

T E X A S

Master
Naturalist™



HIGHLAND LAKES CHAPTER



Highland Lakes Steward

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MISSION

The Texas Master Naturalist program is a natural resource-based volunteer training and development program sponsored statewide by Texas A&M AgriLife Extension and the Texas Parks and Wildlife Department.

The mission of the program is to develop a corps of well-informed volunteers who provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities for the state of Texas

OFFICERS

President
Chris Faught
Crisfaught1@hotmail.com
(512) 261-6583

Vice-President
Melissa Duckworth
lissaduckworth@gmail.com
(512) 756-2813

Secretary
Marilyn McClain
mccgrammy@yahoo.com
(214) 235-5759

Treasurer
Blair Feller
blair.feller@gmail.com
(830) 385-2782

PRESIDENT'S MESSAGE

by Cris Faught

What a privilege it was to recognize Ray Buchanan as the recipient of the Master Gardener of the Year award during our October Master Naturalist meeting. He is truly a treasure for our Chapter by serving in many humble and unseen roles in both organizations. Congratulations and thank you Ray!

The Land Management Assistance Program (LMAP) was discussed by Melanie Huff as our newest venture into the "hands on" approach to helping landowners in the development of their property with an educated and environmentally responsible plan. This small committee made up of (Marvin Bloomquist, Jerry Stacy, Fredi Franki, Linda O'Nan, Jan Warren and Melanie Huff) has volunteered for extensive training and many hours of field service to our community. It is this kind of volunteerism that makes our Chapter outstanding. Thank you all for your commitment to this program.

Marcy Westcott announced that Blanco State Park had won the Budweiser Grant of \$25,000.00 and that Highland Lakes Master Naturalist had matched more than \$2000.00 in donations from our members. This money will help escalate the opening of the park and assist the Friends Group in developing the nature viewing features. Thank you, the members of HLMN, for your generous support of the Friends of

Blanco State Park.

We have two silent auctions coming up in the next few months. If you are still thinking about donating some items, let Fredi Franki know so she can get you to the right place at the right time.

The Nominating Committee will begin working soon. Also, Melissa will begin asking for volunteers for various positions to be filled for 2016. Our newly approved Bylaws state our purpose as: "...educational, non-profit, volunteer organization to provide education, outreach and service..." Please keep this in mind if you are called to volunteer in a leadership role for our Chapter. This is another avenue of service in the spirit of our stated purpose.

Thank you for allowing me to serve as your 2015 President



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Please submit pictures, articles, reports, stories, announcements, etc. to

chili865@gmail.com.

Photos should have captions and appropriate credits. The deadline for submissions to each month's newsletter is the 10th of the month and publication will be by the 15th.

NOVEMBER MEETING

by Melissa Duckworth

The November 2015 meeting of the Highland Lakes Master Naturalist Chapter will be held at Turtle Rock Ranch and hosted by Allan and Vivian Wolfe. Turtle Rock is intended to be an evolving laboratory and demonstration facility for sustainability and renewable energy projects.

This property was settled in the 1880s by a German family named Slaughter (no relation to Slaughter Creek south of Austin). The original survey was done by Jonas Dancer for whom nearby Dancer Flats is named. There is a marker for Mr. Dancer on the adjacent ranch. Mayme Slaughter lived on the property until 1984. Allan and Vivian acquired the property in 1998.

Turtle Rock is located a few miles west of Highway 71 on the opposite side of 71 from Packsaddle Mountain and several miles north and west. Turtle Rock is a little over 30 minutes from Marble Falls (281 to 71W) and about 40 minutes from Burnet (29 to 1431 to Slab Road to 71E). A map and directions will be provided prior the meeting.

OCTOBER PROGRAM

Dr. Phil Wyde's presentation, "Light-Hearted, Then Serious and Then Light-Hearted Microbiological Thoughts For The HLMN" at the October meeting hit the mark at being very informative and entertaining.. What's the difference between a virus and a bacteria? - now we know!



GET WELL!

Prayers and loving thoughts for a quick recovery to be back "on the trail"

- Karyn Parker
- Sondra Fox
- Gretchen Pachlhofer
- Ellen Elly (Hibler)
- Anne Holly
- Ann Stevenson
- Blair Fellar
- Fred Zagst

Spring-fed Honey Creek, a perennial creek, flows through Turtle Rock. (Yes, it is still flowing.) Long-time neighbors consistently report that Honey Creek has been flowing "since before the drought of the fifties". In addition to the riparian area along the creek, there are a hillside of oak, elm and juniper and two upland pastures.

Turtle Rock was converted from agricultural use to a wildlife management plan in 2008. With two grid-tied solar electric systems and an 80' wind turbine, the ranch is a net electricity producer. Central Texas Electric Coop has been a supportive and cooperative partner in the integration of our three grid-tied ener-

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2015 National Wildlife Refuge Week

Bee Helpful to Pollinators Family Fun Day October 17 9-1

Doeskin Ranch at Balcones Canyonlands
National Wildlife Refuge
10654 FM 1174, Bertram TX 78605

All Day

Children's Activities & Games— All About Monarchs & Pollinators

- Go Seed Go - make your own seed ball to take home
- Monarch Migration - follow the monarch's migration
- Butterflies vs. Moths - jigsaw puzzles, word games, memory game
- Solitary Bees - make a bee nest
- Honey & Bumble bees - pollinator relay
- Hummingbirds - great nectar game
- Amazing Butterfly - discover the life stages of the egg, the caterpillar, the chrysalis, and the butterfly
- Citizen Scientist - hunt for and tag then release monarchs

9– 1 **Butterfly Hunt**, tagging & release

9 & 11 **Drawing in Nature** with Priscilla Humay

9- 9:30 **Landscaping for Pollinators**

10–10:30 **Plight of the Monarch!**

11– 12 **Getting Great Photos with Just Your Phone** You can use a camera too

A COUPLE OF INTERESTING AUGUST HAPPENINGS

by Jerry Stacy

We have all heard of how a cowbird will lay eggs in a songbird's nest and leave the rearing to the songbird. The cowbird hatchling will dominate the nest for the food brought in by the parent songbirds. Apparently, they also demand food when they leave the nest. We watched this female cardinal feed this cowbird for days at our feeder.



Also, in August, I happened upon a rather large, dead rat snake with a big belly. I have no idea how it died, but it was fresh. (I did not, would not, kill it!) My curiosity got the best of me, so I had to do a little surgery. Did the squirrel cause it's demise???



NOVEMBER MEETING

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gy systems. In addition, the cabin in which the meeting will be held is off-grid and powered by a solar system and a large bank of batteries. The ranch also has two solar water pumps, a solar electric fence, a rain-water collection system, a greenhouse, an organic vegetable garden, and an electric ranch cart. We recently purchased a BMW i3 electric vehicle that can comfortably travel from Austin to Turtle Rock on a single charge.

Recent projects include improvement of a 4.5-mile hiking trail around the ranch, maintenance of a system of swales in the pastures to promote in-soak, annual visits from guest cows, and a visit and assessment from HLMN's Land Management Assistance Program Team. Upcoming projects include the construction of simple erosion control features, additional swales for water management, a prescribed burn in support of reestablishing native prairie grasses, and a micro-hydro electric generation system. Ever ongoing activities address brush control, maintenance of the many systems and projects, and removal of invasive or exotic species.

BENEATH YOUR FEET- THE SECRET WORLD OF TEXAS HILL COUNTRY CAVES

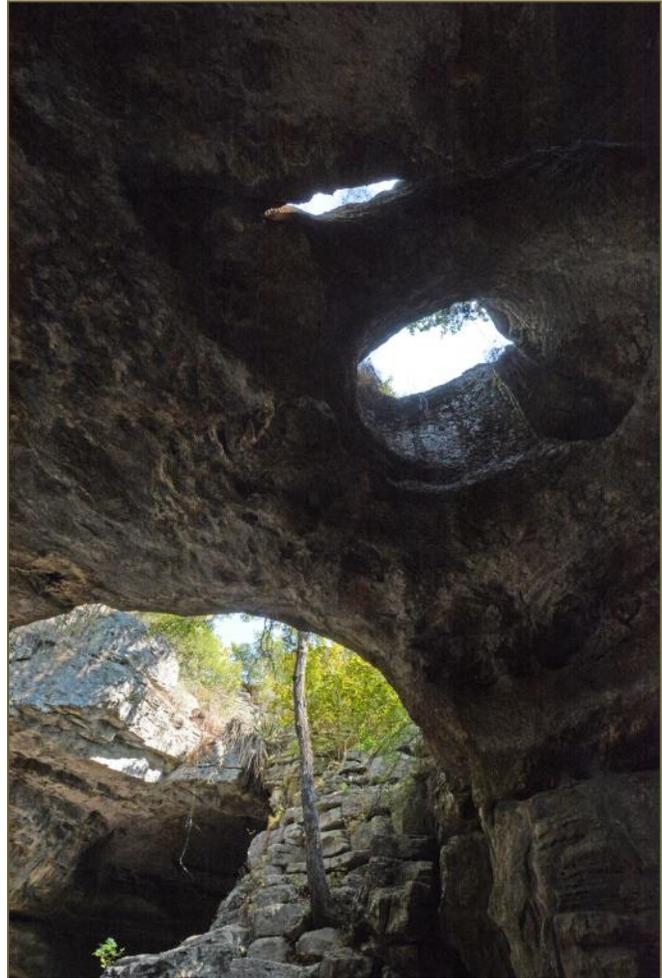
by Melissa Duckworth

Reprinted from the Highlander Newspaper

Caves are mysterious features of the Texas Hill Country and Edwards Plateau, holding well kept secrets comprised of geological features, anthropological treasures and subsets of life found nowhere else. Approximately 65 to 145 million years ago, Central Texas was covered by seawater containing a multitude of life forms. Their skeletal remains accumulated into layers and, after time, limestone deposits were formed. Around 25 million years ago, the sea receded for the last time and the formations became pocked with Swiss cheese-like holes due to groundwater filtering through fissures, creating formations known as Karst. Karst formations are characterized by an abundance of caves. It is estimated that for every known cave in the Hill Country, 1,000 unknown caves exist. Most are on private property or have been forever lost, covered by human expansion. The well-known caves hold tourist allure of tales of buried treasure, secret Native American rituals and illicit Prohibition parties. There is real and folkloric history to most caves open to the public.

Water is the building force of caves, carving unique passages and building up mineral deposits called Speleothems. Building construction, road expansions and landfills cause excessive contamination of groundwater and are therefore endangering the health of caves and our fresh water supplies. Vandalism and the theft of artifacts have been a problem in the past further endangering cave health and research.

Of concern is the future of at least nine cave dwelling animals, among them cave dwelling bats, several spiders and beetles such as the Helotes Mold Beetle and the Robber Baron Cave Spider. Why are



these species important to humans? They indicate the health of the cave itself.

Cave dwelling bats are responsible for the pollination of more than 300 species of fruit as well as huge nightly consumption of crop eating insects. Bats' annual contribution to North American agriculture is valued close to \$4 billion dollars. Cave health equals bat health.

So what does the future hold for caves in general? More and more caves are utilized as laboratories for scientists. Karst systems yield clues to how water supplies can become contaminated and consequently how diseases might be spread via underground connections between waterflows. Caves hold keys to formation of many mineral deposits, the nature of soil



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RED TIDE

by Cathy Hill

Those of us who went on the HLMN Port Aransas trip got to experience something we had not planned on, the phenomenon known as red tide. While not pleasant, it was certainly educational in a way we won't soon forget. We were warned about it shortly before the trip and one of our planned activities had to be canceled, but as it appeared to be such a pretty clear day, I don't think we were expecting the immediate effect of the airborne toxin. As soon as we emerged from our air conditioned cars we all started coughing! As part of our AT, Ranger Buzz with the Padre Island National Seashore included a few facts about the red tide in addition to his excellent planned presentation on the Kemp's Ridley sea turtles. However I was left with wanting to know more. Now I was a biology major at Texas A&M and had studied red tide in a marine science course, but that was a long time ago, so upon returning home I did some further research and decided to share it for The Steward.

The red tide we experienced is due to a larger than normal concentration of the microscopic algae, *Karenia brevis*, found only in the Gulf of Mexico. There are other types of red tide caused by other algae elsewhere. While rapid increases of algae, also known as algal blooms, can be caused by fertilizer and other pollutant runoffs, this red tide is completely natural and occurs when temperature, salinity, and nutrients reach certain levels. Scientists believe that high temperatures combined with a lack of wind and rainfall are usually the root cause. When present in dense concentrations, these algal blooms are visible as reddish or brown patches of ocean water. In Texas, red tides have occurred from August through February. This is good news for Spring Breakers and most summer tourists, but not so great for off-season visitors. The red tide typically begin further out in the Gulf of Mexico and then currents and winds push it toward shore. The effect is less frequent in bays and estuaries.

Karenia brevis produces a toxin, called a brevetoxin, that affects the central nervous system of fish so that they are paralyzed and cannot breathe. As a result, one of the most visible effects of a red tide event are quantities of dead fish washing up on the beaches. Coyotes and other scavengers can also fall prey to the toxins. Interestingly gulls and other



birds are less affected, in part because they will just leave the area. Beverly, another park employee, informed me that another visible indication of a red tide is a noticeable absence of birds along the shore.

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BENEATH YOUR FEET

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cover and rate of water movement through rock. Biologists study how cave animals adapt to total darkness, limited food supplies and what these species might reveal about evolution.

Most exciting could be medical research coming from caves. Use of cave medicine has been documented from the 16th and 17th centuries. Moonmilk (montmilch or cave milk) is a white creamy substance found in limestone caves and is of great interest. It is composed of crystals from carbonates, created by bacterial rather than chemical reaction. In the 16th century, this liquid was effectively used to treat acidosis (increased acidity in blood or urine), cardialgia (heartburn) and was successfully used for dressing wounds. Scientists now know that it contains antibi-

otic properties. Great potential exists for the development of new drugs whose origins are found only in healthy caves.

Spelunking is the recreational pastime of exploring little known caves. In contrast, speleology is the scientific study of cave environment. Often, the two are combined. Individuals involved in these endeavors are mindful of the interconnection between life above and below ground.

Whether you enjoy spelunking, or simply enjoy visiting better known caves of the Texas Hill Country or elsewhere, take time to appreciate that what lies beneath your feet contributes to the well-being of what is visible above ground. Enjoy the tales of treasures never discovered, outlaw hideouts and archaeological finds. Also realize that cave health may contribute more to the health of humans in the very near future.

RED TIDE

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As we all discovered, the other common sign of a red tide is breathing difficulties as the toxins become suspended in the salt spray and thus into the air. The effect is worse with strong winds and rough seas. With calmer seas the effect is sometimes nonexistent even if the red tide is present in the water. Exposure to the brevetoxins either in the air or water can result in the irritation of the skin, eyes, nose, and throat. Swimming is not recommended. (Gee, you think?) Luckily symptoms are usually temporary, though people with asthma or other respiratory illnesses may be more severely affected.

So what about the safety of seafood? Commercial seafood found in restaurants and grocery stores is harvested from red tide free waters and is strictly regulated so other than a possible shortage of some menu items there should be no problem in "chowing down." For those who choose to harvest their own they should know to not eat clams, mussels, whelks, or oysters from red tide affected areas as they can cause neurotoxic shellfish poisoning (NSP). Cooking does not destroy the toxin. Shrimp and crabs are not normally affected by the red tide and can be eaten. Fish caught live, then cleaned and gutted are okay to eat as the toxin accumulates in the gut, not in the muscle tissue which is what is usually eaten. (Hmm, I think I would stick to restaurant food just in case).

Other warnings seem like just common sense. Visitors are warned to not swim near dead fish, nor to touch or eat dead fish floating on the water or washed up on shore. Also they need to be careful of spines and bones on the beach as puncture wounds could become infected. Not only is there the brevetoxin to consider, but bacterial levels due to fish decomposition could be high.

Luckily for our trip most of the areas we visited were free from the effects of the red tide and we had a great time in Port Aransas and Corpus Christi. And we ate a lot of seafood!

In closing I would like to share a story from many years ago when I briefly taught high school science. One of my classes was an elective in Marine Science in which the classroom had at least six salt water aquariums along the back of the room. Part of the class curriculum included collecting specimens for the tanks on a field trip to Galveston. That was an adventure you can be sure. But anyway, it was football season and lots of red crepe paper was festooning the halls. Some jokesters in my class thought it would be really funny to put some of it in the tanks. Well of course that stuff bleeds its color into the water. I walked into the classroom and I'm greeted with "Look Mrs. Hill, we're having a red tide!" I had to laugh, and although we had to change out the water, I don't remember having many casualties. I was glad they had learned the term.