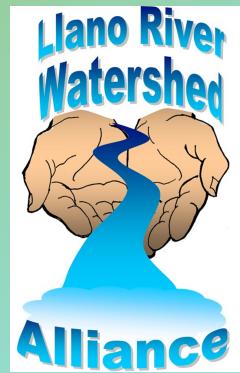


# WATERSHED WEEK IN REVIEW



## Please Join Us

If you find this newsletter and [Facebook Page](#) helpful and support the efforts of the Llano River Watershed Alliance, please consider becoming a member.

*Individual Membership is \$20/year.*

*Business Sponsorship is \$100/year.*

Click on the Donate Button on our [website](#) or [Download a Membership Application](#)

We greatly appreciate your support.



## Get Your Well Tested Next Week!

*If your well was inundated by floodwaters, or you just haven't had it tested in some time, next week is your chance to act.*

Texas Well Owner Network, part of Texas A&M AgriLife Extension, is hosting two water well screenings in Mason and Llano counties. Each screening will be in two parts.

November 5 - Mason screening 8:30-10am

November 8- Mason screening results 6pm  
[details](#)

November 6 - Llano screening 8:30-10am

November 8- Llano screening results 6pm  
[details](#)

**NOTE : Sample bottles must be picked up prior to the screening event. See details.**

**Healthy Creeks and Riparian Areas Workshop**  
**Saturday, November 3 - 8:30am - 2:00pm**  
**Sunrise Beach Village Civic Center**  
**124 Sunrise Drive**

[details](#)

**Healthy Creeks and Riparian Areas Workshop**

**8:30 am – 2:00 pm, Saturday, November 3rd, 2018**

*Sunrise Beach Village Civic Center  
124 Sunrise Drive, Sunrise Beach Village, TX 78643*

8:30 am	Welcome & Introductions	Daniel Oppenheimer, Hill Country Alliance
8:45 am	Introduction to Riparian Function	Steve Nelle, NRCS retired
9:30 am	Hydrology and Sediment: Principles and Interactions	Kenneth Mayben, NRCS retired
11:15 am	Riparian Vegetation	Steve Nelle, NRCS retired
12:00 pm	Light Lunch Provided	
12:30	Riparian Stewardship & Best Practices	David Riley, Plateau Land & Wildlife Management
1:00	Sandy Creek Case-Study: Tying it all Together	Steve Nelle and Kenneth Mayben
1:30	Wrap-Up Discussion and Dismiss	

**\*\*\*\$10 registration includes lunch. Space is limited. To register, go to:**  
<http://www.hillcountryalliance.org/event/sandy-creek-healthy-creeks-and-riparian-areas-workshop/>



## Fish and Flooding

*EDITOR'S NOTE: Stakeholders throughout the watershed have expressed concerns about the welfare of our finned friends following the flood. Today, Texas Parks and Wildlife Department issued a press release addressing the issue **with suggestions for how riverside landowners can aid in the recovery.***

AUSTIN – As flood waters recede in the Llano, Colorado, Pedernales and other central Texas rivers, Texas Parks and Wildlife Department (TPWD) biologists are fielding questions from anglers and other members of the public concerning the impacts of flooding on fish populations. Although TPWD biologists do not expect to see a negative impact on fish populations in these rivers as a direct result of the flooding, the long-term outlook depends on how riverside landowners and communities respond to the aftermath of downed trees and other debris deposited in and along these rivers... [continue](#)

## Get to Know Your Fish — Blacktail Shiners

By Megan Bean, Texas Parks and Wildlife

Blacktail Shiners are one of the most common fish in the Llano River watershed. Found throughout a large portion of the state, many people are familiar with this abundant minnow. Most Blacktail Shiners you will see in the river will grow up to about three inches long, but they have been recorded to be as large as six inches long. Adults typically live for three to four years and become mature around one year old. Blacktail shiners can be found in many different habitats in the river, but will congregate in riffles during the spring and summer to breed. Eggs are deposited in crevices of rocks and other substrates in fast moving water; the fast moving water keeps a fresh supply of oxygen over the eggs. Blacktail Shiners prefer to eat aquatic insects which include insects along the benthos (bottom of the river), floating in the drift (the water column), as well as insects that fall into the river from the terrestrial system.

Cool fact: The black spot on the tail is thought to be a false eye to trick predators like Guadalupe Bass!

Identification: This will be the only minnow species in the Llano River with a mostly silver body and a large black spot on the tail.



*Above : Blacktail Shiner*

*Below : Blacktail Shiner in breeding colors*

*Photos: S Robertson, Texas Parks and Wildlife*

# The Size of the Floods

**We often hear the term 100-year flood.  
What does that mean?**

What it *does not mean* is that there will be 100 years between floods of this magnitude. A 100-year flood occurring one year could be followed by a 100-year flood the next year, or next month.

The better terminology is **Recurrence Interval** for a flood. Recurrence Intervals are statistical probabilities that a given flood event will be equal or exceeded in any given year. A “100-year flood” really means that a flood of this magnitude has a **1 in 100** (1 percent) probability of occurring in a given year. (It also means that if you live by the river for 20 years, you have a **1 in 5** chance of observing such a flood.) A flood event with a recurrence interval of 25 years has a 4 percent chance of occurring in any given year, a 10-year interval has a 10 percent chance, and so on.

Below are the recurrence intervals for selected locations along the Llano, along with the recorded flow from the last flood events. The recurrence information comes from the [USGS Water Resources Investigation Report 96-4072](#) and the Fall 2018 flood peaks come from USGS gaging stations. Values are in cubic feet per second (cfs).

Note: The South Llano has only had a gage since 2012.

Gage	1 : 2	1 : 5	1 : 10	1 : 25	1 : 50	1 : 100	Peak Flood Event	Fall 2018
N Llano near Junction	10,300	35,300	58,700	92,300	118,000	143,000	102,000	28,000
Llano near Junction	13,700	50,100	88,200	149,000	202,000	258,000	319,000	118,000
Llano near Mason	25,700	75,300	125,000	208,000	283,000	369,000	380,000	183,000
Llano at Llano	30,500	78,400	126,000	207,000	284,000	374,000	380,000	278,000