

WGCD established in 1997.

The Texas Constitution recognizes the need to manage and conserve groundwater through the 1917 Conservation Amendment. The preferred approach to groundwater management in Texas is through local groundwater conservation districts (GCDs) with locally elected board members.

Today, many of the state’s nearly 100 GCDs were formed in the 1970s as our state lawmakers began to see that groundwater in some areas of Texas was being used faster than it could be replenished, or recharged, from rainfall. By law, districts are responsible for ensuring that water use is balanced between new and existing users, and that the future of the aquifer as a water source is protected.

In 1997, the Texas Legislature passed a bill allowing for the formation of the **Wintergarden Groundwater Conservation District (WGCD)** and set its boundary within Dimmit, La Salle and Zavala counties. The WGCD board of directors is made up of seven elected members—two from each county and one director-at-large. WGCD directors serve four-year terms, unpaid, with staggered elections held every two years.

The **WGCD board is charged with conserving, preserving and protecting groundwater** within the District boundaries. The various ways the board goes about meeting this charge are contained within this brochure.

Learn more about your groundwater conservation district at www.WGCD.net.

Serving the District

The Wintergarden Groundwater Conservation District was created by the Texas legislature and is managed by a seven-member locally elected Board of Directors.

Board of Directors
(as of January 2013)

John H. Northcut, <i>Board Chairman</i>	La Salle
Christopher Meyer, <i>Board Vice-Chairman</i>	La Salle
Bay C. Laxson, <i>Board Secretary</i>	Dimmit
Mario A. Escobar, <i>Board Treasurer</i>	Zavala
H. A. “Sunny” Fitzsimons	Dimmit
Jack Rutledge.....	Zavala
Frank Solansky	Director-at-Large

Wintergarden Groundwater Conservation District

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Ed Walker, General Manager

WGCD
WINTERGARDEN
GROUNDWATER
CONSERVATION DISTRICT

Our water is our future.

www.WGCD.net

Our Groundwater:
Many Demands
& Limited Supply



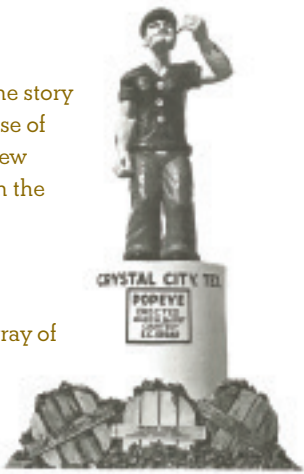
Managed with care by
Wintergarden Groundwater
Conservation District

Our Water is Our Future.

Water is also our history.

Water has always been the central character in the story of the Winter Garden region of Texas. The promise of abundant water, fertile soil and good weather drew speculators and early settlers by the thousands in the early 1900s.

Numerous wells in the area supplied plenty of water for irrigated crops. With the arrival of the railroad, northern markets were opened for an array of vegetables grown in the Winter Garden area of Texas. The artesian waters flowed; horticulture techniques were refined; and the region thrived as an agricultural community.



The challenges of today.

Water continues to play a primary role in the health and economy of the Winter Garden area—especially groundwater—the water below the land surface. Groundwater is in demand like never before—by farmers, ranchers, a growing population, and by the oil and gas industry.

The Carrizo-Wilcox aquifer is the primary groundwater supply within the District, but the Queen City and Sparta aquifers can be locally important too. The Carrizo is a sand aquifer that recharges slowly. So, it’s easy for demand to exceed recharge, and aquifer levels in the region have historically shown decline. In some places, the water table dropped as much as 300 feet between 1900 and 2006.

Continuing demands on the aquifer are increased population, drought, irrigated agriculture, the uncertainty of climate change, and the certainty of an ongoing oil and gas play in the region.

A practical, legal and science-based approach.

The Wintergarden Groundwater Conservation District has a big job—to conserve, preserve, protect and prevent the waste of groundwater within its boundaries.

The District follows a publicly developed and state-approved Management Plan and takes a common sense approach to meet its goals.

Increase recharge.

As the Carrizo aquifer is naturally slow to recharge, the District currently operates two recharge structures, one in Dimmit County and the other in Zavala County. These are surface impoundments designed to catch and hold rain, thus preventing rapid runoff and encouraging water to percolate into the aquifer at key locations. The District also gathers information at these sites to measure recharge rates.

Monitor water levels within the aquifer.

The District collects and maintains background water quality data and aquifer level data from wells across all three counties. This data is reported at the monthly Board meetings, allowing Directors and the public to track important trends.

Register new wells.

All new water wells are required to be either permitted or registered with the District. Through this standard procedure, the District can verify construction standards and ensure wells are properly spaced to prevent interference or drawdown of neighboring wells.

Water wells drilled for oil and gas exploration must be registered by the District. Landowner water wells used to supply water to the oil and gas industry must be permitted for industrial use.

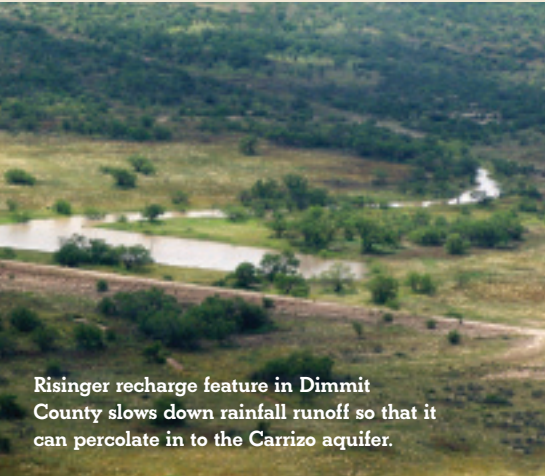
Plug unused wells.

In 2005 the District began a cost-share program to help responsible landowners plug old, abandoned water wells. Plugging unused wells is recommended as a strategy to prevent groundwater pollution from trash dumping, saltwater migration, or even animals falling into the well. The District works with the Texas Railroad Commission regarding pollution threats from oil and gas activity.

Research on multiple fronts.

Although Mr. Goodnight was referring to cattle, his point is well taken as it relates to water as well. Knowing the science of the aquifer is critical to the task of managing it properly. To that end, the District has worked with Southwest Research Institute (SWRI), Texas A&M University-Texas AgriLife Extension, and the USGS to gather data and develop research projects.

- Studies with SWRI are providing more detailed knowledge of the groundwater systems within the District and have helped identify and measure recharge features. Resistivity studies on rivers and major tributaries identify recharge



Risinger recharge feature in Dimmit County slows down rainfall runoff so that it can percolate in to the Carrizo aquifer.

“You can’t manage what you don’t measure.”

CHARLES GOODNIGHT

areas and how the water flows underground. Historical trends in the water table have also been documented, and current levels are being tracked.

- The effects of brush removal (primarily mesquite) are being studied in partnership with the Texas AgriLife Extension. Similarly, AgriLife is a research partner on how to use less irrigation water more efficiently.
- Rainwater harvesting as an alternative, viable water supply source is being studied by the District in partnership with the Uvalde AgriLife Research Center. A rainwater harvest system has also been installed at the NRCS office in Cotulla. The plan is to gather data on the volume and beneficial uses of captured rainwater within a yearly rainwater cycle. The District also works with the Nueces River Authority to educate students through rainwater catchment demonstration projects.

Conservation and education.

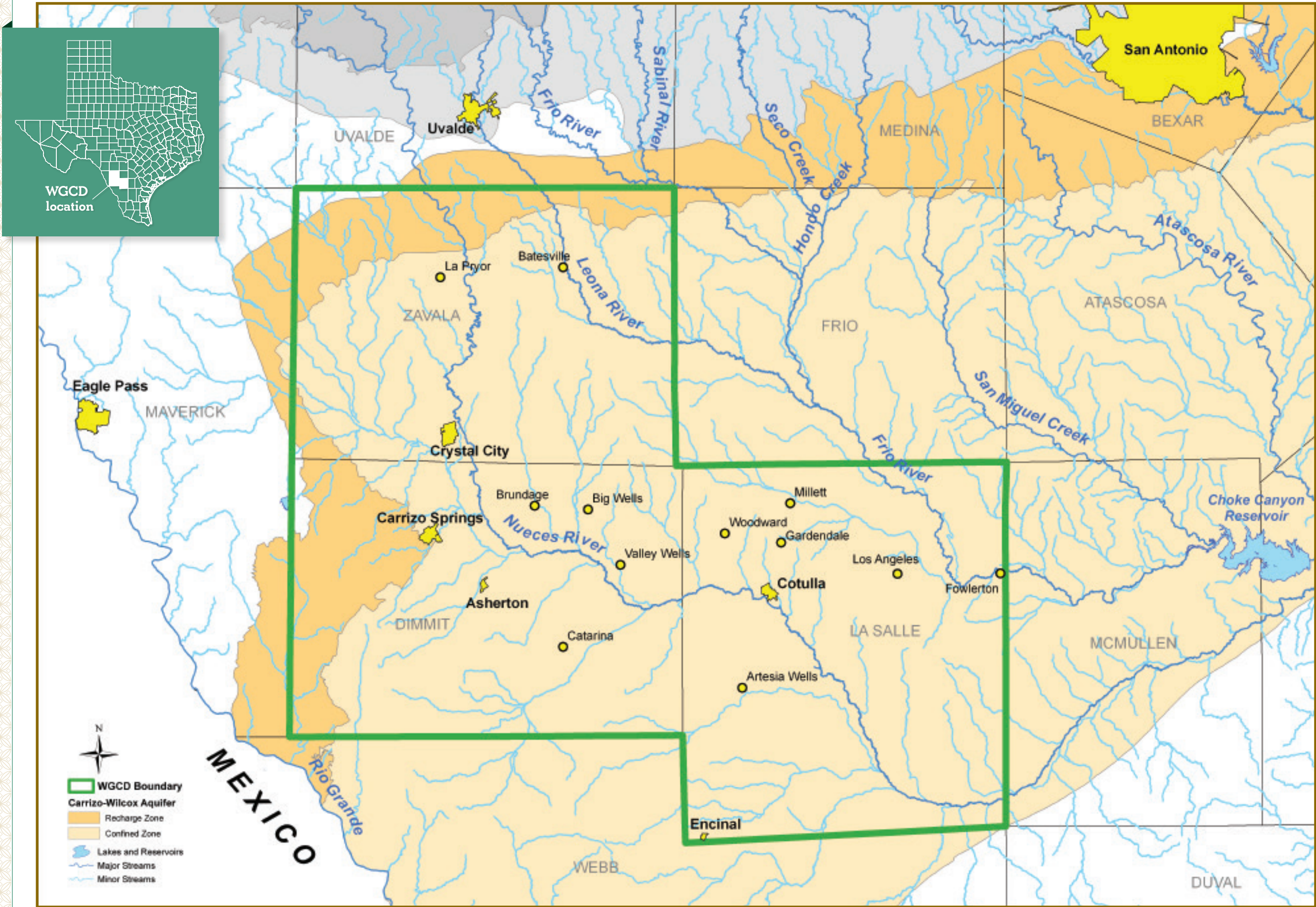
Since 2007, the Nueces River Authority has delivered water stewardship education for the District. The award-winning conservation education program uses a number of hands-on education tools to engage the students, including an eight-foot, 3-D water catchment model, a rainfall run-off demonstration, red barn rainwater harvest display, and the “Up2You” litter prevention campaign. The education program has delivered a unified conservation message to more than 8,000 young people in Winter Garden area school districts and has become a foundation for the WGCD’s education program. This work is now being expanded to promote educational rain-catching projects on each campus, helping students learn about the water cycle system and practice good conservation.

An engaging model of the region’s water catchment area helps students see where their water comes from and where it goes.



Your groundwater rights are as good as the district that protects them.

Groundwater is a valuable resource to our region.



Water Regulation Divided.

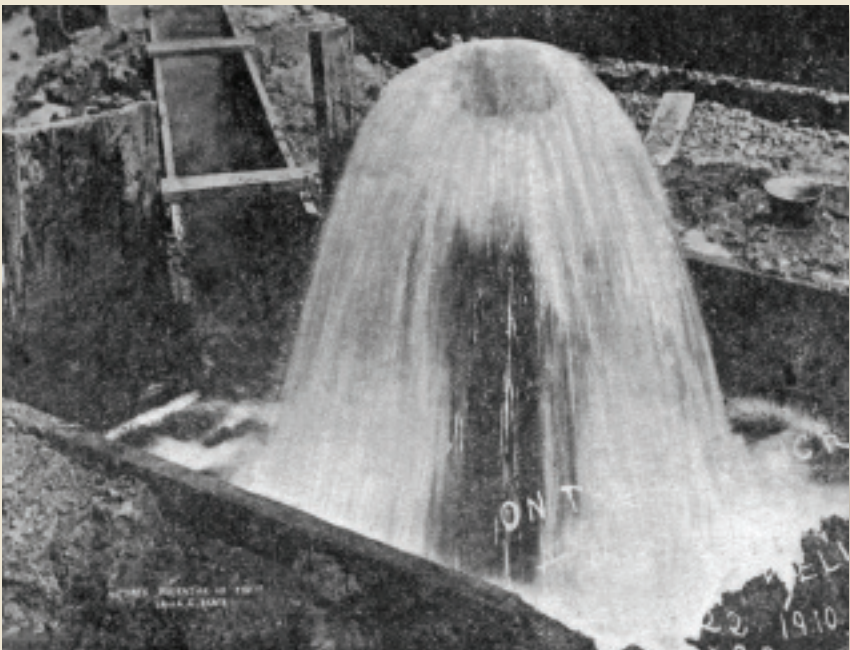
In Texas, groundwater and surface water are regulated separately. Groundwater, once seen as “occult and mysterious,” is governed either by the 1904 Rule of Capture, or by rules and management plans set forth by local groundwater districts and overseen by the Texas Water Development Board. Surface waters are owned and regulated by the State of Texas under rules set forth by the legislature, interpreted by the courts, and overseen by the Texas Commission on Environmental Quality.

One Complete System.

In recent years it has become more widely acknowledged that groundwater and surface water are in fact parts of one complete, interactive and interdependent water cycle system. Spring flow from underground aquifers often feeds streams and rivers— those streams in-turn recharge other aquifers. In this natural system, riparian conditions and landscape cover can play a role. Healthy land and functioning riparian areas produce abundant clean water and numerous ecological benefits.

Our Aquifers & Streams.

The above map of the region indicates the known recharge zone, or outcrop area, for the Carrizo-Wilcox, our major groundwater aquifer, and it highlights the streams that are part of the system. Stream flow coming into the region from the north, coupled with rainfall that runs over the outcrop lands, are known to recharge the aquifer. The map also identifies the communities of the region— water has been part of their history and certainly will factor greatly in their future, and that of the entire region.



A 1910 artesian well in the region gushes forth without need of a pump. Water wells like this supported the claims of early developers that there was plenty of water here and that the region was ripe for settlement and farming.

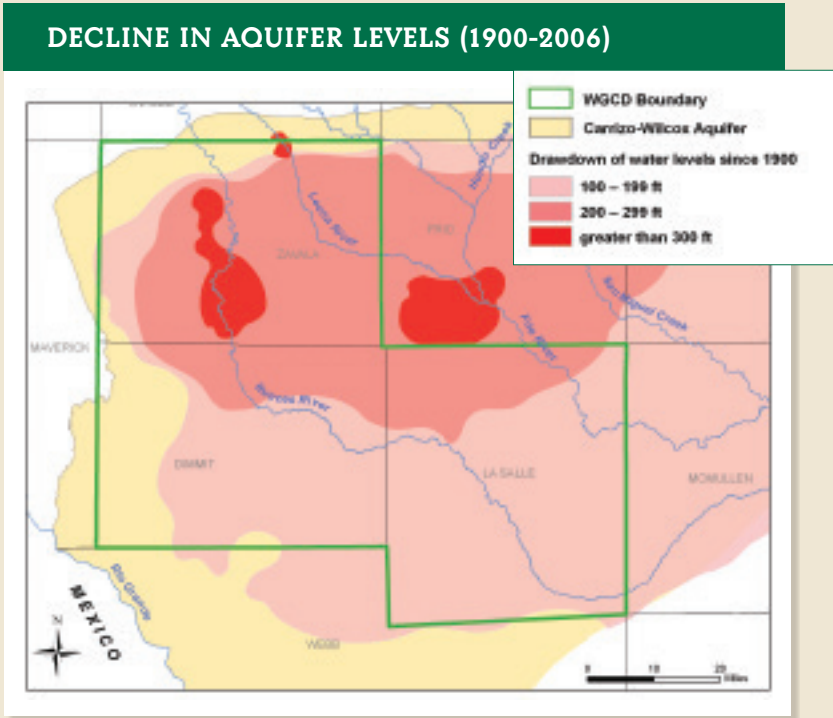
The Winter Garden was born on the promise of abundant water.



Over time, the artesian waters subsided and deep wells and pumps were needed to harvest the groundwater. Today the availability of adequate water is not taken for granted.



Water does not come without a price these days. The volume of groundwater use by the oil and gas industry has elevated our groundwater resource to the category of valued commodity.



This map shows the decline in water levels in the Carrizo Aquifer from pre-development (early 1900s) to 2006. Pumping more groundwater than is recharged has implications for rivers and for sustainability of the aquifer. Some wells have gone dry due to aquifer decline.

The data for this map was collected and modeled by WGCD research partners at Southwest Research Institute in San Antonio.