Facts & Issues

Should Water Be a Commodity?

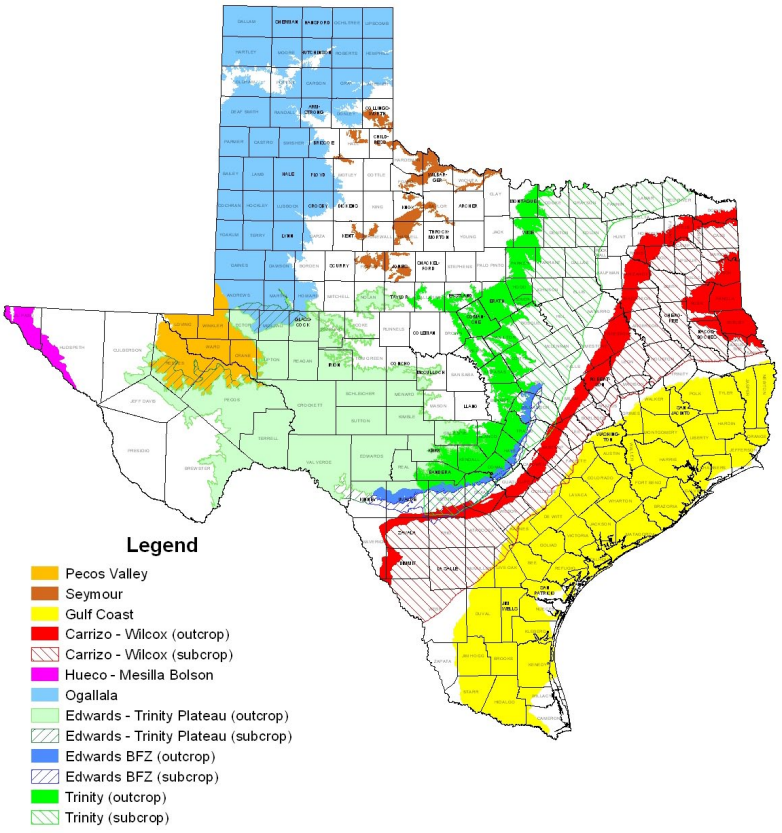
A Study by the League of Women Voters of Texas Education Fund Summer 2011

There won't be enough water.

It seems impossible that someday people might look at our monuments as we look at Mesa Verde or Chaco Canyon and wonder how we could have abandoned our magnificent cities, but "…without water the most exquisite palace is worthless. The Anasazi apparently fought and killed each other, perhaps over tiny water seeps." (1)

Today, Texas encompasses climate zones from alpine deserts to humid subtropics, from coastal swamps to forests to prairie grasslands, and always faces the threat of periodic droughts. The water systems which cover Texas include twenty-three river basins, as well as nine major and twenty-one minor aquifers of varying types. For example, the Ogallala Aquifer in west Texas receives almost no recharge, whereas the Edwards Aquifer in central Texas is recharged frequently by rainfall. Each zone differs dramatically from the others in the amount and types of water supplies available. They also differ in their needs for water, from high-density cities to irrigated agricultural lands.

Major Aquifers of Texas

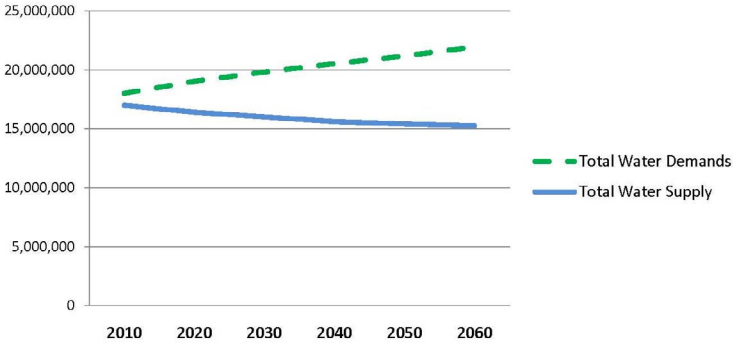


Source: Texas Water Development Board

In addition, the population of Texas is increasing rapidly. According to the *Summary of the 2011 Regional Water Plans*, by 2060 more than 46 million people are expected to call Texas home – more than 80 percent greater than the 2010 population. Unexpectedly, water demand in Texas is projected to increase by only 22 percent, from approximately 18 million acre-feet per year in 2010 to a projected demand of about 22 million acre-feet per year in 2060. (An acre foot is the amount of water required to cover an acre of land to a depth of one foot, or 325,851 gallons.) This smaller increase is primarily due to declining demand for agricultural irrigation water and increased emphasis on municipal water conservation. Nevertheless, municipal water needs will increase greatly.

Except for reuse of treated wastewater, there has been no significant increase in available water supplies since the "dam building era" ended in the early 1980's. In fact the existing water supplies – the amount of water that is legally and physically available – are projected to decrease about ten percent, from approximately 17 million acre-feet in 2010 to

Statewide Existing Water Supplies and Projected Demands (acre-feet/year)



Source: *Water for Texas: Summary of the 2011 Regional Water Plans*, Texas Water Development Board

about 15.3 million acre-feet in 2060. This decrease is due primarily to accumulation of sediment in reservoirs, and the depletion of various aquifers, including the Ogallala. (2)

Competition for water in Texas is a major issue. The sale or transfer of water rights has been proposed as a strategy to redistribute water to areas of greatest need, but the issues are extremely complex because of the ways that water law, management, and ownership have developed in Texas over the years.

Texans today rely on both surface water and underground water (commonly known as groundwater). In general, the eastern half of the state uses predominantly surface water and the western part, roughly west of I-35, relies more on groundwater. *These two types of water are governed by two different bodies of law.*

HISTORY OF WATER REGULATION IN TEXAS

Surface water management:

Surface water from streams, rivers, lakes, and reservoirs is owned by the state for the use of its citizens. The Texas Commission on Environmental Quality (TCEQ) grants permits for the use of surface water. Only the right to use the water is permitted; the underlying water rights still belong to the State.

All claims to surface water were adjudicated beginning in 1969, resulting in the assignment of senior and junior rights depending on when a claim to the water first originated. Now all surface water is allocated, even over-allocated. As of August 1975, TCEQ had recognized water-rights claims involving almost fifty-four million acre-feet of water, which is slightly more than the state's average annual surface-water runoff of forty-nine million acre-feet. (3) According to Norman Johns of the National Wildlife Federation: "…there is a fair degree of agreement among state regulators and the environmental community that many streams would run dry if all water rights were fully used during a severe drought." (4) In general, access to water is subject to availability and the holder's priority date.

River authorities, whose boards usually are appointed by the governor, operate independently and control a large portion of the state's water rights, acting as wholesale dealers to their customers. They are regional water management entities created to address the water development and planning needs within river basins. River authorities supply about a quarter of the surface water consumed in the state. (5)

Water may be moved from one basin to another, but all water right holders are subject to strict inter-basin transfer rules, including provisions that the detriment to the basin of origin must be less than the benefit to the receiving basin, and that the drought and conservation plans will result in the highest level of water conservation and efficiency. Even more important is that any request for a transfer activates the "junior rights provision," which means the requesting entity loses its seniority as a permit holder. These obstacles may encourage consideration of alternative water sources such as groundwater.

While river authorities are supposed to be stewards of their rivers, they must also be self-supporting through the sale of water. They function under the

permit guidelines established by TCEQ and respond to planning parameters established by the Texas Water Development Board (TWDB). Thus, the marketing of surface water is under the control of the state, and therefore does not constitute "water as a commodity" where sales would be strictly subject to market forces.

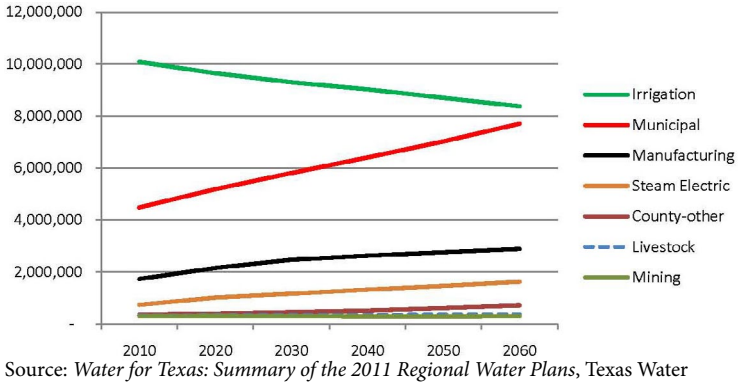
Groundwater management:

The common law rule with regard to groundwater in Texas is called "the rule of capture." It permits landowners to withdraw unlimited amounts of water from under their property without liability to surrounding landowners, as long as the water is beneficially used and isn't intentionally wasted.

In 1904, the Texas Supreme Court officially upheld the rule of capture as the law of the land. The justices believed that since groundwater was stored in unseen aquifers beneath the surface it was too "mysterious, secret, and occult" to regulate. Since the rule of capture gives landowners the rights to the water under their land, the government has left decisions about water use in the hands of individual landowners. However, as irrigation in semi-arid regions became possible, thanks to the invention of the deep-well centrifugal pump, problems arose. Wells drilled on one landowner's property could withdraw groundwater from underneath adjoining property, causing the water levels in the neighbor's well to decline or even go dry. Some regulation was clearly needed.

In 1949 the Texas Legislature decided that local Groundwater Conservation Districts (GCD's) would be the preferred method for local communities to "conserve, preserve, protect and recharge" underground water reservoirs. However, the rule of capture continued to dominate groundwater law and use until recently. Today there are over 90 groundwater conservation districts and approximately 90% of producible water is regulated by a district. (6)

Projected Water Demands (acre-feet/year)



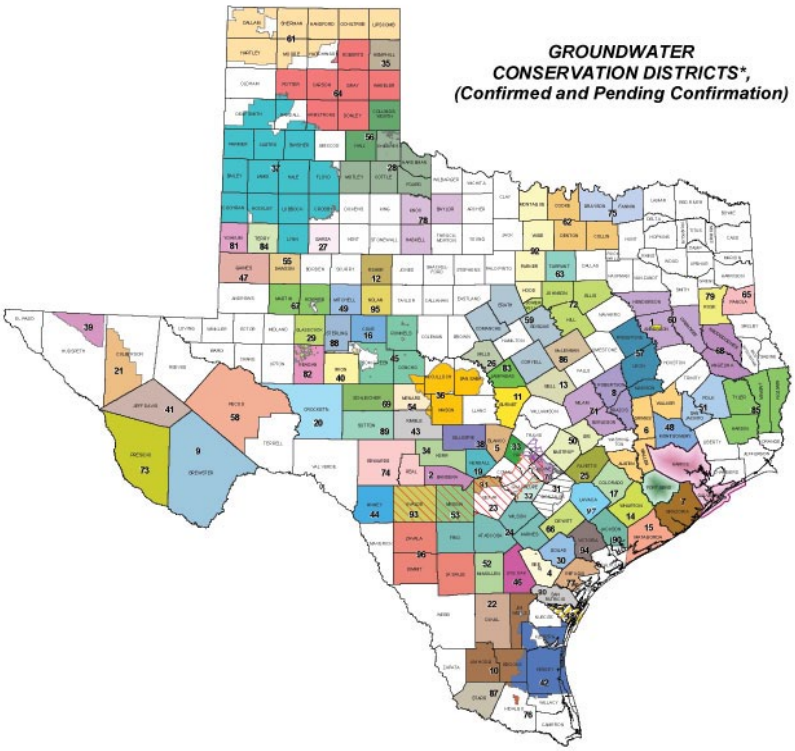
Source: *Water for Texas: Summary of the 2011 Regional Water Plans*, Texas Water Development Board

In places where there is no groundwater conservation district, there is no protection from overuse by one landowner. Each district regulates well spacing, sets the amount that can be drawn from the aquifer, assembles data for hydrologic atlases, supplies depletion information for tax purposes, and provides educational programs as well as other services to the local community.

PLANNING FOR THE FUTURE

In the mid 90's a glimmer of the future began to dawn: Texas' water resources would not be adequate to meet the demands of its burgeoning population. In 1997 the Texas Legislature passed Senate Bill 1, which established the regional water planning process in Texas.

The state was divided into 16 regions, each having a locally appointed regional water planning group with representatives from 11 statutory interest groups associated with water use and development. Each of the regional water planning groups is responsible for creating a 50-year Regional Water Plan and refining it every five years. The regional plans are sent to the TWDB, which then develops a statewide plan to submit to the legislature. The regional plans lay out projected population growth and water demands and then develop water management strategies to meet those needs. They also include conservation and drought contingency plans, and can include plans for importing water from other regions. Both groundwater and surface



Source: Texas Water Development Board

water issues are taken into account.

In 2005 the Texas Legislature passed HB 1763 requiring the GCD's that share an aquifer to form Groundwater Management Areas (GMA's) to jointly define the 'desired future conditions' (DFC's) of their aquifers. The DFC is the set of policy and management actions chosen by the district for each of its aquifers in order to manage water use according to its local needs. One example of a DFC includes a decision to stipulate a percentage of drawdown, or an amount of water to be left in the aquifer in fifty years.

Each groundwater conservation district is required to adopt a management plan which addresses in a quantitative manner how it intends to achieve its goal. This information is sent to the TWDB to be included in a model which simplifies information about complex groundwater flow systems into a numerical representation. The TWDB runs the model and provides Managed Available Groundwater (MAG) totals to the districts for their use in establishing pumping limits.

The Groundwater Management Area (GMA) framework provides for the possibility of regional collaboration, but it does not require unanimity. For example, within GMA 1 the DFC's decided by the groundwater districts range from 40% of water remaining in 50 years in parts of North Plains to 80% in Hemphill County.

Water banking:

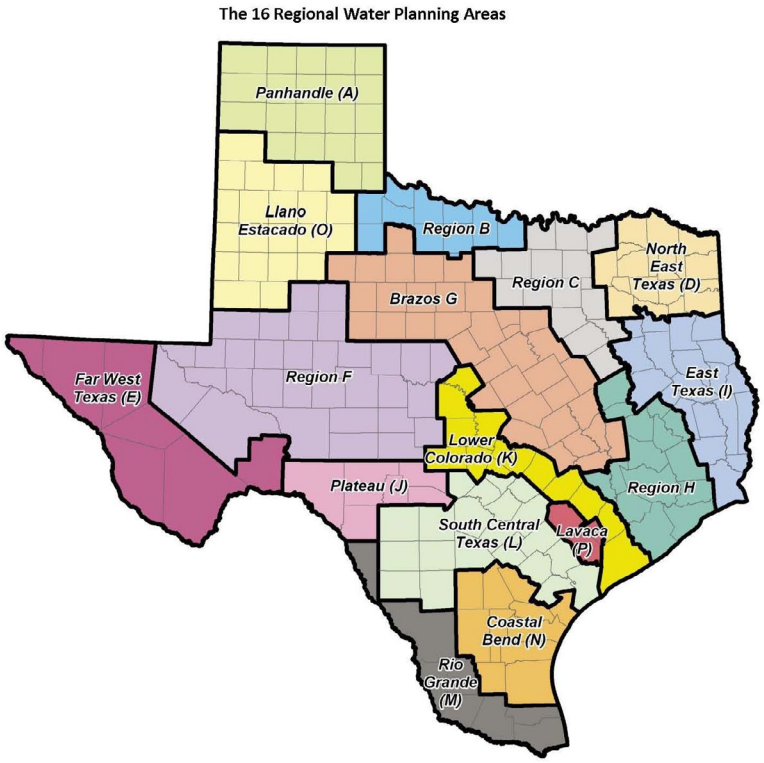
In 1993, in order to facilitate the sale or transfer of water, the Texas legislature created the Texas Water Bank, which includes both surface water and groundwater. The Texas Water Development Board (TWDB) administers and operates the Texas Water Bank primarily as a bulletin board where willing buyers and sellers post listings of water needed or available. In addition, the TWDB is empowered to establish regional water banks; to purchase, sell, hold, or transfer water or water rights; to accept and hold donations of water rights in trust for environmental purposes; and to serve as negotiator and otherwise facilitate water transactions.

Several factors have limited the effectiveness of the water bank. First, the use of the bank is optional and water may also be marketed outside of the bank. In fact, an active market for Rio Grande water rights existed long before the establishment of the Water Bank. Second, the regulations for surface water transactions require a permit modification from the TCEQ, and if the amendment involves an inter-basin transfer, the junior rights provision will be activated. Third, groundwater transactions are subject to the rules of the GCD where the groundwater is located. An additional complication is the regulations associated with the logistics of conveyance of water from seller to buyer. To date, the Texas Water Bank has completed only one transaction in seventeen years.

CURRENT CONTROVERSIES

Ownership of groundwater:

In Texas the consideration of water as a commodity applies primarily to groundwater because there is less governmental control, but the courts and the legislature are becoming involved. Adjudication of groundwater claims is just now beginning - some would say our dockets are "water-logged." The case which everyone is watching is Edwards Aquifer Authority vs. Day, currently before the Texas Supreme Court. In the 1990's, the state set a pumping cap for the Edwards Aquifer which bound the Edwards Aquifer Authority (EAA) to limit production to the cap. This led to a process where permits were issued first to historic users and then to any additional applicants if there was any water remaining.



Source: Texas Water Development Board

The problem developed when there was not enough water to satisfy the claims of the historic users. Landowners from Bexar County are arguing in court that they deserve a larger permit and should be paid for the water that, in their view, was stripped from them. Edwards Aquifer Authority vs. Day specifically raises the question of whether landowners have a "vested" (i.e., complete) ownership in the groundwater beneath their property or only ownership when that water is extracted.

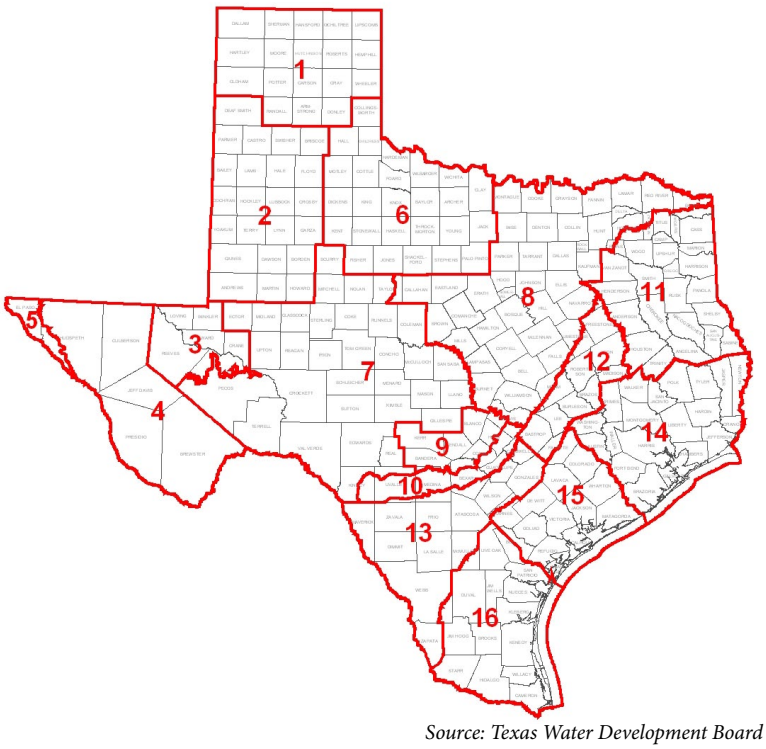
In addition, pumping limits set by the GCD's can be viewed as an impediment by water marketers and other stake holders such as farmers, municipalities, and industry. Landowners denied the right to pump as much water as they want feel that they are being denied potential income. "Generally groundwater has taken longer in the state to be recognized as a valuable commodity compared to surface water or oil and gas; therefore, the law governing groundwater management has lagged behind the development of law for these other natural resources," according to Steve Walthour, manager of the North Plains Groundwater Conservation District.

In 2011 the 82nd Legislature attempted to clarify ownership rights by amending the Water Code to read "a landowner owns the groundwater below the surface of the landowner's land as real property.…Nothing….shall be construed as granting the authority to deprive or divest a landowner… of groundwater ownership." However the new law (SB 332) "does not entitle a landowner to the right to capture a specific amount of groundwater." The act also contains language which supports the powers of groundwater districts to regulate groundwater, so until it is tested in court, it is difficult to know what difference it will make.

Prior to passage of this bill, the following opinions were offered. Amy Hardberger in her Environmental Defense Fund blog, Texas Water Solutions, stated:

> Groundwater districts do not have the means to defend their actions against numerous individual takings claims in court or potentially paying millions of dollars in judgments. This economic reality would vitiate the legislative intent behind the creation of districts

Groundwater Management Areas in Texas



Source: Texas Water Development Board

> because they would be unable to continue their legitimate management functions. Further, there is already a legal avenue to challenge district actions in court as appeals of administrative decisions. (7)

At the March 1, 2011, Senate Committee on Natural Resources hearing on S.B. 332, Susan Combs, State Comptroller, insisted, "Certainty of ownership is essential. Otherwise, no one would invest in the infrastructure needed to transport groundwater."

Farmers and ranchers say they support the groundwater districts and they are willing to serve on the groundwater district boards when elected, but there is always the fear that a groundwater district will do something that will handicap them financially. They would be more comfortable if they knew they had absolute ownership of the water under their land so there would be no impediment to selling it or using it in any way they see fit. Given the charge to GCD's to "conserve and protect," difficulties may arise when board members hold water rights they wish to develop or sell, yet are responsible for long term conservation. This becomes even more of an issue when the water resource is limited and people with water rights feel the old threat of "either use it or lose it."

Natural resource or commodity:

The Texas Constitution designates water as a natural resource, held in trust by the state for the benefit of its citizens. When water is managed as a shared natural resource, there is an inherent responsibility to be fair and to plan for the future. Long-term sustainability is an important responsibility. In addition, decision making is conducted by deliberative bodies which must abide by open meetings requirements and provide substantive information to the public.

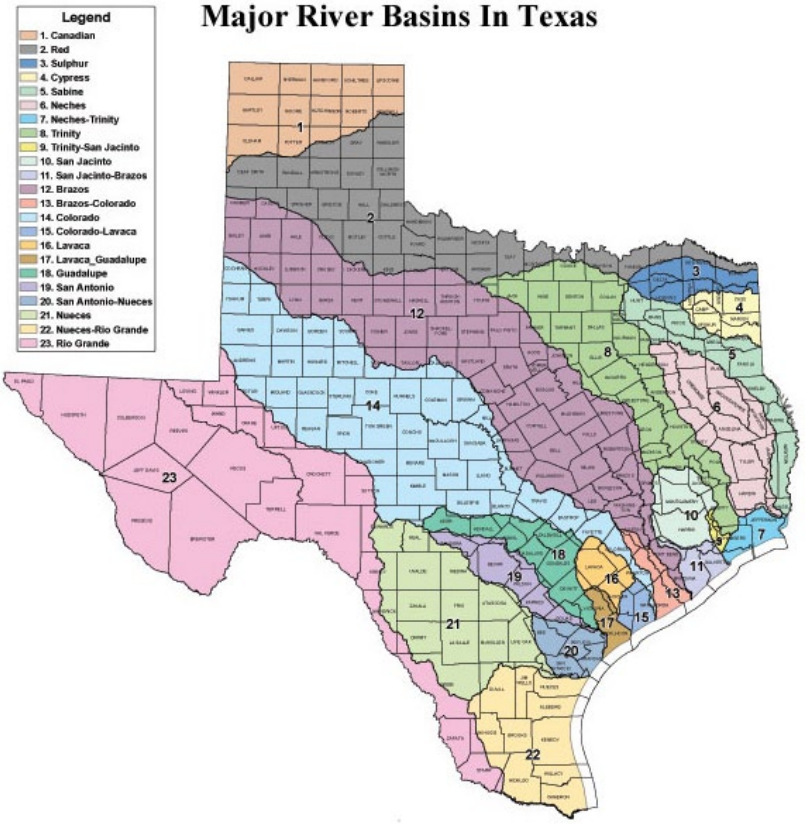
Since groundwater is privately owned, it could be treated as a commodity. If the status of water in Texas were to be changed to a commodity, to be bought and sold like oil and natural gas, it could be managed by private entities that have no legal requirement to share information about their planning and decision making, and no responsibility to the general public. Their primary obligation would be to share-holders, not the public at large. Because we live in a complex world where the choices are multi-layered, we are called to weigh various options.

Privatization of water utilities:

Some cities in other states have considered privatization of water utilities as a cost saving method. In response to serious budget shortfalls in Milwaukee, the city comptroller in late 2008 proposed privatizing the city-owned Milwaukee Water Works system through a 99-year lease of all the water operations, a form of public-private partnership. The plan was that a one-time payment for the lease would be set aside in an endowment to generate about $30 million annually to help fund city operations. The Milwaukee Common Council received bids from 17 firms. But in May 2009, in response to a public outcry, the Council put the process on hold to bet-

ter explore revenue options without privatizing. (8)

Opponents of privatization say losing control of such a valuable resource is shortsighted; we will have lost control of an essential component of the city's future. A private company can't be depended on to put the general welfare ahead of the shareholders' interests. They say that once a service is in private hands, the owner can set the prices as high as the market will bear, and the customer has no recourse unless there is a powerful regulatory restraint.



Source: Texas Water Development Board

Robert Glennon notes that:

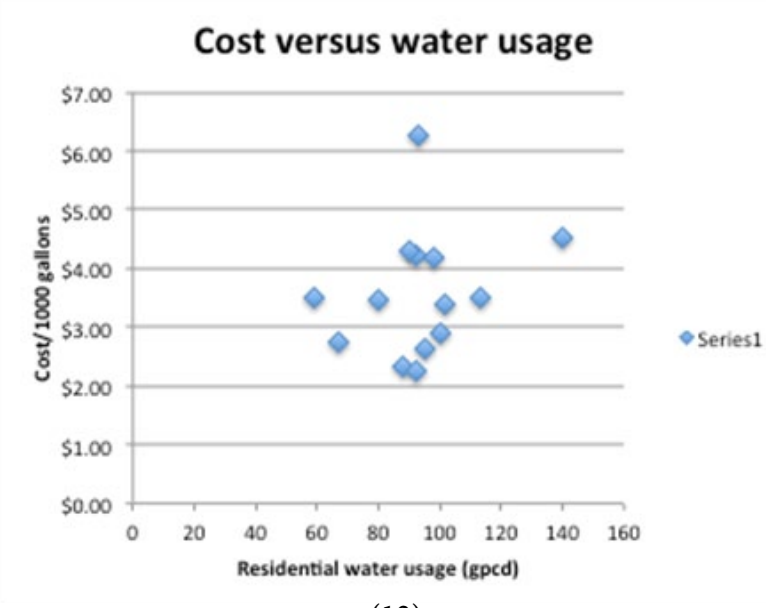
> Most water systems in the United States are publicly owned and operated. Things were not always this way. In the early 19th century, most citizens received water from a private water company. At the end of the 19th century, municipalities began to assert control over these services because they recognized that private companies were not providing adequate service to all citizens. Private companies often failed to invest sufficient capital in the system and sometimes supplied water to the wealthier sections of a city and not to the poorer sections. Issues of water quantity and quality took second seat to maximizing the company's profit on its investment. By the year 2000, private companies served only 15% of the American public. (9)

Proponents of privatization retort that the deficiencies of the past can be corrected by regulation of water utilities, as is currently done with other privately-held utilities. They argue that private industry is able to perform a service at lower cost than the government can – that the government is inherently wasteful. A company whose *only* job is water management can effect "economies of scale, [provide] more capital for efficiency investments, better technology, and fewer but better trained employees." (10) And if some degree of regulatory oversight is deemed necessary, a public authority can be established that has a say in the price of water just as they do with electricity and natural gas.

Even if we accept water as a human right, that approach does not imply that water must be provided by the government. Food is also necessary for life, but nobody seriously argues that all food must be owned and distributed by the government. Indeed, because food is considered a commodity, the world has been able to produce more of it and feed more people than at any time in history . If the poor can't afford water, then we can create the equivalent of a food pantry, food stamps or Light Up Texas to provide water for those who are in need.

Aging infrastructure:

When it comes to infrastructure, a private company has more freedom to make the necessary investment and charge the customers, whereas a governmental entity might not be able to get agreement



(12)

from its constituents. In 1978, federal funding covered 78 percent of the cost for new water infrastructure. By 2007, it covered just 3 percent. In the 20 years ahead, local and state governments will have to come up with over half a trillion dollars to update infrastructure. (11) In a state that feels forced to cut four billion dollars from its legally mandated school budget, it is difficult to see where capital will be found to improve the aging infrastructure.

Conservation:

Some say that letting the market set the price will enforce conservation. However finding hard data to support this assertion is difficult because cities include various budget items when they figure per capita usage. An attempt is being made to "standardize" reporting, but for now, the correlation between price and gallons used is murky.

Current research shows that private companies charge more for water than public utilities. *Food & Water Watch*…has tracked rate increases after privatization. It compared rates charged by publicly and privately owned utilities in California, Illinois, Wisconsin, and New York, and found that privately owned water utilities charge customers up to 50 per cent more than those that are publicly owned. (13)

Another issue is the variation in local restrictions on water use during droughts and summers, especially for municipal landscape irrigation. Each water utility can set its own guidelines and restrictions, and this can create differences in conservation tactics even in the same areas of the state.

Landowners' management rights:

Ideally, it is in the best interest of land owner's to properly manage the water resources on which they depend. They will conserve water in order to protect future interests, and will not sell or use more than they must because of the inevitable consequences.

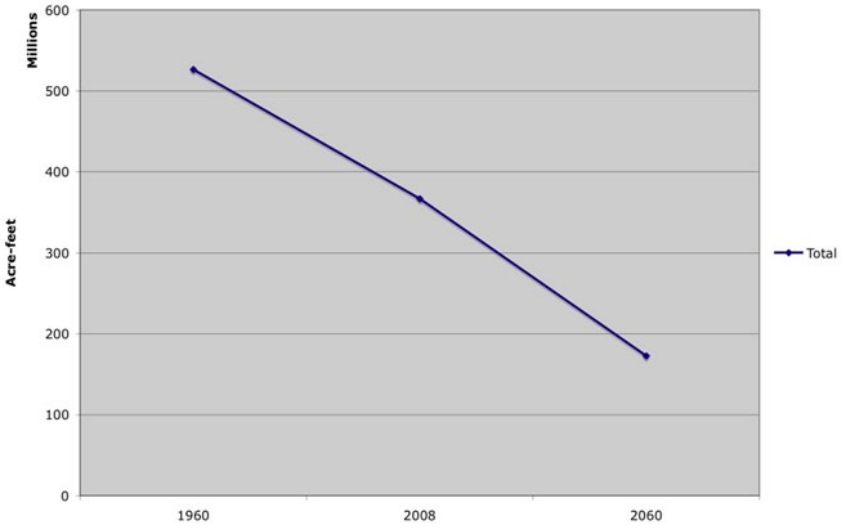
Unfortunately, there are examples of land owners who ignore any long-term considerations for their land or their neighbors: Clayton Williams (Senior) provides one such example. The town of Ft. Stockton in West Texas was founded at the outflow of Comanche Springs which had provided an oasis at least since the early 1500's. For several generations, the town's major festival was the Comanche Springs Water Carnival – until 1951, that is, when the springs dried up. That was the year that Mr. Williams and several others drilled 52 irrigation wells just to the west of town, and the springs stopped flowing within hours after the pumps were turned on. (14)

On the other hand, there are many farmers who husband their water resources well, but the decline in many aquifers makes it apparent that there are too few of them. For instance, though the Ogallala is the largest aquifer in the United States, underlying parts of eight states, in the Texas region this aquifer is replenished so slowly that, for all practical purposes, there is no recharge. It is the lifeblood of the region, yet even careful use will eventually deplete it.

If water were to be considered a commodity, what would have to change? C. E. Williams, general

manager of Panhandle GCD, answered: "Nothing has to be changed because water marketing has been going on for fifty years." He added, "Some [groundwater] districts' rules are more market friendly than others." According to Mr. Williams, "The first transport of water out of the Panhandle Groundwater District to the City of Amarillo was in the 1950's. The District put a transport permit system into place in 1984. That transport permit system was challenged in court, and the court ruled that the District could not limit transport of water but it could limit withdrawal of water." Currently, landowners can sell their water rights as they wish. It is only the spacing of wells and the rate of pumping that is regulated by the district in which their water lies.

Total Ogallala Aquifer Volume in Texas



(15)

Central control or local control:

The Sierra Club supports a more integrated system under which laws pertaining to surface water and groundwater are merged under one over-arching agency: "The clear fact that there is a single hydrological cycle and that groundwater and surface water therefore share an inevitably linked fate has not yet been incorporated into the traditionally bifurcated management of both." (16) Such action would bring Texas policy more in line with practices in most other states.

Steve Walthour thinks local control of groundwater must be a component of any decisions made by the state. In his North Plains Groundwater Conservation District the municipalities, industries and the agricultural community through their elected representatives, have agreed to limit pumping to 1.75 acre-feet per acre in 2011. In 2012 it will drop to 1.50 acre-feet. The public is much more likely to voluntarily accept such restrictions when they are locally generated.

OTHER CONSIDERATIONS

All the water that will be, is. The inescapable fact is that the supply is finite; we have already exploited nearly all available sources. Difficult choices require a commitment to equity. Proponents of water marketing have not addressed inequities that can arise: 1) the more populous parts of the state can out-vote the rural areas on water issues in the legislature; 2) large cities may lack incentives to use existing water resources sustainably because they have the economic clout to buy more water rather than conserving; and 3) by taking water from rural areas, the future of those communities and eco-systems is compromised.

There is more at stake than water for humans. Water is also needed to sustain the ecosystems that provide not only food and habitat for wildlife, but also for us. For instance, fresh water which flows to the Gulf is not wasted; it is essential for the estuaries which are the nurseries for Gulf fisheries. An important consideration is to sustain the healthy ecosystems which create a livable planet for humans and for wildlife.

CONCLUSION

Texas has stipulated in its Constitution that water is a natural resource, held in trust by the state for the benefit of its citizens. To that end the state has set up a complex system of water management in which local control is the hallmark. For surface water, historic claims have been taken into account through the assignment of senior and junior rights, but certain priorities of use (domestic, livestock) have been designated. For groundwater, the historic tradition of individual ownership has been preserved, although groundwater management districts were instituted to preserve the viability of the aquifers. Two statewide agencies are involved in water management – the TCEQ for surface water and the TWDB for groundwater. The TWDB supervises and facilitates the local development of regional water plans and acts as an intermediary with the legislature to assure funding for water projects. All this so that the future water needs of Texans can be guaranteed.

However, the marketing of water occurs now and will continue to occur as cities continue to grow and demand a greater share of the limited supply. Issues are emerging in the legislature and through the courts in which owners of groundwater are seeking to have absolute "vested" rights to their water. Should they be compensated if they are denied the right to pump as much as they want to or were able to historically?

On the other side, should the needs of the people take precedence, with the pumping limits and setting of desired future conditions of aquifers maintained through local control and regional planning? Is water a commodity which may be owned and used or sold by an individual landowner, or is it a natural resource held in trust by the state for all citizens? Or can the present system, in which landowner rights are protected while the state attempts to preserve and conserve water, continue?

Would privatization of water utilities be cost effective and lead to cheaper prices and better distribution, or should water continue to be delivered primarily by public utilities? Do we need one state agency that would oversee and approve all water transactions, or is the present system of regional planning and local management adequate? Should the water needs of cities have priority? Our agricultural industry? The preservation of rivers, streams, and aquifers?

The problems are great and the complexity beyond the scope of this study, but the need and the competition for water in Texas will only continue to grow. The role of the League of Women Voters is to provide opportunity for civil disdcourse so that communities are not torn apart by the water wars which are predicted in the future.

Researched and written by the Texas Water Resources as a Commodity Committee: Mina Fields Johnson (Amarillo), Chair; Miriam Foshay (Dallas), Deanna Frisk (Comal Area), Karen Haschke (Austin), Sandra Heatherley (Corpus Christi), Tonya Kleuskens (Amarillo), Mary Vogelson (Dallas), and Janet Imhoff (Plano/Collin Co.), Ex Officio.

Special thanks to Douglas Caroom, Harry Everett, Lou Ann Garrett, Beverly Gattis, Tom Gooch, Janet Guthrie, Joyce Hinsley, James Kowis, Jensie Madden, David Meesey, Joyce Robinson, Janice Schieffer, Steve Walthour, and C. E. Williams.

The mission of the League of Women Voters, a nonpartisan political organization, encourages informed and active participation in government, works to increase understanding of major public policy issues, and influences public policy through education and advocacy.

REFERENCES

1. **Proulx, Annie**. *Bird Song*. New York : Scribner, 2011. p. 166.

2. **Board, Texas Water Development**. *Water for Texas: Summary of the 2011 Regional Water Plan*. s.l. : http://www.twdb.state.tx.us/wrpi/rwp/documents/2011RWPLegislativeSummary.pdf, 2011.

3. **Templer, Otis W**. WATER LAW. Handbook of Texas Online. [Online] Published by the Texas State Historical Association. [Cited: April 23, 2011.] http://www.tshaonline.org/handbook/online/articles/gyw01.

4. *Water for People and the Environment*. Dallas : Sierra Club, 2001. http://texas.sierraclub.org/ChapterEvents/Water%20Conferences/proceedings_dallas.html.

5. **Krishmurthi, Sushma**. Water Supply Aspects of River Authorities in Texas. College Station : Texas A&M University, 2006.

6. *Overview of Texas Water Rights and Water Development*. **Caroom, Douglas G. and Susan M.Maxwell**. Austin : The University of Texas School of Law, 2009. 2009 Texas Water Law Institute. http://www.utcle.org/eLibrary/preview.php?asset_file_id=22910.

7. **Hardberger, Amy**. Texas Water Solutions. [Online] March 29, 2011. [Cited: April 24, 2011.] http://blogs.edf.org/texaswatersolutions/.

8. In the Public Interest. *"Milwaukee Water Works Privatization"*. [Online] [Cited: June 4, 2011.] http://inthepublicinterest.org/case/milwaukee-water-works-privatization.

9. *Water Scarcity, Marketing, and Privatization*. **Glennon, Robert**. No. 7, 2005, Texas Law Review, Vol. 83, pp. 1873-1902. Available at SSRN:http://ssrn.com/abstract=762604.

10. **Segerfeldt, Fredrik**. *Water for Sale*. Washington, D. C. : The Cato Institute, 2005. p. 58.

11. **Lohan, Tara**. *Water Consciousness*. San Francisco : Alternet Books, 2008. p. 45.

12. Texas Water Development Board. "*Texas Water Use Summary Estimates*". [Online] 2008. [Cited: June 4, 2011.] http://www.twdb.state.tx.us/wrpi/wus/2008est/2008wus.asp.

13. **Gies, Erica**. Water Wars: Is Water a Human Right or a Commodity? *World Watch*. March/April 2009, pp. 22-27.

14. **Patoski, Joe Nick**. Playing by the Rule. *The Texas Observer*. June 24, 2010, pp. 11-12.

15. **Wilder, Forrest**. The Late, Great Ogallala Acquifer. *The Texas Observer*. September 7, 2010. http://www.twdb.state.tx.us/wrpi/wus/2008est/2008wus.asp.

16. **Kramer, Ken**. *Texas Sierra Club*. [Online] March 31, 2011. [Cited: April 24, 2011.] (http://www.texas.sierraclub.org/water/Memo_onSB332asPassedbySenate.pdf).

Published by the League of Women Voters of Texas Education Fund with generous support fom the Jacob and Terese Hershey Foundation.

LWV-TEF has sole responsibility for the contents of this Facts & Issues. Donors for this study had no editorial control or influence over the content or findings in this report.

Printed by Paragon Printing, Austin, TX.

To request additional copies, contact:
League of Women Voters of Texas Education Fund
(512) 472-1100
lwvtexas@lwvtexas.org
www.lwvtexas.org

League of Women Voters of Texas Education Fund
1212 Guadalupe St., #107
Austin, TX 78701

NON-PROFIT ORG.
U.S. POSTAGE PAID
AUSTIN, TX
PERMIT #144