

Research Report

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Choppy Waters

Understanding The Challenges To Texas Water Policy

Including Papers By

The Honorable Susan Combs

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Katharine Armstrong

Former Chair, Texas Parks and Wildlife Commission

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Chair, Texas Commission on Environmental Quality

Introduced By

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ABOUT THE TEXAS PUBLIC POLICY FOUNDATION

The Texas Public Policy Foundation is a 501(c)3 non-profit, non-partisan research institute guided by the core principles of limited government, free enterprise, private property rights and individual responsibility.

The Foundation's mission is to improve Texas government by generating academically sound research and data on state issues, and by recommending the findings to opinion leaders, policy makers, the media and general public. The work of the Foundation is conducted by academics across Texas and the nation, and is funded by hundreds of individuals, corporations and charitable institutions.

By refusing government funding, the Foundation maintains its independent voice on the issues important to Texas' future.

In 1989, a small group of civic-minded Texans created the Texas Public Policy Foundation to bring independent, market-based thinking to tackle problems facing state government. Through the years, the Foundation has championed solutions to the day's pressing issues, and won support for market-based policies that have made Texas a better place to live and work.

The Foundation's impact on public policy is substantial, and has been noted by lawmakers and opinion leaders alike. The *Dallas Morning News* has said the Foundation is "dubbed the 'official think tank of Texas' by friends and foes."

An Introduction

Brooke Rollins

William Shakespeare wrote that men’s virtues are written in water.¹ Penned by a British playwright in the 16th century, these words reach across time to us today. The wisdom of Texans will be recorded in state policy crafted over the next few years to resolve competing demands for water and address water shortages.

Water is rapidly rising to the top of the state policy issues. The complexity and importance of water problems challenge state courts and the legislature. Solutions to these problems will indelibly and forever affect Texans – impacting human consumption, the economy, the environment, rights of private ownership, and the role of state government. There is no doubt that the growing water needs in this state and the estimated cost for providing those needs will not be covered by state funding. Hence, the private sector, and ground water resources, must play a major role. In fact, perhaps the free market is the only true way to solve our water challenges for future decades.

To help clarify the key problems with water and inform decision-making, we asked Agriculture Commissioner Susan Combs, Texas Commission on Environmental Quality Chairman Kathleen White Hartnett, and former Chairman of the Texas Parks and Wildlife Commission Katharine Armstrong to provide their perspectives. The authors share their expert knowledge and keen insights on state water policy from a unique vantage. The three have deep roots in Texas; they are ranchers and generations of their families have derived livelihood from the land. Each author has broken new ground in leadership positions in Texas government. Each is a staunch advocate for the environment and represents a conservative approach to state policy reform.

Collectively, their perspectives offer a comprehensive examination of Texas water from diverse perspectives – historical, legal, regulatory, political, economic, and environmental. The three authors strongly concur that:

- Supply and allocation of water is the most urgent problem facing Texas today;
- Current law and policy are unequal to the task of solving today’s challenges;
- The state legislature must clarify current law and regulation;
- State water reform must address consumptive, economic, and environmental needs;
- Scientific information should guide decision-making;
- Private sector engagement in water marketing and management should be carefully considered; and
- The role of government must be redefined.

¹ William Shakespeare, *King Henry VIII, Act iv, Sc 2*. “Men’s evil manners live in brass; their virtues we write in water.”

The Foundation agrees that it is time to take a fresh look at the ownership, use, management, and regulation of ground and surface water in Texas. Reforming water policy offers Texans an opportunity to apply market-based solutions, limit government, expand private property rights, and increase individual responsibility. These approaches have proven the most effective in all areas of public policy.

This thoughtful collection is the first of a series of reports that the Foundation will be publishing about water policy during the remaining months of 2004.

In late fall, we will produce new research by Dr. Ronald Kaiser, a respected scholar at Texas A&M who has prolifically published on state water law and market-based solutions to water allocation.

The third and final report of this series is research examining the usefulness of desalination for Texans by Dr. James C. Smith, also a respected scholar at Texas A&M who serves as an expert resource on public-private solutions to state water challenges.

The Foundation is honored to begin this series on state water policy with the collection of perspectives by Commissioner Combs, Chairman White, and Ms. Armstrong. We thank each for contributing to this collection and laud their efforts on behalf of the people in Texas, dependent on a plentiful supply of clean water.

About The Authors

Susan Combs

Susan Combs, a fourth-generation rancher and Texan, was sworn into office in 1999 as the state's 10th commissioner of agriculture, and the first woman to hold this position in the state's history. She was overwhelmingly re-elected to the position in 2002. Commissioner Combs has a cow-calf operation on her family's 100-year-old ranch in Brewster County.

Commissioner Combs received her law degree from the University of Texas School of Law and is a former assistant district attorney in Dallas. She served in the Texas Legislature from 1993 to 1996, writing the state's major private property rights legislation. She was also a member of the House committees on Natural Resources and Criminal Jurisprudence. In 1996, she joined the staff of U.S. Sen. Kay Bailey Hutchison and worked as the senator's state director.

For her outstanding work for Texas farmers and ranchers, Susan was named *Progressive Farmer's* Leader of the Year in Texas Agriculture for 2002.

Twice Susan has been invited to lecture at the Harvard Business School on the U.S. – Mexico water situation. In 2003, she was named co-chairman of NASDA's Tri National Accord, U.S.-Mexico Working Group. She was also elected chairman of the Texas Agriculture Policy Board.

Along with their three sons, Susan and her husband of 28 years live in Austin, where he started a successful high-tech company.

Katharine Armstrong

Katharine Armstrong is president of Katharine Armstrong, Inc., an Austin-based consulting firm specializing in corporate affairs, government relations and not-for-profit clients at both the state and national levels.

Armstrong is a fifth-generation Texan raised on her family's South Texas cattle ranch, an artist, an avid outdoorswoman and the mother of three children. She was appointed to the Texas Parks and Wildlife Commission in 1999 by Gov. George W. Bush and named chairman in 2001 by Gov. Rick Perry, becoming the first woman to head the agency.

In her more than two years as chairman of the Texas Parks and Wildlife Commission, Armstrong focused her efforts on rebuilding the agency's credibility with political leaders.

Armstrong worked for Senator John Tower and in the Nixon White House before joining Smith Barney, Harris Upham & Company in 1976. She currently serves on the advisory boards of the Harte Research Institute for Gulf of Mexico Studies at Texas A&M Corpus

Christi, the James Madison Book Award, as Chairman of the South Texas Native Plant restoration project at Texas A& M Kingsville and is a director of the Texas and Southwestern Cattle Raisers Association and the Texas Wildlife Association.

Kathleen Hartnett White

Kathleen Hartnett White of Valentine, Texas, was appointed by Gov. Rick Perry as chair of the Texas Commission on Environmental Quality on October 20, 2003, after being appointed to the commission on October 15, 2001, and confirmed by the Texas Senate on March 6, 2003.

Her term will expire on August 31, 2007.

White is co-owner of White Herefords and a partner with her husband in a 115-year-old ranching operation in Jeff Davis and Presidio counties. She was appointed to the Texas Water Development Board in 1999 and left that position after her appointment to the TCEQ (formerly the Texas Natural Resource Conservation Commission). She also sits on the board of the Texas Water Foundation and the Texas Natural Resource Foundation.

White received her bachelor and master degrees from Stanford University. She also studied comparative religion at Princeton University and law at Texas Tech University.

White was Director of Private Lands and the Environment for the National Cattlemen's Association in Washington, D.C. She has served as director of the Ranching Heritage Association, and was a special assistant in the White House Office of the First Lady Nancy Reagan.

She is a member of the Texas and Southwestern Cattleraisers Association, the Texas Hereford Association, and the American Hereford Association.

The Future Of Texas Water

The Honorable Susan Combs

While water planning and reflection on water policy are not new in Texas, the urgency for clear thinking has never been stronger. We hear from numerous sources that some areas of Texas may run out of water, or at least be “water short” by 2050. If that is in fact the case, we must do something to address a possible shortage. At the outset, it can’t be overstated that water is the lifeblood of economic development – and virtually all economic activity follows water. Without water, houses cannot be built and many manufacturing processes cannot be completed. Water and wastewater systems are essential for structures of any size. Yet the population of Texas is expected to double to 40 million in the next 50 years. What are we to do for our tomorrows?

To look at where we are today, a brief review of the history of water efforts is required. An essential part of any policy discussion on water must include an analysis of the relationship between ground and surface water law and the theories and policies affecting each. Groundwater and surface water come from two very different legal perspectives – one highly regulated and one not, at least until recently.

Historical Perspective

The Texas constitution was amended in 1912 to allow the state to participate financially in water resource projects. There were some early efforts to gather data, but they were primarily to analyze long-term water supplies and related water demands. In 1961, the state, through the Texas Board of Water Engineers, issued a report detailing the outlook for both surface and groundwater supplies for Texas. They were working with a 20-year planning horizon, projecting needs and supplies for 1980. The report, as all water planning documents describing Texas routinely do, referred to drought as a continuing problem for the state, particularly the 10-year period of the 1950s when rain was so scarce.

Of note in this early report is its emphasis on the development of surface water as the primary means of dealing with long-term water shortages. It specifically remarked that the state does not control groundwater, nor was there reliable data on much of the groundwater in the state.

So where do we start in looking at water policy? It is useful to take a brief detour and look at oil and gas law, because it has a significant impact on how we view water.

Oil And Gas

Oil and gas production in Texas and the body of laws and regulations that govern its operation have evolved over a number of years. The prevention of waste and protection of correlative rights have been regarded as the most important principles. In 1891, the Railroad Commission was formed to regulate railroad practices and protect farmers, small businessmen and the public. Oil and gas had been discovered in Texas, but not in large commercial quantities.

The Texas Legislature passed its first regulatory statute relating to the conservation of natural gas in 1899. In 1905, the Legislature acted again to pass a statute relating to the protection of groundwater, the abandonment of oil, gas and water wells and the conservation of oil. However, it was not until 1919 that the Legislature passed an act that firmly established the Railroad Commission's jurisdiction over oil and gas fields. Since that time, the Railroad Commission's authority to control waste, address environmental concerns, regulate private property rights in the oil and gas fields and perform other conservation duties has continued to grow and develop through statute, case law and rules.

During the 1930s there was a large amount of discovery and production that prompted the need for additional legislation. Because Texas statutes never defined correlative rights with regards to oil and gas law, the courts have attempted to fill in the blanks. Early oil and gas production was based on the rule of capture to promote a plentiful supply of energy. However, because this raises property rights issues and because it is often not the most efficient method for producing oil and gas, case law in this area began to develop during the 1930s, '40s and '50s.

Landmark cases during this period generally held that the Railroad Commission had the authority to protect correlative rights, which allow each landowner the opportunity to produce their fair share of the recoverable oil and gas beneath their land. The Railroad Commission, through the administration of well spacing and adjustment of the allowable production for each well, was empowered to give each landowner the opportunity to develop his or her fair share of oil and gas through the administration of well spacing and prorationing orders. There were also statewide rule changes that empowered the agency to regulate activity.

Groundwater

Groundwater is, to date, an entirely different legislative animal, even if it is found underground like oil. The Texas Supreme Court in 1904 in *Houston & T.C. Railway Co. v. East*, 98 Tex. 146, 81 S.W. 279, looked at groundwater and called it "mysterious." The landmark case arose when the defendant railroad drilled wells on land adjacent to the plaintiff's property and transported the water for use elsewhere, causing the plaintiff's well to run dry. The court viewed groundwater as incapable in some very real sense of being "known," and thus the rule of capture was first articulated in Texas.

This meant that any surface property owner could “capture” whatever quantities of this mysterious substance were available. This was fine in relative terms because the usual withdrawal of water across the state was with 2-inch pipes, and the pumper wasn’t withdrawing water 24-hours a day, seven days a week, or every day of the year. So the likelihood of impacting a neighbor by withdrawal was not, at that time, particularly likely.

This case was followed by several others, the most recent being *Sipriano v. Great Spring Waters of AM, Inc.*, 1 S.W. 3d 75 (1999) known more informally as the Ozarka case, in which the Texas Supreme Court reaffirmed the rule of capture but essentially urged the Texas Legislature to consider how it might address the issues that arise between neighbors – one of whom complains that the other has taken water from a common underground pool to the neighbor’s detriment.

Another issue is subsidence, when excessive groundwater withdrawal causes the ground to lower. Subsidence districts, such as those around Houston, address this issue. The first, the Harris-Galveston Coastal Subsidence District, was created by the Legislature in 1975, and the second, the Fort Bend Subsidence District, was created in 1989. Recently, the Harris-Galveston district informed residents of Harris County that they will have to “migrate” from underground water reliance by 2010, and various communities on the north side of the county have finally negotiated surface supplies.

However there is a very real argument that some withdrawals of groundwater, particularly from the Gulf Coast aquifers, might be enhanced without impact on subsidence, if the water were re-used through a closed-loop system. The reused water would not be impacting surface water availability and would not increase subsidence, since the withdrawal amount would not increase. Undoubtedly the Harris County area will look at this as well as other options in the coming years.

But underground water is primarily on private land, as the 1961 Board of Engineers report noted, and the disputes that arose were not particularly visible in the public eye for some years.

Surface Water

Surface water, however, is not only visible in reality but visible in the public domain. The *Irrigation Act of 1917* provided for the first adjudications of water but was declared unconstitutional in 1921. Consequently, the next legislation to authorize adjudication of water rights was the *Adjudication Act of 1967*, and in 1976 the Texas Water Commission, today known as the Texas Commission on Environmental Quality (TCEQ), held a series of hearings to formally determine or adjudicate surface water rights. There were two kinds of priority – priority of use and priority of time. This really boils down to a kind of “who’s on first” type of analysis – and the results can be both fascinating and complex.

Regarding priority of use, according to state law, domestic, and municipal uses – including human and livestock use – have first right of access to water, followed by agricultural and industrial, mining, hydroelectric power, navigation, recreation, and finally by any other beneficial use.

Regarding priority of time, many of these water rights that were being claimed were ancient, and according to Texas law, first in right. The issue of senior (first in time) versus junior (later) has created complicated and contentious issues. What happens if a very ancient right that was an irrigation right, for example, is transferred out of a basin of origin to another basin? Present state law says that the “age” of the old right is not accorded to the new interbasin transfer permit, so it becomes “junior” to the basin of origin – which has deterred many such transfers. Some argue that this has been one of the reasons that excessive reliance of groundwater has recently emerged, rather than a more balanced relationship between surface and groundwater supplies. The issue of priority of use with regards to interbasin transfers is commonly referred to as “junior rights” and has played a significant role in surface water discussions.

Issue Of Control

Another issue involved who controls surface water. River authorities are one type of entity controlling surface water. There are 13 such authorities created by the state to cover a particular river basin or watershed under a particular section of the state constitution’s conservation and reclamation district language. For example, these include the Lower Colorado River Authority, the Guadalupe-Blanco River Authority, and the Nueces River Authority, to name just three. The primary purpose of these entities is to conserve water, but in some cases their authority has expanded to cover various economic development activities including providing electric power and even phone service. In such instances, the legislature has given them additional authority through special legislation.

Water improvement districts replaced water irrigation districts and could tax, construct irrigation works and other items. Twenty-seven irrigation districts have been established, and they hold vast amounts of Rio Grande water, especially in the Rio Grande Valley. There are 18 water improvement districts as well. Farmers have generally welcomed the districts because they needed mechanisms to keep up and maintain the irrigation facilities.

On the groundwater side, entities were slower to develop to regulate underground water, with the first groundwater conservation district not created until 1951 in the High Plains after legislation was passed in 1949. The districts’ early powers were geared to issuing permits for water wells and setting well spacing limits.

As groundwater districts developed, along with increased legislation about surface water, some things became clearer. A case in 1927 permitted the sale of groundwater to a third party for off-site use without affecting the rule of capture – essentially creating a water

market, *Texas Co. v. Burkett*, 117 Tex. 16, 296 S.W. 273 (1927). A very interesting water transport case in 1955 said it was acceptable to move water, even if the transportation losses are substantial, *City of Corpus Christi v. City of Pleasanton*, 154 Tex. 289, 276 S.W.2d 798 (1955).

So even though water may need to be transported great distances and consequently suffer volume losses (through evaporation or seepage, for example), such losses are acceptable. The line however is clearly drawn against malicious, wanton, willful misuse or waste of water.

What was about to happen next was a slow and inevitable collision between thirsty and desperate urban areas and rural areas, which had much of the groundwater.

Some of the other entities that were also beginning to struggle for supplies were: Municipal Utility Districts; cities looking for water; developers who were occasionally battling with cities for the right to survive (which meant they had to have water); and rural interests who were not happy at the prospect of powerful entities intervening in their lives.

Groundbreaking Water Legislation

Lieutenant Governor Bob Bullock in 1996 declared that the No. 1 legislative issue for the 75th Legislative Session was going to be water. He set Senate Bill 1 (SB1) on course for the first comprehensive and in-depth analysis of water when it was filed on Jan. 22, 1997. More than 35 years had elapsed since the 1961 report, which described the critical situation for water supplies in Texas. Everyone in the state realized that truly historic legislation was going to be crafted. The legislature and its halls were filled with people from all areas of the state, representing a variety of backgrounds and interests, coming to talk about water.

Senate Bill 1

Governor Bullock's leadership on the water issue propelled the talks forward, even over some muttered opposition, and SB1 was passed and signed into law on June 2, 1997.

SB1 dealt extensively with drought planning and response, clearly important in a state such as Texas, which has long experienced major and prolonged dry spells. It also, and very important, made interbasin transfers of surface water much tougher than they were previously – with requirements such as notice being given to every county judge in the entire basin, mayors and a whole host of other stakeholders. Public meetings were required, and the effects on the home basin as well as the receiving basin were to be thoroughly analyzed. But the major item, which is still a thorny issue, is that all such transfers would be junior to every other water right already granted in the basin of origin and the first to be cut off in times of drought.

A major component of the legislation was the task given to the Texas Water Development Board (TWDB) to develop the first State Water Plan driven by local decision-makers, coordinated at the regional level and ultimately approved on a statewide basis. The creation of 16 regional water planning groups was a task in and of itself, with the membership on the various groups being hotly contested in some cases.

Representatives on the planning groups were to include members from all the different water consuming interests in the region, but an analysis of the geographical areas in some of the planning groups indicated powerful tugs of war had taken place in drawing the regions. Some regions looked almost like strangely drawn congressional districts with various entities complaining about who was included, who was excluded, whether or not they properly reflected the hydrological conditions of the areas and whether one political subdivision or another would determine the outcome over the resistance of various parties. It was going to be as difficult as herding cats.

The politics of these groups were interesting to say the least, but after some early struggles of leadership, they performed very well. In 2002, the reports from all 16 regional planning groups were compiled into a statewide water plan called *Water for Texas-2002*. Ideas were proposed for increasing water supplies, or allocating water and the regions' approaches to water varied widely. In part, the variances were attributable to differing water supply and demand, but also to the differing visions of the members. Some proposed reservoirs, mostly in East Texas with more predictable rainfall, and others proposed brush control or limiting withdrawal of groundwater through regulation. It is worth noting that SB1 specifically stated that groundwater conservation districts are the state's "preferred method" of managing groundwater resources.

What also became even more apparent was that some of the surface waters that were appropriated to various entities over the years were heavily oversubscribed. Unlike a plane flight when you can be offered a later flight and a cash bonus for deferring because it is oversold, there has been no effective mechanism in Texas to deal with this over-allocation, except to hope that no one ever uses all of their "right." There is language in Section 11.173 that suggests a person can "lose it if you don't use it."

Reuse has been touted as an important conservation tool but has become another hot topic. A good example is when a city that has water rights, uses the water, cleans it up and delivers it back to a river system that uses the flow to benefit downstream users. Suppose the city now decides that it wants to endlessly reuse that water – and with the consequence that the river bed that had that flow from that city or entity no longer has that water. Whose water is it? SB1 said that future water rights permits would have to state the percent of return flow it would provide to the stream. One noteworthy phrase in the rules later promulgated by TCEQ states that there can be endless reuse "so long as the water is not discharged to a watercourse." Interesting proposals have surfaced to suggest that a city could get a large pipe at the "end of the water use" and then simply pipe it back to the top. This change in water flow has certainly sparked debate.

Cities can argue that they have bought and paid for the water and they should be able to use it. Other observers have argued that since the water used to flow out of the city's limits and downstream, wildlife and other entities have become dependent on the flow.

Senate Bill 2

Senate Bill 2 (SB2) was passed in the 77th Legislative Session and became law in mid-2001. It was primarily directed at certain groundwater conservation districts, because by that time fears were being felt across the state about cities or other entities "grabbing" water by water ranching, which would hurt the neighbors of the water ranch. Groundwater districts were seen as a way to hold the line against unreasonable withdrawals and subsequent transfers of water from an area.

But of real importance also was the focus on brush control, desalination, public-private partnerships and agricultural uses of water.

A report issued by TWDB in 2002 stated that since the population in Texas was expected to double to at least 40 million in the next 50 years, there was simply an inadequate water supply to meet that growth. That plan called for eight new major reservoirs and 10 minor reservoirs with a cost in excess of \$4 billion.

Currently, groundwater districts are facing their own challenges. The number of districts has doubled over the last 10 years, and there are now 80 confirmed districts that manage about 88 percent of the state's groundwater. In addition, there are eight districts that were created but have not yet been confirmed by a local referendum. Districts can be created either by petition submitted to TCEQ or by legislation.

Since some of these have been established simply to fend off feared water marketers, they are subject to being deemed "inactive" by the State Auditor who is required by state law to audit the districts. Groundwater districts must file a groundwater management plan for their district and submit it to TWDB for certification. They must publish rules as well.

If the district is not doing what it said it was going to do in its management plan, it could be deemed "not operational." If that happens, the choice is to actually start working as a groundwater district or face the possibility of being shut down. This threat is usually enough to get them going. The Auditor has the ability to determine whether a district is "actively engaged in achieving the objectives of the district's management plan." If the district is not operational, appropriate action may be taken by TCEQ, such as dissolving the board, calling for a new board, or suing the district and collecting the assets, or even dissolving the district. In a series of reports analyzing 44 districts total, the SAO found nine inactive since 1999. Since the first report, one is now operational, and TCEQ is reviewing materials from six others to see if they are operational. The percentage of districts that were deemed "not operational" in 1999 was high. However, today that percentage has gone down, perhaps indicating that the early audits spurred districts to make greater efforts to be in compliance.

Recent Events

One problem that has become increasingly clear, however, for not just the early districts but all districts, is the amount of money needed for operating. Some raise funds for the district's operation by fee for use, and others by tax, depending on the authority granted in their enabling legislation or Chapter 36. But the tasks laid out in the management plans often contemplate literally hundreds of thousands of dollars being needed – while the district might only have a few thousand dollars each year. They simply would not have sufficient funds to accomplish their tasks. These districts are also struggling with the lack of sufficient information to deal with the various complex and frequently troubling arguments between numerous parties. If one group of land and water owners wants to export water, because it is more financially rewarding for them than to engage in their traditional pursuits, usually agriculture, and another group does not want to be “drained,” the district often does not have reliable data to make thoughtful decisions. Or at least that is the argument that is made.

Some problems also arise because of legislative loopholes. One is when the City of Sweetwater condemned land for its groundwater because the city had relied on the groundwater as a percent of the municipal supply. The landowners had a contract with the city and as renewal time neared, talks broke down between the city and the landowners. When no agreement could be reached, the city condemned the land. The real argument came over what size payment should be made. The landowners stated that since the city only wanted the ranch land for its water, their payment was inadequate because it simply covered the surface. The city disagreed. The 11th Court of Appeals in *Duer Wagner & Co. et al. v. City of Sweetwater*, said that the early court erred in not admitting evidence relating to the value of the land. That case is awaiting retrial on the issue. Nearly concurrently, State Representative Charlie Geren and Senator Robert Duncan passed legislation in 2003 (HB803) to protect landowners from city condemnations. There are a series of hurdles that a city has to cross before condemning land.

Another city was also at odds with some locals. The City of San Angelo in various meetings was proposing to condemn farmers' surface irrigation rights since it needed water. This was also taken care of in HB803.

Beyond struggles over groundwater availability and value, surface water conflicts also appeared. In July 2000, the San Marcos River Foundation (SMRF) applied to TCEQ (at that time known as TNRCC) for a water permit that would essentially require sufficient water to flow to the coastal estuaries. This is known as instream flow, and groups up and down the rivers were concerned about this application since it requested all excess waters from the San Marcos and Guadalupe rivers to be sequestered in a legal sense for environmental flow down the streambeds. Legislation was filed to study the issue, SB1639, and told TCEQ that it did not have the power to issue these permits. The same legislation established the Study Commission on Environmental Flows, which is presently studying this very important issue.

But what all of these topics clearly point out is that the SB1 and SB2 planning process did not cover all of the hot water topics.

In 2003, legislation was passed that permits an entity to pump groundwater from an area, then pour it into the Rio Grande for transportation down stream. This first proposal was later followed with a second proposal by the General Land Office (GLO) also in 2003 to lease hundreds of thousands of acres of its lands across the Trans-Pecos region to enhance the Permanent School Fund. The concept was to do a single bid to the Rio Nuevo group for drilling, and the group could then sell the underground water it obtained by lease to interested purchasers.

Opposition to the proposal, since it primarily centered on arid and drought-ridden far West Texas lands, was intense and focused on several points. First, that the proposal was not subject to competitive bid which seemed important because a state asset, owned by all of the public, was at issue. Second, there was very real concern that the GLO might not be required to adhere to groundwater district rules. And third, they had not participated in the regional water planning process, and the proposal was not on any regional water planning horizon. This would essentially, it was argued, eviscerate the SB1 and SB2 planning process. Since the “enforcement” mechanism for the planning process is denial of state funding or permits, the planning process and the resultant regional plan are irrelevant, in a sense, if someone in the area does not need state funds or a state permit for any part of their particular project. This was apparent with the GLO/Rio Nuevo proposal, in that it was never considered by the local regional water planning group.

Other groups might also be exempt from state regulation. The federal government, which owns various pieces of land, is exempt by federal sovereignty from any oversight or regulation by any state water entity. In addition, a tribe with land that it believes represents a nation, would also be exempt. One group, the Tiguas in the El Paso area, have proposed that a ranch it acquired in the late 1990s should be deemed “trust” property and would therefore not fall under state water law. That request is pending in Washington in the Department of the Interior.

On a side note, in the 2003 legislative session, a bill was introduced and passed banning the driving of vehicles in state streambeds, with certain exemptions. The significant increase in recreationists interested in accessing remote areas of the state through “water highways” concerned a broad coalition of interests, and this legislation prohibited such use. However, a local plan can be written by an individual county, municipality or River Authority allowing limited vehicle use under certain circumstances. This ensures public access.

Searching For Solutions

Lieutenant Governor David Dewhurst, clearly understanding the importance of these issues, established the broad and far-ranging Senate Select Committee on Water Policy.

Its task, prior to the 2005 Legislative Session, is to cover such diverse topics as the role of groundwater conservation districts, the rule of capture, historic use standards, and junior water rights. In addition, in a direct response to the issues raised by the GLO proposal to lease state water, he established a subcommittee chaired by State Senator Frank Madla to look at the topic of how the state might or might not lease its own water. Dewhurst's proposal has been welcomed with widespread relief, and it is expected that his leadership on this important topic, much like Governor Bullock's in 1997, will drive water issues during the 2005 Legislative Session.

There are a number of suggestions on how to deal with these issues, but clearly one must be that the regional planning process is only as effective as the level of participation and the amount of water and land covered. Should there be any additional kind of refereeing? Some have suggested that before the state is able to, through one agency, dispose of state assets such as water, there should be legislative oversight.

What about dealing with the issue of inadequate information for a truly informed decision making process? In SB 1 during the 75th Legislative Session, former representative Ron Lewis proposed a number of fees, one of which was to be collected from each public water supply system in the state. New fees were not passed but at least raised the issue for consideration.

While there has been contention between groups viewed by some as "urban" or "rural" – a surprising conflict has arisen between two sectors of the agricultural sector. In Kinney County and Hudspeth County, proposals to export groundwater from a region have resulted in two classes of agricultural interests. Farmers who can demonstrate long time "historic use" will be permitted to send water out. For neighboring ranchers who have not needed much water, they are being left, in their view, high and dry. Why the disparity in treatment? Because the farmer had invested dollars in equipment, purchasing supplies for a cost-intensive agriculture operation. The rancher had little equipment needs – but they argue that they also left the groundwater in place for their more thirsty neighbors – and now they are being penalized for that forbearance.

Conflicts over increasing water supplies are numerous. The Marvin Nichols Reservoir that was proposed in northeast Texas to supply water to the Metroplex faced substantial opposition from residents in the area because hundreds of thousands of acres would likely either be flooded or withdrawn from use because of environmental concerns. However, win/win situations are on the horizon. A proposal by the Lower Colorado River Authority to build four off-channel reservoirs to capture floodwaters and then send that water to San Antonio has been supported both by legislation and various opinion leaders. More study of that particular project is underway to ensure that downstream uses and values are not impaired.

Meeting the state's water demands over the next 50 years will require that we make better use of the water we already have. The important role of conservation in meeting this goal cannot be overstated. The Texas Legislature in 2003 passed SB1094 creating the Water Conservation Implementation Task Force to review, evaluate and recommend optimum

levels of water use efficiency and conservation. The task force will recommend best management conservation practices for agriculture, municipalities and industry.

The task force is also working on standardizing the calculation of gallons per capita per day (GCPD), the assessment of a municipality's conservation efforts. This figure is derived by dividing the number of residents served by a water utility by the total amount of water consumed. The calculation, however, does not take into account the water used for industrial purposes. As a result, municipalities with a large number of water intensive industrial users have a disproportionately high GCPD. The task force will ultimately recommend targets cities should strive for in their water conservation plans.

We do know that municipal conservation efforts work. Under an aggressive conservation program, the city of San Antonio has lowered their GCPD from 220 in 1980 to 132 in 2003, a reduction of 40 percent. Other cities have shown similar successes.

Desalination is being hailed by some as perhaps the most likely "savior" of the coming water shortage. The first question usually asked is, "is it cost effective?" It depends. In Tampa Bay, Florida, the cost per thousand gallons is \$2.49. Contrast that with Singapore's facility – down at \$1.60. Desalination is already a reality in Texas with projects at Corpus Christi, El Paso, Wichita Falls, and Brownsville, to name a few locations. The legislature has appropriated funds to conduct studies on both seawater and brackish groundwater. There is actually a substantial amount of brackish groundwater in the state, which can be more cheaply converted to drinking water because the effort to strip the salt costs less than from seawater. It is going to be a major source of water during the future.

Watershed management involves managing land in such a way that maximizes the quality and quantity of every drop of rain, almost all of which falls on private land. Proper land stewardship management techniques, including brush management and responsible grazing, increase surface and groundwater supplies. They are keys to meeting the state's future needs and are extremely cost effective strategies. For example, state-funded removal of salt cedar along the Pecos River has already produced approximately 36,000 acre feet of "new" water at a cost of only \$8 per acre foot. This is much cheaper than desalination – though not available in all areas. Successes have also been shown with the removal of ashe juniper (cedar trees) and mesquite, realizing water at a cost of between \$30 and \$50 per acre foot, depending on the location. The management of brush has proven to be most cost effective in or near riparian areas.

The Future

Regardless of the strategies used, water resources in Texas must continue to be actively managed and regulated to meet the state's needs for decades and generations to come. As a policy question, what level of government is the proper place for regulation? Water planning is a bottom-up approach, beginning at the local level and culminating in a state water plan.

As mentioned before, the Legislature has deemed local groundwater conservation districts as the state's preferred method of groundwater management. Regarding local control, should we be concerned that groundwater in one area of the state might be plentiful and even wasted, while arid areas could run out of water? As private property, groundwater also has intrinsic value to a landowner and a valid role in free enterprise. Since land is often valued by the water beneath it, there may be sound economic reasons for landowners to market their water rights.

At the same time, all surface water is owned by, regulated by and permitted by the state. Will the disparity between surface water and groundwater management cause unintended consequences? Will proponents of local control seek assistance from the state when they perceive their own personal financial interests are hindered by decisions of their local management entity? The answers to these questions will ultimately evolve over years, just as oil and gas law has.

The future of Texas will be built on how we approach water policies today. But if history has taught us anything, it should not be policy just for policy sake. Thoughtful water policy is a Texas issue that is going to take the dedication and commitment of all Texans to develop fair and equitable solutions to our future water needs. Texas and Texans cannot afford to wait. The time to act is now.

Environmental Stewardship And Market-Based Surface Water Policy

Katharine Armstrong

The Challenge: To Find Enough Clean Water

Water allocation is the most important natural resource and economic policy challenge facing Texas today. The devil himself could not have dreamed up a thornier, more complex issue to sort out if he tried. The water debate is escalating because it is now clear that the era of plentiful and cheap water is over. The new era will pit the countryside against the city, agriculture against industry, wildlife against people, private property rights against the commons, politics against science, and every variable imaginable. These conflicts are to be expected whenever a vital resource like water is finite and essential to life itself. How they are resolved will determine whether Texans chart a course of their own design that can meet the economic needs of a dynamic state and have enough clean water left over to protect our precious wildlife resources. Fortunately, Texas is in a position to meet the challenge if its citizens choose a course that is grounded in sound science, free market principles, and its strong tradition and respect for private property rights.

Surface vs. Underground Water

When one considers the ownership and right to use water, the first distinction to be made is *surface water* versus *underground water*. This distinction is critical, because in Texas, the ability to use water is dependent upon the ownership of water. The focus of this paper is on surface water.

Generally, the question of ownership of water in Texas is resolved by looking at the source of the water. The State of Texas owns “the water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression and watershed in the state.” (Texas Water Code, Section 11.021).

However, the broad state ownership of these waters is subject to certain rights to use them. Texas surface water law has evolved around two distinct principles: the Riparian Doctrine and the Appropriation Doctrine. In general terms, under the Riparian Doctrine, the owner of land that is contiguous to a watercourse or other natural body of (state-owned) water has certain rights to the use of the water, principally for domestic, livestock, and irrigation purposes. Under the Appropriation Doctrine, rights to use state owned water are acquired by statutory provisions which rely upon the principle of “first in time, first in right,” generally meaning senior water rights holders have priority over junior water rights holders.

As a result of the *Adjudication Act of 1967*, now codified in Section 11.301 *et seq.* of the Texas Water Code, every person claiming a non-statutory water right had to file a statement on or before September 1, 1969, with the Texas Water Rights Commission describing his or her claim (whether appropriative or riparian in nature) to surface waters of the State of Texas. The result of this *Act* was to merge Appropriative and Riparian rights into our present Texas system of adjudicated water rights, and to permit the use of state surface waters. Under the *Water Adjudication Act*, except for domestic and livestock use, all claims of statutory and non-statutory riparian water rights were extinguished (Texas Water Code, Section 11.322).

The Code went on to provide that, with two exceptions (again, domestic and livestock related), “no person may appropriate any state water or begin the construction of work designed for the storage, taking, or diversion of water without first obtaining a permit from the [Texas Water Commission, now the Texas Commission on Environmental Quality] to make the appropriation.” So, in general, the use of surface water in Texas is almost totally subject to state control.

The “Water Bill”

Fast forwarding from the 1960’s era to the present, due partially to extensive widespread drought, in 1997 the Texas Legislature passed Senate Bill 1 (SB1), referred to as “The Water Bill,” and fundamentally set a course for water planning, development, and management in Texas. This precedent-setting legislation was championed by the late Lt. Governor Bob Bullock (D), carried through the legislative process by Senator Buster Brown (R) and Rep. Ron Lewis (D), and signed into law by Governor George W. Bush (R). SB1 provides for a “bottom up” approach to Texas water planning whereby 16 regional water planning groups are tasked with creating long term water conservation and water supply strategies for their regions. The state agency with overall responsibility over this regional planning is the Texas Water Development Board (TWDB), which is statutorily required to consolidate the 16 regional plans into one comprehensive statewide water plan.

SB1 is certainly a step in the right direction by providing local planning, but it falls short because it fails to place sufficient reliance on economic principles and incentives in the planning process. It is noteworthy, however, that SB1 does contain language encouraging marketing of water rights, but ironically, the Texas judiciary has effectively nullified that language (*City of Uncertain, Caddo Lake Area Chamber of Commerce and Tourism, Greater Caddo Lake Association, Caddo Lake Institute, John T. Echols & Barry L. Bennick v. Texas Natural Resource Conservation Commission* (now TCEQ) & *City of Marshall, Cause No. GN 201217*).

SB1 and its modifier, Senate Bill 2, later passed by the legislature, significantly changed water use and produced some unintended consequences. The legislation focused water use primarily on groundwater because inter-basin transfers of surface water were so

tightly restricted. Consequently, some significant water users (municipalities) have turned to rural groundwater supplies to meet their growing needs. Secondly, this legislation has provoked growing concern about water for the environment.

Environmental Needs: A Measuring Stick

Now, think of a map of Texas. All our Texas Rivers generally run from north to south and into the Gulf of Mexico. These rivers are fed by rainfall that, for the most part falls on privately owned lands, and then becomes stream flow, either as direct run-off or by recharging springs. Thousands of contributing streams flow into our major rivers, helping keep the rivers flowing steadily. So, when we think of the volume of flow in these streams and rivers (known as “instream flow”), we might visualize a rainfall event in the northwest quadrant of Texas, which recharges springs and provides direct run-off into the contributing streams that become the major systems of the Brazos, Trinity, and Colorado Rivers. As this flow of water moves along on its way to the Gulf, it is used by agriculture, industry, municipalities, and wildlife, and much of it is eventually returned to the stream or river after it is used.

The trick is to be sure that these instream flows are adequate to supply all these various inland needs and finally reach the Gulf in sufficient quantity and quality so as to replenish the freshwater requirements of our bays and estuaries. Indeed, the health of our bays and estuaries is the best measuring stick for determining if we are properly managing our surface water across the entire state. Through floods and drought, freshwater and the valuable nutrients and sediments carried by it sustain wetlands, marshes, hundreds of species of migrating birds, fish, crabs, shrimp, oysters, plankton, and countless other plant and animal species that have all evolved to take advantage of this dynamic ecosystem.

If the health of these critical coastal environments is diminished due to insufficient freshwater flows, we know we are not managing our surface water well, and need to take corrective action. This natural system that cleans, filters, and purifies trillions of gallons of water a year before it finally reaches the Gulf and is carried by currents to the seas and oceans beyond produces more than just environmental benefits. The economic benefits derived from our coastal waters through tourism, real estate, commercial, and recreational fishing translate into over \$10 billion annually to our state’s economy.

Bay And Estuary Studies

The importance of all this was recognized in 1985, by the 69th Texas Legislature, as it directed the Texas Water Development Board and the Texas Parks and Wildlife Department to undertake scientific studies to determine the amount of fresh water needed by our coastal bays and estuaries to keep them and the plant and animal life that live in them, healthy. These Bay and Estuary Studies are aimed at determining just how much or how little freshwater, and at what time, is really needed to keep our bays and estuaries

healthy. If we reach that goal of understanding, we will be much better equipped to manage freshwater as it moves across Texas toward the Gulf of Mexico.

Today, the studies of the principal bays and estuaries are complete and represent sound science. They should serve as a benchmark, a starting place, as Texas wrestles with water allocation and adjudication issues. However, the studies should not be viewed as the last word by any means. New information must be welcomed and incorporated through a dynamic process of scientific discovery and peer review so that citizens and political leaders can formulate water policy based on the best available science at any given time in the future.

Instream Flow Studies

While the Bay and Estuary Studies will help Texas determine how much fresh water needs to reach our Gulf Coast, the Instream Flow Studies that are just getting underway will tell us how carefully we are using the water in our rivers and streams as it makes its way across Texas to the coast. Commissioned by the Texas Water Development Board, the National Academy of Sciences will review the methodology and modeling that Texas Parks and Wildlife Department (TPWD), Texas Water Development Board (TWDP), and The Texas Commission on Environmental Quality (TCEQ) plans to use for these Instream Flow Studies and will periodically review the continuing progress of these studies until they are completed. Coupled with the Bay and Estuary Studies, the Instream Flow studies will provide us with much needed science – and eliminate much guesswork – in the determination of the management of our state’s surface water. This is a sensible approach to insuring that policy makers, planners and citizens have confidence in the scientific information produced by the state.

Big Government Thinking Has Shaped Texas Water Policy

Bearing this background in mind, there can be no argument that the contemporary liberal approach to natural resource conservation has captured the high ground in terms of public opinion. For at least a generation citizens have generally trusted democrats over republicans when it comes to protecting the environment. Today, conservatives find meager purchase with the public because they have allowed the debate to be framed by emotion, so-called “junk science” and a philosophy that measures success in terms of numbers of regulations and not by results. Sadly, the liberal approach has left us with serious distortions in the allocation of water and prolonged the perception that clean, plentiful, and inexpensive water is an entitlement that can only be delivered through total government control, regulation, and subsidy.

But Texans Now Have The Opportunity To Take A Different Approach

The debate is reaching a boiling point. Disputes about ownership and use of water are increasingly common throughout Texas, lending credence and heightening concern about a predicted water shortage. It is indeed time for Texans to find better ways to conserve and allocate water.

Important lessons from the 1970's have direct application to surface water conservation today. Most of us remember the results of price controls on gasoline and the bumbling efforts by the federal government to allocate scarce petroleum supplies. Had our leaders at that time demonstrated the political leadership to allow market forces rather than government price controls and regulations determine allocation, gas lines would not have materialized and the social and economic costs would certainly have been less painful and shorter-lived. Countless examples throughout history demonstrate that when government intervenes and market forces are thwarted, shortages, inefficiencies and waste occur.

As water shortages appear inevitable in the future, Texans are scrambling to find new water sources. Billions of dollars are being spent on desalinization plants, purchase of rangeland overlying aquifers by municipalities, inter-basin transfers, and out-and-out groundwater mining. These approaches should not be discounted and some will ultimately prove to be useful, economical sources of needed water. However, in the meantime, we are overlooking a significant way to produce more clean, fresh water at a far more reasonable price and it is right under our noses.

More than 95% of Texas, unlike most water-starved western states, is privately owned and for that fact we should be forever grateful to our forefathers. This reality affords Texas more opportunity to chart its own course in planning for the water needs of the future. Millions of acre feet of clean rainwater fall on Texas every year, most of it on privately owned farms and ranches. Farmers and ranchers in Texas are playing a growing and increasingly significant role in the production of surface water through implementation of sound soil and water conservation practices. Under the auspices of TPWD, over 14 million acres of rangeland are currently under voluntary approved Wildlife Management Plans. Millions of additional acres are well cared for without any formal management plan at all.

Deferred-rotation grazing, prescribed burning, and better brush control keep invasive and water guzzling mesquite and cedar at bay and encourage the dense growth of drought resistant native grasses and forbs. When these management tools are properly utilized, rainfall is allowed to seep into the soil, percolate into our aquifers, be regurgitated by springs and fed as filtered water into our streams and river systems. The watersheds of Texas are enormous sponge-like reservoirs and natural waste water treatment systems that must be encouraged to function to their greatest capacity. The sound land management practices of private landowners significantly contribute to the increased supply of clean water for the use and enjoyment of all Texans. They should be rewarded for their efforts and be provided with solid incentives to do even more.

More Government Regulation Is Not The Answer

Like gasoline and other resources, excessive government regulation will not increase the supply nor decrease the cost of water. We must now allow the marketplace and private landowners to work to the fullest extent possible and create a role for government agencies to support market-based water allocation and usage.

Unfortunately, under current Texas surface water law, the market place and private landowners are given scant encouragement to work their magic. As previously stated, essentially all surface water in Texas is owned by the State and our surface water allocation is based on statutory and administrative law operating through an adjudications system allocating water to users for beneficial use.

An example of an allocation distortion that results from this approach is the “use it or lose it” provisions of Texas surface water law. Section 11.030 of the Texas Water Code was designed to prevent unused allocations from reducing the amount of water available for allocation. It provides that the abandonment of appropriated or lawful use of state water for three years results in a forfeiture of those water rights to the state, and that water is subject to re-appropriation. However, due to the absence of legal mechanisms for quick and easy transfer, lease, or banking of adjudicated water rights, water rights holders may be wasting water in order to avoid risking the loss of those valuable rights. The legislature should recognize the value of water rights marketing and provide legal mechanisms that would allow water rights holders the ability to freely trade, lease, or bank their allocated surface water rights without the risk of losing them.

The Weakness Of Depending On Plenty

The system of senior water rights is only workable as long as there is plenty of water for everyone’s needs and still enough left over to take care of the environment. Historically, there has been sufficient water to meet these needs, but as demand for water increases, the system breaks down. Today, we see senior water rights owners allocated water priorities before junior water rights owners, even if the value of the water usage of the junior rights owner is far in excess of the senior rights owner. Consequently, the system is now driving premature and costly transfers of ground water from rural Texas to municipalities in order to augment water that could otherwise be supplied by surface water.

The Tragedy Of The Commons Is Not Destiny

“Tragedy of the commons,” the ruinous ultimate result of the lack of individual pride of ownership of natural resources that occurs when no-one has reason to feel personally responsible for a resource owned by the government, can affect all of us. One of the best examples of this tragedy was found in the former Soviet Union, whose communes and centralized government deprived citizens of a free market, and individual ownership of

private property. The results of the Soviet command and control economy produced some of the most devastating environmental conditions on earth. There is, as there should be, a balance between the unfettered and destructive abuse of natural resources by the private sector and a government dominated and overly-regulated regime that produces the same sad result. Given the proven American model of success resulting from the pride of individual ownership of property, coupled with the proven successes of free enterprise, there should be little doubt that Texans can largely regulate themselves *given the belief that unrestrained use of a common resource results in ruin for all.*

Market-Based Water Solutions Can Work For Texas

Can Texas make carefully selected changes to our surface water structure policies of allocation and encourage movement toward water markets and incentives for water conservation and stewardship? A free and more flexible market for surface water would allow junior water rights holders to augment water supplies in times of drought, satisfy environmental flow requirements, and diminish the need for municipalities to import rural groundwater. Encouraging private landowners to do what they do best – taking care of their land – will go a long way in meeting our water needs.

The Texas Legislature should now go beyond SB1, and establish a new role for government, charging state agencies to:

- review present and projected water needs instead of emphasizing cumbersome regulation of water use;
- serve as a clearinghouse for water marketing and banking;
- provide additional incentives for soil and water conservation;
- quantify available water, water use; and
- provide the scientific environmental research data needed for Texans to make sound decisions.

Reclaiming Conservation For Conservatism

Conservation deserves a central role in conservative efforts to increase water quality and quantity. Our streams, lakes, shorelines, and the wildlife that inhabit the land and water need protection and care. Conservatives should and must take ownership of conservation and introduce market-based stewardship. Conservation and market solutions are the best solutions to improve the economy, increase the supply of clean water for all forms of life, and keep Texas habitable and beautiful.

The New Value Of Water

Kathleen Hartnett White

Introduction

In the year 2004, the state of Texas is beyond the threshold of an era when water policy was merely a matter of debate. Today decisions about water policy have more ramifications for the future of the state than any previous era. There are high stakes for Texans; multiple competing interests wage war for limited water resources. The beginning of this era can be easily traced to 1997 with the passage of Senate Bill 1 (SB1) which created the 16 Regional Water Planning Groups and required development of detailed regional plans to meet water supply demands under drought in 2050, a time when the current population will have doubled.

The poignant facts of the matter came into focus in January 2002 when, as also required by SB1, the Texas Water Development Board (TWDB) issued the State Water Plan, *Water for Texas – 2002*. This plan drew a state-wide picture of water demand and water supply in 2050 based on a compilation of all the 16 regional plans. Calculations based on existing use and available supply revealed that water demands in 2050 would dramatically exceed available supply.

The State Water Plan noted:

By 2050, almost 900 cities (representing 38 percent of the projected population) and other water users will need either to reduce demand (through conservation and/or drought management) or develop additional sources of water beyond those currently available to meet their needs during drought. Total inability of current water sources to meet demand increases from 2.4 million acre feet per year (AFY) in 2000 to 7.5 million AFY in 2050.... However, if a drought of record occurs in 2050, almost half (43 percent) of the municipal demand could not be satisfied by current sources... The best response to this situation is a thoughtful, feasible long-term plan for water supply acquisition and demand reduction (State Water Plan, page 2).

One of the main components of the Regional Water Plans are the individual “strategies” for meeting demand in 2050 under drought conditions, most of which involve developing additional supply from water resources in Texas. From complex reservoirs to reuse of wastewater effluent, water development projects invariably take many years of development, multiple authorizations from federal, state and local government, and mountains of money. The TWDB estimates \$17.9 billion is the price tag for the water development strategies enumerated in the regional plans. Consequently, in the two years since issuance of the State Water Plan, there is increasing activity across the state to get these projects underway. With these activities, competing interests for finite water resources and finite financial resources butt heads!

But what of Texas water resources? Texas is blessed with abundant water resources, probably unparalleled in any other state with surface water, groundwater, and the Gulf of Mexico. Texas has approximately 191,000 river miles flowing through 23 major river basins, 9 major and 20 minor aquifers, 7 major bay and estuaries, 4 minor bay and estuary systems, and 2,125 miles of bay-estuary-lagoon shoreline along the Gulf of Mexico. Yet, the demand on these bountiful water resources has been steadily growing in Texas, now the second most populous state in the nation. Demand will necessarily increase, even with increased water efficiency, if the current population of 21 million doubles in 2050 as projected. Covering 261,797 square miles, big, expansive Texas is becoming crowded, at least east of I-35. An urban and commercial corridor now stretches almost from the Oklahoma border through Dallas-Fort Worth to Houston. It wraps around the Gulf and has a thick waistline in the middle where Austin and San Antonio grow closer together. Imagine what Texas will look like when the population doubles within the next fifty years!

As human consumption places increasing demand on water, the environmental impacts grow. There is a fundamental need for water resources to sustain themselves. Aquifer recharge, instream flows, and freshwater inflows to bays and estuaries are necessary for hydrological systems to sustain themselves for the use and enjoyment of future generations. And the glorious wildlife, flora, and fauna of Texas depend on water resources. The undeniable need for adequate environmental flows and aquifer recharge complicate the challenge that Texas faces in meeting the increasing demand for water.

So Texas must determine how to do it all – how to meet increasing water needs of a growing population and a thankfully dynamic economy while simultaneously conserving the environmental health of our water resources. This must be accomplished so that future generations of Texas will enjoy the quality of life, prosperity, and natural magnificence of the Texas environment. Although most water shortages are still problems awaiting us in the future, contentious legal battles over water rights with statewide ramifications have already come before The Texas Commission on Environmental Quality (TCEQ) and are working their way through the courts.

Water Wars

Growing controversy over water policy is evident in the Texas Legislature. Although the last 78th legislative session did not make major changes to the Texas Water Code, contending voices on water resounded throughout the Capitol. Perhaps in response, the Legislature created multiple interim entities to address water issues. Lieutenant Governor David Dewhurst created the Senate Select Committee on Water Policy with a Select Subcommittee Lease of State Water Rights chaired by Senator Frank Madla. The Select Committee lists sixteen separate charges. Senate Bill 1639 created the Study Commission on Environmental Flows in response to applications for new instream-use water rights at TCEQ. The session also created the Conservation Taskforce, and Speaker Tom Craddick gave specific charges to the Texas Water Advisory Council, a group created by statute several sessions ago.

With the Study Commission on Environmental Flows, the Senate Select Committee's scope covers today's water policy gambit: water contracts, role of Edwards Aquifer Authority, Groundwater Conservation Districts, regional water planning process, conjunctive use of ground and surface water, rule of capture, historic use standards, water infrastructure, and financing, interbasin transfers, junior water rights, conservation, water quality standards, drought preparedness, and water marketing, General Land Office proposals to lease permanent school land and university lands for groundwater development, and desalination projects.

Legal Controversy

Basic legal questions at the heart of these water policy debates find no clear resolution in existing state law. Water law, like all law, evolves in response to changing needs and values. Issues arising in 2004 about current and future municipal, industrial, agricultural, and environmental needs raise questions about the legal meaning of fundamental components of Texas water law. Operating for decades without raising vexing questions, bedrock concepts such as "beneficial use" of water, "waste," "vested rights," "rule of capture," and "water right" no longer have consensual meanings. Legal questions about these concepts have major implications for:

- Long-recognized private ownership interests held in surface water rights and groundwater rights;
- The state's role as "owner" of surface water for benefit of the Texas public;
- The role of private market versus the state in allocation of water resources;
- The value of water as an irreplaceable natural resource versus a simple commodity like oil and gas; and
- The authority of local and regional communities versus state authority; for urban versus rural needs.

Some of these complex issues are already before the TCEQ. Although the projected major shortages in supply are twenty to thirty years in the future, legal battles among competing interests in water have come before the Commission as the final decision in state government. Decisions made by the Commission have been challenged in civil courts and final resolutions are likely years away.

Uncertainty, instability, and indefinite delay in the state's decision-making procedures complicate, if not preclude, the ability of local government and the private sector to plan, finance, and implement water supply projects. The same uncertainty frustrates plans for water conservation and protection of environmental flows. Most critically, effective markets depend upon clearly defined private interests and reliable government process and decision.

Water Rights Amendments

Amendments to surface water rights provide a good example of how legal uncertainty can confound what might otherwise seem like a simple means to accommodate economic growth. Recall that the State Water Plan estimates that almost 66 percent of future water need will be met by what the plan calls voluntary redistribution of existing supply. Such redistribution envisions change of use of existing supply or water rights, such as an amendment to water right to add or substitute a municipal for irrigation use and implies private market transactions. This example is timely. Litigation arising from a TCEQ decision that grants a water right amendment adding industrial use to an existing municipal use right held by the City of Marshall is now before the Texas Supreme Court. The TCEQ's decision for simple issuance of the amendment was reversed by both the District and Appellate Courts.

Property Interest In A Water Right

The question of what type of review that the Texas Water Code requires for water right amendments (for changing use only) raises a fundamental question at the heart of almost all the current water policy debates. What is the nature of the property interests held in a surface water right? Remarkably this question is not really explicitly addressed in the historical evolution of Texas water law, although the question is a keen one in most other western states. Private ownership interests and property rights are unquestionably the pivotal issues in current debates on groundwater, but are not so labeled in surface water. Texas water interests on all sides of the issues seem hesitant, as if uncomfortable, to characterize adjudicated surface water rights as private property rights – A permit to use state water, a lease, or perhaps some form of license, but generally not surface water right appropriations.

Contrast the Texas situation with this clear declaration from the Colorado Supreme Court:

The property right we recognize as a Colorado water right is a right to use beneficially a specified amount of water ... that can be captured, possessed and controlled in priority under a decree, to the exclusion of all others not then in priority under a decreed water right (*Empire Lodge Homeowners' Association v. Moyer*, 39 P.3d 1139 [Colo. 2001]).

The Texas Water Code declares that the surface waters are “the property of the state” (Section 11.021) and added in the last legislative session that “The waters of the state are held in trust for the public” (Texas Water Code, Section 11.0235). Through the prior appropriation system, the state allocates private rights to use water “owned by the state” for beneficial purposes enumerated in law (Section 11.023).

In Texas, what are the nature, measure, and limit of the private property rights granted in an adjudicated water right? There are several commonly understood characteristics of Texas surface water rights which are stout elements among the “sticks” in the bundle of private property rights. Of course, water rights are less than fee-simple land ownership.

The state owns the water in that the state holds title to the corpus of the water or actual water. Water rights are usufructory rights or rights to use. Like all other prior appropriation systems for allocating rights to surface water, under the Texas Water Code, the state allocates rights to specific quantities of water for one or several specified beneficial uses. The Water Code lists the beneficial uses in Section 11.023 and also lists an order of preferences among the uses in Section 11.024. The water right dictates from where the water is diverted and the rate of diversion. The priority date of the water right is the most valuable property interest in that it guarantees exercise of the right, in other words, actual diversion and use, to the exclusion of all other rights with more junior priority dates. As such, the exercise of the senior water right is protected against infringement by enforcement action through the TCEQ.

The Texas water right is a defeasible property interest because the state can revoke or cancel the right if it is not used in accordance with the stipulated beneficial use, not used at all, wasted, or abandoned. However, among the most salient of the rights in the property rights bundle, typical surface water rights in Texas are in perpetuity (unless otherwise appropriated as seasonal, term, etc.) and, most critically, water rights are clearly fungible.

Surface water rights in Texas can be sold with minimal state review. The seller or buyer of the water right does not need to disclose price. The state review is limited to a change of ownership form and legal documents, demonstrating a chain of title. If the new owner indicates there will be any change – such as type of use, place or rate of diversion – TCEQ sends an application for a water rights amendment. As stated in the classic treatise (albeit dated on some topics but perhaps not for this one), *The Texas Law of Water Rights* by Robert Hutchins published in 1961, the state of Texas owns and retains title to the corpus of the water itself but allocates to private parties in perpetuity fully fungible rights to use water. The Water Code's new declaration that "the waters of the state are held in trust for the public" (Section 11.0235) evokes various interpretations these days. This declaration first appeared in a seminal early Supreme Court ruling *Motl v. Boyd* in 1926 and evidently has never occasioned controversy or been in the Water Code until added by the last session through Senate Bill 1639.

One hears the comment, "People shouldn't be able to make money selling the state's or the people's water." Such comments reflect belief that water rights are more like leases or licenses to use the state's water. Hutchins, on the other hand, views the public beneficiaries for which the state as trustee holds title to the water to consist of the actual water right holders and members of the public to whom the state may allocate water rights in the future. This is a decidedly different interpretation than what most people and the California Supreme Court understand as public trust doctrine. Most generic public trust perspectives view the public to be the general public who do not hold water rights, a view that is almost the opposite of Hutchins'.

Texas should be extremely cautious in advancing formal public trust doctrine. Most other Western states have self-consciously rejected this doctrine because it indefinitely enlarges the state's continuing, potentially confiscatory authority over private rights. The

California Supreme Court adopted the public trust doctrine in a bold decision. The Idaho Supreme Court also did so, but the Idaho Legislature immediately passed law abrogating the court ruling. Texas should carefully study public trust doctrine, before uncritically espousing this superficially innocuous language.

Four Corners Provision

The previous paragraphs offer a landscape for the “simple” water right amendment for change of use now before the Texas Supreme Court. In some sense, this case turns on a measure of the property interest held in the water right. On bare facts of the matter, the case would not immediately evoke fundamental ownership principles or bedrock concepts of the Water Code. The City of Marshall applied for a water right amendment to add industrial use to its current water right for municipal use. Marshall sought no additional water and no change in the place of diversion or rate of diversion. TCEQ issued the permit based on a key section of the Water Code colloquially known as the Four Corners Provision (Section 11.122b) and a major Texas Supreme Court Decision in 1985 known as Stacy Dam (*Lower Colorado River Authority v. Texas Department of Water Resources*, 1984).

Combined with provisions added to the Water Code by SB1, with the intention to facilitate water marketing and to help implement water supply strategies in Regional Water Plans, the Four Corners Provision mandates that the Commission “shall issue” the water right amendment if there is no change other than the type of use. Both the Stacy Dam case and the City of Uncertain address the same question: how much water does the water rights holder “control” or “own” if the holder has used less than the full amount of water recorded on the certificate of adjudication? Although difficult to simplify within the constraints of this paper, Texas water law, like its other prior appropriation Western cousins, has provisions for “perfecting” and “vesting” a right. In short, a right vests when it is perfected by lawful use (Texas Water Code, Section 11.025-26).

Concepts of perfecting and vesting derive from the premium placed on beneficially using and not wasting the scarce water resources in western states. The Texas Water Code also stipulates that non-use or waste of water is grounds for forfeiture or formal cancellation of all or part of a water right. Whether non-use of a portion of water right is a species of waste is a question not easily answered by the black letter provisions of the Texas Water Code. How does this take into account conservation and water use efficiency? If to “perfect” or protect a water right, the holder has to use it all, unnecessary use, i.e. waste, would be encouraged. The law and associated TCEQ rules have wrestled with this issue for decades but it has never been clearly resolved. Following the *Water Rights Adjudication Act of 1967*, Texas did reduce the amount of water in many water rights through formal adjudication proceedings in court. Since then, the state never has cancelled a portion of water right for non-use.

In the Stacy Dam case, the Texas Supreme Court ruled that a surface water right must be valued at the recorded level on the state paper (certificate of adjudication, permit, or certified filing), not on the basis of what had been historically or actually used. The ruling

specifically focused on how the state determines whether sufficient water is available to issue a new water right – a legally different question than the amount of water controlled by the owner of the right. In Stacy Dam, applicants for the new water right maintained that water availability should be calculated after subtracting what existing water right holder actually used and not the full quantity of water that existing water rights were entitled to use. The Supreme Court disagreed and ruled that the state should compute water currently available for new appropriations after subtracting all the water that the state had previously allocated in water rights. From a laymen’s perspective, this decision reinforces the property interests of all water right holders in the full amount the state allocated, subsequently adjudicated, and recorded on the paper water right. As the court in Stacy Dam stated, absent formal cancellation proceedings, the water right extends to the amount recorded on the paper right.

On the contrary, the litigants in the current City of Uncertain case contend that the state of Texas retains title to water already appropriated but not fully used as if it were unappropriated water. From Uncertain’s perspective, the bottom line is that the state, in the course of processing a water rights amendment, could reduce the amount of water already appropriated and fully adjudicated if the holder of the right has not demonstrated full use of the entire amount. Although the Water Code has provisions for cancellation of water rights for non-use, these provisions historically have been sparingly interpreted and rarely used. TCEQ did cancel some water rights last year where there was non-use of the entire right for at least ten years. The formal cancellation procedure provides extensive notice and opportunity to challenge cancellation by a showing of intended future use or sale of the water right prior to cancellation

Full Use Of Existing Water Rights

Concern about summary issuance of water rights amendment – without the full review required of applications for new water rights and thus without the opportunity for contested case hearing – is in large part prompted by concern about the environmental impacts of full use of existing water rights. The statutory requirement for assessment of environmental impacts before issuance of new water rights arose in 1985. The majority of Texas water rights was issued before 1985. If because of increasing demand, those already issued, but not fully used, water rights are amended, sold, and then fully used, concern arises for potentially increased withdrawals. However, consider the worst case stakes involved. Many cities and river authorities hold very large, senior water rights, not fully used, for a number of reasons. River authorities with downstream, senior rights can manage the hydrology of the entire river, including protection of upstream environmental and downstream freshwater inflows to the bays and estuaries. Cities and water districts can plan for the future with assumption of rights to water not yet fully used. And the majority of surface water dependent strategies for meeting future demand in the Regional Water Plans assume redistribution of existing developed, i.e. appropriated, water. Change of use and voluntary transfer of existing rights are the legs of the private surface water market. Without predictable, efficient state approval, the market will freeze. The chill already has set in.

The stakes in the City of Uncertain could be extremely high. If the state decided that current law required reduction of existing water rights on the occasion of simple amendments to add another statutorily recognized beneficial use, the specter of “Taking,” long relied-upon private ownership interests in water, would jump to the center. Not long ago, some large, senior water rights sold for almost \$100 million. Imagine the response to the state decision to reduce the amount of water held in that right. The Texas Supreme Court might avoid (and this is likely) the fundamental issues in ruling on the City of Uncertain. Throughout Texas history, the state Supreme Court has deferred to the Texas legislature in questions of major change in the Water Code. In judicial rulings, statute, and rule, however, Texas has not yet clarified the issues of historical use and the amount of water on the paper right.

On the other hand, some Western states have grappled and finally resolved this thorny question about actual or historic use versus the amount allocated on the paper right. The resolution usually limited the ownership interest in the water right to a quantity of historically-used water needed for beneficial use. Conservation, plans for future use, and other factors add flexibility. Such controversial reallocations usually arise because of water shortage, i.e. out of need to put to beneficial use water held in water rights but not actually put to use. It can be said Texas already has done this following the 1967 *Water Rights Adjudication Act*. The last adjudications were not completed until the late 1980's. Thus, Texas only recently completed a review of historic use.

Ground Water: From East To Ozarka And Through The District

Today groundwater accounts for slightly less than 50 percent of Texas water use. The State Water Plan projects a future decline in groundwater usage but groundwater is most likely to remain a critical source of water used in this state. In fact, over the last several years, water marketing efforts have focused more on groundwater than surface water. Speculation and actual market transactions occur more frequently today with groundwater than surface water.

Most attribute the current market focus on groundwater to statutory restrictions on transfer of surface water from one basin to another. Labeled as the “junior rights” problem, the water code stipulates that when surface water is transferred from one basin to another, the transferred right assumes the most junior date water right in basin of transfer. In other words, the transferred water right can be utilized only if any water remains after all other more senior water rights can be met. Another more concrete reason why the groundwater market is more active is the relatively more clearly defined ownership interests in groundwater, and, historically, there has been far less regulatory interference in acquisition, use, or sale of groundwater interests.

Rule Of Capture

For one hundred years, Texas groundwater has come under the rule of capture. Simply put, ownership of land gives the owner of the private property right to pump, “capture,”

and use the water under his or her land. As a legal principle, landowners have the right to capture all the water under their land and use it or sell it even if their groundwater use deprives their neighbor of his or her groundwater use. Unless groundwater is pumped with a malicious intention to harm or is willfully wasted, under Texas law the landowner is not liable to a neighbor.

The Texas Supreme Court first adopted the English common-law rule of capture one hundred years ago in the landmark case of *Houston & Texas Railroad Co. v. East* (styled East). With only the most minor modifications, East is good case law today. People now snicker at the East Court's characterization of groundwater as "secret, occult and concealed." East declared that the "hidden" nature of groundwater made it practically impossible to determine an adjoining landowner's proportionate share of groundwater. Obviously today, the science of hydrogeology does not consider groundwater as occult.

Texas remains the only western state which follows the rule of capture. For a century and amidst growing conflicts surrounding the rule of capture, both the Texas Legislature and the Supreme Court have declined to replace it with far more prevalently used legal doctrines, such as reasonable use, correlative rights, or prior appropriation. The rule of capture survives relatively intact despite several cases in the Texas Supreme Court that strain the bounds of basic equity and common sense. In 1955, the Texas high court upheld the rule of capture although 63-74 percent of the groundwater was lost during transport of more than 100 miles from wells near Pleasanton into the Nueces River and finally to Corpus Christi. When the City of Pleasanton sued for damages for reduced water levels in their wells, the Supreme Court refused to find unlawful waste or liability for damage.

The Texas Supreme Court's most recent ruling in 1999 on groundwater squarely declined the plaintiff's invitation to replace the rule of capture with another legal doctrine – such as the reasonable use doctrine – accommodating the rights of adjoining landowners. In *Sipriano v. Great Spring Waters of America, Inc.* (known as Ozarka), Henderson County landowners sued Ozarka bottled water company after landowners' wells were depleted by Ozarka's pumping of 90,000 gallons of water per day. The court ruled in favor of Ozarka, dismissing the landowners' claims that Ozarka was liable for the depletion of their wells.

Importantly, the Ozarka Supreme Court ruling deferred to the legislature. The Court recalled that Texas voters made groundwater regulation a duty of the Legislature by constitutional amendment. And by SB1, the Legislature chose a process which permits the people most affected by groundwater regulation to create local Groundwater Conservation Districts and to participate in democratic solutions to their groundwater issues. The Ozarka Court argued that it would be improper to judicially intercede at this time by changing the common-law framework within which the legislature has crafted a local regulatory framework to meet the state's groundwater needs.

Supremacy Of The State Legislature

The Constitutional amendment to which the Ozarka Court refers is Article 16, Section 59 of the Texas Constitution. Called the Conservation Amendment, Texas voters passed the amendment in 1916 following serious droughts. The amendment declares that the conservation of all the state's natural resources are public rights and duties, and authorizes the legislature to pass laws appropriate to this end. This amendment is critical to past and present water policy issues and particularly pertains to private property interests in groundwater or surface water.

In authorizing the legislature to pass all laws appropriate to regulate natural resources, the Conservation Amendment gives constitutional justification for law and regulations that may restrict otherwise private rights to use natural resources. Interestingly, even though the 1904 East decision adopting the rule of capture occurred well before passage of the Conservation Amendment to the Texas Constitution in 1916, the East court also deferred to implied legislative authority to regulate groundwater. The East court stated, "In the absence of implied and positive authorized legislation, as between proprietors of adjoining lands, the law recognizes no correlative rights in respect to underground waters percolating and through the earth." In legal terms, the Conservation Amendment constitutionally justifies the state's use of the basic police power to protect health and welfare to regulate natural resource use. Although police power regulation of private rights exerts constant tension, there is nothing constitutionally suspect about the principle. All property interests, including fee title land ownership, are held subject to valid exercise of the police power necessary to safeguard public safety. Basic common law nuisance prohibition of private land use that harms a neighbor's land use incorporates this police power limit to private property rights.

Yet, private property interests are constitutionally protected from state regulation which so restricts the private right that it takes the property without compensation. The U.S. Constitution protects private property rights through the Fifth Amendment. This amendment states, "No person shall be deprived of life, liberty or property without due process of law, nor shall private property be taken for public use, without just compensation." The Texas Constitution utilizes broader, arguably stronger language: "No person's property shall be taken, damaged or destroyed for or applied to public use without adequate compensation being made, unless by the consent of such person; and when taken, except for the use of the State, such compensation shall be first made, or secured by a deposit of money" (Article 1, Bill of Rights, Section 17). In a series of cases since the mid-1980's, the U.S. Supreme Court, and more so the U.S. Court of Claims, has articulated modern jurisprudence for regulatory takings of private property after decades of silence on these constitutional protections.

Groundwater Conservation Districts

Texas passed law over fifty years ago establishing the basis for regulation of landowners' groundwater rights. The first enabling legislation for Groundwater Conservation Districts (GCDs) passed in 1949. The High Plains GCD in the Panhandle, an area still wrestling

with contentious groundwater issues, was one of the first formed. Until the last five years, however, GCDs have been few and far between. In these last five years, the number of GCDs has doubled; there are now 80 confirmed GCDs with eight more still to be confirmed by local elections. These 80 GCDs cover approximately one half of the land area of the state and cover as much as 90 percent of the produced groundwater. Rapid rise in the creation of GCDs is typically attributed to the enlargement and clarification of GCD authority provided by SB1 and Senate Bill 2 (SB2). However, fear of the big pump next door also is a powerful catalyst to local formation of a district. Some of those most wary of GCDs' potential to intrude on private property rights now view GCDs as the only available means to protect their rights.

Texas groundwater law is a bundle of apparent contradictions in statutory law, case law, and common law. For a century, the Texas Supreme Court has upheld the common-law rule of capture, often called the law of absolute ownership in that the landowner is not liable if his capture of the groundwater harms the wells of his neighbor. Texas statutory law has given GCDs broad authority to limit and restrict landowners' groundwater rights. In *Barshop v. Medina*, the Texas Supreme Court upheld the facial constitutionality of the *Edwards Aquifer Act*, authorizing creation of the powerful Edwards Aquifer Authority as legitimate extension of authority to regulate water resources under the Conservation Amendment.

Texas groundwater law raises policy questions on a number of levels. Should the rule of capture be replaced by another doctrine such as reasonable use, correlative rights or even prior appropriation? If local GCDs have authority to restrict or preclude pumping, what remains of the private ownership rights under rule of capture? Is there a point at which district rules are a constitutional taking of the private property interest yet acknowledged in Texas Supreme Court rulings on the rule of capture? Are GCDs, created at the local level and for the most part defined by county lines, the appropriate way to regulate groundwater? Or does the state need to be more involved?

In steadily increasing numbers of counties, the reluctance of landowners to support creation of a district with the authority to regulate or restrict the landowners' formerly unfettered right to pump groundwater has been overcome by the same landowners' fear that a major pumper like a large city or the likes of Ozarka might drill a well a foot from a property line. Within the existing rubric of the rule of capture, GCDs just might be the only method to protect private rights to groundwater. But what if the adjoining property is not within a local district? And what if the local district develops rules favoring pumping rights from one category of users, such as irrigators, and limits or denies those rights to another category such as ranchers?

Alternatives To The Rule Of Capture

Concern about the big pumps and the restrictive potential of GCDs' authority leads some landowners to advocate replacement of the rule of capture with one of several alternative legal doctrines for groundwater rights. The most obvious choices are reasonable use, correlative rights, or prior appropriation. Reasonable use provides judicial remedies for a

property owner when his/her reasonable use of groundwater is harmed by another's unreasonable use. This doctrine usually assumes groundwater usage only on the property owned by the pumper. This on-tract limitation makes the reasonable use doctrine not readily applicable in Texas where many cities' water supply derives from groundwater pumped from wells a great distance from the city.

Correlative rights, the legal doctrine underlying rights to oil and gas in Texas, is another legal doctrine advocated by critics of the rule of capture. This legal rubric accords a landowner a "fair and just" proportion of the groundwater. Like the reasonable use doctrine, correlative rights assume an on-tract use limitation. Further, it requires a method for calculating a fair and just share, usually by size of the tract owned or by sufficient hydrological knowledge of the aquifer in question to allocate pumping quantities over time. Yet like the reasonable use doctrine, correlative rights are seriously at odds with current groundwater usage in Texas and with a free market in groundwater.

Many other Western states allocate rights to groundwater through the prior appropriation system that in Texas applies only to surface water. Concern about the legal disjunction between groundwater and surface water, combined with the undeniable hydrological conjunction (in some aquifers) between ground water and surface water, is in principle a viable argument for utilizing prior appropriation for groundwater. The state's allocation of rights in time to specific quantities of groundwater for beneficial uses, however, would wreak constitutional havoc on landowners long-held and relied-upon rights to groundwater. Existing law can accommodate adverse impact to surface water from groundwater pumping. The state needs more sophisticated hydrological study of this issue.

The legislature or the judiciary could replace the rule of capture with one or a combination of these distinct legal doctrines successfully used in other states. For good reason, Texas has not yet chosen to replace the rule of capture. SB1 and SB2 elaboration of GCDs' authority have qualified the rule of capture such that it is certainly not a rule of absolute ownership. And even in those areas outside of a district, the state has the authority to create a Priority Groundwater Management Area and ultimately to impose a district on the local area. Any broad change to or replacement of the rule of capture should consider that the state has recognized this fundamental private property right for more than a century. Texans have relied on this right in innumerable economic decisions. Perhaps clarification rather than replacement is the appropriate approach to the rule of capture. Imposing some liability for pumping that harms others' wells is a good start.

Clarification Of Ownership

Clarification of the ownership interest in groundwater also is an important step. What does the landowner own in a groundwater right? Does the rule of capture confer a solely possessory interest, like the capture of game, and thus require capture by pumping and use? Or does the landowner actually own the groundwater in place underneath his property? This question is at the heart of several current conflicts in Texas GCDs. The measure of the ownership interest in groundwater also questions the limit to GCDs'

regulation within the constitutional protection against takings of private property rights. Curiously, this question is legally analogous to the basic question on surface water rights previously discussed in relation to water right amendments. Recall that in surface water, the question pivots on whether the property interest protected in the surface water right attaches to the amount of water recorded on the water right certificate or attaches only to what the holder of the right demonstrates has been actually put to beneficial use. What is owned that cannot be so reduced or so limited by regulation that the government action would amount to taking of a private property interest without just compensation?

Chapter 36 of the Water Code gives local GCDs broad authority to regulate groundwater pumping through rule making and permitting. With the exception of some exempt wells (usually small wells for domestic and livestock use) or grandfathered existing wells, GCDs may permit all wells and proscribe spacing and production limits. This does not sound like absolute ownership!

Districts may impose fees on groundwater exported outside of the district but, as specified in SB2, the fees may not be prohibitive. The export rules cannot be more restrictive than rules for in-district uses. Clarified in the last 78th legislative session, GCDs can establish production limits based on tract size owned by the groundwater pumper. Statutory authority of Chapter 36 is broad and largely discretionary, allowing variation in rules among districts. Perhaps the key question currently is whether a district can establish production limits based on historical use and thus limit groundwater production on property which has not yet pumped much groundwater. The issue pits property owner against property owner: it pits farmers who irrigate and have big historical usage against ranchers whose groundwater pumpage was for the relatively miniscule need of stock tanks.

Legally considered, the issue of limiting groundwater rights to historical use raises the question, now raised in surface water right amendments, of whether the right to water only “vests” when the right is “perfected” by use. In matters of groundwater, to claim that the right vests only when exercised by use assumes that the landowner’s right attaches after capture by pumping. Texas courts and statute never have recognized that the surface water concepts of vesting and perfecting apply to groundwater. On the contrary, the roots of the rule of capture derive from the concept of land ownership – fee title ownership of the land extends to the soil indefinitely below the surface. In East and succeeding Supreme Court rulings on groundwater rights, Texas courts have affirmed the landowner’s ownership interest in the groundwater underneath the land. New law reinforces this position that the groundwater right extends to the water in place.

In the last session House Bill 803 added requirements to the Texas Property Code for the condemnation of groundwater rights by eminent domain. The issue arose in response to the City of Sweetwater’s condemnation of property for the purpose of groundwater development. Sweetwater wanted to establish market value based on land alone – with no consideration of the additional value of the groundwater. The new statute requires that market price must include the market value of the groundwater rights as property apart from the land. This would imply that there is a point where district regulation limiting

pumping could take a compensable property interest. District rules which set generous production levels, based on the extensive historic usage of irrigation and denial of those levels to non-irrigating landowners, may be a good candidate for a taking challenge – the door to which the Texas Supreme Court has left open.

It is so easy to forget. The federal *Endangered Species Act* is responsible for the most restrictive regulation of groundwater in Texas through the Edwards Aquifer Authority (EAA). Recall that the federal appellate court of the Fifth Circuit gave the state an opportunity to establish pumping limits on the Edwards Aquifer to preserve requisite stream flows on which several listed threatened and endangered species depend. The prospect of federal control through the likes of the U.S. Fish & Wildlife Service, regulating the then sole source of drinking water for San Antonio, was powerful impetus for legislative enactment of the *Edwards Aquifer Authority Act* (EAAA). This authorized bold regulation of groundwater rights, including caps on withdrawals. In a facial challenge that Texas law establishing EAAA took property rights protected by the rule of capture and the Texas Constitution, in 1996 the Texas Supreme Court upheld the constitutionality of the law as a legitimate exercise of the state's police power to regulate under the Conservation Amendment of the state constitution (*Barshop v. Medina County Underground Conservation District*).

Noteworthy, however, the Supreme Court acknowledged the necessity of compensating landowners for groundwater rights held under the rule of capture that might be taken by subsequent and specific implementation of EAA authority. Constitutional taking claims are highly fact-specific. Facial constitutional challenges to statutory language as in *Barshop* are extremely difficult to win, given the indefinitely broad conceptual reach of police power to protect health, safety, and public welfare. The EAAA was additionally buttressed by the mandates of the *Endangered Species Act*, whose absolute terms have been repeatedly upheld by the US Supreme Court.

Is Local Authority Sufficient?

GCDs possess substantial authority to regulate groundwater rights and the aegis of this authority is local, now predominantly from within county lines. This was the express intention of the legislature when SB1 declared local GCDs as the state's preferred method of groundwater management. In contrast, management of surface water derives from state authority articulated in the Water Code. Except for a few geographically specified sections of the Water Code such as the Rio Grande Watermaster, the same rules apply statewide to surface water.

Some parties now question the local parameters of GCDs' authority and advocate a greater state role in groundwater management. The issues are many:

- Perceived inconsistency among districts' rule;
- Local politics within districts affecting local courts to which district rules can be challenged;
- Limited resources in many districts;
- Disjunction between districts' typically political/county line boundaries and

- hydrological reality of aquifers, areas outside of district jurisdiction slyly targeted for unrestrained development;
- Potential taking of private rights under district rules.

Some Call For Expanding The State's Role

These legitimate issues prompt some to advocate new legislation giving the state a more specific role in oversight of GCDs' rules and permits, and in state-imposed district creation. Such proposals include allowing appeal of a district rule to the TCEQ, instead of a district court with a hearing through the State Office of Administrative Hearing, and then to the Commission for a final state decision.

Such enlargement of state authority over groundwater is risky and premature. Most of the now 80 functioning GCDs are very new – half of them created in the last five years. These districts are hardly mature and deserve time to evolve. Making the state final decision-maker diminishes, if not removes, the local aegis of the authority that remains the legislature's preferred mode of regulating groundwater. A rush to judgment on the viability of local management could vitiate the strategic bottoms-up Texas approach to resource management, not only in groundwater but also in the regional water planning approach created in SB1. More state authority over groundwater also could inadvertently favor big development schemes and urban needs, as opposed to local interests and established rights to groundwater.

One size does not fit all in big, diverse Texas, most particularly with groundwater. Not only is local control distinctive to the entire legal history of Texas, but local diversity is also appropriate for the extensive ecological and hydrological diversity of Texas and its aquifers. The Panhandle Ogallalah aquifer is highly different than the Gulf Coast aquifers. The far west Texas aquifers are different than the Edwards Aquifer. Central Texas aquifers are different than east Texas aquifers. In type and amount of recharge, in aquifer levels, in historic usage, in degree of hydrological assessment, the diversity of the Texas Aquifers do not now lend themselves to consistent state wide rules. If need be, consistency and clarity can be furthered by additional statutory clarification of the appropriate limits to district authority.

Instream Flows

A particularly complicated legal issue in surface water policy concerns the state authority to protect freshwater inflows to the bays and estuaries and instream flows, commonly identified as environmental flows. Since 1985, the Texas Water Code requires assessment of environmental impact to instream flows and inflows in all applications for new water rights. The law mandates assessment of impacts and then gives TCEQ discretionary authority to impose special conditions on the water right to protect flows. Specifically, "the commission shall include in the permit, to the extent practicable when considering all public interests, those conditions necessary to maintain" beneficial inflows, existing instream uses, and water quality (TWC 11.147). If included, the special condition

typically requires restriction on diversion when stream flows reach a certain level. Until last year, this statutory scheme circumscribed the states' protection of stream flows.

Last year the San Marcos River Foundation (SMRF) applied for a new water right of approximately 1.5 million acre feet for pure instream use, a water right to protect stream flow and freshwater inflow as the sole use of the right. This amount of water covers almost all remaining unappropriated water in the Guadalupe River. When TCEQ staff accepted and processed the SMRF application, similar applications for instream use only water rights followed – at one time around 12 million total acre feet of water. The Commission ultimately denied the SMRF application as a matter of law, finding that there was not express statutory authority to grant a new water right for not using water (i.e. pure in situ instream use).

The 78th Legislature passed Senate Bill 1639 (SB1639), reinforcing the Commission's denial of the SMRF permit, after passage of which the Commission denied the remaining instream use water right applications. Now codified in the Texas Water Code, this legislation declares that "the right to use state water may be appropriated only as expressly authorized by law" (Section 11.0235). The legislature has not expressly authorized granting water rights exclusively for instream flows or inflows. SMRF and other applicants, including the Caddo Lake Institute and the Galveston Bay Preservation Foundation, have challenged the TCEQ denials in court. The Study Commission on Water for Environmental Flows, created by SB1639, is to issue a report recommending appropriate means of protecting environmental flows by December 1, 2004.

The SMRF and related applications for pure instream water rights that total 12 million acre feet for permanent water rights, would preclude consumptive use of this water in the future and strain the limits of the meaning of the current prior appropriation system in Texas.

The Texas Water Code defines a water right as a right to "impound, divert or use water" (Section 11.002). A water right is for an "appropriation," a term defined as an affirmative action to take and "to make a thing one's own." Appropriation of water assumes a diversion and impoundment of water so to apply the water to a beneficial use private to the appropriator to the exclusion of other parties. Diversion of water from river is the basic act of appropriation. Section 11.002 says, "Beneficial use means the use of the amount of water which is economically necessary for a purpose authorized by this chapter...and shall include conserved water."

Texas has only granted water rights for specific beneficial uses that are authorized by statute. The Water Code enumerates these beneficial uses in Section 11.023 and even has an order of preferences among these uses in Section 11.024. Water allocated in a water right must be used only for the beneficial use granted by the state and for the amount necessary for that use. The right can be cancelled and revoked if not so used. How can pure instream use be included within this scheme as a purpose of appropriation – a beneficial use?

The legislature similarly wondered when SB1639 reiterated what was repeatedly implied in the Water Code. Texas right now only grants water rights for those beneficial uses explicitly listed in the Water Code. The legislature may add other uses to the statutory list, but TCEQ may not imply other uses. Although the sections of SB1639, creating the Study Commission, have expiration dates in the near future, the sections of the law related to express statutory authorization for purposes of appropriation or beneficial uses have no expiration date.

The Study Commission On Water For Environmental Flows

The Study Commission has very complex questions to address. As Texas' growth puts increasing pressure on our aquatic resources, the state needs to prevent irreversible harm to the environmental quality of our riverine and estuarine systems. To do otherwise is a grave breach of trust to the generations coming after us. Of the many, perhaps three major questions face the Study Commission:

1. What is the condition of environmental flows in our rivers, bays, and estuaries? Gravely impaired, moderately impaired, at risk in the future, healthy?
2. To what level of environmental quality should the state protect environmental flows? The only statutory standard is "a sound ecological condition" and no one ever has agreed on what that was. There are a range of levels or standards utilized in other states – enhancement, target, maintenance and critical.
3. By what legal means should Texas protect environmental flows? Current law's method of special conditions in permits, a reservation by the state, or a type of instream use only water right?

This third question is of particular interest for TCEQ because TCEQ must implement that method. Current law requires assessment of environmental flow needs but offers considerable discretion on whether and how to impose special conditions in new water rights permits. Many other states have established the legal authority for state "reservations" of water for environmental purposes through which the state reserves or withholds, from new appropriations, certain amounts of water to protect flows. Reservation systems usually allow for future contingency or emergency warranting consumptive use of some water previously reserved for protection of environmental flows. Some states have decided in specific statutes to allocate water rights in priority for the purpose of instream use only. The SMRF believed that the current Texas Water Code implies this authority. However, the Commission and the Texas Legislature agreed that such authority is only as expressly authorized in law and current law does not expressly authorize instream use as a purpose of appropriation.

Conclusion

Significant changes in public values, public policy, and law usually occur gradually and incrementally. Abrupt, broad, and deep change to the Texas water policy, policy that evolved over one hundred years and is embodied in the Water Code, would not be wise. However, clarification of several fundamental components becomes increasingly needed.

The history of Texas water law is marked by milestone Supreme Court decisions and key legislation. Most of the major legislation arose in response to severe and persistent droughts. SB1, in fact, was formulated in response to the severe drought of the 1970's.

Today's water policy debates may have graver ramifications than previous chapters of Texas history. As previously, water shortages motivate today's policy disputes, but drought is not really the issue. Driving the current debates are projected future water shortages – shortage for consumptive human use and for environmental needs and shortages of a far greater magnitude than previous eras. Texas now feels the pressure of 21 million people, home to four of the 10 largest cities in the nation. Sophisticated demographic analysis enables a reasonable prediction that the Texas population will exceed 40 million by 2050. Greater scientific knowledge about the hydrological impacts of ever increasing water use complicates the picture. Public interest in preserving the ecological health of our water resources grows.

Texas can do it all! Thanks to the brilliant, bottoms-up planning process established by SB1, the 16 Regional Water Planning Groups have planned for and are now acting to meet water demands. We can fulfill future water demand and protect irreplaceable aquatic habitats with thoughtful policies that are based on bedrock Texas values:

- Relying on private market mechanisms;
- Expanding local and regional authority;
- Protecting private ownership rights;
- Using cutting-edge science to guide decisions;
- Implementing creative technology;
- Defining the role of efficient, limited government; and
- Crafting clear legal parameters for state authorizations.

Upcoming Water Research

Resolving State Water Conflicts And Challenges

By Ronald Kaiser, Ph.D.

Dr. Kaiser, a professor at Texas A&M University's Institute of Renewable Natural Resources, is writing a report about resolving conflicts in state water law and expanding access to water through market-based solutions.

This report will cover:

- the primary challenges facing the state legislatures (including water sale and transfers),
- a brief history of ground and surface state water law and the need for change,
- means to improve access by improving the Rule of Capture,
- strategies to balance needs of urban with rural communities, regions with localities, and
- roles for the government and private sector (including public-private partnerships).

This report is expected to be released in October 2004.

Desalination: Promising Solutions To Texas' Water Shortage

By James C. Smith, Ph.D.

Dr. Smith, chair of Texas A&M University's Department of Construction Science and a professor of engineering, is developing a brief report on desalination that:

- identifies the importance of desalination as a solution to the state water shortage,
- examines projects now underway in Texas, and
- describes how the expansion of public-private partnerships in desalination projects can increase water quality and quantity for Texans.

This report is expected to be released in October 2004.

Have You Saved The Dates?!



3rd Annual Policy Orientation For The Texas Legislature

January 26 & 27, 2005
Driskill Hotel + Austin, Texas

Presented by the Texas Public Policy Foundation

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