

Good Water Ripples

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Fall Training Class Starts Soon

UPCOMING EVENTS

8/9/18	NPSOT
8/13/18	WAG
8/23/18	GWMN
8/27/18	Austin Butterfly Forum
9/5/18	NPAT
9/13/18	NPSOT
9/20/18	Travis Audubon
9/24/18	Austin Butterfly Forum
9/27/18	GWMN

Check the website for additional events including volunteer and training opportunities. The events are too numerous to post here.

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Good Water Master Naturalist Fall Training Class will start Tuesday evening, September 4th. The class will meet on Tuesday evenings from 6:00-9:30 p.m. Some classes and field trips will be on Saturdays. The first class is Tuesday, September 4. The last class will be

December 11. Cost is \$150 and includes the comprehensive Texas Master Naturalist Program manual as well as a one year membership to the Good Water Chapter. For couples who plan to share the manual, there is a discount for the second student.

Click here for online registration. The Tuesday classes will start at 6:00 p.m. and finish around 9:30. There are four Saturday field trips and classes planned. The schedule will be posted in the next week or so. Check back here after August 15 for the link to the schedule.

Click here: <https://txmn.org/goodwater/Training-class-online-application/> for Online Training Registration

David Robinson took our Spring Training Class this year. He says, "The Instructors & Speakers were absolutely fantastic. They were knowledgeable, approachable and eager to share their knowledge. I also would like to thank all the Goodwater Master Naturalists who were there for every class and made the whole experience thoroughly enjoyable!"

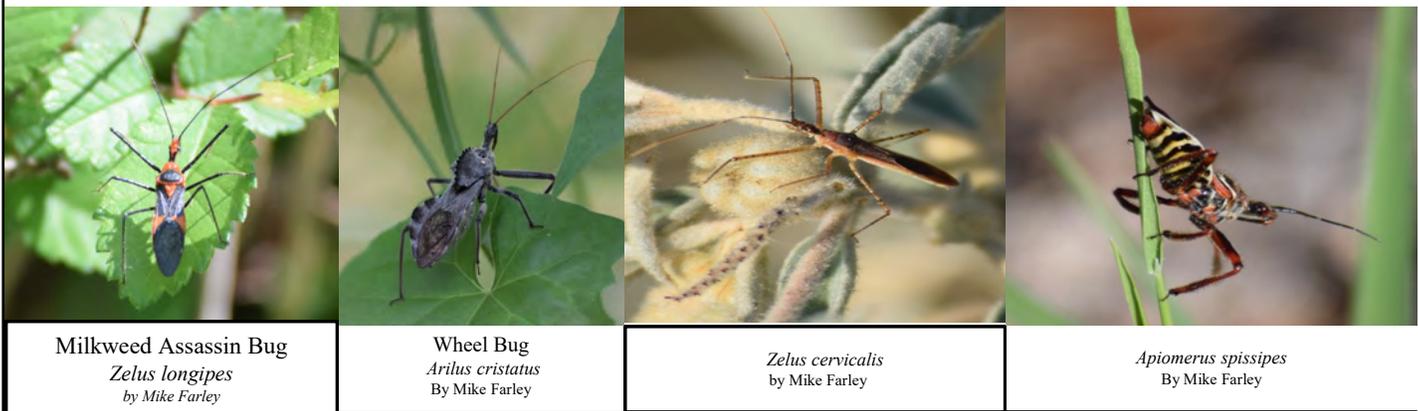
(continued on page 3)

In the woods, we return to reason and faith. There I feel that nothing can befall me in life,—no disgrace, no calamity, (leaving me my eyes,) which nature cannot repair." — Ralph Waldo Emerson

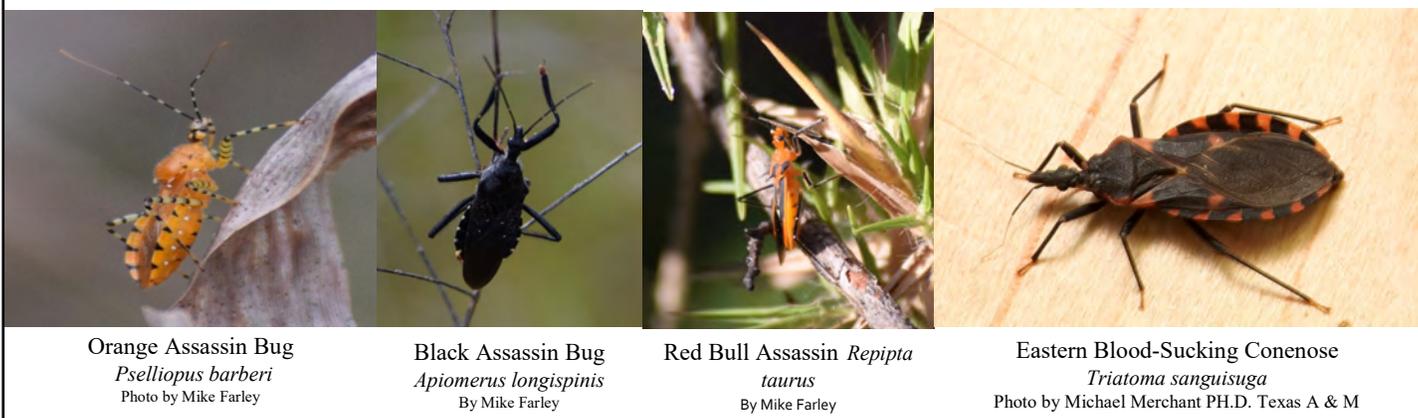
Assassin Bugs of Williamson County by Mike Farley

North America is home to approximately 150 species of assassin bug. **Reduviidae** are a large family of the order Hemiptera, (True bugs), and are ambush predator insects. They hide in plants or flowers which they blend with. Their legs are specially outfitted with sticky hairs that aid in holding on to the victims. A quick strike with the assassin bug's long mouth paralyzes the prey. This dissolves its internal organs to juices, which are drained with their soda straw like mouth. Many are specialized for specific prey and sometimes mimic other insects. Assassin bugs originated in the middle Jurassic, or 178 million years ago. The greatest diversification began around 97 million years ago in the late cretaceous. 90% of today's Assassin bugs began at this time period.

The most commonly found assassin bugs in Williamson, Co. are: *Zelus longipes* (Milkweed Assassin Bug), *Zelus renardii* (Leaf Hopper Assassin Bug), and *Arilus cristatus* (Wheel Bug) are the top three. *Zelus cervicalis*, *Zelus luridis* (Pale Green Assassin Bug), and *Apiomerus spissipes* round out the most commonly found here.



Less common, (per iNaturalist) are: *Pselliopus barberi* (Orange Assassin Bug), *Apiomerus longispinis* (Black Assassin), *Repipta taurus* (Red Bull Assassin), *Microtomus purcis*, *Melanolestes picipes* (Black Corsair), *Rasahus biguttatus*, *Rasahus hamatus*, *Sinea diadema* (Spined Assassin Bug), *Triatoma gerstaeckeri*, *Triatoma sanguisuga* (Eastern Blood-Sucking Conenose), genus *Phymata*, and genus *Macrocephalus*.



Assassin Bugs of Williamson County (Continued from page 2)

Assassin bugs range from being very beneficial to gardeners, to very dangerous to mammals, including human beings. They undergo incomplete metamorphosis with three stages, egg, nymph, and adult. As nymphs they molt several times to reach adulthood. Their bite, which is more of a piercing, can take weeks to months to heal.

One group of Assassin bugs known as “Kissing bugs”, or Triatomine bugs, can transmit Chagas disease to humans. They are known to sometimes carry a parasite (*Trypanosoma cruzi*), in their feces. Their bite on or near the face of a sleeping human, may go unnoticed, and can lead to fever, large swollen lymph nodes, headache. If medical attention is not sought early, it can be fatal. Medications to treat it are nearly 100% effective. Wikipedia claims 2015 deaths at 8,000 worldwide. There have been two confirmed observations in Williamson, Co. of these species posted to inaturalist. I believe there are seven species in Texas known to carry the parasite. They can be found in substandard housing and outdoor pet or animal resting areas. They require a blood meal so their habitat choice will center on those locations where victims will be sleeping or resting.

Triatomine bugs are found in southern United States, Mexico, Central America, and South America. Eleven species are found in the US. Not all Triatomine bugs carry the parasite that causes Chagas disease, but a large percentage do. Individual bugs can be tested in a lab for the presence of *Trypanosoma cruzi*. The article cited below, describes how the bugs can be sent to Texas A&M for testing. Kissing bugs originated from 27-32 million years ago which coincides with their host prey diversification.

A very informative research article on Chagas Disease, **using citizen science**, was produced in 2015. The title is; **Using Citizen Science to Assess Chagas Disease Entomological Risk in Texas**. By Curtis-Robles R, Wozniak EJ, Auckland LD, Hamer GL, Hamer SA (2015)

Since the bite of any assassin bug is very painful, they should not be handled without protection.

CDC Centers for Disease Control and Prevention “Triatomine Bug FAQ’s”

Texas A & M Agrilife Extension Insects in the City “Wheel Bugs and other Assassin bugs” Michael Merchant PH.D.

kissingbug.tamu.edu Kissing Bugs and Chagas Disease

Fall Training Class Starts Soon

(continued from Page 1)

Mary Gail Hamilton also took the Spring Training Class. Her comments: "The whole course was incredibly interesting. Based on the agenda, there were classes that I told myself would be boring. However, that was never the case! Each of the speakers did an excellent job sharing his/her knowledge. I will say the bat class was particularly eye-opening, learning how non-threatening and adorable bats really are. The wildflower and bird-watching field trips have made me much more aware of the nature around me. I was sorry the classes came to an end. I thoroughly enjoyed learning about nature and meeting others who share my interest!"

Texas Master Naturalists are people who still like to play in the dirt and are willing to get their feet wet and their hands dirty. We are a volunteer organization and we have many opportunities to serve. To become a Master Naturalist, one takes a training class of over 40 hours of expert training about almost every aspect of the natural world – soils, backyard habitats, prairies, rangeland management, forest ecology, birds, mammals, fish, insects, botany, climate, geology and archaeology.

To complete the certification process, each volunteer completes 40 hours of service and an additional 8 hours of training. To maintain their certification each year, volunteers are encouraged to take their knowledge and volunteer for 40 hours and take 8 hours of additional training.

Why Roadkill? By Amy Flinn



Roadkill Great Horned Owl Photo by Amy Flinn

Whether you are an iNaturalist fan/user or not, you might be surprised that numerous projects have been created on the program for the reporting of roadkill. A quick review disclosed at least 26 projects with “roadkill” in the project title. Some are limited to a certain area - “Roadkill of Texas” or a particular species and location - “Roadkill Raccoons of Texas.” The purpose of this article is to provide some general information about roadkill projects.

Why Roadkill?

Each project has a specific reason for the study. Projects are designed to provide data regarding 1) existence of the species in the area, 2) location of dangerous crossings for animals (and hence drivers), 3) wildlife management/program planning (hunting quotas), and 4) need to provide safe roadways and crossings and/or

prevent crossings.

What are the most frequently reported species?

It depends. Different projects report different results. For example: In *Roadkill of Texas*, the top three species reported are Slender Glass Lizard, Western Ribbon Snake, and Checkered Garter Snake. In both *Adventure Scientists’ Wildlife Connectivity Survey* and *Global Roadkill Observations* the top three species reported are Common Raccoon, Virginia Opossum and Striped Skunk.

[My most observed roadkill? Common Raccoon, Striped Skunk and Fox Squirrel – Virginia Opossum is a close fourth.]



Roadkill Raccoon Photo by Amy Flinn

Isn't it gross?

It can be unpleasant to make these observations, but knowing these surveys are useful can be sufficient motivation.

Sometimes creatures are impossible to identify. An occasional “mammal” or “bird” or “something” is an acceptable identification because the observation provides some data if not complete data. Sometime another naturalist/curator will be able to identify a species you cannot.



Roadkill Fox Squirrel Photo by Amy Flinn

Isn't it dangerous?

Common sense should be used when stopping to photograph roadkill. **If it is not a safe place to stop, don't stop.** If you do stop **USE YOUR FLASHERS!**

[I find it more frustrating than dangerous, as there is almost always a place to stop, if one has time and patience. Often an observation will require a number of U-turns before a successful photograph can be taken.]

Summer Youth Activities



Liberty Hill Library
Dinosaurs



Georgetown Recreation Center
Aquatic Invertebrates



4H Summer Camp
Spiders



Hutto Park Kids Summer Camp
Aquatic Invertebrates



Georgetown Recreation Center
Water Treatment



Hutto Park Kids
Waterfowl



4H Summer Camp
Mason Bee Houses



Liberty Hill Library
Geodes



Georgetown Recreation Center
Water density experiment

Summer Youth Nature Programs by Mary Ann Melton



Hutto Park Kids
Waterfowl Class

Good Water Master Naturalists have been busy providing nature programming for kids this summer.

Our weekly programs at the Georgetown Recreation Center's Camp Goodwater and the biweekly programs at Hutto's Park Kids Summer camp centered on water: Qualities of Water, Waterfowl, Amphibian Watch, Water Treatment, and Aquatic Invertebrates. Kids at the Round Rock Library explored bats in the Batmania Event making bat puppets, exploring echolocation, bat flights on radar, McNeil Bridge Mexican Free-tailed Bats, places to go see bat emergences, and other bat species in Central Texas. The Liberty Hill Library Summer Theme was Dinosaurs. In June Kids explored dinosaurs with hands on activities: viewing real fossils, breaking open geodes, and Burgess Shale replica's, etc . In July kids explored how dinosaurs are ancient ancestors of today's birds. 4H Summer Camp kids studied about Insects and Spiders with activities such as viewing spider specimens, making a model spider, and making Mason Bee houses from straws.

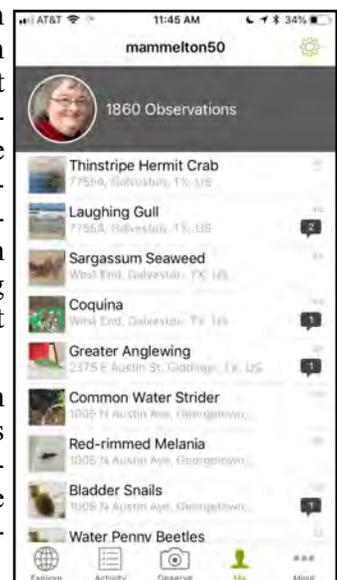
During Texas A&M AgriLife's annual Farmfest kids explored monitoring stream water quality with aquatic invertebrates.

iNaturalist by Mary Ann Melton

iNaturalist is an online database with observations of flora and fauna from around the world. It is an amazing Citizen Scientist project. For an observation to be "Research Grade" it must have a photo or audio recording where at least two identifiers agree on the species. The photo or audio recording must also include the geographic location of the observation. Observations may be made directly from the cellphone app or on a computer. They have added an identification feature that is especially useful. When one uploads an image, the computer analyzes it and makes an effort to identify the species, giving five to ten possibilities. This is extremely useful both when one is out in the field making observations and when one is back at the computer trying to determine what species they saw.

There is also the collaboration with others who either confirm the identification or correct incorrect identifications. There is no question that bird enthusiasts get rapid identification confirmation. Other categories take longer for identification and some observations never receive confirmation. Sometimes it is because the original image is poor quality, other times it is that there are not enough specialists in that taxa making identifications.

Another nice feature is that you can search iNaturalist records by location or species. You can search your own records or see all records in your search.



iNaturalist Phone App

Destinations: Central Texas Wildlife Blinds

By Mary Ann Melton



Inks Lake State Park

The Highland Lakes Master Naturalist Chapter built a blind a few years ago at Inks Lake State Park. A good blind will have a water source and several different kinds of bird



Eastern Cottontail



Painted Bunting

food. Desirable food includes black oil sunflower seed, a peanut butter/suet mix, fruit and hummingbird feeders. A water feature that has a drip will bring in birds that will not come in for the food. While birds are often the big draw for visitors, other wildlife will also come in for food or water. Some birds will visit the blind year round. Others come in either the winter or summer. At Inks Lake stop by the entrance gate to pay your entrance fee or check in with your annual pass. Then ask for the combination to get into the blind area.



Ladder-backed woodpecker

Pedernales Falls State Park

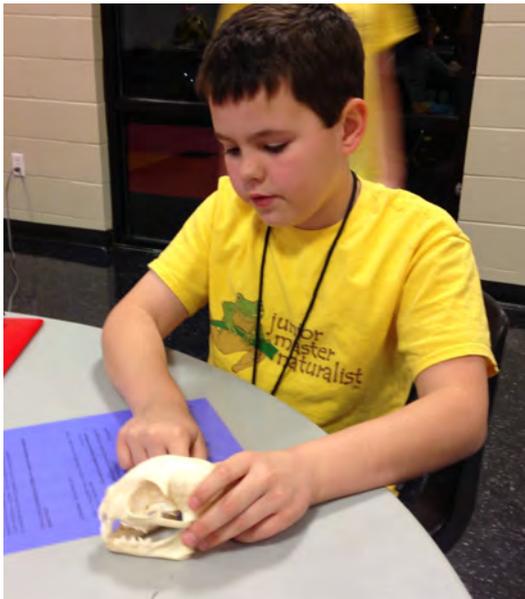
There are two bird blinds at Pedernales Falls State park as well as a station up by the entrance gate. These blinds are well established and have many species coming both summer and winter. Summer favorites are



painted buntings with their brilliant colors. Winter sparrows are

Junior Master Naturalist 2018-2019

Register Now!



The Good Water Chapter of the Texas Master Naturalists is partnering with Williamson County 4H for Junior Master Naturalist programming this year. This program for 3rd-5th graders aims to instill a sense of excitement, passion, and concern for nature, to offer students core knowledge of the natural world in Williamson County, and to bring children and their families into the natural world more frequently. There are 16 sessions – twice a month that include field trips. Junior

Master Naturalists will explore the nature in Williamson County through presentations by Master Naturalist volunteers, hands on learning activities, and field trips. There will be one service project.

Location: Juvenile Justice Center, 200 Wilco Way, Georgetown, Texas

Please note: Class sessions will be at the Juvenile Justice Center, 200 Wilco Way. This is near the Regional Animal Shelter. The first class will last until 8:00 p.m. as we need extra time to introduce the 2018-2019 year program and rules, etc.

Registration is open. Reserve your spot now.

Click to go to the [online registration form](https://txmn.org/goodwater/junior-master-naturalist-registration/).
(<https://txmn.org/goodwater/junior-master-naturalist-registration/>)

Last Day to Register: September 21, 2018

Grades: 3rd-5th grade

Fee: JMN Registration \$25.00 + **4H Membership:**\$20.00 Total \$45.00

Time of Class: Thursday 6:00 pm-7:30 pm

Field Trips are listed on the calendar. Parents are expected to accompany their children on the field trips.

Each participant will receive a Junior Master Naturalist T-Shirt.

To earn the Junior Master Naturalist Pin each participant must attend 80% of meetings.

Sponsor: Good Water Master Naturalist Chapter Williamson County, Texas A&M AgriLife Extension Office - Williamson County, Williamson County 4H, Texas Parks & Wildlife

Junior Master Naturalist Tentative Schedule

Sept 6 - Introduction to Program - Ecology

Sept 20 - Reptiles

Oct 4 - Crustaceans, mollusks and invasives

Oct 27 - Service Project

Nov 3 - Insects field trip Evening

Nov 15 - Insects Class

Dec 6 - Careers

Jan 10 - Dragonflies

January 31 - Spiders

February 7 - Mammals

February 21 - Hawks & Owls

March 7 Birds - seedeaters, insect eaters

March 21 - Water Plants

April 4 - Butterflies

April 19 - Bats

May 2 - Pollinators

May 18 - Field Trip - Pollinators

For information about the Good Water Chapter
<http://txmn.org/goodwater> or goodwatermn2@gmail.com