

Fredericksburg Nature Notes



Newsletter of the Friends of the Fredericksburg Nature Center

March, 2021 Volume 2 Number 3

<http://fredericksburgnaturecenter.com/>

Editor's Musings: **Lonnie Childs**

Dear Friends of the Fredericksburg Nature Center,

Change is in the air at the Nature Center and within our supporting Friends organization. We suffered comparatively little damage from Uri the ice storm but, nonetheless, it will stimulate some alterations in our landscape. Mother Nature occasionally batters itself only to allow opportunity for new growth and wonderful surprises. The ecological dynamic may be difficult to decipher, so it's best to just accept it and be patient. Wait for the "eco-play" to unravel and learn from it.

And then there is the normal transition from Winter dormancy to Spring green which brings joy to our spirits. After the ice storm, we especially need the mental lift of a spring revival. Note the signs of Spring's arrival we feature in this newsletter and look for many more to come. As flowers bloom, let the ice melt and your soul bloom.

Finally, our FFNC organization is experiencing a transition as we say thanks to outgoing President, Bill Lindemann, and usher in a new slate of Board officers. I am humbled to take over as President after Bill's many years of dedicated leadership but pleased that we have a strong leadership team on our Board to carry us forward.

As the cliché says, change is the only constant in nature and life. At FFNC, we embrace it and await with great anticipation for the blooms, butterflies, and birds of springtide. As Robin Williams once joked, "Spring is nature's way of saying, "Let's party!"

Happy Nature Trails !

Lonnie

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OUR MISSION STATEMENT: "To enhance, protect and interpret the natural ecosystems of the Texas hill country while providing educational and quality of life opportunities for members of the community and visitors"

FFNC News

FFNC Board of Directors for 2021



**Left-Right Lonnie Childs Billy Guinn Paul Person Gracie Waggener Sharon Rodriguez
Jane Crone Tom Hynes Leslie Washburne (not pictured)**

With the retirement of Bill Lindemann from the Board after 20 years service and also of Mary Ellen Terrell in 2020, we thank them for their years of dedicated service. The FFNC Board of Directors met on March 11th and elected new officers for calendar year 2021. We also thank Jane Crone for her many years of service as Vice-President (Jane will continue as a Board member). Newly elected officers are as follows:

- | | |
|------------------------|--------------------------------------|
| President: | Lonnie Childs |
| Vice-President: | Paul Person |
| Treasurer: | Carl Luckenbach (re-elected) |
| Secretary: | Sharon Rodriguez (re-elected) |

Continuing as Directors on the Board will be Billy Guinn, Gracie Waggener, Jane Crone, Tom Hynes, and Leslie Washburne.

We are actively seeking additions to the Board. If you are interested in discussing the opportunity, please contact Lonnie at lonniechilds@utexas.edu.



"The promise of spring's arrival is enough to get anyone through the bitter winter!"

Jen Selinsky

Harbingers of Spring!

Signs that Spring is almost here:

Redbuds are budding and blooming. (They seemed to have survived the ice and are budding out).

Texas Mountain Laurels waft aromas of grape Kool-aid. (Maybe not this year?)

Bluebonnets raise their bonnets reaching for some sun. (They're starting to bloom!)

And the Purple Martins return. They're here! Come check them out.



Our first adult was seen on March 1st.

By March 8, we had 12 individuals (6 pairs?). This is the 2nd year for the community, and we hope their numbers will increase.



Photos by Mary Ellen Terrell



“Let us permit nature to have her way. She understands her business better than we do. “

Michel de Montaigne

The Ice Storm Cometh!

Our Valentine’s gift this year was unexpectedly cold and icy. Our hearts might have been warm, but the feet and hands were frosty. Many people suffered without electricity or water for up to 3 weeks, and our empathy goes out to them

We experienced the weather trifecta—temperatures to near 0 degrees, temps that held under freezing for over one week, and the final blow of snow and ice. Ground-hugging plants like Bluebonnets did fine. The mid-level shrubs and woody perennials took a hit and will die back, but most will hopefully fight back from their resilient roots. Our stately trees bore the brunt of the icy onslaught as their outstretched limbs could not bear the weight of the ice (up to 1” in western and northern Gillespie County) and snow (up to 6” in places). Limbs were ripped from woody torsos, oftentimes to the ultimate demise of the parent tree. The sprawling canopy of Live Oaks did not hold under the ice, and Junipers with their thick thatch captured the most ice and suffered the most damage.

At the Fredericksburg Nature Center, we were very fortunate in the comparatively light damage that we underwent. Most of the downfall occurred near the Bird Blind with one large Juniper crashing over and many limbs blocking the start of the Vista Loop trail. Fortunately, we were able to clear the trails within a week thanks to our volunteers, in spite of the fact that many of our volunteers have substantial downfall to be cleared at their own homesites.

In the face of this magnitude of natural destruction, the best one can do is strive to reach acceptance as quickly as possible. Mother Nature imposes her cyclical will without our input. Nature always harbors more resilience than the human eye can perceive. Strive for patience. Out of the destruction will emerge some unexpected surprises. Think the “Phoenix” tree.



Upper Left: Large Juniper lost outside Bird Blind.

Upper Right: We lost two mid-size Junipers & limbs inside the Bird Blind. City crews helped with removing these. Thanks!

Right: Ice stretching out about 20 ft. from bank on Live Oak Creek on Sunday, Feb. 22. Who knows how much ice covered the creek the week prior?



All Photos by Lonnie Childs



"In nature, nothing is perfect and everything is perfect. Trees can be contorted, bent in weird ways, and they're still beautiful."

Alice Walker

The Volunteers Cometh!

Normally, we would be performing our normal Spring preparation activities. They were a little more extensive this year! Thanks as always for our dedicated volunteers.



Upper Left: Bill Lindemann, Frank Garcia, Tom Hynes, & Phil Youngblood with the pile of deadfall removed from trails.

Upper Right: Patti Guinn & Gracie Waggener at the Pollinator Garden. They stand next to the day's output of pruned shrubs & perennials preparing them for spring growth.

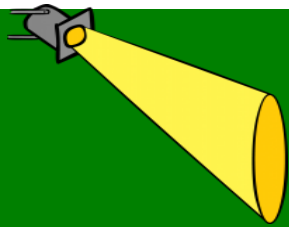
Left: Our tree trimming crew demonstrating their versatility by pruning the Butterfly Garden.

All Photos by Lonnie Childs

What to do with deadfall?

The impulse is to burn it or carry it off. But remember that this is valuable biomass created here & removing it is like debiting your natural savings account. Sometimes you simply have too much. Consider this application where the downed limbs are terraced across a slope to hold/catch soil & hopefully generate some new vegetation protected from the deer by the brush. Another use is to make & leave piles that are nesting habitat for birds & small mammals.





Volunteer Spotlight:

Frank Garcia

One of our more recent and dedicated volunteers came to us from the Hill Country Master Naturalists almost exactly one year ago. Frank Garcia is there at the park almost every week at the Tuesday workdays to provide much needed muscle on many of our trail projects. He is one of our youngsters! We value not only his hard labor but his dedicated and cheerful spirit. Here is Frank's story. Editor

Frank was born and raised in San Antonio, Texas. After graduating from high school, he left San Antonio to attend the University of Houston (U of H) in 1975 to acquire an Accounting Degree. After his third year at U of H, he started working part time for United Parcel Service (UPS). Subsequently, he quit attending the university in 1980 to work various part time jobs while also working part time with UPS until he was hired full time at UPS. He eventually returned to U of H – Downtown to earn a degree in Business Administration, graduating in May of 2007.

Frank had been a UPS delivery driver for about 7 months when he decided to pursue a career in management. After becoming a Business Manager for UPS, he held various positions. He was part of the UPS management team that opened operations in Puerto Rico in 1985, assisted with opening gateway operations to Mexico in 1989, and aided in the corporate transition of operations in Spain after a corporate acquisition in 1990/1991. He retired from UPS as a Business Manager on February 29, 2012.

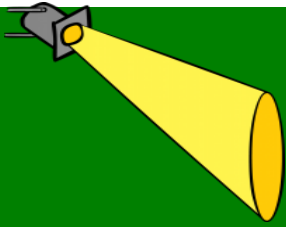
Frank has been married and divorced twice with no children. After purchasing property in the Tierra Linda subdivision of southern Gillespie County in July of 2016, he left Houston in January, 2017, to live on his new property. Houston was getting too loud for his newly retired life!

Frank states that he has always enjoyed the outdoors and experiences with nature while growing up which cemented his relationship with nature. When he was in elementary school, his Mom directed him to start a garden in the backyard to keep him busy. (It was a lesson well-learned because he is always busy on our workdays! Editor) His Dad used to take the family for visits to his brothers and sisters who lived on farms. Family vacations were to the beach in Corpus Christi or other state parks. He also enjoyed camping in the late 80's and early 90's.

As a UPS Business Manager, he was on call 24/7. In 2000, he started running 3 miles at Memorial Park for 3 to 4 days per week. No matter what the weather was like, Frank ran to stay connected with nature and clear his mind. He stopped running in 2016 during the period that he was pursuing the time-consuming task of



Photo by Lonnie Childs



Volunteer Spotlight:

Frank Garcia (continued)

looking for a new place to call home.

Frank's interests are any action or activity that helps him enjoy nature. He also likes being involved with other groups with similar interests. He states that being a Master Naturalist promotes exposure to the natural sites that afford him the opportunity to give back through his volunteerism.

Frank's involvement with FFNC began in March of 2020. Juan Leal (a fellow TMN classmate) encouraged him to tag along to a Tuesday workday, (the actual date was March 10). Since the group met every Tuesday which worked for him, he penciled it in on his calendar. This was a perfect fit for his Master Plan to give back through volunteerism on projects supported by the Hill Country Master Naturalist Chapter in most of their 10 county service area. As a FFNC volunteer, he has been a consistent participant always striving to learn and be well informed. He has participated on all of the various projects that FFNC has offered in the past year.

Frank says that what he most enjoys most about his volunteer work in FFNC are the interactions with a group of folks that share the same beliefs that he has as it relates to giving back. He also appreciates the opportunities to learn something new every time he shows up to volunteer. He says that he has learned something from everyone in the group.

Spring Migrants



Photo by Bill Lindemann



Turkey Vultures (*Cathartes aura*) are back, perhaps feasting on the large die-off of Axis deer during the ice storm.

Ruby-throated Hummingbirds (*Archilochus colubris*) will be moving through soon on their journey north. Time to clean & hang those feeders.



"The price of Spring is Winter."

Hope Primavera

Looking Forward to Spring in the Pollinator Garden!

If you visit the Pollinator Garden right now, you might wonder where it went. Not to worry, it simply got its Spring haircut. Come back in April when the Spring Show will be well underway. Below are some of the Best of 2020 photos We will be looking for their return. Did you ever look forward to Spring as much?



Photos by Lonnie Childs

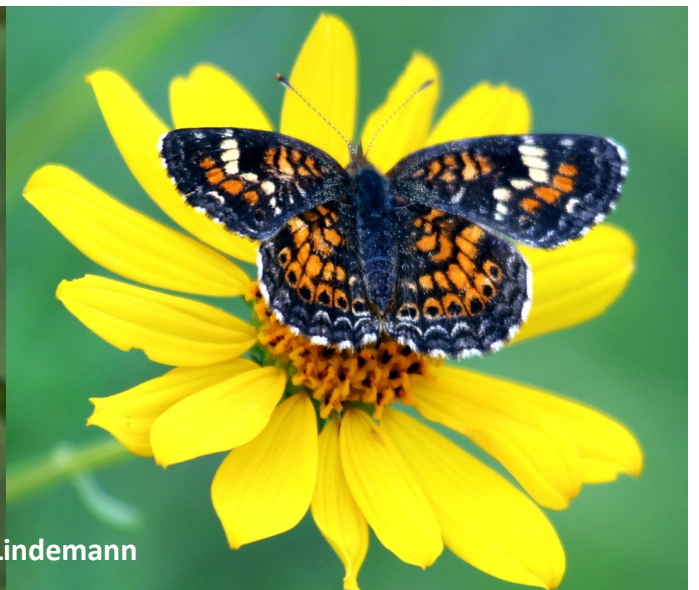


Texas Greeneyes (*Berlandiera betonicifolia*)

Turk's Cap (*Malaviscus arboreus*)



Photos by Bill Lindemann

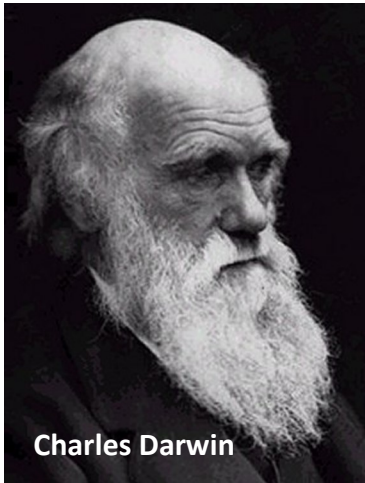


Two-tailed Swallowtail (*Papilio multicaudata*)

Phaon Crescent (*Phyciodes phaon*)

Feature Story: *Survival of the Cooperative*

By Lonnie Childs



Charles Darwin

'In the long history of humankind and animal kind (and plant kind, too), those who learned to collaborate and improvise most effectively have prevailed.'

Charles Darwin

If you mention Darwinism, the first phrase that probably comes to many people's minds is "survival of the fittest" which emphasizes the perspective of a highly competitive world. After all, it is an eat or be eaten world, right? Well, maybe not always. As my friend Chuck says, the evolutionary advantages of cooperation and collaboration are sorely understated and unrecognized. Perhaps, competition is more easily identified in the natural world, but scientific research has increasingly begun to learn about mutualistic relationships between species. I'll discuss a

couple of forms of evolutionary cooperation – Mutualism and Mimicry.

Mutualism(s), also known as **Biological Mutualism**, is defined in the *biology dictionary* "as interactions between organisms of two different species, in which each organism benefits from the interaction in some way. Mutualisms may involve either the exchange of resources, such as shelter, food and other nutrients, or they may involve the exchange of services, such as protection, transportation or healthcare."

Mutualisms can be categorized in various ways. If the mutualism involves aspects vital for the growth, survival or reproduction of an organism, then it is referred to as **obligate** (necessary). If the organism is not dependent on the mutualism for survival, then the relationship is called **facultative** (i.e. capable of but not restricted to a particular function or mode of life). Mutualisms may also be differentiated by being species specific or diffuse. In specific interactions, each species engages in mutualism exclusively with the other, whereas **diffuse interactions** involve multiple interactions with many different species.

Finally, as to what distinguishes **Symbiosis vs. Mutualism**, symbiosis is defined as a condition where two species live in close proximity to each other for part or all of their lives. A mutualistic relationship may also be symbiotic, but not necessarily. However, symbiotic relationships are not mutualistic if only one species benefits from the interactions and are then termed **Commensalism**. Enough terms!

Pollination services (pollen/nectar for pollination) are probably the best example of mutualism on a broad scale. In the tropics where the density of species per acre is huge and thus the competition intense, mutualism exists at high levels (ex. a flower that can only be pollinated by one hummingbird species with a long enough beak). Mutualism can ensure a high probability for availability of a resource or service as long as your counterpart species maintains a strong population. But the evolutionary advantage dissipates quickly if it is a necessary (obligate) relationship and your partner species suffers population loss. Indeed, with growing re-

Feature Story: *Survival of the Cooperative* (continued)

ports of insect decline, could we suffer catastrophic effects on pol-
lination?

Let's talk about some local examples of Mutualism.

The Yucca Moth. All Yuccas, including our three local species, are
pollinated by only one or two nocturnal moth species - *Tegeticula*
or *Parategeticula*. The reproductive behavior of the moth ensures
the pollination of the Yucca flower while the flower serves as a
nursery for incubating moth eggs. The moth visits the Yucca flower and
uses its specially sized ovipositor to drill into the floral ovaries and lay its
eggs in the ovaries. As the fertilized flower produces a seed containing
fruit which encases the eggs, the moth eggs hatch and the emerging lar-
vae eat the seeds and eventually through the ovary walls to drop to the
ground. During the egg-laying process, the moth consequently uses its
specialized mouth parts to collect and transfer the yucca pollen. In this
example, the Moth has evolved specialized mouth parts and an ovipositor
to take advantage of the Yucca flower morphology.

Interestingly, to continue the story, there is a related moth species that
has evolved from mutualistic to parasitic behavior. It still takes advantage
of using the Yucca flower ovaries to incubate its eggs, but no longer polli-
nates the flower which seems counter-productive.

Plants as Larval Hosts. We all know of many plants that serve as exclusive
host plants for butterfly or moth larvae. Accordingly, the Native Plant So-
ciety of Texas (NPSOT) advocates for planting not just nectar plants but also larval plants in your pollinator
garden, and importantly they must be local native plants to accommodate the insect's specific food needs.
Following is an example where the pollinator moth not only evolved an exclusive reproductive relationship
with a plant but also evolved a camouflage suit to accompany it.

The **Indian Blanket Moth**, aka Painted Schinia Moth, (*Schinia volupia*) lays its eggs exclusively on our Indian
Blanket flower (*Gaillardia pulchella*), aka Firewheel. The flower also serves as a host plant to the Bordered
Patch Butterfly (*Chlosyne lacinia*). The moth and butterfly provide pollination services in exchange for ensur-
ing that their emerging larvae will have immediate access to a palatable food source. Note how the moth has
gone one step further in evolving exterior coloring that provides camouflage from predators while on the
flower. Having viewed this moth on my lighted porch several times, I struggled to identify it until capturing it



Tegeticula ssp Yucca Moth

Yucca Moth *Tegeticula yuccosella* (Riley) Onefour, Alberta, July 9, 1950.
image courtesy of G. G. Anweiler



**Buckley's
Yucca
Flower**

Photo by Lonnie Childs



“Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts.”

Rachel Carson

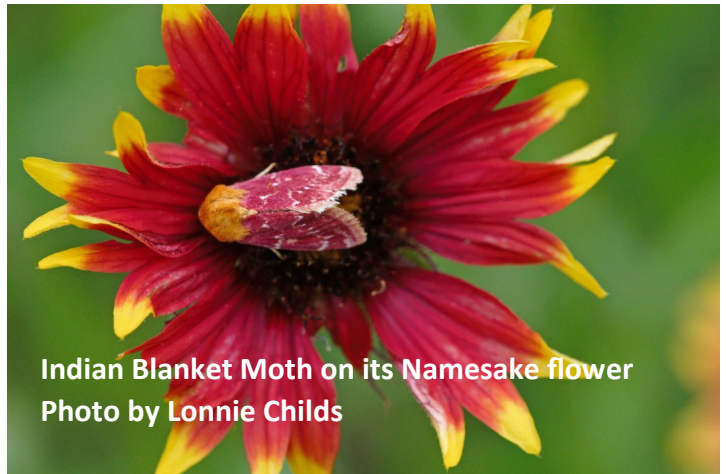
Feature Story: *Survival of the Cooperative* (continued)

in this photo of the flower.

Monarchs and Milkweeds. Most of us are at least aware of the relationship between the celebrity rock star species, Monarch butterflies, and the Milkweed genus which serve as their larval host plant. Exploiting the Monarch’s stardom, NPSOT created a funding program for gardens to support the migrating Monarch and introduce people to native plants.

By laying eggs on the Milkweeds, the Monarchs are not just ensuring an available food source for their

larvae. The plant also provides predator protection through the toxic latex compound in its sap which makes the larvae and adult butterflies an unpalatable food source. As I mentioned earlier in reference to mutualistic threats, the declining Monarch population number is often attributed to the declining availability of Milkweed plants in the mid-west states where agricultural cultivation has obliterated large expanses of Milkweed habitat. If that was not damaging enough, the widespread use of Round-up herbicide on “Round-up ready”



Indian Blanket Moth on its Namesake flower
Photo by Lonnie Childs

grains and soy decimated remaining Milkweed plants that grew on the margins of agricultural fields. Less Milkweed equals less Monarchs.

Here are just a few other examples of mutualistic relationships between local species – Pecan trees and squirrels (food for seed planting), birds and Hackberry trees (food for seed dispersal. An example of Diffuse Mutualism), Agaves and Mexican Long-tail bats (food for pollination), etc.

Mimicry is another form of evolutionary collaboration, albeit one of the species partners is generally passive in allowing the mimic to steal its look. According to Wikipedia, “mimicry is an evolved resemblance between an organism and another object, often an organism of another species. Mimicry may evolve between different species, or between individuals of the same species. Often, mimicry functions to protect a species from predators.”



Monarch on Milkweed
Photo by Lonnie Childs

For a local example, we will use the Monarch again. The poisonous taste of a Monarch allowed similar species (Viceroy and Queens with closed wings) to evolve via mutations that increasingly mimicked Monarchs



"We still do not know one thousandth of one percent of what nature has revealed to us. "

Albert Einstein

Feature Story: *Survival of the Cooperative* (continued)

and thus allowed them to survive in greater numbers. Those individuals which did not carry the mutation were eaten in greater numbers. The "Monarch-like" mutants eventually won out. The Viceroy's in particular took on a Monarch resemblance. Who wouldn't want to look like a rock star?

Mimicry between plant species is much less studied and understood. Examples do exist where one plant species resembles another less palatable herb in an apparent evolutionary adaptation to avoid predation by herbivores. The subject is ripe for more research.

There are many cases of insects mimicking leaf shapes and colors that allows them to hide from predators, but far fewer of the reverse case. Orchids provide the best example of plants mimicking insects in that there are numerous Orchid species where the flower resembles the female form of a pollinating wasp or bee. In the course of the male wasp or bee attempting to mate with the mimicking flower, pollination occurs. I read of one research study where scientists in the lab observed a male bee attempt to unsuccessfully mate 22 times with a flower before keeling over dead from exhaustion. What a cruel Orchid!



In the modern Human world, we often extol the virtues of competition. If you win, it feels great, but if you lose, it is said to be character building at least. In the natural world, competition is a life or death proposition. Evolving to maximize the benefits of cooperative relationships has proven to be the better bet for many species. Maybe Humans should take a lesson from the bugs, birds, and blooms and mimic their affinity for collaboration more often. We wouldn't even have to mutate.

Sources:

1. "Coevolutionary Research"; C.D. Eaton, in Encyclopedia of Ecology, 2008
2. Biologydictionary.com
3. Wikipedia

Photo credits:

Monarch and Queen butterflies by Bill Lindemann
All other photos by Lonnie Childs



"Leave the road, take the trails."

Pythagoras

Live Oak Creek from Live Oak Trail—Check it out!



Photo by Lonnie Childs

Bird Feeder Tip of the Month

Unfortunately, our tip this month focuses on an outbreak of Salmonella that is occurring in birds across the US. In particular, the large numbers of Pine Siskins that have migrated further south this year searching for food may be the primary vectors, since many have been found dead.

From an article on the Austin Audubon website: "Birds infected with Salmonellosis can show a number of different symptoms, from displaying swollen eyelids to acting lethargic and being slow to react. Other symptoms include sitting on the ground, appearing thin or fluffed up, and having pasted vents (feces caked under tail). Some birds, however, don't show any outward symptoms."

For more information, go to <https://travisaudubon.org/uncategorized/pine-siskins-and-salmonellosis-how-to-identify-and-prevent-the-spread>.

The suggested defense to this infectious outbreak is to take down your seed feeders and leave them down to mid-April when Pine Siskins and other migrants will have dispersed to northern areas. Be sure to empty and disinfect feeders before putting them back up. Also, quickly dispose of any dead birds you find

Note: We have temporarily removed our feeders at the Bird Blind per the recommendations.



"Those who find beauty in all of nature will find themselves at one with the secrets of life itself."

L. Wolfe Gilbert



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or
print & mail our
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