Watershed Weeks In Review

WASTE(D) WATER, JUNCTION MURAL RECAP, TX LANDOWNER SURVEY, ARUNDO

Editor: Linda Fawcett

WASTE(D)WATER

Phosphorus is an essential nutrient for plants and animals, but only in naturally occurring amounts. The tell-tale result of phosphorus overload is the growth of algae colonies to the point of depriving fish and other aquatic life the oxygen to live, as the water becomes less and less clear (technical term: Eutrophication). No more pristine stream.

Portions of the Llano River system are listed as pristine, but what does this mean and how did it get that way?

Technically speaking, pristine is defined as a stream segment with naturally occurring phosphorus levels below 6 micrograms per liter (mcg/L) in 90% of all water quality tests over the past ten years. Currently this definition applies to only 22 stream segments in Texas with most located in the Hill Country*. This makes the Hill Country a main attraction, resulting in astronomical population growth and fragmentation of previously unincorporated areas. More water requirements increase the pressure on the Edwards Aquifer and pristine streams, to the point that (for example) in Kimble County, recent driller logs submitted to the KC Groundwater Conservation District result in as many dry holes as successful ones**.

* https://hillcountryalliance.org/our-work/water-resources/pristine-streams/

** from page 14, current KCGroundwater District's Management plan.

But meanwhile, what happens to the wastewater generated by all of this? The largest impact on pristine streams comes from the wastewater generated by city facilities, new housing developments, and youth camps.

These users all need wastewater disposal permits from TCEQ in order to discharge treated wastewater into rivers, apply it to land for irrigation, or reuse it for other purposes. The least desirable method for the health of Hill Country rivers and streams is direct discharge. Current TCEQ discharge permits allow too much phosphorus, the lowest being 150 mcg/Liter. (Remember that 6 mcg/L is the target.)

There is also lack of policing: Official water quality testing stations are most often located far downstream from discharge sites, so that accurate analysis of the effects of the discharge are at best problematic. In other words, before being measured, effluent negatives could have already found their way into the karstic Edwards Aquifer, polluting our water supply. On top of that, repeated periods of drought and increased water use have slowed down stream flow and decreased channel vegetation that subsequently hamper phosphorus dilution. Overload begins, evident by disruptive algae colonies.

How is our "pristine" Llano River affected by wastewater dumps?

The **City of Junction's** TCEQ Wastewater permit allows direct discharge into the Main Llano River a few miles downriver of the city, with the nearest water quality monitoring station located approximately 17 river miles from the wastewater outflow! The permit currently only requires limits on the amount of e. coli bacteria in the city's treated effluent discharge, and with no limits on phosphorus(!), although with the 2021 permit renewal, the TCEQ did begin requiring Junction to at least self-report phosphorus levels. [Note that the TCEQ has fined Junction's wastewater plant as recently as 2020 for violations.]

Similarly, the **City of Mason's** TCEQ treated effluent direct discharge permit only requires limits on the amount of e. coli bacteria, plus ammonia nitrogen, but not phosphorus. Like Junction's wastewater plant, they too have had

past violations for going over their limits, resulting in significant fines to the City. Mason's treated effluent is discharged into Comanche Creek that flows into the Main Llano 9 miles downstream where the closest water quality monitoring station is located.

A brighter note: read about the **City of Llano** in the last paragraph below!

SO WHY WASTE WASTEWATER?

It is currently impossible to sufficiently clean wastewater to make it safe for pristine streams, so WHY DUMP IT? Especially since there are alternative methods of disposal: TLAPs and Beneficial Reuse. TLAP stands for Texas Land Application Permit. Specifically, the wastewater facility would dispose of treated effluent by land application in the form of surface or subsurface irrigation, on its own land or neighbors' land through long-term lease agreements. A correctly designed disposal field would be appropriately distanced from a waterway or set back from other entities, and be designed not to leak into any fissures leading down into the aquifer.

Reclaimed water (210 reuse) could happen nearby or be transported miles away via pipeline to paying customers or, for example, to water a city golf course. The **City of Llano** has a non-discharge permit which means it beneficially reuses its treated effluent to irrigate 200 acres of hay field. No direct dumping into waterways. ***GOOD JOB LLANO!***

QUICK REVIEW ON PHOSPHORUS NUMBERS (from last newsletter)

The measurements below shown are in micrograms per liter (mcg/L):

6 mcg/L - level of naturally occuring phosphorus in pristine streams.

15 mcg/L - level when excessive algae starts growing in pristine streams.

20 mcg/L - Level to which phosphorus in wastewater can be reduced using newest technology.

150 mcg/L (!) is the lowest phosphorus limit that TCEQ has included so far in any Approved or draft wastewater discharge permit.

500 mcg/L is the limit for many older TCEQ permits, if any limit at all!

**Note that TCEQ quotes its phosphorus measurement in milligrams (mg), not micrograms (mcg) even though mcg measurements can use whole numbers and
is easier to follow. RULE of THUMB: 10 mcg = .01 mg; 500 mcg = .5 mg, etc.

MANY OPPOSITION VOICES HEARD AT TCEQ PUBLIC MEETING concerning a new development's draft permit to dump treated wastewater (San Antonio area). Regardless of the outcome of this meeting, this serves as inspiration for our own anticipated TCEQ Public Meeting about the Waterstone Dam draft permit!

https://sanantonioreport.org/hundreds-oppose-permit-hill-country-wastewater-plant/?fbclid=IwAR03JeIkNcZT7yz7WDaiwfQUnfzYa-SG7q5FEjF2omlVm-3e8kqS-Rw8p0sM

RAISE HELL, NOT CANE
OR
FREE ARUNDO CANE REMOVAL FOR LLANO RIVER LAND OWNERS

By Glen Coleman, LRWA

2023 will probably be the year that feral hogs edged out the fire ant as Texas' most hated invasive species. Ranchers in Central Texas got a head start on that vote, but for some landowners along the Llano Rivers, a new candidate is making play for public enemy number one.

Arundo Donax, also known as Giant Reed, Carrizo or Elephant Grass, has already amassed quite a rap sheet in its westward march across the southern United States. The moisture loving cane grows in impenetrable twenty-foot-high stands and wipes out, destroys, any native vegetation in its path. Nothing can graze it, nothing will eat it, and within a few years it can choke out a creek, riverbed or moist riparian area. It's a sponge that depletes the water table and will quickly lay down a mass of dead cane just waiting for a spark. Where rivers once were a barrier to fire, an Arundo infested waterway becomes a conduit for unstoppable infernos. With the native vegetation depleted, the burned dead zones quickly lay down more cane. The horrible thing about Arundo is it takes over a landowner's riparian areas, the most important spots in most pastures for good cover management.

"Arundo is far thirstier than most native plants; its root-system can deplete enough water to push up as much as four inches of growth per day," says Dr. Angela England, a conservation biologist with the Inland Fisheries Department of Texas Parks and Wildlife. Her department manages the programs that target invasive species along Texas rivers.

Yes! **There is a program**.

Alarm bells reached the state capitol a few years ago and the Texas Parks and Wildlife Department was authorized to start assisting landowners with free eradication efforts statewide. So vast is the economic damage wrecked by Arundo Donax on the state's cattle, farming and outdoor recreation industries that the state is making resources available to any landowners who wish to combat this cane on their properties.

How it works:

Landowners who think they might have Arundo on their property can reach out to a local partner, in this case the Llano River Watershed Alliance, and ask for an assessment. The Alliance will send a scout to the site, and if Arundo is spotted, the scout will list the site for assistance. In coordination with the landowner or land manager, Texas Parks and Wildlife will then send out specially vetted, trained and licensed contractors to hand apply a selective systemic herbicide directly to the plant. The landowner is invited to be present during every step of this process and a Watershed scout may also be asked by the landowner to be onsite during any herbicide applications.

For more info, go to https://www.llanoriver.org and then click the link: **Healthy Creeks Initiative to Combat Invasive Arundo**. Anyone seeking an assessment can email LRWA President Linda Fawcett at **lrwatx@gmail.com**.

Please assist the community in eradicating this unwelcome colonizer from our riverbanks. The service is free, and the association will work carefully with landowners when any exterminators are present.

I bet a lot of you filled out the 2022 Texas Landowner Survey* last fall. THE RESULTS ARE IN! CLICK HERE

* Repeated every 5 years, this survey determines landowner needs, preferences, and concerns that serve to improve outreach and programming. Conducted by the Texas A&M Natural Resources Institute.

THE JUNCTION MURAL GRAND OPENING BLOCK PARTY on April 15, 12-2pm

The **first** TEXAS RUNS ON WATER mural in the Hill Country on 7th St and Main in downtown Junction would not have been possible without the support of the community. "We are so grateful to the city, the county, the tourism board, and the chamber of commerce, who all donated money to this project and helped make it a reality," said LRWA officer Melissa Burnard. The local mural committee also received significant support from nonprofits Hill Country Alliance and Big Seed. The mural features scenes from the Llano River, originally inspired by JHS student art, assisted by their teacher **Shea Watkins** and LRWA President/retired art professor, **Linda Fawcett**. All the artwork in this mural was created by Junction locals, **Oly Limon** (below left) and **Christan Powers** (below right), with guidance from Big Seed's **Kristin LaRue**. The well-attended reception/BLOCK PARTY was marked by free snacks and refreshments donated by Hill Country Alliance and Big Seed/Pint and Plow with live music by local **Travis Powers**. This event was part of the Hill Country Alliance's annual Spring Water Revival - a month-long, springtime celebration of water in the Hill Country. Learn more at www.springwaterrevival.org

ALERT:

The Llano River Watershed Alliance NEEDS YOU TO HELP US HELP YOU (and the river!)

If you live anywhere along the Llano Rivers or their tributaries, LRWA consultants will do a FREE assessment of your riparian condition and vegetation to give suggestions on how to better achieve your objectives! [You also get a free *Your Remarkable Riparian* (book) worth $50 when purchased from the Nueces River Authority.] Just email us at lrwatx@gmail.com

A very good **Texas Tribune** article related to the wastewater theme of this newsletter (*"Everything You Need To Know About Texas Water Systems"*) can be found at: https://www.texastribune.org/2023/05/03/texas-water-infrastructure-broken-explained/

BELOW: LCRA Hydromet Stream Flow as of 5.31.23

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 streamflow, river stage, rainfall totals, temperature and humidity. https://hydromet.lcra.org

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 Iniative to Combat Arundo**