

LRWA Watershed Report

Editor/Layout/Occasional Author: Linda Fawcett

*Opinions expressed herein are not necessarily shared by LRWA

THE DATA CENTERS COMETH

A new challenge that will likely affect our natural resources such as water and affordable energy is fast approaching the Hill Country and more specifically, getting very close to the Llano River Watershed. There are a myriad of data center construction projects around the state. Conservationists are alarmed. Despite what you may read on company websites, here are some basic facts you should know about data centers. Note that much of the following are excerpts from a **Texas Tribune** article on the subject, dated last [Sept 25](#):

According to Texas' water plan, some "researchers warn that with droughts and population growth, data centers have the potential to help push water supplies to the brink, especially in Texas' more arid regions. According to the Houston Advanced Research Center, existing data centers in Texas used approximately 25 billion gallons of water, or .4% of the state's total water use in 2025. And by 2030 this could increase up to 2.7% of the total annual water use in Texas (equal to water consumption of 1.3 million average U.S. households)."



ABILENE DATA CENTER

2030"—wonder how that will affect our own electric bills?—and all those computers need cooling, a lot of cooling. The more electricity a data center uses, the more water is indirectly consumed. Also, "generative AI, such as ChatGPT, uses graphic processing units much more complex than typical computer processors and generate more heat - thus the need for more water for cooling."

Note that some data centers will be located in or near small communities, that won't be able to handle the sudden increase in water demand.

Why do data centers need so much water? Enormous amounts of electricity are required to process all that data. "Data centers are expected to help drive Texas' power demand to nearly double by

So far, the closest data centers in or near the Llano River Watershed include one planned near Doole, 24 miles NW of Brady, in McCullough County, Hickory Aquifer. Doole is unincorporated with an estimated population of 74 in 1990. Building the center is [Cipher Mikeszka](#). Another is [Skybox Datacenter near San Angelo](#), planned on city-owned land northeast of the city (zoning change in progress) in Concho County.



The Texas Water Development Board relies on historical data and unfortunately new industry growth in Texas is outpacing that method. Presently, Texas companies have to report past water usage, but not future consumption, or where it would come from, making difficult community management of water supplies. This has happened before. When hydraulic fracturing began, "state planners were caught off guard by the immense water demand, according to Carlos Rubenstein, water expert for the TCEQ (Texas Commission for Environmental Quality)." Alternatives were eventually found like brackish groundwater and reusing water, but these are temporary fixes, "only Ok for now."

"In 2024, the state water board tried to get a handle on data centers' water consumption by sending surveys to nearly 70 data centers asking how much ground and surface water they used each month and who was supplying that water to them. Even though a response was required by state law, only one-third of them responded. The consequences for non-compliance are minimal – a Class C misdemeanor with a maximum fine of \$500."

The only bright spot right now is promising research on new kinds of cooling systems, such as an ongoing UT-Arlington research project to reduce energy and water demands. If successful, the need for huge amounts of electricity will decrease, likely a big incentive for data centers to adopt the new cooling systems.

GROUNDWATER RIGHT OF CAPTURE, no longer relevant to today's reality?

also see the [Texas Tribune article of Nov. 13, 2025](#).

As previously reported in the LRWA Oct. 2 newsletter ("One More Look At the Results of the 89th Full Session..."): "Representative Cody Harris (Republican) filed five bills that actually (get ready...) challenged the Texas "right of capture" for aquifer wells and private reservoirs ("you own the water under your feet" and can therefore pump all you want for domestic and agricultural use). These bills came out of complaints about a wealthy landowner, **Kyle Bass**, who owned property over the Carrizo-Wilcox Aquifer (a major groundwater source in Texas stretching from the Louisiana Border to the Mexican border). Bass said he wanted to pump 15.9 million gallons using 41 groundwater wells in three counties in Northeast Texas (roughly equal to one-fifth of Austin's total annual water consumption). His permit said it was for conservation, but it turned out he plans to pump water for export out of the counties.

Needless to say, this issue threw the Republicans in disarray, so these bills DID NOT pass, but a serious conversation has begun...

Texas is at a point where it needs to seriously consider how to update the rule of capture

because society has modernized, said State Representative, **Gary VanDeaver** (R-New Boston) on panel at the 2025 Texas Tribune Festival). People are no longer pulling water from the aquifers with a hand pump and two inch pipes.

"Modern technology and modern needs have outpaced the regulations that we have in place, the safeguards we have in place for that groundwater," VanDeaver said. "In some ways we, in the legislature, are a little behind the times here and we're having to catch up."

The best solutions to Texas' water woes may not even be found below ground, said panelist **Robert Mace**, the executive director of the Meadows Center for Water and Environment. Conservation, reuse and desalination can go a long way.

In Austin, for example, some buildings collect rain-water and air conditioning condensate. The city also has a project to collect water used in bathrooms, treat it and use it again in toilets and urinals.

Texas could also be a leader in the space for desalination plants, which separate salt from water to make it drinkable, Mace said. These plants are expensive, but

Continued top of next page...

rainwater harvesting is too. And so is fixing leaky water infrastructure that wastes tens of billions of gallons each year.

“There is water that’s more expensive than that. It’s called no water,” Mace said. “And if you look at the economic benefit of water it is much greater than that cost.”

THE IMPORTANCE OF UNINTERRUPTED STREAM FLOW IN WATERSHED RIPARIAN ZONES



A recent study of the Upper Guadalupe River Basin (completed in 2024) by Tesnuva Udit, PhD [now of the Austin Sustainability Program], using land use maps from satellite imagery over a 30-year span in 10-year increments (1987-2017), and GIS (Geographical Info Science) software, showed an overall 6.5% decline in vegetation associated with development, especially when coupled with marked increase in impervious cover. Most of the declining vegetation was along stream channels. **Conclusion: Vegetation was declining because the landscape was being converted.**

“How are aquatic instream and riparian vegetation connectivity influenced by factors like BARRIERS (mostly dams and river crossings) and/or by land use (especially if it involves impervious cover), fragmentation and habitat loss?”

Conclusion: Barriers are BAD because the connectivity of the watershed is very important. When connectivity is disrupted:

- ★ Aquatic life passage is interrupted.
- ★ Barriers change spring flow, affecting water quality. MOST BARRIERS are located directly

downstream from springs, impounding spring flow (especially in ephemeral streams.)

- ★ Sediment builds up in previously free-flowing streams, thus also affecting water quality.
- ★ Riparian buffers (against floods) are affected negatively, especially their amount of vegetation and soil enrichment. **You need at least 25-40 feet of riparian buffer (filled with vegetation) on both sides of all streams.**
- ★ Floodwater velocity increases. Energy dissipation is slower.
- ★ Normal wildlife movement can be affected by barriers.
- ★ There are so many UNREGISTERED barriers. TCEQ estimates 7,280 dams statewide, but only 40 or so are registered.
- ★ SIZE matters; even small barriers sequenced together in one stream can be as disruptive as one big one.
- ★ Some private barriers simply don’t serve their purpose anymore, but current landowners don’t remove them and they eventually become prone to sudden collapse.

THE LRWA, IN COLLABORATION WITH THE LACUNA CENTER, WILL HOST A WORKSHOP: *AFTER THE RAIN*, APRIL 18 IN CASTELL, TEXAS, ALSO SEE FLYER NEXT PAGE

(REGISTRATION BEGINS SOON)

About the Speakers

Steve Nelle is a Wildlife Biologist with the Natural Resources Conservation Service working out of San Angelo. Nelle has a 35 year history of working with private landowners in the Rio Grande Plains, Trans Pecos and Edwards Plateau. Nelle has had the privilege of working with and learning from some of the very best land and wildlife managers in Texas and this experience helps him provide high quality assistance to others. His primary work involves helping landowners plan and carry out comprehensive range / wildlife / watershed management, and promoting responsible land stewardship. He is a graduate of Texas Tech and is actively involved in the Society for Range Management and the Texas Wildlife Association.

Michelle Bertelsen is the principal senior ecologist of the Blackland Collaborative, that matches landowners with organization and design teams and science driven management plans to restore healthy, native, plant communities. Major goal: to bring back biodiversity and ecological function such as forage production, carbon sequestration, heat island mitigation, improving air and water quality, and creating habitat. Previously she oversaw the Lady Bird Johnson Wildflower Center's long term management and research program for 10 years. Education: B.S. in Ecology, Evolution and Conservation at UT-Austin, and is presently a MS candidate in Recreation, Parks & Tourism at Texas A&M.

Brian Wright is ranch manager and oversees the habitat restoration on the White Ranch in Mason County. He has successfully and safely used prescribed fire projects to remove brush and enhance the soil, and reversing the negative effects of years of overgrazing by cross fencing, rotational grazing and various conservation methods to provide water throughout the ranch. Wildlife has also exploded on the ranch from his management.

Carol Flueckiger creates mixed media paintings about sustainability, feminist history, and weather. She is a Professor of art at Texas Tech University where she was awarded Integrated Scholar status for her interdisciplinary approach to art. Research destinations for her artwork include prestigious archives such as American Antiquarian Society, Library of Congress and Women's Rights National Historical Park. Educational partnerships that influence her classroom include Ogallala Commons leadership organization, Flower Power Wind Turbine corporation, Lubbock Arts Alliance and Elsewhere Studios art residency. She delivers outreach and engagement workshops geared for STEAM* audiences that link drawing strategies to conversations about sustainability.

* Science, Technology, Engineering, Arts, and Mathematics

LLANO RIVER
WATERSHED ALLIANCE +
LA CUNA CENTER PRESENT

SATURDAY

18

APRIL

CASTELL
GENERAL STORE

10 AM - 3PM
\$25 INCLUDES
LUNCH



GUEST SPEAKERS

STEVE NELLE An Ethic of Care	MICHELLE BERTELSEN Land Management for Water Quality	CAROL FLUECKIGER Prairie Plants Art Workshop	BRIAN WRIGHT Benefits of Prescribed Fire
---------------------------------------	---	---	---

NEW GRASSROOTS WATER CONSERVATION ORGANIZATION!

Great website: www.FischerNeighbors.com

Fischer Neighbors Residents for Responsible Growth has recently organized to oppose a TCEQ permit to build and operate a wastewater treatment plant for a proposed subdivision of 850 houses on a tract of approximately 230 acres, called **Broken Cedar Ranch**, a **Lennar** development (note: Lennar has a poor reputation among water conservation groups...). Their Mission statement: "[Fischer Neighbors promotes responsible growth that protects our natural resources and the character of the local community in Fischer, Texas. In furtherance of this goal, Fischer Neighbors educates residents in Fischer and the greater Canyon Lake area about proposed development projects and the public participation process, and advocates on our members' behalf in local, state, and federal decision-making processes, including in litigation, if necessary.](#)"

**Their website includes useful instruction on how to contact state officials, and how to write an effective letter to TCEQ during Public Comment periods.



The Texas Water Development Fund, approved by Texas voters in the General election, (Prop 6/SJR 75), Fall 2023, to be administered by the **Texas Water Development Board (TWDB)**, would NOT fund water reuse projects (cleaned water for potable or non-potable reuse) because reuse was not considered a new water source, even though ironically the TWDB called the "cleaned" water from fracking and other industrial use (also known as Produced Water) a new source and therefore could get funding... boo...

WELL, GUESS WHAT? GOOD NEWS FOR WATER REUSE! With our passage last fall (Nov. 2025 election) of Senate Bill 7 (Prop 4 on the ballot), the Texas Water Development Fund now explicitly supports water reuse, including treatment of wastewater, as part of its strategy to increase Texas' water supply. The TWDB will continue to oversee project funding (\$2.5 billion initially available to municipalities and local entities). See also <https://watereuse.org> and [an explanation of the Texas Water Fund by the Texas Sierra Club.](#)

RECOVERING YOUR RIVERBED AFTER MAJOR FLOODING...

The following are excerpts from an EXCELLENT new Instructional PDF from the Hill Country Alliance ([scroll down the page and click on "Healing In the Hill Country."](#))

THINK LIKE A RIVER...

Before proper riparian restoration can take place, it's important to understand basic river dynamics and to work in harmony with the natural laws of a river.

Most floods are less destructive in nature. These lesser floods—which typically occur once every five to fifty years—are important and essential to a river. Such floods recharge the alluvial water table, scour out pools, form new banks and bars, and create improved floodplain areas where floodwater can spread out and soak in. In short, floods help keep rivers healthy and balanced, which in turn enhances water quality,



North Llano, Kimble County, floods fairly regularly when it's not going dry

base flow, fish and wildlife habitat, and recreational use. A river literally engineers itself with each flood by cutting some soil material from one place and depositing it in another. This is all part of the natural process of a river. Rivers are dynamic, not rigid; they must be allowed to move back and forth within their valley, and their meander patterns naturally change over time.

For these normal and frequent floods, dense natural vegetation, boulders, and large woody material help to buffer the forces and dissipate the energy of the floodwaters.



Comanche Creek, Mason County, FEMA "clean-up" after flooding

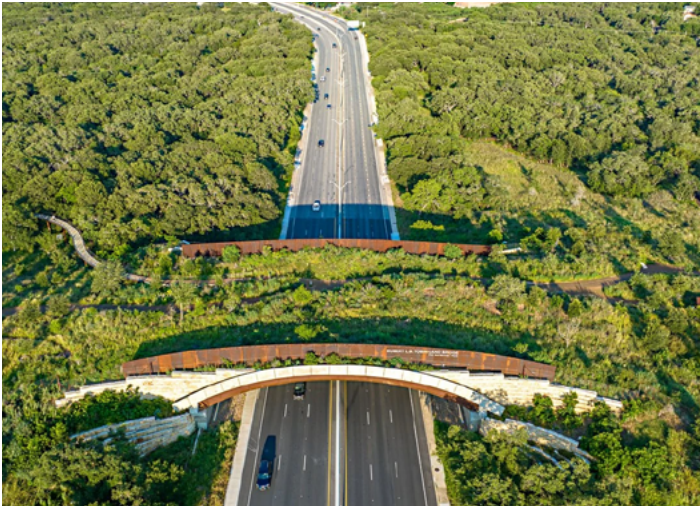
They help reduce erosion and stabilize the channel and banks. The power of the water during these more common and frequent floods is generally constructive, not destructive; however the constructive benefits can only accrue if we allow dense stream-side (i.e. riparian) vegetation to grow and allow natural woody debris to do its job.

Rare and gigantic floods are major reset events. No amount of strong trees or healthy riparian condition can offset floods of this magnitude. These massive floods force us to respect our rivers and give us the opportunity to rethink how we manage riparian property in the future. When experiencing this reset, healthy riparian areas are more resilient than intensively managed landscapes and tend to recover more quickly.

Key Messages:

- ★ Rivers and their adjacent riparian areas will heal naturally, if we allow the process to take place.
- ★ Human intervention can hasten or hinder the healing process.
- ★ Denser vegetation and wider bands of dense vegetation promote better healing.
- ★ Dead woody material of all sizes promotes better healing. Large wood is especially important.
- ★ Refrain from heavy-handed floodplain and bank manipulation.
- ★ Strive for a more river friendly landscape, more natural and less manicured.
- ★ Where cleanup is necessary, find a balance of targeted access and swaths of vegetation.
- ★ Observe and document your riparian recovery with written accounts and photos.
- ★ Be patient and expect setbacks. Allow a river to heal at its own pace and in its own way.
- ★ There will be scabs, scars, broken and deformed trees – all this is natural.
- ★ A flood-impacted river will be beautiful again but perhaps beautiful in a different way.

DID YOU KNOW? Goal: to capture CARBON from the atmosphere into our soil (carbon from the carbon dioxide of oil/gas emissions), something we can do to mitigate heating up of the atmosphere. (Every little bit helps!) **SOLUTION: PLANTS YEAR-ROUND COVERING YOUR SOIL!** Organic carbon in your soil is a good thing, best brought about by keeping healthy, living plants. Consider cover crops like legumes during the off-season to continue feeding microbes into the soil. Avoid bare ground and monoculture (planting the same crop over and over again), and cut back on impervious cover. For further info, download [the Greater Edwards Aquifer Alliance Healthy Soils Field Guide!](#)



Robert L. B. Tobin Land Bridge, San Antonio



Kinder Land Bridge, Memorial Park, Houston

TEXAS WILDLIFE CORRIDORS

We all hate hitting wildlife with our vehicles, whether it's sadness over the unnecessary killing or maiming of a wild animal, or frustration from resulting body repair. **Wildlife corridors** are protected, connected stretches of habitat designed to allow wildlife to move freely between separated natural areas, reducing the impact of habitat fragmentation. Examples are 1) **Underpasses of roadways**, evident in the Hill Country by the many bridges crossing the rivers, feeder creeks and streams. (Although most of these likely cross private land and are thus subject to hunting), 2) **Overpasses (Land Bridges)**: A major example of a land bridge is the **Tobin Land Bridge**, located in **Phil Hardberger Park** in San Antonio. (The park itself is a 330 acre urban nature park managed for

its wildlife habitat.) The Tobin Land bridge crosses over Wurzbach Parkway with ample space for both animals and humans to cross safely.

3) **Culverts and small underpasses** that allow smaller wildlife to cross under roadways. Example: since 2005 **Laguna Atascosa National Wildlife Refuge** (along the Texas Gulf Coast near Harlingen) and partners have built 14 road underpasses to help ocelots and other small mammals move safely in search of territory and mates.

4) **Riparian corridors** - natural wildlife corridors that follow rivers, streams, lakes, lagoons, and oxbows.

5) **TPWD regulations** that any private road crossing a waterway must have a prior approved permit and designed to allow fish and other aquatic species to pass through.

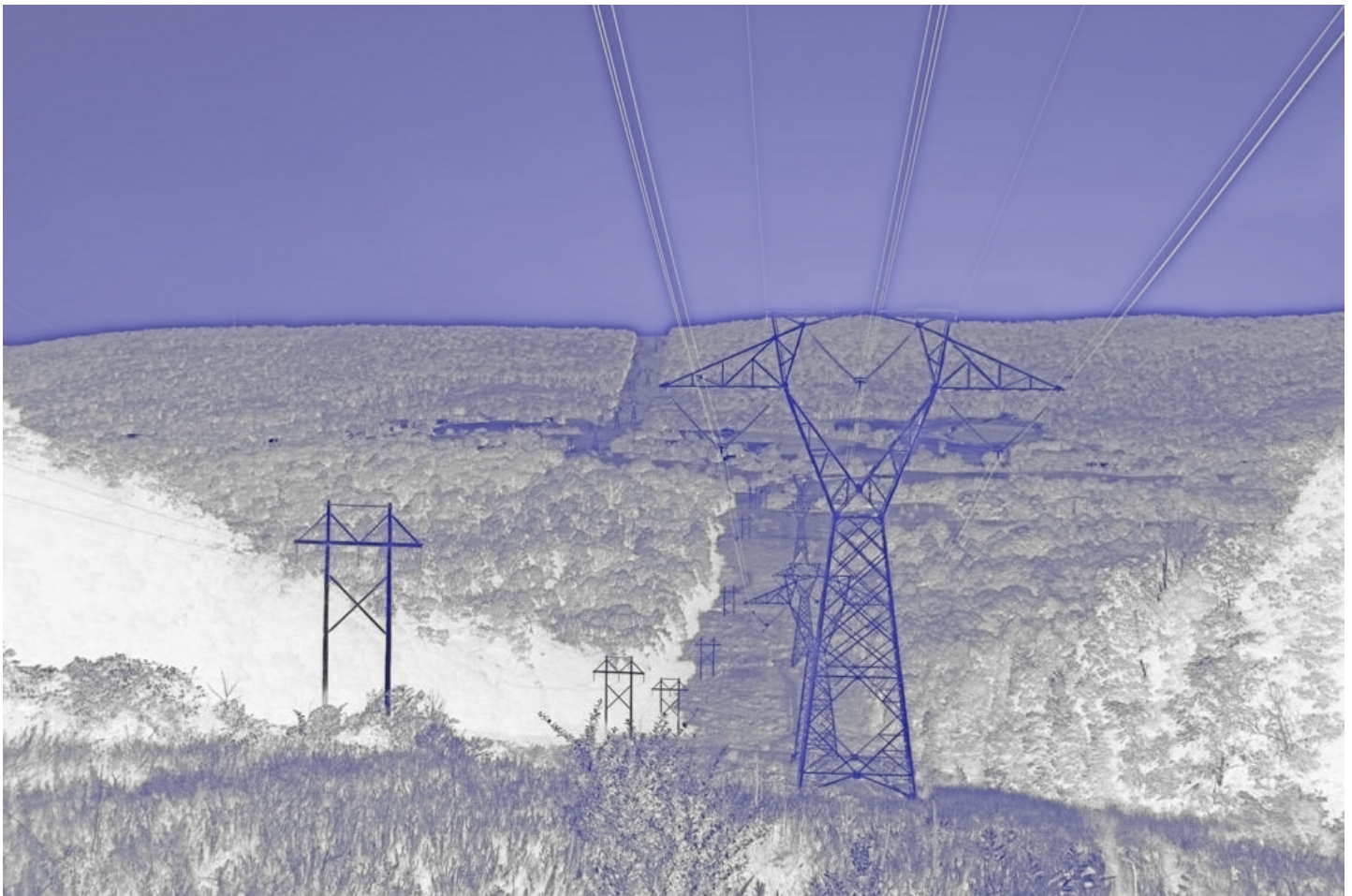
YES, THOSE HUGE 765-kV TRANSMISSION LINES PLANNED THROUGHOUT THE HILL COUNTRY ARE STILL "IN THE WORKS"...

For the Latest Information and "What Can You Do?"

<https://www.preservethehillcountry.com/>

And

<https://edwardsplateaualliance.org/alert>



INVASIVE SPECIES IN TEXAS

ARUNDO DONAX IMPAIRS CREEK HEALTH.

Invasive species like *Arundo* (giant cane), privet and others can harm Texas creeks and rivers. They devastate habitat and keep our waterways from providing essential ecosystem services, such as recreation, fresh water supply, and drought and flood protection.

DOCUMENTED IN
136+
Texas counties,
most problematic in several
Hill Country rivers and along
the Rio Grande.

**Arundo can grow up to
2 INCHES PER DAY,**
crowding out and replacing
native plants.

**FISHING & BOATING
IMPACTS**

Arundo and other invasive plants degrade habitat for fish such as Guadalupe bass, the official state fish of Texas.

Blocks access for bank, wade, and kayak fishing, a **\$14-32 million industry** in the Hill Country.

**DAMAGE TO
RIVER BANKS**

Arundo roots are very weak below the surface, causing river bank erosion.

They crowd out native grasses whose roots reach more than **6 times** deeper, stabilizing banks. An unmowed native buffer acts as a sponge and helps absorb water.

**DROUGHT & FLOOD
RISK**

Arundo's high wax content makes it a wildfire hazard—particularly during drought.

Can increase the area impacted by flooding up to **10%**

Keep our creeks healthy. Prevent invasives:

- 1 Don't mow, let it grow**
- 2 Let woody debris be**
- 3 Plant natives**

Join the Healthy Creeks Initiative: tpwd.texas.gov/HealthyCreeks

TEXAS PARKS & WILDLIFE

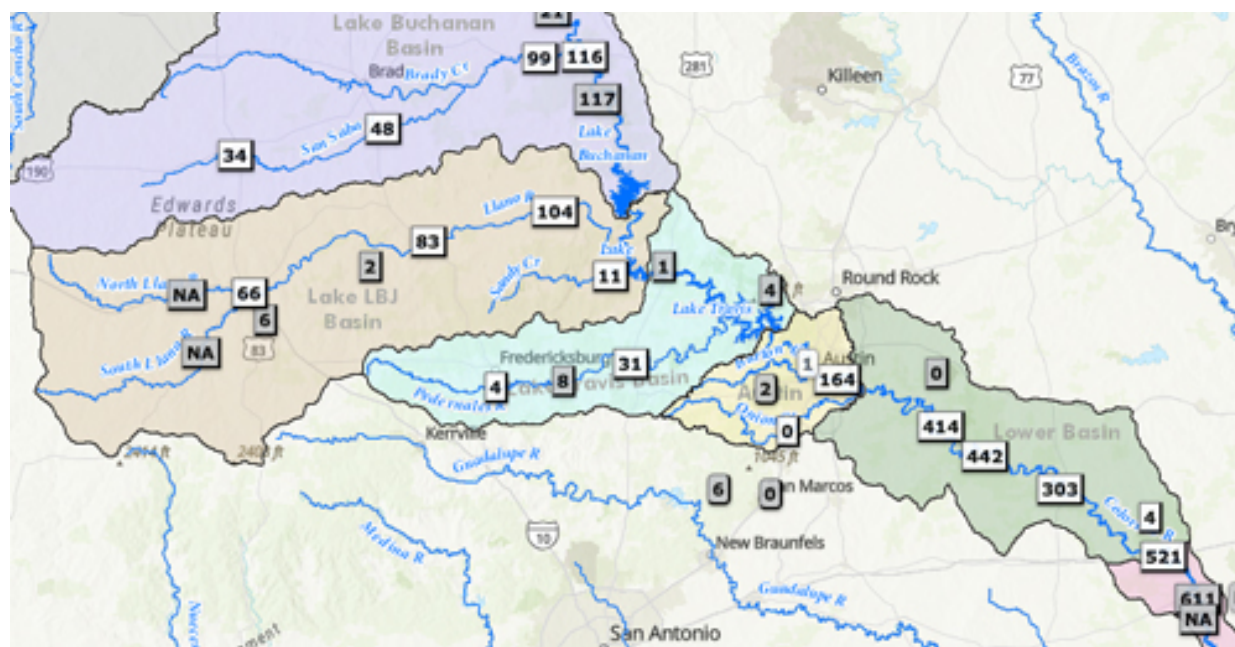
© 2017 TPWD. CS PR #0102-016 (01/17)

Healthy Creeks Initiative to Combat Invasive Arundo

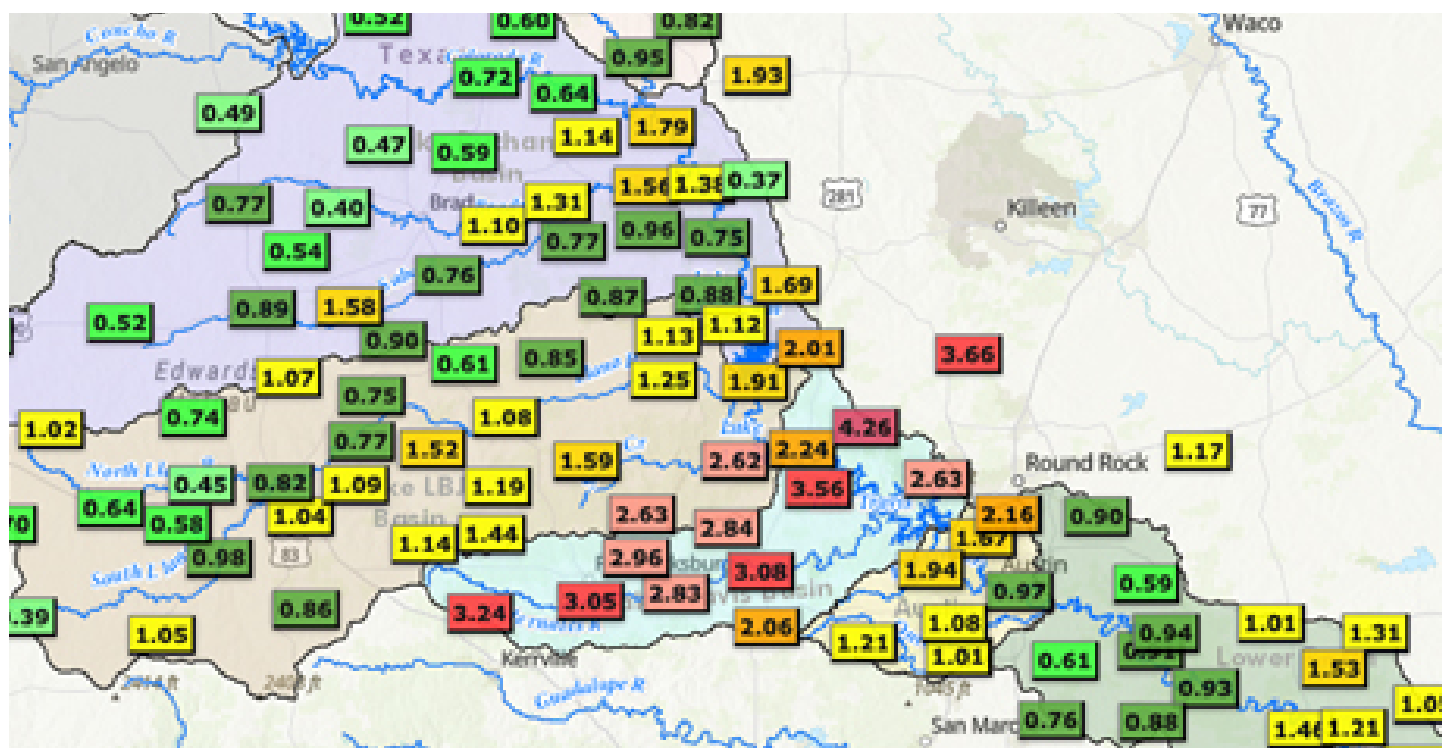
FOR COMPLETE INFORMATION, Please go to <https://www.llanoriver.org> and

then click on the link that reads: **Healthy Creeks Initiative to Combat Arundo**

LCRA Hydromet Stream Flow as of 1.31.26



Lower Colorado River Authority's Hydromet is a system of more than 275 automated river and weather gauges throughout the lower Colorado River basin in Texas. The website displays gauges maintained by the City of Austin and USGS. The Hydromet provides near-real-time data on stream-flow, river stage, rainfall totals, temperature and humidity. <https://hydromet.lcra.org>



LCRA Hydromet Rainfall Last 30 days (as of 1.31.26)