

Water Grand Challenges: Water Rights

Institutional Actors for Water in Texas

Background – In Texas, surface water and groundwater are governed and managed separately. Governance of surface water is divided primarily among four state agencies: the Texas Water Development Board (TWDB), the Texas Commission on Environmental Quality (TCEQ), the Texas Parks and Wildlife Department (TPWD), and the Texas General Land Office (GLO). Groundwater Management Areas (GMAs), Priority Groundwater Management Areas (PGMAs), the Edwards Aquifer Authority (EAA), and Groundwater Conservation Districts (GCDs) play an important role in implementing local groundwater management strategies.

Surface Water Governance

Texas Water Development Board – The mission of TWDB is “to provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas.”¹ The agency maintains data regarding surface and groundwater resources, provides financial assistance for water planning, offers technical advice, approves GCDs, and assists with water planning initiatives across the state.

Texas Commission on Environmental Quality –The TCEQ provides permitting for surface water, water quality, and wastewater. These permits are enforced via the ‘water masters’ monitoring program.² Since the 2007 adoption of Senate Bill 3, regarding environmental flow standards, TCEQ is responsible for establishing appropriate environmental flow requirements for each river basin. TCEQ also plays a key role in intra-agency cooperation and coordination by engaging local, state, federal, and international groups in the water management process.

Texas Parks and Wildlife Department - While TPWD has the “primary responsibility for protecting the state’s fish and wildlife resources,” it does not have any regulatory authority over the state’s water resources.³ TPWD conducts natural resource evaluations for regional groundwater management areas and environmental flow standards, orchestrates public outdoor education programs, and encourages private landowners to practice water conservation and land management techniques. TPWD operates by providing expertise on the sustainable management of the state’s natural resources, both for state or local agencies and for the public.

Texas General Land Office – The GLO is tasked with “preserving history, protecting the environment, expanding economic opportunity, and maximizing state revenue through innovative administration and prudent stewardship of state lands and resources.”⁴ GLO responsibilities include the oversight of oil, gas, and mineral rights leasing of state properties, which also contains state-owned submerged lands in the Gulf of Mexico. The GLO is also able to provide financial and technical assistance to programs such as the Coastal Management Program and the Oil Spill Prevention and Response Program.

Groundwater Governance



Groundwater Management Areas and Priority Groundwater Management Areas – Groundwater is a major source of water in Texas, annually providing about 60% of the 16.1 million acre-feet of water used in the state.⁵ By dividing the state into several different hydrologic basins, and then designating appropriately sized GMAs and PGMAs, governance of groundwater is in the hands of local decision makers. The legislature has authorized TCEQ, TWDB, and TPWD to study, identify, and delineate GMAs and PGMAs.

A GMA is a geographical area that coincides with the boundaries of aquifers and is ideal for the management of groundwater resources. A PGMA is a region declared by the TCEQ that is experiencing (or is expected to experience within the next 25 years) critical groundwater problems such as surface or groundwater shortages, land subsidence, and contamination of groundwater.⁶ Once an area is classified as a PGMA, state officials determine the threats facing the local aquifer. In many cases, TCEQ recommends the formation of a GCD in order to prevent further degradation, though the classification of a PGMA is not a prerequisite for the creation of a GCD.⁷

Groundwater Conservation Districts – The creation of a GCD allows for more localized control over groundwater resources in regions where there is a risk of over pumping; it is the state’s preferred method for groundwater management. A GCD is developed by a consensus of landowners, an act of the Texas Legislature, or by a recommendation from TCEQ. “Groundwater conservation districts are units of local government with the authority to regulate the spacing and production of water wells.”⁷ Although Texas utilizes the rule of capture for groundwater, a GCD can help regional landowners jointly manage aquifer drawdown. GCDs have the ability to regulate the number of wells, including appropriate spacing and production, while also protecting current water user rights, and identifying a long-term aquifer management plan, which is contingent on Desired Future Conditions (DFCs). These are a set of quantifiable target goals to help control aquifer drawdown.⁸

Not all GMAs or even PMGAs have a GCD designated in their region, and even those that do cannot prevent groundwater from being pumped off-site. In most cases, GCDs do not follow the hydrological boundary of the aquifer, which increases the difficulty of effective management. However, GCDs can help to protect the groundwater for current and future generations of water users and are currently the most effective mechanism in place for doing so.

Edwards Aquifer Authority – The EAA was created as a result of the 1993 court case between Sierra Club and the U.S. Fish and Wildlife Service (USFWS). It was found that extreme over-pumping of the Edwards Aquifer resulted in the ‘taking’ of several endangered species endemic to the aquifer. The USFWS mandated that Texas regulate pumping of groundwater in the Edwards Aquifer, despite rule of capture precedents. In order to accomplish this task the Texas Legislature passed Senate Bill 1477, which replaced the former managing entity with EAA. The EAA is the only managing entity in Texas that has a legal right to permit and manage groundwater for commercial and residential entities alike. Permitting for groundwater in the



Edwards Aquifer has been in place since 2001. Today, it is required that all pumping be done sustainably in the Edwards Aquifer. This is required by federal statute to preserve adequate flows for endangered species living in the springs. This also protects local communities from over-pumping and depleting their primary water supply.”⁹ In order to obtain an incidental take permit for the endangered species, EAA is required to form a stakeholder group and create a Habitat Conservation Plan (HCP). The HCP was recently finalized and implementation has already begun.

Since the passage of Senate Bill 332 and the Texas Supreme Court ruling in the Edwards Aquifer Authority v. Day and McDaniel, landowners now have a vested interest in the groundwater as a property right while it is ‘in-place’ under the owned land. The implication of this decision reaffirms rule of capture and has the potential to undermine pumping restrictions by holding groundwater managing entities responsible for potential ‘taking’ of groundwater property rights without adequate compensation to the landowner. There are many court cases currently in the litigation process that will clarify the true repercussions of these decisions.

¹ Texas Water Development Board. *About Texas Water Development Board*. 2013. <http://www.twdb.state.tx.us/>.

² Texas Commission on Environmental Quality. *TCEQ Water- related Topics*. 2013. http://www.tceq.texas.gov/agency/water_main.html.

³ Texas Parks and Wildlife Code. "Parks and Wildlife Code, Subchapter A, sec. 12.0011. ." n.d. http://www.window.state.tx.us/tpr/btm/btmnr/nr12_fn.html#fn0 (accessed March 2013).

⁴ Texas General Land Office. *What We Do*. 2013. <http://www.glo.texas.gov/what-we-do/index.html>.

⁵ Texas Water Development Board. "Groundwater Resources." <https://www.twdb.state.tx.us/groundwater/index.asp>. (Accessed March 12, 2013.)

⁶ Texas Commission on Environmental Quality and Texas Water Development Board. *Priority Groundwater Management Areas and Groundwater Conservation Districts: Report to the 82nd Legislature*. Report to the 82nd Legislature, Austin: Texas Commission on Environmental Quality and Texas Water Development Board, 2011

⁷ Groundwater Protection Committee. "Management of Groundwater." *Groundwater Protection Committee*. 2011. <http://www.tgpc.state.tx.us/GWManagement.php> (accessed 2013).

⁸ Far West Texas Planning Group. *Far West Texas Water Plan*. Annual Water Plan, Texas Water Development Board, 2011.

⁹ Veni, George, et al. *Living with Karst: A Fragile Foundation*. CBL Printing, 2001.