federal, state and local governmental agency representatives, including groundwater districts. While coming from sometimes divergent backgrounds, many conference participants shared concerns. Aquifer depletion from over-pumping, and the ability of groundwater districts to protect local interests (rural communities, agriculture and ranching operations and environmental water needs) from increased withdrawals are just two examples of these shared concerns.

During the conference, presenters and participants from various backgrounds shared their perspectives. We heard from a water marketer who explained that privately funded water projects are the wave of the future but we also were made aware of the potential pitfalls of water marketing that ignores sustainability principles. We learned about the growing pressures to export water from the Panhandle region of the state and how the district in that region is trying to balance withdrawal rates against economic viability and generational equity in water transfers. We learned about collaborative efforts between districts established along political instead of aquifer boundaries. We also heard how districts often lack the funds necessary to support needed research activities, and that the lack of district revenue and funding often hinders district confirmation and operation.

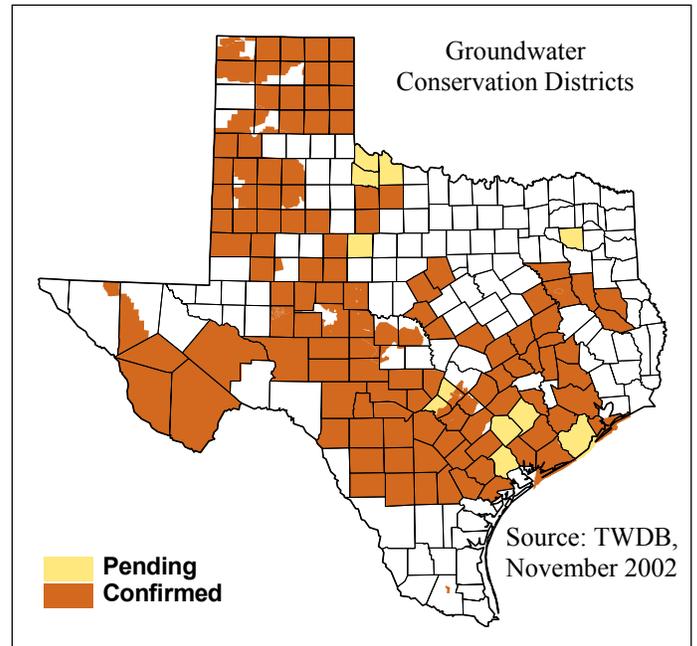
As Chairman Puente predicted in his presentation, a number of bills were introduced during the 78<sup>th</sup> Session of the Texas Legislature relating to district powers and duties, some strengthening and some weakening a district's ability to manage the resources within their purview. In the near future, Environmental Defense will be releasing an assessment of the bills that passed. In any case, it is essential to the future of this natural resource that the state stand behind it's mandate and provide districts the assistance they need to sustainably manage groundwater resources.

## Definitions

**Beneficial use** is defined as using the amount of water that is economically necessary for an authorized purpose, when reasonable intelligence and diligence are used in applying the water to that purpose (Texas Water Code (TWC) § 11.002 (4)).

**Chapter 36** of the Texas Water Code is the statute that delineates the powers and authorities granted to groundwater conservation districts by the Texas State Legislature. The Texas Water Code is available online at [www.capitol.state.tx.us/statutes/statutes.html](http://www.capitol.state.tx.us/statutes/statutes.html).

In 1949 the Texas Legislature authorized the establishment of **Groundwater Conservation Districts**. The legislature designated these districts as the tool to conserve and protect groundwater resources of the state. Groundwater districts do not provide water or wastewater services; their main purpose is to manage groundwater. Districts are organized along county lines or along aquifer boundaries. Individual districts are legislatively given varying levels of authority from limiting groundwater withdraws (modifying the “rule of capture”) to the taxing and permitting of water wells. As of February 2003, there are 80 confirmed districts covering over 50 percent of the state.



**Groundwater Availability Models (GAMs)** are numerical groundwater flow models developed to provide the public with reliable information on groundwater availability within the major and minor aquifers of Texas. More information on GAMs is available at [www.twdb.state.tx.us/Gam/](http://www.twdb.state.tx.us/Gam/).

The state is divided into sixteen different **Groundwater Management Areas (GMAs)**. As the name implies, districts within a management area are required to share their management plans with other districts in their management area. If warranted, the Board of Directors of any one district may call for joint planning with any other district(s) in the area (TWC§36.108). More information on GMAs is available at [www.twdb.state.tx.us](http://www.twdb.state.tx.us).

**Rule of Capture** is the governing doctrine for the use of groundwater in the state. Under Texas law, the landowner has the right to capture an unlimited amount of groundwater from beneath his/her land. Within this right, he is not liable for injury to another adjacent landowner caused by excessive or harmful pumping, other than from subsidence, as long as it was not intentional.

**Priority Groundwater Management Areas (PGMAs)** are areas designated by the TCEQ that are either experiencing or expect to experience within the next 25 years critical groundwater problems including shortages, subsidence or contamination (Texas Water Code § 35.007).

**Sustainability**, as it refers to groundwater, means maintaining a balance of the resource and not withdrawing more water from the aquifer than is recharged.

The Texas Legislature enacted **Senate Bill 1 (SB 1)** in 1997. SB 1 established the framework for the regional water planning effort currently taking place in Texas. The state was divided into 16 regions and a Regional Water Planning Group (RWPG) was created for each region. See [www.twdb.state.tx.us](http://www.twdb.state.tx.us) for additional information about the regional water planning process.

The Texas Legislature enacted **Senate Bill 2 (SB 2)** in 2001. SB 2, the Legislative follow-up to SB 1 (1997), contained a wide range of important water management issues. In addition to establishing the Joint Interim Committee on Water Resources that met during the State Legislative interim, establishing the funding framework for supporting future water projects, and forming the state-level Water Advisory Council, it strengthened the management of groundwater resources in the state by giving Groundwater Conservation Districts additional powers. To review the bill, see [www.capitol.state.tx.us](http://www.capitol.state.tx.us).

## Additional Resources

### Internet Resources

Texas Water Development Board: [www.twdb.state.tx.us](http://www.twdb.state.tx.us)

Texas Commission on Environmental Quality: [www.tnrcc.state.tx.us/water/quality/gw](http://www.tnrcc.state.tx.us/water/quality/gw)

State Auditors Office: [www.sao.state.tx.us/reports/groundwater\\_districts](http://www.sao.state.tx.us/reports/groundwater_districts)

Texas Alliance of Groundwater Districts: [www.texasgroundwater.org](http://www.texasgroundwater.org)

Texas Department of Agriculture: [www.agr.state.tx.us](http://www.agr.state.tx.us)

Texas Parks and Wildlife Department: [www.tpwd.state.tx.us](http://www.tpwd.state.tx.us)

Texas Cooperative Extension: [texaswater.tamu.edu](http://texaswater.tamu.edu)

Texas Water Resources Institute: [www.twri.tamu.edu](http://www.twri.tamu.edu)

Texas Living Waters Project: [www.texaswatermatters.org](http://www.texaswatermatters.org)

### Publications

“Groundwater Conservation Districts: Success Stories.” Texas Cooperative Extension, Texas A&M University System, 1999. Publication B-6087. Available at [tcebookstore.org](http://tcebookstore.org).

“Groundwater and Surface water: Single Resource.” U.S. Geological Survey Circular 1139. Available for download at [water.usgs.gov/pubs/circ/circ1139/](http://water.usgs.gov/pubs/circ/circ1139/)

“Questions about Groundwater Conservation Districts in Texas.” Texas Cooperative Extension, Texas A&M University System, June 2002. Publication B-6120. Available at [tcebookstore.org](http://tcebookstore.org).

“Spotlight on Groundwater Conservation Districts in Texas.” Environmental Defense, Austin, Texas, 2003. Available at [www.texaswatermatters.org](http://www.texaswatermatters.org).

