

LRWA Watershed Report

Editor/Layout: Linda Fawcett

*Opinions expressed herein are not necessarily shared by LRWA



TCEQ COMMISSIONERS DECIDE ON LIBERTY HILL

Austin - March 28, Regular TCEQ Commissioners Meeting, Texas Workforce Commission, 101 E. 15th St, 1:30pm

FIRST, THANK YOU STEPHANIE MORRIS for your nine years of perseverance!

The number is 20. While it isn't everything that we wanted, it's a lot of what we wanted. (I will use micrograms with whole numbers instead of milligrams in this report because it is more reader-friendly.)

The following is a synopsis of the results from **Brian Zabcik, of the Wastewater Conservation Coalition** (of which LRWA is a subsidiary member), who was present at the Commissioners meeting on March 28:

"It's disappointing that the commissioners didn't approve the 15 microgram per liter limit recommended by the TCEQ Administrative Law Judges. However, they had two decent reasons for holding back, as we heard them say in their discussions. One was that TCEQ-certified laboratories can only measure phosphorus in water quality samples down to 20 micrograms. (This is a problem that WCC should look into later.) The other is that there was a split in the recommendations from the expert witnesses for the protestants. Baylor University biologist Dr. Ryan King was the only one to say that the new

phosphorus limit had to be 15 mcg (to avoid harmful levels of algae). Drs. Lauren Ross and Jan Stevenson both said that recreational uses of the river could be preserved with a limit of 20 mcg, so there was a split in the recommendations from the expert witnesses for the protestants.

Still, even if the 20 microgram limit isn't all that we wanted, I personally think it's extremely important that all of us need to present it as a win. First, the simple fact is that the commissioners' unanimous vote for 20 mcg was an ENORMOUS step for TCEQ. The agency has never gone below 150 mcg in any previous permit, and that's the limit that TCEQ's staff proposed for Liberty Hill and that city officials wanted. The difference between 150 mcg and the 15 mcg that Dr. King and the ALJs recommended is 135 micrograms. The difference between 150 mcg and the 20 mcg that the commissioners adopted is 130 micrograms. That's what I mean when I say that we got most of what we wanted — 130 is most of 135.

The second reason for us to present 20 micrograms as a win for us is that Liberty Hill officials are going to be fighting very hard to get this overturned, and they have some very powerful allies. LH officials are already spreading the lie that if TCEQ could issue a permit like this for their city, the agency could issue this for any city in Texas. Again, that's a flat-out lie, because no other city in Texas has been polluting a river as badly as Liberty Hill, but it will be enough to get powerful lobbyists on their side. The Texas Municipal League, which represents city governments, already sent a letter to TCEQ supporting LH before yesterday's meeting."



The South San Gabriel River downstream of the Liberty Hill wastewater plant

WORKSHOP: LANDOWNER ACCESSIBLE EROSION CONTROL TECHNIQUES

co-sponsored by the LRWA and the Upper Llano Soil and Water Conservation, District #225, March 20, Lyssey & Eckels, Roosevelt, TX

GUEST SPEAKER: MOLLIE WALTON, PhD, RESTORATION ECOLOGIST (Linda's Notes)

Our **NEW NORMAL**: SEVERE DROUGHT and more and more forceful floods.

*Plus, the Hill Country has so many overlapping watersheds, this also contributes to potentially huge hydraulic forces.

Drought causes less soil moisture that leads to less photosynthesis, leads to less and less plants, leads to less protective plant cover, that again leads to less soil moisture causing erosion on even a slight incline... (sound familiar?)

BUT, if you: Increase moisture infiltration so the soil remains moist/wet, this leads to more plants, increases plant cover and root growth that can hold the soil in place.

TERMS:

BLUE WATER: rainfall that goes to lakes, rivers and ground-water (and water frozen in glaciers and the polar ice caps).

GREEN WATER: the amount of rainwater that sinks in straight down to groundwater (ca. 65% of all rainwater). It's held in the soil and available to plants. It is the largest freshwater resource but can only be used in situ, by plants. Managed by farmers, foresters, and pasture or rangeland users.

Goals to achieve less erosion: 1) **geomorphology** - stabilization with Erosion Control Structures to stop further degradation, cover bare ground, create surface roughness, and deter animals eating the plants.

2) Slow down runoff to improve water infiltration.

3) Inevitable habitat improvement (re-establish those root systems!)

The force of water on an elevation-change increases with no obstacles, *especially* if there are little temporary drops in elevation ("nick" points) such as animal trails or road ruts. If steep enough these little nicks are called **headcuts that ENLARGE UPHILL** even as the downhill side keeps on eroding (see diagram above right).

STRESSORS that increase erosion:

- Legacy: mining scars, old roads railroads, trails.
- Current: modern roads, stock tanks too deep, drainage ditches alongside roads, culverts.



- Climate related: drought & duration, increase storm intensity, warmer temperatures.

MOLLIE'S RULE OF THUMB: prioritize the small stuff first – do the little "nitpicks" before ever even thinking about fixing the 5' headcut!

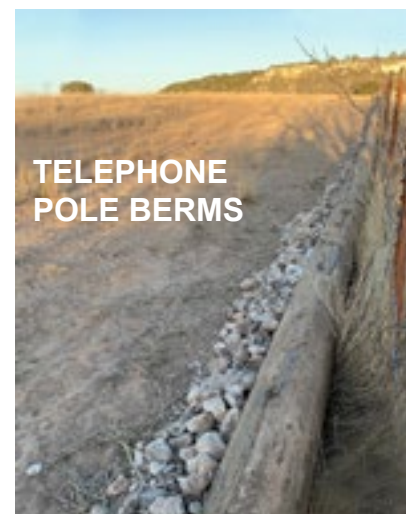
STRUCTURES TO PREVENT EROSION

Easiest: placing simple **BERMS** of log and/or rock along the contour/ high side of an elevation drop, but remember (in the case of logs/ telephone poles) to make sure they are sunk into the ground somewhat to prevent "piping" underneath (water getting under them in tiny open areas).

Stamp the soil on the high side and/or fill in with small rocks, soil, gravel (pictured at right/ Fawcett ranch).

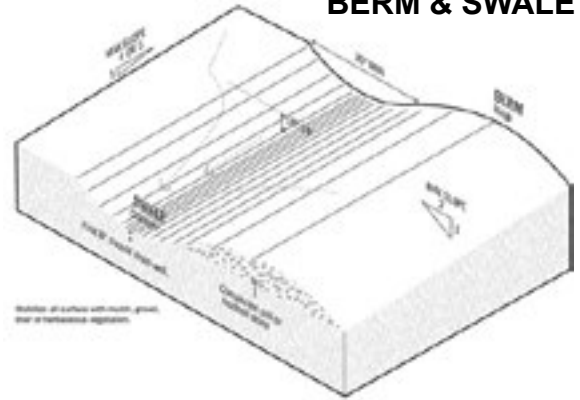
BERM & SWALE:

dealing with an inclined "rolling" land contour to accentuate/change slightly where the water goes. Be creative. The high parts (sloping sides) are called berms and the low parts (swales) hold ponding water runoff. All to *slow down* the rapid flow of stormwater. In this case, berms can be low earthen walls that help retain and channel the runoff into (a)



designated area(s) – the swales. Swales will become vegetated. Swales can also help in treating runoff to reduce pollutants, such as with wetland planting. (see diagram at right.)

BERM & SWALE



MEDIA LUNAS: half-moons, used to cure a pre-headcut (a small channel just starting). Or for prevention. (see photo directly below/ Fawcett Ranch) The bigger the rocks the better, if they are small then it needs to be wider.



MEDIA LUNA

You hope the rocks “disappear” into soil and vegetation. (picture directly below/detail of previous: disappearing rocks in progress) As the soil covers up rocks on the high side, add more rocks!



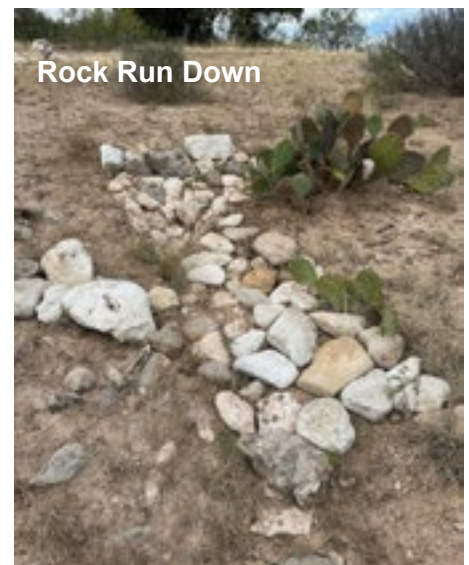
Disappearing Rocks - high side of Media Luna

You could also plant pollinator-friendly “good plants” between/ within the rocks of a Media Luna to strengthen its hold so it won’t wash away easily.

ONE ROCK DAM: better for straight, slightly downward channels versus elevation-undulating downward channels. Called for with accelerated headcuts (again see chart, previous page). It is an on-going process – you put a single layer of rocks in the bottom of the depression, then after soil settles over it, put another rock on top, and repeat over time. Use only in places that have the capacity to revegetate. The “danger” is that the water may just go around the rock and make the cut wider – so make sure the rock is “jammed in.” One Rock Dams just slow the downward water, best for slight inclines. And they are not really “one rock” – can be a lining of rocks.

ONE LOG DAMS use old fence posts, staked down or stabilized with 1/2-length T-posts. The fence posts are placed in line with the channel, not across it.

Next, **ROCK RUN DOWN** (for smaller headcuts; but over 1 foot is still too deep for this method). Line the depression with tight-fitting relatively large rocks (see photo at right, Fawcett Ranch).

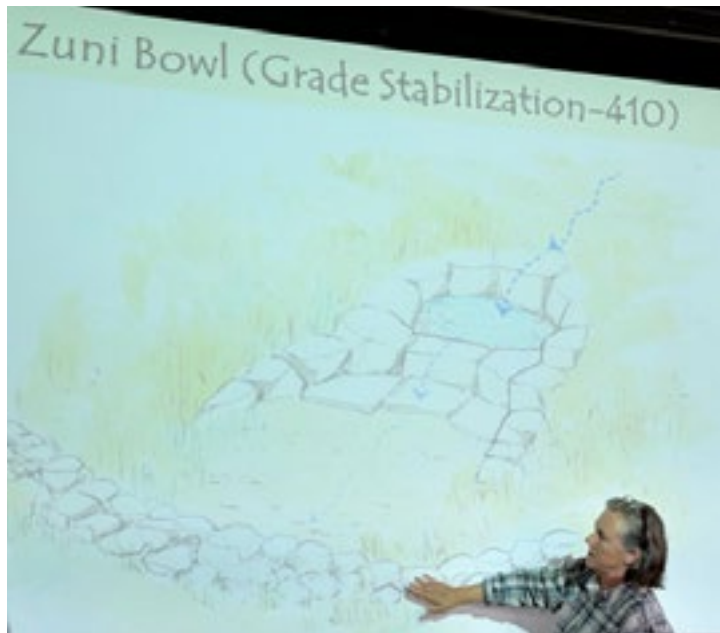


Rock Run Down



One Rock Check Dam

And last but not least, **ZUNI BOWLS** for big, deep headcuts. First, line with “geo-textile fabric,” (tougher than garden weed-proof fabric). Then you have to line it with boulder-size rocks; you will likely need machines to help (or a contractor). And finish with a Media Luna below it. (see picture, next page)



“Almost anything you do can help.” For example, you could cover a deer trail with rock to deter the deer from using it over and over, making it deeper.

FUTURE FUNDING FOR LANDOWNERS wanting to address EROSION: In the future, NRCS will be adopting this type of restoration to their EQIP grants, mostly under their CODE 643; Zuni Bowls will be under CODE 410. This has already happened in Colorado and N.M.



Mollie Walton at left talking about Zuni Bowls.

ABOUT REUSE (some take-away excerpts from Water Wonks Seminar by Rachel Hanes, Greater Edwards Aquifer Alliance (GEAA), Jan. 24 2024)

First, what is reuse? Answer: Taking treated wastewater and re-using it for something else, usually some form of ground application (but NOT to direct discharge it into a waterway).

Reuse can help prevent groundwater from drawing down to the point of drying up our springs.

The State can create “water conservation and reuse districts” with “purple pipe networks” OR have the pertinent River Authorities enlarge their scope to include implementation of Reuse.

The EPA wants intuitive locations of REUSE – to be near water-hungry industries congregated in industrial parks, for example. QUARRIES in particular need to use reclaimed wastewater for their huge water needs.

Recycled water should be for ALL outside irrigation, even residential lawns.

The Texas House of Representatives, Committee on Natural Resources/Water, Agricultural and Rural Affairs, is currently conducting a study for the creation of Wastewater Reuse Districts, especially in fast-growing areas and at industrial sites.

LATE BREAKING:

Austin wastewater reuse requirement

Austin City Council voted on 03.07.24 to amend the land development code to require wastewater reuse for large developments. Under the change, new developments of 250,000 square feet or larger must either (1) have an onsite wastewater reuse system, or (2) be connected to the city’s Reclaim Water system. Austin Water Utility will roll out a “Go Purple” campaign for the public.

Question: At this time do any other jurisdictions in the Hill Country have a similar requirement for wastewater reuse in new developments? NO

DEVELOPER INVESTIGATED FOR UNPERMITTED GUADALUPE RIVER WORK IN HUNT

[From an article on March 21, 2024, by Irene Van Winkle published by the West Kerr Current, serving Ingram, Hunt, Mountain Home, The Divide]

Possible violations of state or local laws have occurred on a riverfront property in West Kerr County. Agencies are now investigating what looks like unauthorized earth moving activities by an out-of-town developer. Upper Guadalupe River Authority officials have heard from area citizens reporting and witnessing heavy equipment working on a hillside south of the North Fork of the Guadalupe River, saying they saw soil and rocks sliding downhill and into the water.

Tara Bushnoe of the UGRA (Upper Guadalupe River Authority) also confirmed hearing information from a Texas Parks & Wildlife Department game warden. Bushnoe said she reported the information to the Texas Commission on Environmental Quality and the Kerr County floodplain administrator.

Earlier, a Texas Game Warden had also visited the site. Following a visit to the site by a TCEQ investigator, the contractor was told to stop all activity, and the equipment was eventually removed from the property.

The site in question faces property owned by Camp Stewart, who have nothing to do with its ownership or the developer.

A search of KCAD mapping of the property identifies the owner as **River House Development LLC**.

An investigator from TCEQ walked the length of the riverfront taking photos and she told the contractors there they were in violation of the Floodplain Permit and other details about disturbing more than five acres without a permit. Back in San Antonio, she was going to get the paperwork going to notify the Houston property owner of the violation.

On Tuesday (March 19), TCEQ Media Relations Specialist Ricky Richter confirmed, "The TCEQ San Antonio Region received a complaint on March 8, 2024, regarding construction and possible impact to the river. An investigation was conducted on March 18, 2024, and the investigation is currently ongoing."



A developer's earth-moving activities on the banks of the Guadalupe River in Hunt are being investigated by the Texas Commission on Environmental Quality.

Addendum from Ron Duke, of the Guadalupe Riverkeepers organization: "About 10 days ago bulldozers were seen at the top of a hill/cliff overlooking the North Fork/Guadalupe here in Hunt on Hwy 1340 across the river from where Camp Stewart keeps their horses fenced. We obtained permission from Camp Stewart to use their gates and drive to the riverfront to see close-up. The contractor dozers were building a road down the hill/cliff to the river and pushing all the rocks/dirt down the hill onto the floodplain/river.

The damage is not visible from the road, but up close it is. Acres n'acres of hill are now on the riverfront. An area about the size of [Kerrville's] Tivy Stadium has been pushed/bulldozed downhill.

From the Kerr County property records we learned that several tracts of adjacent acreage on the hill comprising about 400 acres were sold to a Houston Development Co. LLC in January: River House Development LLC.

On Monday I met w/the TCEQ investigator sent from their San Antonio office on the Guadalupe riverfront site. The investigator said "*the property owners have no Permits*" and took photos of the damage. Back at the San Antonio office the paperwork of the violation was begun. The TCEQ language refers to it as "Stormwater Runoff of more than 5 acres with a road being built and all the rocks/dirt falling into the Guadalupe River."

It's on the TCEQ website tracking page so anyone can check the progress: <https://www.tceq.texas.gov/compliance/complaints/waci.html>. Click on the Button: Search the Status of a Complaint and in the Complaint Tracking # blank, type in **the TCEQ Complaint tracking# is 418815**.

HILL COUNTRY GRASSROOTS GATHERING FOR WATER ADVOCATES Fredericksburg, TX, March 26

The LRWA was represented by Board member, Linda Fawcett, at a Hill Country Alliance-sponsored gathering of central Texas grassroots groups concerned with water issues. The speakers at this meeting focused on communication and successful water conservation advocacy with real estate developers and Home or Land Owner Associations. Excerpts from Fawcett's notes:

A CASE FOR REUSE

David Price, engineer for Texas Onsite and President of the Texas Rivers Protection Association, gave a presentation on the importance of wastewater REUSE as a good strategy for new developments. First he gave statistics showing that with our current growth in the Hill Country, we are actively depleting the aquifers more quickly than they can replenish. Surface water is also over-allocated.

A major villain in this scenario is direct discharge of wastewater, that many if not most developers apply for from the TCEQ. Except that more and more of these new permits are being challenged and delayed by a growing number of well-organized water advocacy groups. One sticky issue, however, is that permits are not made public when they are submitted to the TCEQ, only when the draft permit is ready giving opponents less time to react. That issue will likely be addressed either internally (TCEQ rules) or maybe by legislation. *And treated wastewater is often still harmful to our streams* because of excessive BOD (biological oxygen demand - kills

fish) or too much phosphorus (causing excessive algae that also limits oxygen in the stream, besides being unsightly).

Beneficial Reuse is a good solution for wastewater, and currently waters crops, is used by industry (such as for cooling towers), toilet flushing, and even treatment for drinking (Did you Know that the Cities of Wichita Falls and Big Springs' drinking water is partially treated wastewater?)

From a developer's point of view, Price noted the Cost Differences of Zero Discharge versus direct discharge: 1) Zero makes quicker permits, quicker to market (time = money). 2) Treatment plants are cheaper because in most applications less cleaning is required.

Example: in Austin, a city building downtown collects all the water it uses and treats it all for reuse: only a little more expensive than traditional water use, but zero taking from the aquifer. This is known as **One Water**, applicable to individual buildings and even to entire developments.

We will definitely be running out of cheap water in the near future, so the public should expect more of themselves (conserve water on a household level), and from developers, the TCEQ, and the Texas Legislature.

HOME and PROPERTY ASSOCIATIONS

As a rule, new homes use more water than older ones, and about 70% of water use during the summer is outdoors.

DID YOU KNOW...?

FALLACY: Collecting rainwater in tanks for personal use deprives the aquifer below. Variation: All rainwater soaks into the ground so that we can just pump it back up again when we need it.

Both statements are not true. All rainwater DOES NOT soak into the ground because of the dominance of uncontrolled rainwater runoff. Only if you use "passive rainwater collection" by controlling where and how the rain runs off with berms, swales, gravity (controlling the elevation of the ground), or otherwise set up barriers. Goal: to slow the water down or stopping it from moving anywhere but straight down into the ground. Mother Nature can also help, as in the case of strategically located thick brush and/or closely grouped trees.

So many HOAs have cookie-cutter rules that come from other states and don't apply to the conservation needs of the Hill Country. For example, why should all lawns be green during a severe drought! The best strategy is to engage with developers BEFORE enough lots fill up for the HOA to take over, or talking with the HOAs *before* they file with the County (after filing and approval, a 66% approval vote will be needed to make changes). Effective communication can also be with neighboring HOAs, the County Commissioners Court, and property management associations (the latter enforces the HOA's rules). Built into the plans for a development or an HOA should be pride in the local ecology!

There are current efforts to create Hill Country guidebooks for developers, HOAs, and city/county officials, explaining the unique geological conditions of the Hill Country, and addressing issues of hardscapes, water features, grasses & lawns, native trees and plants, outdoor lighting geared to night-time Dark Skies, yard maintenance, model landscape conditions, and last but not least: the CC & Rs (covenant, conditions and restrictions - i.e. the rules). Water companies are also interested in such a guidebook, especially in times of drought when some rules affecting water usage will need to be relaxed. There has been Texas legislation (property code 202.007) to allow homeowners to defy their HOA rules if they want to xeroscape or have rainwater collection, but HOA managers might find ways to discourage them nonetheless.

AND FOR A POSITIVE NOTE: In Bandera an "Ideal" Development Is In Progress

It's called [Silver Sage](#) and its creator is **Art Crawford**. Silver Stage is sixty acres outside Bandera with "Tiny Houses" planned and Senior housing as a priority. When surrounding landowners and the city first learned of this enterprise, there were protests because of the real fear of not having enough water. After all, there are already 5600 registered wells in Bandera County with 12-20 wells being added every month!

The Hill Country Alliance introduced Crawford to the idea of **One Water**, and a new plan was designed by engineer **Nick Durant**. As planned:

- the front part of the acreage is flood plain so it will be a Nature area. No oak trees will be cut down, building will go on around them.
- Rent for the homes will be on a sliding scale. Besides the (colorful) homes themselves and a Senior Center, partially underground greenhouses growing hydroponic plants will be added to accomplish the roof area needed to collect enough rainwater to meet the development's needs, including a fire tank.
- Above ground and underground storage tanks will enable 1.8 million gallons of available rainwater onsite; plus condensation, stormwater, and grey water.

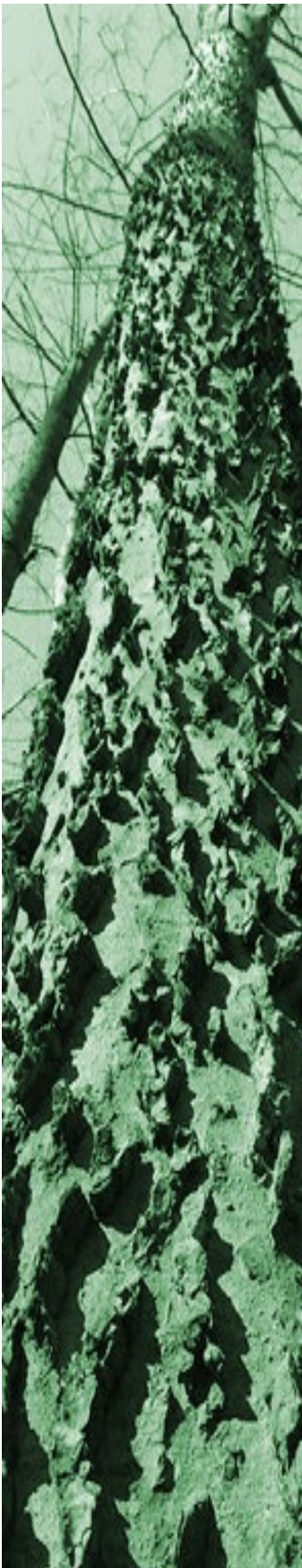
This pioneering project will prove that **A Development Can Build Houses Without Drilling a Well!** The TCEQ has never seen this - 100% rainwater.

Local fundraising has funded this project so far - a lot of commitments. The project is still ongoing, and when the total cost becomes evident, then government, EPA and foundation grants can be applied for. Crawford estimates that the total cost will likely be 50% more than a typical development that drill wells *but the benefits are obvious to all*.

* **NOTE:** the Hill Country Alliance can make introductions to any developer who wants to convert to any level of One Water, and the One Water publication is available for download on its website. ([go to this link and look for the button saying "Explore the Guidebook."](#))

A Hackberry Heresy

by Glen Coleman



Anyone who has ever had to cut a Hackberry tree out of a wire fence will have a number of colorful names for this plant. In the interest of polite society, I will limit this list to include the common Hackberry, *Celtis laevigata*, and its common cousin the Netleaf hackberry, *celtis reticulata*. Of the five possible Hackberry species at large in Texas, these are the two along the Llano River watershed most likely to swallow a fence post full of nails and wait for a chainsaw.

Collectively, local experts of my acquaintance classify this tree in the Damdo family, along with Damdo cedar and Damdo mesquite.

“Trash trees, cut ‘em down.”

Now I have cut my share, but bear with me; it might be time to reconsider the hackberry gospel.

Foes of this tree make a good case. Let’s be honest, they are not the stateliest of trees in the pasture. Their wood is brittle and prone to drop. Downriver, City of Austin arborists report that around 15% of their dying or “imminent risk” trees are Hackberries. The bushy limbs are often prone to mistletoe and Nipple Leaf Gall. Finally, birds with a belly full of hackberry seeds can somehow sense a chain link fence from twenty miles away.

“Where injured, the roots and soft, brittle heartwood offer little resistance to wood-rotting fungi.” says State Botanist Chris Best, with the U.S. Fish and Wildlife Service.

But from a healthy pasture standpoint, hackberry trees have a lot to offer. They are a tough tree during hard times. All five species can withstand drought, heat, and our highly alkaline soils. Hackberries can give us canopy when there are not a lot of options. Their fast growth allows them to quickly get above the hard browse line and their bushy habit, while erratic, helps resist damage from bucks scraping velvet: the death of many an oak sapling.

However, once out of the reach of deer and goats, the Hackberry canopy is a bonanza for other creatures. Their tiny blooms support bees and other pollinators, and they retain their sugary berries well into Autumn; a lifesaver for Cardinals, Cedar Waxwings, and overwintering songbirds. And finally, probably more than any tree in our ecosystem, the leaves of the hackberry are a larval feeding ground for some of the Hill Country’s most iconic butterflies. The “Hackberry emperor” will lay its eggs nowhere else. (*continued next page...*)



If you are looking for wrens, warblers, or other caterpillar-eating birds, these trees are your best bet.

Hackberries also make great nesting habitat. Their branches may lack grace, but their twiggy chaos is the perfect option for hummingbirds, Tanagers, and Red-eyed Vireos.

Birds were not the only ones to recognize the value of this plant. Native cultures used the berries extensively. Both the Kiowa and the Pawnee were reported to have ground the berries into meats or fats for roasting, while the Chiricahua and Mescalero used a similar process and dried the mixture for future use.



These are hardworking plants and times are tough right now.

“Once it reaches the canopy, it produces heavy crops of sweet, nutritious fruits, a staple for many fruit-eating birds and mammals. Hackberries live fast, give much, and often die young.” says Best.

Our Texas summer sun at its zenith is the death of good pasture. Following on the premise that any canopy, even Damdo’ canopy, is better than none; I suggest some revisions in the myth of the hackberry. Trim them up as high as you can reach, and get some shelter over your grasses and forbs.

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

MEET STEVE TOTTEN, new LRWA BOARD MEMBER!

Steve Totten - Stephen is a native of Michigan, having studied in California and Washington, D.C. for college. He graduated from American University, specializing in business. Professionally, he began his career as a licensed agent for Aflac insurance in Maryland, covering both the Baltimore and Washington metros. His years of experience spent implementing benefits package strategies for employers in both for- and non-profit worlds, as well as assisting with the DC government employees' own Aflac enrollment program, gave him a keen view of the realities of employee retention and compensation plans across all industries.

Stepping back after nearly 10 years of service, Steve took time for R&R by traveling, notably including the Appalachian Mountains from Maryland to Tennessee, the Grand Canyon and Grand Staircase regions of Arizona and Utah. Though in doing so, he discovered a piece of Texas he would ultimately come to call home in the Hill Country, right here in Kimble County.

Last spring, Steve relocated full-time to Junction, to the home of his vertical hydroponic gardening project, River Ranch Harvest, where he strives to provide locally-grown food while only requiring as little as 5% of the water demanded by a similar yielding ground garden. His tomatoes are found throughout the season at his booth at the Junction Area Farmers Market on Saturdays.

Steve's personal interest in rain catchment, water conservation, and soil erosion mitigation, and as a new resident of the Hill Country, he connected to the LRWA, and he is proud to offer his help to keep our rivers for the next generation of Texans.



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



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
3.31.24**



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 3.31.24**