

*Conference Proceedings*

# Community and Economic Benefits of Texas Rivers, Springs and Bays

Lady Bird Johnson Wildflower Center  
Austin, Texas

April 12, 2002



Photo courtesy of TPWD



44 East Ave., Suite 306 • Austin, TX 78701  
512.474.0811 phone • 512.474.7846 fax  
[tcps@texascenter.org](mailto:tcps@texascenter.org) • [www.texascenter.org](http://www.texascenter.org)

## **Community and Economic Benefits of Texas Rivers, Springs and Bays**

### **Introduction**

The Texas Center for Policy Studies (TCPS) hosted a conference entitled *Community and Economic Benefits of Texas Rivers, Springs and Bays* on April 12<sup>th</sup>, 2002 at the Lady Bird Johnson Wildflower Center in Austin, Texas. The conference was designed to explore the benefits of flowing freshwater in our state and to examine the legal and policy framework for protecting these flows.

About 200 people participated in the day's forum. Attendees included representatives of 11 municipalities - including two mayors, seven state and three federal agencies, three universities, three river authorities, eight groundwater conservation districts, three regional water planning groups, over 30 outdoor activities and/or conservation oriented organizations, and the general public. The diversity of attendees exemplifies how important this issue is to the people of Texas.

Texas has made many advances in water planning and water management over the last few years. Nevertheless, the issues of how to make sure Texas rivers and streams retain sufficient natural flows, how to protect valuable springs from being dried up by over-pumping of groundwater, and how to ensure that our bays and estuaries receive sufficient freshwater inflows are still largely unresolved. These issues are currently the subject of much attention at the Texas legislature and in our state's natural resource agencies. The goal of this conference was to help the participants gain a better understanding and a wider perspective on the importance and benefits of these flows.

The conference agenda included two discussion sessions in the morning which focused on a variety of benefits of instream flows, spring flows and freshwater inflows to the bays and estuaries. The first session provided an overview of some of the urban and rural benefits to protecting and maintaining these flows, including the important role instream flows play in wastewater assimilation. The second session explored many of the coastal and tourism benefits, including the economic influence of nature based tourism on rural areas of the state. Both panels were composed of knowledgeable and informative speakers that provided the audience perspectives on these issues.

In the afternoon, a distinguished panel discussed current Texas law and policy framework for protecting freshwater flows. They also explored what, if any, changes might be needed in this framework, and the prospects for change in the next few years.

A wide array of co-sponsors provided support for the conference. They include:

Texas Rivers Protection Association	Sportsmen Conservationists of Texas
Matagorda Bay Foundation	Austin Paddling Club
Environmental Defense	Texas Alliance of Groundwater Districts
Hill Country Groundwater District Alliance	Galveston Bay Foundation
Coastal Conservation Association Texas	San Marcos River Foundation
Lower Laguna Madre Foundation	Texas Travel Industry Association
National Wildlife Federation	Texas Nature Tourism Council
Texas Springs Alliance	Texas Watch
The Nature Conservancy of Texas	Clean Water Action
Lone Star Chapter of the Sierra Club	Coastal Bend Bays Foundation
Hill Country Conservancy	Texas Committee on Natural Resources



This conference was the second in a series of three annual TCPS sponsored events focusing on Texas water issues. This effort is made possible through the generous support of the following contributors:

*Houston Endowment Inc.*  
*The Meadows Foundations*  
*The Jacob and Terese Hershey Foundation*  
*Magnolia Charitable Trust*  
*The Brown Foundation, Inc.*

## Welcoming and Opening Remarks

**Andy Sansom**, former executive administrator of the Texas Parks and Wildlife Department, and now the executive administrator for the International Institute for Sustainable Water Resources at Southwest Texas State University, opened the day's events by relaying his concern with the overall lack of connectedness in the way we address water issues in our state. He highlighted the "disconnect" between water and policy, between Texas laws for surface and groundwater, and the frequent failure to recognize how water management impacts all sectors (economic, environmental, etc.).



*Andy Sansom*

Andy explained what he sees as a disconnect in a biogeographic context. To remedy that, he proposed a more holistic approach to water management, where everything (aquifers, estuaries, etc.) are considered as part of a whole system delineated around river basins. This way, it would be possible to evaluate impacts of proposed water use on all parts of a system, providing a more adaptive approach to water resource management that is more responsive to physical realities and new information.

---

## Discussion: Urban and Rural Benefits

Presentations: *Relationships Between Instream Flows and Water and Wastewater Treatment Costs*, **Dr. Richard Kiesling**, Hydrologist, US Geological Survey; Adjunct Professor of Environmental Science, Department of Chemistry and Geosciences, Tarleton State University

*The Importance of Stream Flow and Springs Flow to Rural Landowners and Landscapes*, **George Cofer**, Executive Director, Hill Country Conservancy and 5th Generation Texas Rancher

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

**Dr. Richard Kiesling** discussed the importance of multiple-use planning for Texas' water resources and the municipal interest in protecting instream flows. A multi-use approach is essential because we depend on water resources for a number of important services and functions. Some examples of water resource functions include: aesthetics; habitat for fish and wildlife; hydroelectric power generation; recreation; seafood production; water quality

(assimilation of waste and producer of drinking water); and water supply. Dr. Kiesling explained how these functions are interrelated and at times mutually exclusive. He also emphasized that because future water development projects can be jeopardized from unknown or unconsidered loss of functions, addressing problems during the planning process is more cost effective.



Photo courtesy of TPWD

Through the use of examples of studies done within the Bosque River watershed and along Buffalo Bayou, Dr. Kiesling gave insight into how municipalities have a stake in maintaining instream flows. Without sufficient water in the river, municipalities are forced to treat their wastewater to a higher level, which increases the costs to the city. In Buffalo Bayou, it was demonstrated that the most cost effective method of wastewater treatment was flow augmentation. He also outlined a study that included water quality simulations along the Rio Grande below El Paso. This study showed that there is a direct relationship shown between instream flow and assimilative capacity. These results highlight the fact that there is the potential for economic trade-offs between wastewater treatment costs and instream flow to maintain assimilative capacity.

During the audience discussion period, Dr. Kiesling explained some of the sensitivities involved in potentially relying on assimilative capacity and streamflow augmentation as wastewater treatment options. He explained how it is important to analyze stream flow patterns, and evaluate permits on a shorter time frame.

Backed by the history of the Cofer family ranching along the Frio River in Uvalde County since 1898, **George Cofer** engaged the audience with some of his personal observations about ranching in Texas. He spoke about the lack of water in the Frio River in the 1950's, and how many ranchers did not make it as a result. He described how his family's ranch and others like his had been able to survive through hunting leases and a bit of nature tourism, all supported by Frio River water. George gave an example of a family in Concan who has an inner-tube rental business on the Frio to provide additional income.



*George Cofer*

George explained how in many instances, water makes it possible for small towns and ranchers to survive and be viable. He said activities such as tubing, fishing, birding, etc. are extremely important to the local economies along the Frio River. A good example of the economic value of water in this part of Texas is Garner State Park –which, because of the Frio River, is one of the only state parks that turns a profit.

George also took the opportunity to explain one of the tools available to landowners in rural areas -the purchase of development rights (for more information on PDRs, visit [www.farmland.org/regions/tx/texas\\_pdr.htm](http://www.farmland.org/regions/tx/texas_pdr.htm)). In the case of his family's ranch, the family sold their right to subdivide and develop their property to the Texas Nature Conservancy. Depending on the agreement, this relationship allows the rancher to continue ranching, but keeps the property intact and undeveloped. In the case of the Cofers, the sale allowed them to put the proceeds towards operation of the ranch.

During the question and answer period, the audience also discussed the need to engage more landowners in opportunities like the water trust and PDRs. Due to misconceptions and uncertainties over future gains, many landowners are leery of pursuing such options.

---

## Discussion: Coastal and Tourism Benefits

Presentations: *Economic and Other Values of Texas Bays and Estuaries*, **Pam Baker**, Fisheries Biologist, Environmental Defense

*Tourism along Texas Rivers*, **John Guenzel**, Co-owner Rio Raft Co. and River Valley Resort; President, Canyon Lake Chamber of Commerce

*Water Related Nature Tourism in Texas*, **Linda Campbell**, Nature Tourism Coordinator, Wildlife Diversity Branch, Texas Parks and Wildlife Department

Moderator: **Teresa Carrillo**, Executive Director, Coastal Bend Bays Foundation

Speaking from the perspective of a fisheries biologist and self-proclaimed “fish-hugger”, **Pam Baker’s** message for the day was “Don’t Turn Your Back on Texas Bays.” Pam explained how shrimpers and other fishermen along the coast realize how important healthy estuaries are to their livelihood, and they understand the value of freshwater flows. Unfortunately, she explained, the reality is most people don’t recognize this. Pam used Choke Canyon and Lake Corpus Christi, the water sources for Corpus Christi, as an example. A certain amount of flow has to be provided to the bay from these reservoirs to insure that the bay remains productive, but local sentiment is against releasing water into the bays and estuaries.

Pam outlined how 95% of marine life -- at some point in its lifecycle -- depends on the wide range of salinities and abundant food and shelter provided by bays and estuaries. She stressed that the health of our bays and marine life in our oceans is intrinsically linked to adequate freshwater flowing from our rivers to the bays.



Pam went on to explain how Corpus Christi Bay and Galveston Bay are classified as “estuaries of national significance”. Pam outlined how the extensive marshes and seagrass meadows are among the most productive ecosystems on earth -- they rival rainforests and coral reefs in terms of biodiversity and productivity. These ecological treasures are home to nearly 500 species of birds and more than 200 species of fish. She explained how the bays are essential assets in that they provide unparalleled opportunities for bird watching, fishing, shrimping, sightseeing and wildlife cruises and attract thousands of tourists and winter Texans to the coast. These activities contribute \$2 to \$4 billion to the local and Texas economy annually.

Pam then gave an overview of the commercial and recreational fishing industry in Texas to provide a better picture of how our economy is tied to freshwater flows and healthy bays. Commercial fisheries in Texas account for an estimated 87 million pounds of shrimp, blue crab, fish, and oysters each year. The dockside value -- or the amount of money commercial fishermen receive at the dock -- is about \$175 million each year. The total economic impact of the Texas seafood industry is about \$330 million each year (including dockside transactions, supplies and gear, trucking expenses, etc.) and supports an estimated 30,000 full-time jobs (fishermen, bait dealers, suppliers, boat builders, processors, wholesalers, retailers, etc.). As far

as sport fishing is concerned, approximately 1 million anglers take 10 million trips on the Gulf Coast a year, spending \$890 million a year on items such as ice chest, boats, etc., introducing \$2 billion into the economy (from fishing trips, hotels, restaurants, etc.), and supporting 25,000 full-time jobs in Texas.

**John Guenzel** gave an overview of the economic and recreational importance of flows in Texas rivers, with a focus on the Guadalupe River. With 1.3 million visitors to the area in 2000, Canyon Lake is the water recreation capitol of Texas. The Guadalupe River just below Canyon Lake also has thousands of visitors each year. John explained how river flow and the lake level are intrinsically related. While river recreation is dependent upon releases of water from the lake, how much or how little water is released affects lake levels, which in turn also affect tourism. He explained how water could be strategically released at different times in order not to negatively impact the lake levels.

John explained how bird watching, trout fishing and nature trails are also being developed in the area. These types of activities are dependent on the presence of water. An example of the economic impact is that for every dollar spent on the Guadalupe River and Canyon Lake, \$7-8 dollars are spent in the local economy, which comes to \$500 million dollars per year for Comal County.



*Pam Baker and John Guenzel*

**Linda Campbell** explained how much of our nature tourism in Texas centers around the water resources of the state. For birding, riparian and coastal areas are key (Texas is #1 for birding, with 620 documented species). Nature tourists are interested in the total experience of the outdoors. Backpacking, camping, horseback riding, mountain bikers, wildlife and bird viewing, canoeing, and kayaking are just a few examples. However, she noted, if you don't have wildlife and habitat, you can't have nature tourism. And you have to have water to support wildlife and habitat.



Photo courtesy of TPWD

Linda defined nature-based tourism as: responsible travel to a natural area that conserves the environment and improves the welfare of local people. Interest in this type of tourism is growing in rural areas as rural residents try to improve their economy and as landowners look at diversifying their income base. It brings in tax revenues and lifestyle improvements for local residents. She noted how tourism on the whole brings in \$623 million in local taxes, with about a 6% increase every year since 1990.

Linda explained how the Texas Parks and Wildlife Department (TPWD) helps landowners look at nature tourism potential on

their own lands. With 94% of the land in Texas privately owned, landowners are the stewards of our natural resources. Linda used the Coastal Birding Trail as an example of making the connection between creating conservation incentives and supporting urbanites who want to get out of the city to recreate. These birding trails are important because they establish new sites for birding, build public support for conservation efforts, and supplement local economies.

Questions and answers for this session focused around the TPWD birding trails. For additional information about the trails, visit [www.tpwd.state.tx.us/birdingtrails](http://www.tpwd.state.tx.us/birdingtrails).

---

### **Panel Discussion: Exploration of Legal and Policy Framework for Protecting Instream Flows, Spring Flows and Freshwater Flows to Bays and Estuaries**

Panelists:     **Representative Robby Cook**, Eagle Lake, State House Natural Resources Committee  
                  **Myron Hess**, Legal Counsel, National Wildlife Federation  
                  **Tom Beard**, Rancher and President, Leoncita Cattle Company; Chair, Far West Texas Regional Water Planning Group  
                  **Margaret Hoffman**, Deputy Director, Office of Legal Services, Texas Natural Resource Conservation Commission  
                  **Ron Massey**, Assistant City Manager, City of Corpus Christi  
Moderator:    **Mary E. Kelly**, Executive Director, Texas Center for Policy Studies

**Representative Robby Cook**, a 5<sup>th</sup> generation rice farmer and avid outdoorsman from Eagle Lake in Colorado County, explained that one of the reasons he ran for the state legislature was to work on water issues. He views water as an important part of his family's livelihood and critical to the future of Texas, and emphasized that we must keep an open mind when dealing with more controversial aspects of water management policy. Rep. Cook noted that one exciting effect of Senate Bill 1 is the growing level of awareness of the need to address water issues. He expressed hope that the regional water planning process was useful for everyone and he applauds people for getting involved.



*Rep. Robby Cook and Margaret Hoffman*

**Margaret Hoffman**, Deputy Director of the Office of Legal Services at the Texas Natural Resources Conservation Commission (TNRCC), began by stating that the TNRCC is involved in trying to be proactive in determining the problems that might be coming up in water policy. Margaret explained the process of determining environmental needs in the water permitting process. For a new water right, the TNRCC conducts an environmental assessment to evaluate the effects of granting the water right on the flow of the river and wildlife habitat. If the proposed permit is located within 200 miles of the coast, TNRCC does a Bay and Estuary study. If the project requires a dredge and fill permit from the Army Corps of Engineers, then the agency also does a wetlands environmental assessment.

She explained that for instream uses, the state doesn't have the same breadth of site specific studies. They can add a condition in the permit if the study indicates there is a need. She

reported that the TNRCC is about to have a hearing for dedicated water rights for in-stream flow. She noted that there should be some interesting arguments and that it could drag on for a while. She also said that as old water rights come up for amendment, there is increasing scrutiny by stakeholders on what the effect of those old water rights are and how might they be changed. (See [www.tnrcc.state.tx.us/permitting/waterperm/wrpa/permits](http://www.tnrcc.state.tx.us/permitting/waterperm/wrpa/permits) for additional information on the TNRCC surface water permitting process).

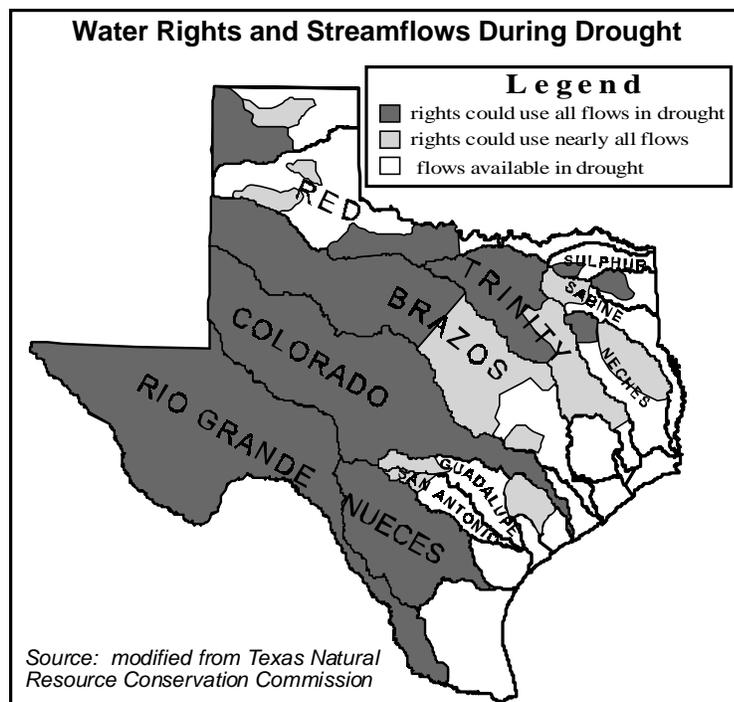
**Myron Hess**, legal counsel for the National Wildlife Federation, began with the point that a large portion of the rivers in Texas are already totally appropriated, which means if all paper water rights were fully exercised during a drought, the rivers would run dry (see figure).

He emphasized that we need to look at the flow assumptions in the Water Availability Models and the results they are producing. Myron showed graphs of environmental flow assessments depicting past and possible future flow scenarios for a portion of the Nueces River. His graphics showed that under medium to low flow conditions, river flows would be reduced dramatically if all water rights were used. Myron explained that NWF isn't advocating to try to re-establish naturalized flows, an unrealistic request, but he doesn't think the future low-flow conditions are acceptable either. Myron went on to explain his belief that the best we can do with conditions on new permits or amendments is to minimize making things worse.

**Tom Beard**, a 6<sup>th</sup> Generation Rancher in Brewster County, is the chair of Far West Texas Regional Water Planning Group. Being from the desert of far West Texas, he explained how he lives 700 miles from any bay or estuary. Because of this, his concern is focused on spring flows and the groundwater that supports them. He explained that his "lens" is sustainability of groundwater resources, as he believes this is the key to keeping our way of life viable. He further explained how this "lens" colors his perception of all of the water issues he comes across. Tom noted how in West Texas it's critical to keep in mind, especially when thinking about recharge of the aquifers, that many recharge formulas used for modeling are based on less arid regions.

Tom said that the current rule of capture is a significant barrier to achieving sustainable use of our aquifer systems. He shared his concern that the groundwater conservation districts are not strong enough. "We've made some progress, but we haven't met the sustainability challenge," he stated.

**Ron Massey**, currently the Assistant City Manager for public works with the city of Corpus Christi, was previously director of public works in Franklin, Massachusetts. For his presentation, Ron gave an overview of the Rincon Bayou study, a demonstration study



performed by the Bureau of Reclamation (see [nueces-ra.tamucc.edu/ndi/rbdp.html](http://nueces-ra.tamucc.edu/ndi/rbdp.html).) The city of Corpus Christi is located within the Nueces River Basin and its water needs are supported by two reservoirs: Choke Canyon Dam and Wesley Seale Dam, along with a pipeline from Lake Texana. Reduced surface water inflows caused a condition where the salinity levels were higher in the Nueces delta instead of in the bays. The Rincon demonstration project was designed to restore more natural salinity levels in the delta. Though successful, the project only lasted 5 years. Ron explained how the city is now doing some of the work on their own, re-opening some of the channels and piping freshwater into the delta. Ron reiterated that the issue is not whether the bay needs freshwater flows, but how to provide those flows in the most effective manner.

### **Panel Discussion**

After the introductions, **Mary Kelly**, director of the Texas Center for Policy Studies, led the panel through a series of questions aimed at exploring the framework for protecting freshwater flows in the state.

What is your sense of awareness of instream flow issues among legislators, local offices, and state decision makers?

**Rep. Cook** said that the Senate Bill 1 planning process has created a greater awareness of water issues in general. All of the regional water planning groups have various interests represented. He conceded that some people had more difficulty getting their voice heard than others, depending on the regional group. He also feels that groundwater conservation districts, which have been around since 1951, are helping to raise awareness of water issues.

**Tom** felt that people in rural Texas are particularly concerned about water issues. He said in his experience they are aware of where their water comes from, while people in the city are not as concerned or involved. He admitted that if someone had asked him about groundwater conservation districts a few years ago, he wouldn't have supported them.

Do we understand and have the data and studies to determine necessary minimum in-stream flows? Are we putting enough resources into developing the data?

**Margaret** explained that in the absence of comprehensive studies of the major water systems, the TNRCC requires the applicant to do some site-specific studies in the area. **Myron** pointed out that in fact we don't have a lot of comprehensive studies on instream flow needs, but that we have enough information to make flow determinations right now. He noted how we've been permitting water rights for a long time without better information. We need to make our decisions based on the best science available and make educated decisions now. He pointed out that we need funding to do these studies, so we will have the information down the road. He then stated that we may never have a perfect model and that because of a lot of generalizations being made in the models, they may not be great, "but we need to use what we have. We can't wait for perfect information."

We are currently in the 2<sup>nd</sup> round of regional water planning in the state. We have some new tools and some new language from the Texas Water Development Board, but do we have the resources to do the necessary work?

**Tom** stated that the regional water planning groups don't have sufficient resources. To make his point, he offered up the Far West Texas RWPG as an example. He said that the group determined that they would need \$2.2 million to do the necessary studies. The TWDB offered them about \$300,000. He is concerned that the TWDB is going to develop the groundwater availability models (GAMs) using existing data, which is sometimes incomplete and incorrect. In the case of west Texas, there is less data on the aquifers than any other area in Texas. He said that we need to gather more data to create good GAMs and we need more money to do this.

What are the prospects for more money for the regional water planning groups?

**Rep. Cook** explained how the continual funding of water resource planning in the state is a high priority with the legislature. The reality though is that the legislature is looking at a \$5 billion shortfall for the next session. But he sees a lot of options for the funding of data collection and studies. For example, the groundwater conservation districts could be offsetting the cost of studies to gather more data as a cost of doing business instead of relying on the legislature. He then used the Lower Colorado River Authority (LCRA)/San Antonio Water Systems (SAWS) project as an example of alternative funding for a surface water or water transfer issues. He explained how the 7-year study to evaluate the project would be largely funded by San Antonio, as will be the mitigation to agricultural irrigators.

**Myron** stressed again the incredible importance of water in the future of Texas. He said that we've already invested \$25 million in planning process, and this wasn't enough because of the importance of water and the estimated \$17 (+) billion cost of water projects. Myron also stressed that the plans are incomplete and not comprehensive, with the environment not considered in many plans, partly because the RWPGs lacked the resources. We need to give them money to develop comprehensive plans, he stated. Otherwise –the plans are not real.

The Texas Water Trust: there is no funding mechanism and no water rights in it. Why doesn't it work? How can we fix it? Are there other alternatives?

**Myron** postulated that the only incentive now for people to put it in a trust is to prevent cancellation of their water right. He explained how the state of Texas owns the water, not the permit holder, and a permit just gives you the right to use the water. He said that cancellation is the way for the state to free up water, an option that exists in concept but not in practice. If we had an incentive cancellation program, there would be a reason to put rights into a trust. Also, people are concerned that when they put the water in a trust, the water will be just taken out downstream. How will the TNRCC protect the water put in a trust? These issues have to be worked out. People need incentives to put water in trust, and we need money to make it work.

**Margaret** agreed with Myron to a degree. She conceded that it's true water right holders are not in fear of cancellation by TNRCC. She explained that although a water right doesn't give you ownership, it is often viewed as a property right, which leads to procedural protections before the right is removed or reduced. The burden of proof is on the state regarding whether the water right has been put to beneficial use. She then said that proving this is difficult in most areas, as the TNRCC is not equipped to police that sort of thing. The state is able to do it along the lower Rio Grande because of the water master program and other procedures that are different.

As to incentives, Margaret thought that organizations that care about bay and estuary inflows and instream flow needs might appeal to people's altruism to donate rights. She said that the TNRCC might expedite such a permit change. She wasn't sure that even in better times economic incentives from the state would work. There is a general perception among water rights holders that their water rights will be much more valuable later on, and people may want to hand them down to their grandchildren.

**Ron** expressed his concern that the cancellation timetable of 10 years is problematic for cities like Corpus, where in some cases, their water rights won't be used until 2040. **Mary** clarified that there are protections against cancellation for municipal rights in the statutory framework.

The interim Joint Committee on Water Resources is looking closely at instream and freshwater flows, as well as water marketing and other issues. The Committee's recommendations will set the stage for the next legislative session. What are the key environmental flow issues for the next legislative session? How are other "hot" water issues going to shape up (i.e. water markets, interbasin transfers)?

**Rep. Cook** implored everyone concerned about water issues to give input to committee members. He said that they want to hear concerns. He noted that water marketing is a huge issue and there are no guidelines or regulatory structure around it, especially on groundwater. He compared the contracts to oil and gas leases. He also believes the junior water rights issue will be around forever. Rep. Cook sees the provision as benefiting instream flows and bays and estuaries, because it has slowed "bleeding" of water out of basins. It causes people to look at other options, like desalination of brackish groundwater.

Rep. Cook explained how in Senate Bill 1 the preferred method of managing groundwater is through local groundwater conservation districts. He feels it's important to try to let the local level work first, rather than have the state come in and do it. He hopes groundwater districts will work. They will need tweaking and strengthening in some areas, as was done in the last session.

**Margaret** pointed out that the public is talking to the TNRCC about setting some sort of instream flow protection for major rivers in Texas. She also noted how the interim Committee has been talking about this, and no one thinks that we shouldn't do anything about instream flows. Also, in regards to water donations to trust, we need to be able to enforce water rights. The legislature has made it clearer in law in recent sessions that the TNRCC has the authority to enforce it, but how? A good example is the water master program on the Rio Grande. Because

of increased demand for water, there will be increased scrutiny of water rights, for example: how are they used, and how do we know people are abiding by their permits?

**Myron** stressed that he doesn't believe the current system to protect environmental flows is adequate. He said that stream flows are not being protected; that the state has issued new water rights without knowing what's available; and that we've over-appropriated basins. He stressed the point that we HAVE to deal with this. He doesn't think groundwater conservation districts are the magic answer. He thinks we need coordinated approaches for aquifers, sustainability goals for groundwater, and we need to change the default mechanism for groundwater because the rule of capture doesn't work. On the issue of protecting instream flows, he feels it will receive plenty of attention this session. As to whether we will go forward or backward, he is unsure. He shared his concern that we could lose ground and the legislature could eliminate water rights for instream flows. Progress won't happen unless people really get involved.



*Myron Hess and Tom Beard*

**Tom** then shared some of his concerns on water marketing. He said that he doesn't think it is the best way of allocating water, as it will dry up West Texas. He feels groundwater conservation districts are better, but that their ability to impose disincentives for transfer of groundwater out of district has been weakened. He stressed that in-district uses are returning water to the aquifer, via recharge and that if you export it, none of it goes back as recharge. He conceded that while we need to treat people fairly, we need to protect local aquifers from the danger posed by large export proposals.

**Rep. Cook** remarked that the state of Texas would not allow cities to go dry, as these are large centers for economic activity. He said the key for us is to find balance, which is an ongoing challenge.

During the open discussion period with the audience, questions were raised about how to achieve higher conservation rates in some areas. One panelist suggested a carrot and stick approach, with planning districts and cities that have good per capita use getting increased planning money from state. Those that didn't conserve would get less money, or no money for planning. The point was raised that we must get more efficient use of water, from all users. And we must reserve some conserved water for the environment. If there is state funding for new projects, efficient users should get to the front of the line. It should not be acceptable to use water inefficiently, because it affects everybody and water is a limited resource. We need incentives that encourage efficiency.

## Definitions

**Groundwater Availability Models (GAMs)** are currently being created for all the major and minor aquifers in the state. Additional information on the GAM process can be found at [www.twdb.state.tx.us/Gam](http://www.twdb.state.tx.us/Gam).

The Texas Legislature in 1949 authorized the establishment of **Groundwater Conservation Districts** and groundwater management areas. The legislature designated these Districts as the tool to conserve and protect groundwater resources of the state. 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.

In general, **instream use** is defined as the use of state water for fisheries, water quality protection, aquatic and riparian wildlife habitat, freshwater inflows for bays and estuaries, and any other similar use of water. Instream use is not currently defined in the Texas Water Code, though it is defined in TNRCC regulations.

**Joint Committee on Water Resources** was created in 2001 during the 77<sup>th</sup> Legislative session through the passage of Senate Bill 2. The Committee, which meets this year during the interim between legislative sessions, is composed of three members of the Texas House of Representatives and three members from the Senate. The committee is charged to conduct an interim study and make recommendations regarding the following issues: increasing the efficient use of existing water resources; developing sufficient long-term financing strategies; improving existing water conveyance systems; water marketing; determining the appropriate role of environmental and wildlife concerns in water permitting and water development; and protection of the natural condition of beds and banks of the state-owned watercourses. Visit [www.capitol.state.tx.us](http://www.capitol.state.tx.us) for additional information on meeting dates and agendas.

**Sustainability** as it refers to groundwater means maintaining a constant amount of water in the aquifers. This means only removing the same amount of groundwater from an aquifer that is replaced by recharge.

**Prior appropriation** is the principle that governs surface water use in the state. In Texas, surface water is publicly owned—a property of the state. Before using surface water, a municipality, corporation or individual must apply for a permit from the Texas Natural Resource Conservation Commission. The prior appropriation principle is based on who received the water permit first (senior water rights vs. junior water rights).

A **Purchase Development Rights (PDR)** program involves a voluntary transactions where an organization buys the right to subdivide and develop a piece of property from a willing landowner. While relatively new in Texas, PDRs are an increasingly popular tool used to maintain rural continuity, conserve farmland, and preserve open space and natural resources. Several organizations, including the Texas Nature Conservancy ([www.tnc.org](http://www.tnc.org)) and the American Farmland Trust ([www.farmland.org/regions/tx](http://www.farmland.org/regions/tx)), have active PDR programs in Texas.

**Rule of Capture** is the governing doctrine for the use of groundwater in the state. Under Texas law, groundwater is privately owned and controlled by the owner of the land overlying the aquifer. The “rule of capture” allows landowners to withdraw unlimited amounts of water under their land, and use it or sell it.

**Senate Bill 1** (SB 1) was enacted by the Texas Legislature in 1997. It establishes 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. Over the last 5 years, each RWPG developed a plan to provide for the water needs of its region for the next 50 years. All 16 regional plans were submitted to the Texas Water Development Board in January 2001, and the state water plan –Water for Texas, 2001- was adopted in January 2002. The regional plans and the statewide plan will be updated and modified on a five-year planning cycle. See [www.twdb.state.tx.us](http://www.twdb.state.tx.us) for additional information about the regional water planning process.

**Senate Bill 2** (SB 2) was enacted by the Texas Legislature in 2001. SB 2 included a wide range of important water management issues. Highlights include the strengthening of the management of groundwater resources in the state, the creation of the Joint Committee on Water Resources, the establishment of a funding framework for future water projects, and the formation of a state-level Water Advisory Council. To review the bill, see [www.capitol.state.tx.us](http://www.capitol.state.tx.us).

The **Texas Water Trust** was established to hold water rights dedicated to environmental needs, including instream flows, water quality, fish and wildlife habitat, or bay and estuary inflows (TWC § 15.7031(a)). There are no water rights currently held in the trust. See [www.twdb.state.tx.us/assistance/WaterBank/wtrust.html](http://www.twdb.state.tx.us/assistance/WaterBank/wtrust.html) for additional information.

**Water Availability Models (WAMs)** are computer models that simulate the amount of surface water present in a river basin. For additional information, see [www.tnrcc.state.tx.us/permitting/waterperm/wrpa/wam](http://www.tnrcc.state.tx.us/permitting/waterperm/wrpa/wam).



*Julia Marsden, League of Women Voters, Rep.  
Robby Cook and Tom Beard*

## **Additional Resources**

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

Texas Association of Groundwater Conservation Districts, [www.texasgroundwater.org](http://www.texasgroundwater.org)

Texas Legislature Online, [www.capitol.state.tx.us](http://www.capitol.state.tx.us)

Texas Natural Resource and Conservation Commission, [www.tnrcc.state.tx.us](http://www.tnrcc.state.tx.us)  
Surface water permitting .../[permitting/waterperm/wrpa/permits](#)

Texas Parks and Wildlife Department, [www.tpwd.state.tx.us](http://www.tpwd.state.tx.us)  
Texas water .../[texaswater/sb1/index.htm](#)  
Nature tourism .../[nature/tourism](#)

Texas Water Development Board, [www.twdb.state.tx.us](http://www.twdb.state.tx.us)  
Regional Water Planning page .../[assistance/rwpg/main-docs/rwpg-main.htm](#)



## Conference Co-Sponsors

Texas Rivers Protection Association    [www.down-river.org/trpa](http://www.down-river.org/trpa)  
Matagorda Bay Foundation    [jbb@blackburncarter.com](mailto:jbb@blackburncarter.com)  
Environmental Defense    [www.environmentaldefense.org](http://www.environmentaldefense.org)  
Hill Country Groundwater District Alliance    [eardc.swt.edu/mta/HCA](http://eardc.swt.edu/mta/HCA)  
Coastal Conservation Association Texas    [www.ccatexas.org](http://www.ccatexas.org)  
Lower Laguna Madre Foundation    [llmf@granderiver.net](mailto:llmf@granderiver.net)  
National Wildlife Federation    [www.nwf.org/texaswaterforwildlife](http://www.nwf.org/texaswaterforwildlife)  
Texas Springs Alliance    [aton@myexcel.com](mailto:aton@myexcel.com)  
The Nature Conservancy of Texas    [nature.org/wherewework/northamerica/states/texas](http://nature.org/wherewework/northamerica/states/texas)  
Lone Star Chapter of the Sierra Club    [texas.sierraclub.org](http://texas.sierraclub.org)  
Sportsmen Conservationists of Texas    [home.att.net/~alanallen-scot](http://home.att.net/~alanallen-scot)  
Austin Paddling Club    [www.austinpaddling.org](http://www.austinpaddling.org)  
Texas Alliance of Groundwater Districts    [www.texasgroundwater.org](http://www.texasgroundwater.org)  
Galveston Bay Foundation    [www.galvbay.org](http://www.galvbay.org)  
San Marcos River Foundation    [www.sanmarcosriver.org](http://www.sanmarcosriver.org)  
Texas Travel Industry Association    [www.tourtexas.com/ttia/ttia.html](http://www.tourtexas.com/ttia/ttia.html)  
Texas Nature Tourism Council    [tourtexas.com/tntc](http://tourtexas.com/tntc)  
Texas Watch    [www.texaswatch.geo.swt.edu](http://www.texaswatch.geo.swt.edu)  
Clean Water Action    [www.cleanwateraction.org](http://www.cleanwateraction.org)  
Coastal Bend Bays Foundation    [www.baysfoundation.org](http://www.baysfoundation.org)  
Hill Country Conservancy    [www.hillcountryconservancy.org](http://www.hillcountryconservancy.org)  
Texas Committee on Natural Resources    [tconr.home.texas.net](http://tconr.home.texas.net)