

Fredericksburg Nature Notes



Newsletter of the Friends of the Fredericksburg Nature Center

September, 2022 Volume 3 Number 9

<http://fredericksburgnaturecenter.com>

Editor's Musings: **Lonnie Childs**

Dear Friends of the Fredericksburg Nature Center,

Drought continues, but at least recent rains have wet it down a bit. The resilience of Mother Nature became evident with green grasses quickly responding to the moisture and racing to go to seed. Some of our petite wildflowers along the trail burst out in bloom while the garden denizens perked up. The flow over Live Oak dam recovered to a rate that perhaps ensures the sustenance of downstream riparian habitat. Cheer for Mother Nature and hope that she receives another thirst quencher soon.

FFNC has two exciting programs coming up in early October that you should consider attending. On October 1st, Patsy Inglet will teach us about migratory birds which is a timely and important topic. On October 9th, our Wings Over FNC "open park" event will feature Last Chance Forever entertaining us with their raptor show. Prior to that, we will offer guided hikes of the trails, along with an opportunity to hear about our plans for an Interpretive Center building and a chance for you to provide input. This will be a family friendly event. See details on pages 2 and 3. These events are free courtesy of FFNC!

We could also use your help in digitally cataloguing faunal and floral species at the park. Find out how to use iNaturalist and eBird to report what you see. You just need a smartphone/camera or computer and a willingness to share those photos that you are taking with a bunch of nature nerds who will id it for you.

The temps are cooling, Mother Nature is re-emerging, so go take a hike!

Happy Nature Trails!

Lonnie

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"You don't have to be a birdwatcher to understand the importance of the beautiful migratory birds."

Happy World Migratory Bird Day - October 8, 2022

Bird Migration Workshop—October 1st

Join the Friends of Fredericksburg Nature Center for a presentation on Bird Migration by one of our favorite guest speakers, Patsy Inglet.

Texas is a major flyway for birds migrating in the Spring and Fall. Patsy will present information about why and how birds migrate, along with research findings about migration numbers and trends.

Patsy will also share information about how to get involved with Citizen Science Projects— **Lights Out Texas** and **BirdCast**

Patsy Inglet is an outdoor classroom instructor & citizen scientist at Cibolo Nature Center, a docent at Mitchell Lake Audubon Center, & a certified Texas Master Naturalist . As a Texas Master Naturalist, she has banded birds in the field, monitored birds in the nest, & taught many kids & adults the basics of birding. She has also taught teachers how to incorporate birds into their lesson plans in the Flying Wild Program. She is a Vice-President of Bexar Audubon and a board member of Audubon Texas.



October 1, 2022 from 1:00 – 2:00pm

The Tatsch House
Lady Bird Johnson Park
Fredericksburg

There is NO charge!
Space is limited

RSVP to Trudy Eberhardt by September 26
Trudyeberhardt@ymail.com





"Everyone likes birds. What wild creature is more accessible to our eyes and ears, as close to us and everyone in the world, as universal as a bird?" Sir David Attenborough

Wings Over the Fredericksburg Nature Center—October 9th

You're invited! Save the date! Sunday, October 9, 2022

Time: 1:00-3:30pm

Cost: IT'S FREE!!

Where: Pavilion #1 at Lady Bird Johnson Municipal Park (Hwy 16S, Fredericksburg)

This event will feature:

- 1. An "Open Park" opportunity to bring family & friends to see our Fredericksburg Nature Center & experience a guided hike on the trails.**
 - 2. Enjoy a spectacular raptor showcase featuring Last Chance Forever.**
 - 3. Hear about our exciting plans for a future Interpretive Center & provide your input.**
- 1:15pm** Guided hikes leave from Pavilion #1. **2:15pm** Convene for a brief presentation on future nature center plans. **2:30-3:30pm** Last Chance Forever program

Things to Bring: comfortable walking shoes, walking stick if desired, a hat, comfortable clothing dependent on the weather, and a bottle of water. For the raptor show, bring your own chair or a blanket to sit on.

There will be two opportunities to provide public input on our Interpretive Center Plans.

- 1. Attend this event and provide written ideas about what features and services that you would like to see at the center (examples: children's programs, exhibits, etc)**
 - 2. Complete a short online survey at SurveyMonkey where you can submit your ideas.**
- Go to <https://www.surveymonkey.com/r/MN79LBD> The survey will be active until Nov. 1st.**

Presented by Friends of Fredericksburg Nature Center

fredericksburgnaturecenter.com

<https://www.lastchanceforever.org/>



LAST CHANCE FOREVER
The Bird of Prey Conservancy





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 Activities

Our new watering tank at the Hummingbird and Cactus Garden at the far end of Live Oak Wilderness Trail. Next up for the system will be the addition of a solar-powered pump. Thanks to our Chief Engineer, Tom Hynes, and Billy Guin, Frank Garcia, & Tom Musselman for their fine work.



Tom Musselman & Frank Garcia clear invasive Chinese Tallow along the trail.



Garden Crew

Jane Crone, Trudy Eberhardt, Laura Grant, & Gracie Waggener.

Photos by Lonnie Childs

Tuesday Fundays at FNC are always on! We gather every Tuesday at 8:30am at the trails, gardens, or the Bird Blind. Typical tasks involve gardening skills and trail maintenance, but no experience is necessary. Use it as a learning opportunity. Work in whatever area you choose for as long as you choose. We work some and have a lot of fun outside in the beauty of nature. It's good exercise for the body and great therapy for the soul.

Contact Gracie Waggener at gwaggener@flow-apps.com to receive a weekly email notification.

**"If every tiny flower wanted to be a rose, spring would lose its loveliness."
Therese of Lisieux**

Floral Miniatures Along the Trail

Our recent rains have stimulated our smaller floral denizens to opportunistically bloom and try to sustain themselves long enough to produce seeds. Slow down on the trail, stop, & appreciate the small survivors.



Scarlet Pea *Indigofera miniata*

A sprawling Legume with its distinctive salmon flower relished by deer & a larval host to several butterflies.



Yellow Ground Cherry *Phrysalis viscosa*

A perennial herb producing hairy stems. It is a member of the Nightshade/Potato family.



**White Evolvulus/Silver Dwarf Morning-glory
*Evolvulus sericeus***

An erect or prostrate perennial that prefers granitic sandy soils. It is a member of the Morning-glory family. This species never received the drought memo as it seemed to be one of the few species that continued to bloom throughout this sizzling summer.

Floral Miniatures Along the Trail



Photo by Lonnie Childs

Wingpod Purslane

Portulaca umbraticola

This is our prevalent Purslane that is an annual succulent growing on our sandy soils. Note that the tiny appearing flowers are actually closed in the heat of the day. Purslane employs a unique form of photosynthesis (CAM) which allows it to open its stomata only at night to capture CO₂ & store it for use the next day during the photosynthetic process, thus conserving water. This species can be confused with *P. oleracea* (Common Purslane) which has been transported around the world and is cultivated/harvested for food & as a source of Omega 3's. The Purslanes found in the nursery trade are cultivars and hybrids derivative of these species. Although the scientific debate is not settled, Portulacas are regarded by some as Cacti ancestral predecessors and as ancestral siblings by others.

Pearl Milkweed Vine *Matelea reticulata* @ the Cactus Garden



Photo by Lonnie Childs



Drummond's or Evening Rain Lily *Cooperia drummondii*

Our fall Rain Lily finally got to fulfill its destiny with recent rains awakening its bulb from its summer slumber. We also have a spring blooming species, *C. pedunculata*.

Photo by
Dot Maginot



An "invasive species" is defined as "a species that is non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health."
Federal Executive Order 13112

Invasive Species Along the Trail



Chinese Tallow *Triadica sebifera*

We have had an adult tree growing along Live Oak Creek but not accessible for removal. The ice storm froze it to the main trunk & roots from which it is sprouting again. Some of its prolific seed production has germinated & suddenly appeared along the creek. We eradicated as much as possible in recently & will monitor it for more sprouts to come. Chinese Tallow is considered highly invasive along the southern Gulf Coast, including in Texas. It can overwhelm a habitat & block out native species.

Benjamin Franklin took a part in bringing the tree to the US as a possible economic crop. The fatty coat of the seeds is the source of stillingia oil, a drying oil used in paints & varnishes, and stillingia tallow which is used for candle and soap making.

Please do not plant this tree or any plant with Chinese or Japanese in its name. Consider removing any existing Tallow or Chinaberry trees or Japanese Privet (*Ligustrum*) if possible.



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

Michel de Montaigne

Digital Tools for Nature Watching & Sharing

Become an iNaturalist and Help Us Digitally Catalogue Species at FNC!

What is iNaturalist? It *"is an online social network of people sharing biodiversity information to help each other learn about nature. It's also a crowdsourced species identification system and an organism occurrence recording tool. You can use it to:*

1. Record your own observations,
2. Get help with identifications,
3. Collaborate with others to collect this kind of information for a common purpose, or
4. Access the observational data collected by iNaturalist users."

Vision iNaturalist's vision is a world where everyone can understand and sustain biodiversity through the practice of observing wild organisms and sharing information about them.

Mission iNaturalist's mission is to build a global community of 100 million naturalists by 2030 in order to connect people to nature and advance biodiversity science and conservation.

Why should you use iNaturalist? Not only can you help fulfill the larger iNaturalist mission, it is a tool that will enhance your personal nature experience by helping you record and identify the species that you observe. **You can also help FNC establish its own "Collection" site** by recording all the species that you observe at the park. Using the iNaturalist app, you simply take a photo, select a suggested identification, and post it to the iNaturalist website. The date and location of the observation will automatically be captured by your digital camera or smartphone.

How do I get started? On your phone or computer, **go to iNaturalist.org** and create an account. Choose the "More" tab where you will find a "Getting Started" and "Video Tutorial" that will teach you the basics of using the app. It really is easy to get started and begin recording and identifying your observations. **Become an iNaturalist user today and help FNC build its digital species collection!**

Bird Lover Tip of the Month

eBird

Do you want to know the latest bird species being seen at FNC? It's as easy as some clicks on your phone, tablet, or computer, but you will need to take a step into the digital world of birdwatchers.

Go to **ebird.org**. an app developed by the Cornell Lab of Ornithology. Joining is easy and free, although they would appreciate your donation if you like it. There is a wealth of information including where to find a particular species or what species are being reported in a region, all based on real-time reporting of observations made by participating birders.

But even better, if you want to see what birds are being reported at FNC, you can do so by: Choose Explore, Explore Hotspots, and then enter: Lady Bird Johnson Municipal Park.



"The greatest artist and web-designer ever is indeed a spider!"

Munia Khan

Observations Along the Trail and Lake



Photo by Dot Magnot

Burrowing Wolf Spider *Geolycosa sp.*

Wolf Spiders are hairy spiders resembling but much smaller than Tarantulas. They can issue a painful bite but are not poisonous. Some species do burrow or live under logs or rocks. Possessing keen senses to prevent predation and enable hunting, they do not spin webs but spend most of the time on the ground hunting ground dwelling insects. The female will deposit her egg sac underground during the night for protection & bring it out during the day for daylight warming.



Photos by Lonnie Childs



**Great Egret *Ardea alba*
On Live Oak lake**



“In a meadow full of flowers, you cannot walk through and breathe those smells and see all those colors and remain angry. “

Jonas Mekas

Buzzin’ & Flutterin’ on Kidneywood at the Pollinator Garten

Kidneywood (*Eisenhardtia texana*), aka Bee Brush, in full bloom at the Pollinator Garden, is saturated with native bees and White Sulphur butterflies attracted to its ambrosial nectar. It is a marvel of 3 senses—sight, sound, & smell. This drought tolerant, airy 10 ft tree is a great small tree for landscapes.



Check out this video of *Pteridae* White Sulphur butterflies nectaring on the Kidneywood blossoms.

<https://youtu.be/7WPC40q5TEw>



**Paper Wasp
on Kidneywood**



White Sulphurs

Photos by Lonnie Childs



"Deep in their roots, all flowers keep the light."
Theodore Roethke

Blumen & Flutterin' at the Pollinator Garten



Photo by Dot Maginot

Queen (*Danaus gilippus*) on
Simpson's Rosinweed (*Silphium Simpsoni*)

Lindheimer's Morning-glory
(*Ipomoea lindheimeri*)



Photo by Lonnie Childs



Photo by Dot Maginot

Lindheimer's Senna
Senna lindheimeriana



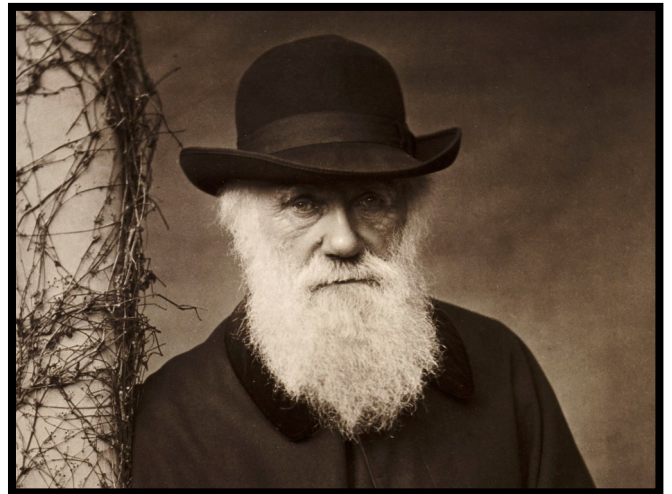
"This preservation of favorable variations and the rejection of injurious variations, I call natural selection or the survival of the fittest."
Charles Darwin

Feature Story: Survival of the Cooperative by Lonnie Childs

"In the long history of humankind (and animal and plant {sic} 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**.



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 by *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.

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



"I have called this principle, by which each slight variation, if useful, is preserved, by the term of natural selection."

Charles Darwin

Feature Story: *Survival of the Cooperative*

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 reports of insect decline, could we suffer catastrophic effects on pollination?

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. During the process, the moth also uses its specialized mouth parts to collect and transfer the yucca pollen from one plant to another to ensure its pollination, which is vital to the success of its emerging larvae. As the fertilized flower produces seed, the moth eggs hatch and the emerging larvae eat the seeds and eventually eat through the ovary walls to drop to the ground. In this example, the Moth has evolved specialized mouth parts and an ovipositor to take advantage of the Yucca flower morphology.



Plants as Larval Hosts. We all know of many plants that serve as exclusive host plants for butterfly or moth larvae. Accordingly, gardeners should plant 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 wear with 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 ensuring that their emerging larvae will have immediate access to a palatable food source. Note how the Indian Moth has gone one step further in evolving exterior coloring that provides camouflage from predators while on the flower.





"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change."
Charles Darwin

Feature Story: *Survival of the Cooperative*

Monarchs and Milkweeds. Most of us are at least aware of the relationship between the celebrity species, Monarch butterflies, and the Milkweed genus which serve as their larval host plant. 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 when eaten 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" 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), Agaves and Mexican Long-tail bats (food for pollination), etc.

Similar to Mutualism, **Mimicry** is another form of species evolving to gain an evolutionary advantage, 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
by Lonnie Childs



Monarch & Queen Butterflies
By Bill Lindemann



"The love for all living creatures is the most noble attribute of man."

Charles Darwin

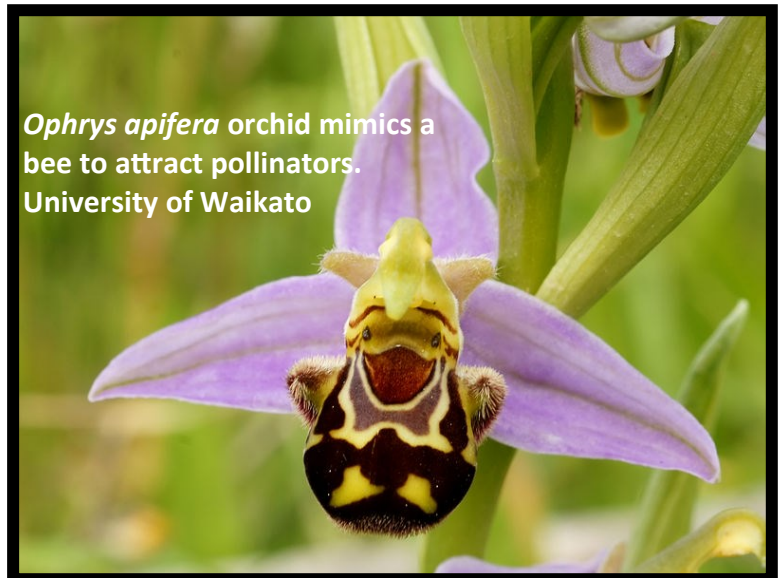
Feature Story: *Survival of the Cooperative*

For a Mimicry example, we will use the Monarch again. The toxic taste of a Monarch stimulated similar species, Viceroy and Queens, to evolve through mutations to increasingly resemble Monarchs and thus survive in greater numbers. Insectivorous birds have concurrently evolved to recognize Monarchs and their mimics as undesirable prey. Those individuals which did not carry the mutation were eaten in greater numbers, thus allowing the "Monarch-like" mutants to win out. The Viceroy 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 (ex. Praying Mantis, Walking Sticks, butterfly chrysalis), but far fewer of the reverse case. Orchids provide the best example of plants mimicking insects. 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's attempt to unsuccessfully mate 22 times with an Orchid 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 considered as character building. 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 some species. Maybe Humans should take a lesson from the bugs, birds, and blooms and mimic their affinity for collaboration more often. No mutation required.



Looks like a bee.
Smells nice!
But why is she so friendly?





"Reflection can sometimes turn your view of the world upside down."

Natura Philosophus



THANKS FOR YOUR SUPPORT!

By Lonnie Childs

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**Comments, questions, or future newsletter submissions can be sent to
Lonnie Childs, Newsletter Editor, at lonniechilds@utexas.edu**