

FLORIDA MASTER NATURALIST PROGRAM

| SPRING 2021 NEWSLETTER |



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20th Anniversary Commemorative Pin Design

A Message from Dr. Main: Florida Master Naturalist Program Celebrates 20 Years

Dear Friends,

It’s hard to believe that our first Florida Master Naturalist Program courses were offered 20 years ago and as we enter into our 20th year, I look back and marvel at how we’ve grown as a program and how we’ve demonstrated the power of partnership and



inclusion. The FMNP is a success because of the talented instructors who have delivered programs and the motivated graduates who have made important contributions to education and conservation in our beautiful state.

There were some who scoffed at the idea of an FMNP instructor network to deliver this program and at the concept of engaging and empowering Florida citizens as partners to educate those we may otherwise never reach. This grassroots approach has created a groundswell that continues to grow and have positive impacts on every aspect of conservation. That credit goes to all of you.

To place this in perspective, since those first courses were offered in 2001 we've completed more than 1,200 courses representing roughly 700,000 educational contact hours and 20,000 FMNP graduate certificates. Our course offerings have grown to 10 and the FMNP instructor network has expanded across the state with approximately 75 FMNP instructor teams representing more than 175 certified FMNP instructors. This complex network of FMNP instructors and graduates is a powerful force that is promoting increased understanding, appreciation, and respect for Florida's natural world and has fostered conservation education and action in many ways and in many places.

"For in the end, we will conserve only what we love. We will love only what we understand.

We will understand only what we are taught." - Baba Dioum

These words, spoken in 1968 before the General Assembly of the International Union for the Conservation of Nature and Natural Resources (IUCN), are simple but inspiring. The more we understand about our natural world, the more motivated we will be to treat it with respect and to demand sensible decisions are made to protect the water, air, and land on which we rely and live. This philosophy played an important role in the creation of the FMNP and I think we can all be proud of the progress we've made.

The FMNP has another role that is equally important, which is to improve our lives by enjoying nature and sharing that enjoyment with others. As spoken by one of our FMNP graduates:

"Best thing I have ever done. I have learned so much, met so many wonderful people, and found meaningful ways to get involved."- Ellen Elliot, Florida Master Naturalist

Many new friendships (and at least two marriage proposals) have been made among participants who met during FMNP courses, but FMNP courses are just the beginning. Enjoyment of nature is a lifetime endeavor that never runs dry.

We are looking forward to the next 20 years and are working to ensure that will be possible. To ensure the FMNP continues in perpetuity, we are raising a \$2 million FMNP endowment to ensure

funding support will always exist for an FMNP Program Leader. To celebrate our 20-year anniversary, we're sending everyone who contributes to the FMNP endowment during 2021 an FMNP commemorative 20-yr pin. They look nice (see above). I have donated so I could get one!

For more information about the FMNP endowment fund click [here](#).

Thank You, Shelly Johnson (FMNP Program Coordinator, 2017-2021)

Our friend and colleague Dr. Shelly Johnson has taken on new roles and responsibilities at the University of Florida. In her new role, Shelly will continue to be a State Specialized Extension Agent with responsibilities in natural resources extension programming but will no longer be serving as the FMNP Program Coordinator. Shelly has been a tremendous help during her nearly four years working with the FMNP. She implemented a number of practices that increased efficiency of our operations, led the effort on revising the FMNP website, and was a big help in the effort to transition to online delivery of FMNP courses when the



COVID-19 pandemic struck in 2020. Shelly also implemented the Nature Knowledge webinar series, a program that provides interesting presentations each month. Shelly is continuing the Nature Knowledge webinars which are available to everyone. Information on the March Nature Knowledge webinar is provided in this newsletter. Registration is free, so check it out.

Thank you, Shelly - your contributions to the FMNP were important and very much appreciated. We will miss you and wish you the very best in this new and exciting leadership role in UF/IFAS Extension.

Sincerely,

Marty and all the FMNP Family

Great Places

By Dorothy Smiljanich;
Friends of Paynes Prairie

Standing away from the trail, a bison - head lowered, eyes bright - keeps a wary eye on three wild horses sauntering down the narrow path.

Montana? Idaho? Wyoming, perhaps?

Not at all. Not even close.

If you also happen to notice the 10-foot alligator cruising down the nearby canal, an endangered snail kite soaring overhead, and large numbers of migratory sand hill cranes standing in the mist, you might know that you could only be in one place in the world: Paynes Prairie Preserve State Park an extraordinary landscape in north central Florida, where conservation of history and nature has created a home for these and myriad other creatures.

The reintroduction of bison and of wild horses to the prairie was done to restore some of the animals that once roamed the region. Bison historically roamed as far south as the prairie, but were extirpated from the region during European settlement. The wild horses are "Cracker horses", which played a crucial role in Florida's cattle-production history and are descendants of horses brought by the Spanish centuries ago.

No such restoration plan was needed for the roughly 300 species of resident and migratory birds, which abound in the various wetland and upland communities. Reptiles and amphibians occur in profound abundance and mammals from otters to



Antigone canadensis pratensis

Florida Sandhill Crane



Photo credit: Joseph C. Boone,
CC-BY-SA-3.0

Taxonomy: Order Gruiformes, family Gruidae

Range: Florida sandhill cranes are distributed throughout peninsular Florida, and do not migrate (as the greater sandhill crane does).

Identifiers: Adults have gray plumage, a characteristic red forehead, and a long dark grey beak. They produce a loud trumpeting call.

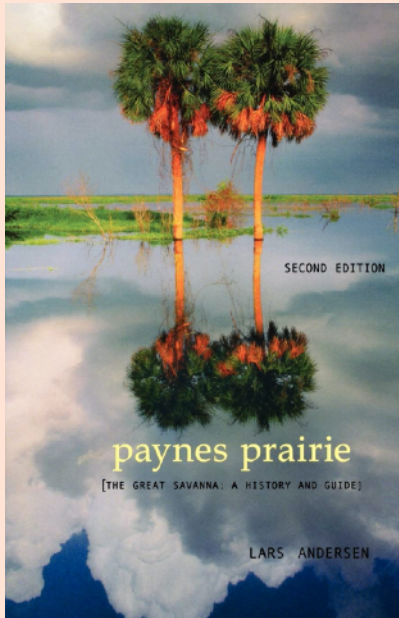
Habitat: They prefer open areas such as prairies and pastures, as well as freshwater wetlands.

Threats: Florida sandhill cranes are an endangered species. Habitat loss and urbanization are major threats to the species.

View the FWC species profile [here](#)



Reading List



Paynes Prairie: The Great Savanna: A History and Guide

By Lars Andersen

Interested in reading more on Paynes Prairie? Lars Anderson, Lead FMNP Instructor in Alachua County, delves into the rich history of the area. He narrates how the prehistoric landscape was shaped to the characteristic features of the area that we see today and gives an account of the people who inhabited the land over time. As an avid outdoorsman who has spent much time exploring as well as leading tours for his outfitters, Adventure Outpost, Lars ends the book by giving his recommendations for enjoying outdoor activities in the area.

The book is available through many retailers, including [Amazon](#). Be sure to also check out [Adventure Outpost!](#)

bobcats fill every available niche. Supporting all of this wildlife is a diverse array of plant life, which also contribute to colorful landscapes that must be seen to be believed.

The roughly 22,000-acre preserve, which spans between the university town of Gainesville and the historic village of Micanopy, has a long and complicated history including more than 10,000 years of human habitation including the establishment of a huge cattle ranch known as Rancho de La Chua by the Spanish in the mid-1600s, and countless skirmishes and battles between competing interests, including Native Americans and European settlers. Established as Florida's first state preserve in 1971 and celebrating its 50th anniversary in 2021, the land was purchased from private owners but named after celebrated Seminole Indian chief King Payne, who led his people until his death in 1812.

The prairie, for which the preserve is also named, is a dynamic ever-changing landscape. An enormous basin into which the surrounding watershed drains, the prairie has experienced transitions between being a mix of upland and wetland communities and a vast flooded expanse known as Alachua Lake. Water that drains into the prairie typically percolates through the soil and also drains into Alachua Sink, a sinkhole that connects directly to the aquifer. During the 1870s the sinkhole became plugged and a period of heavy rains flooded the prairie to a depth

where steamboats could transport cotton, lumber, citrus, and human passengers. In 1891, the sink reopened and the prairie drained, but in 2017 heavy rains from Hurricane Irma once again flooded the prairie and Alachua Lake returned. Fortunately for those species who require drier landscapes, the preserve also includes large expanses of upland environments such as pineland, hardwood, and scrub and grassland communities.

The preserve is touted by the Florida Park Service as being “biologically, historically and geologically unique.” These distinctive qualities draw thousands of visitors each year. Some come for the wildlife, some for the plants, and some for the serenity of its vast expanse, which naturalist-botanist [William Bartram](#) called “the great Alachua savannah” when he visited in 1774.

Perhaps the best place to start a visit is at the [handsome Visitors Center](#), accessed off the main entrance at US 441. There the prairie story is told in videos and exhibitions and floor-to-ceiling windows offer a dramatic view of much of the basin. A short stroll away on Wacahoota Trail is a 50-foot observation tower from which the bison and horses are often sighted. The preserve also features eight well-managed [trails](#) that traverse a variety of upland and wetland habitats. Additional opportunities include canoeing on Lake Wauburg, a fishing pier, picnic area, children’s playground, and campground.

In short, there is no end to the story of Paynes Prairie and rather than just whizzing past it on a highway, we encourage you to stop and explore one of Florida’s great places.

For more information:

[Paynes Prairie Preserve State Park](#)

[Friends of Paynes Prairie State Preserve](#)

Interested in learning more about William Bartram, naturalist who famously chronicled his journey through the southeastern United States? Learn more about him through the [Bartram Trail Conference website](#) or via the [Bartram Trail Society of Florida](#).

Superheroes of the Natural World

By Justina Dacey and Rick O’Connor

If there were superheroes of the natural world, it would be Florida Master Naturalists. Instead of colorful superhero outfits, they would be found blending in with their environment, wearing earth tones head to toe: floppy hats, airy long-sleeved shirts and pants, and sturdy boots. They wield

binoculars, field identification books and water bottles.

Their superpower? Knowledge.

As UF/IFAS Extension agents and Florida Master Naturalist instructors, we (the writers) oversee several community science projects implemented with the help of volunteers. Volunteers serve a needed role in environmental assessments. Long-term monitoring projects are costly for agencies and often are not completed due to expense. But by using well trained volunteers, costs can be reduced and much of this work can be completed. In many cases, these volunteers are Florida Master Naturalist Program (FMNP) graduates who continue to seek engaging opportunities to serve Florida's natural areas.



Rick O'Connor, front, with a group of volunteers during efforts to remove beach vitex from Gulf Islands National Seashore (Credit: Rick O'Connor, UF/IFAS). Note: Photo taken prior to 2020 and COVID-19 requirements.

Northwest Florida:

Florida Master Naturalists in this area are involved in projects that include:

- Monitoring seagrass and surveying for mangroves in the Pensacola bay area. The information obtained is used by a researcher at the University of West Florida.
- Monitoring salinity at different points of the bay to determine if stormwater run-off is lowering salinities to a point where seagrass and scallop restoration will not work. These data are already in the hands of a scallop researcher at the Florida Fish and Wildlife Conservation Commission's (FWC) Research Institute in St. Petersburg, trying to determine whether the state's Scallop Sitter program would work on the Northwest coast.
- Surveying for existing scallops during our Great Scallop Search.
- Surveying for and monitoring diamondback terrapin activity. There is a lack of research on this coastal turtle in the Panhandle and collecting information on this possibly genetically isolated population could result in consideration of protective listing in the future. These data are being shared with both FWC and the United States Geological Survey (USGS).

- Identifying and removing an invasive beach plant, beach vitex (*Vitex rotundifolia*). In addition to finding and reporting this plant, FMNP volunteers have been able to remove over 80% of the known population in our area – staying ahead of the invasive population curve.



*Volunteers monitor a Nassau County living shoreline.
(Credit: Justina Dacey, UF/IFAS)*

There have been side benefits of these efforts. While monitoring seagrass, volunteers began to encounter manatees – an animal not common in Northwest Florida. Repeated encounters led to a new project partnering with the Pensacola-Perdido Bay Estuary Program and Dauphin Island Sea Lab, called Manatee Watch. In 2020, 66 manatee encounters were logged.

Likewise, volunteers searching for terrapins have come across horseshoe crabs, an animal thought to no longer exist in the area but that may be returning.

This has led to a new local project that expands the FWC’s existing Florida Horseshoe Crab Watch, a monitoring program that is tracking horseshoe crab populations statewide.

The time and effort our FMNP graduates have contributed in our area has helped local and state resource managers with needed data and provided an economic value as well. In 2020 alone, the estimated value of their service was about \$40,000.

Northeast Florida:

On the opposite corner of the state, Master Naturalists are utilizing their superpowers in projects that include:

- Surveying the beaches of Amelia Island during peak horseshoe crab spawning times for the Florida Horseshoe Crab Watch. They collect data and tag horseshoe crabs (*Limulus polyphemus*), as well as educate curious beachgoers about the importance of horseshoe crabs to public health (see article Living Fossils, Saving Lives below) and the shoreline food web.

- Identifying invasive species along the beaches of Amelia Island. In the past year, many of these volunteers were trained to scout and identify problematic plants, with scouting events discovering high densities of Russian thistle (*Salsola kali*, subspecies *pontica*), a non-native plant that disturbs shorebird and sea turtle nesting habitat by invading typically barren areas. In two years, volunteers have removed over 800 plants, 278 pounds of plant biomass, contributing an estimated economic value of \$70,000.
- Building a demonstration living shoreline along the Nassau River. Living shorelines are a nature-based alternative to armoring shorelines that provide habitat for coastal organisms, buffer wave action, and have a much longer lifespan than bulkheads or seawalls.
- Assisting with the placement of 320 Community Oyster Reef Enhancement (CORE) modules, 20 oyster reef balls and 40 oyster reef prisms at a park in Nassau County. These alternative oyster restoration methods provide biodegradable, plastic-free options for homeowners and practitioners for the implementation of living shorelines. Many of the Master Naturalists who have helped build this shoreline have become stewards of this site. They enjoy educating park visitors about their importance and benefits to estuarine organisms such as fiddler crabs, blue crabs, snails, shrimp, marsh birds, all the basis for the marsh food chain.

But one of the best outcomes of the project has been the satisfaction of the volunteers. The surveys don't always yield a sighting of the creature they're seeking, but we often hear the positives – getting the chance to see white pelicans, stingrays and other creatures in an interesting place they had never been.

These examples describe work accomplished in two small, opposite corners of Florida's coast. The collective work of Florida Master Naturalists across the state makes them the true superheroes of Florida.

*Justina Dacey is the UF/IFAS Extension Nassau County natural resources agent;
and Rick O'Connor is the UF/IFAS Extension Escambia County Florida Sea Grant agent.*

Learn How to Restore Marine Habitats

By Savanna Barry

Marine habitats such as seagrass meadows, coral reefs, and sponge beds are some of the most threatened on the planet. UF/IFAS and Florida Sea Grant Extension agents in the Nature Coast work a lot on marine habitat restoration projects. A few examples include seagrass restoration in Crystal River and artificial reefs in Taylor County. Now, everyone can learn more about and get

involved in marine restoration through a new course: Marine Habitat Restoration Special Topics course.

We are excited to announce that you can join Savanna Barry and Victor Blanco for a Marine Habitat Restoration Special Topics course this April and May!



The Marine Habitat Restoration Special Topics class covers material about Florida's marine ecosystems. We cover seagrass, coral reef, sponge, and artificial reefs and how they can and should be restored. Students in the spring 2021 class will participate in virtual sessions, a virtual coral reef field trip, and self-guided field sessions. Anyone in Florida is welcome to participate as field trip options are very flexible.

Virtual classroom presentations use the free and easy-to-use Zoom software. That way, students can listen and participate in the comfort of their own homes. Interested in seeing what you can expect in a course? Watch this video on coral restoration! Register today to reserve your spot!

2021 Coastal Shoreline Restoration Course

By Ken Gioeli

The UF/IFAS Extension St. Lucie County congratulates the newest graduates of the Florida Master Naturalist Program in St Lucie County.

On Friday February 5, 2021, nineteen students successfully completed the Florida Master Naturalist Program (FMNP) Coastal Shoreline Restoration Course and were recognized for their achievements. Due to COVID-19 precautions, the course was conducted 100% via Zoom with self-directed field trips. Prior to recognition, each student completed a journal describing three site visits to coastal restoration sites throughout Florida. An example journal created by graduate Dale Johnson can be viewed [here](#).

This 24-hr FMNP Coastal Shoreline Restoration Program is designed to provide training in the restoration of living shorelines, oyster reefs, mangroves, and salt marshes, with a focus on ecology, benefits, methods, and monitoring techniques. Students completing this course are better prepared to promote and assist with restoration projects.

Coastal Shoreline Restoration includes an introduction to “Living Shorelines” and is divided into three workshops: oyster restoration, mangrove restoration, and salt marsh restoration.

The FMNP Coastal Shoreline Restoration course is one of three 24-hr restoration courses offered by the UF/IFAS. It is a collaborative effort of the UF/IFAS Extension St. Lucie County and other partner agencies. In total, students must successfully complete three core courses and four restoration courses to become certified as Advanced Florida Master Naturalists. Details of future course offerings can be found [here](#).

Florida Master Naturalist Program Instructors: Course Lead FMNP Instructor: Ken Gioeli, UF/St Lucie Co Extension Agent; FMNP Associate Instructors: Dr. Vincent Encomio, UF/Martin & St. Lucie County Extension Agent; Carrie Stevenson, UF/Escambia County Extension Agent

Graduating Class: Nancy Angermaier, Karen Blyler, Yvette Carrasco, Suzanne Derheimer, Susan Foley-Pieri, Helen Fox, Fritz Hanselman, Holly Hanselman, Deana Huminski, Lauren Jennison, Dale Johnson, Diann Johnson, Pamela Jones-Morton, PhD, Margaret Livermore, Taylor Masnjak, T Alexandra Mott, Sasha Shirazi, Jane Smith, William Woodworth



Friends Groups Offer Continued Learning for FMNP Graduates

By Holly Abeels and Katherine Clements

Are you a graduate of a Florida Master Naturalist Program (FMNP) course? If so, you're eligible to join a local FMNP Friends Group. There are currently 10 Friends Groups across the state and you can find your local Friends Group [here](#).

Why join?

- There are many benefits to being an engaged member of a Friends Group.
- You can continue the camaraderie and interactions that are a core component of taking FMNP classes.
- Belonging to a Friends Group is an opportunity to meet like-minded people.
- Friends Groups offer a variety of ways for you to interact with other members and the community.
- Each Friends group frequently hosts meetings throughout the year, often with guest speakers. Prior to 2020, these were in-person. They are now done virtually, but that may change when guidelines indicate it is safe to do so.
- Activities are planned for Friends Group members.
- Members can participate in many volunteer or service learning opportunities.
- It's a great way to find out information about upcoming FMNP courses and other nature-focused events in your local area.



Cercis canadensis

Eastern Redbud



Photo credit: UF/IFAS

Taxonomy: Order Fabales, family Fabaceae

Range: Eastern redbuds are native to the eastern United States. They can be found in north and central Florida (USDA hardiness zones 4B-9A).

Identifiers: Beginning in early spring, the trees' characteristic clusters of pink or white flowers begin to bloom along the branches. In the summer, elongated seedpods will appear. Leaves are heart shaped and cultivars can differ in leaf color.

[Find more information on the Eastern Redbud UF/IFAS profile](#)

Statewide Monthly Webinars

With the current COVID situation, Friends Groups had to get creative in how to interact with members. This is a difficult time and FMNP Friends Group facilitators and leaders wanted to provide an opportunity for our members to continue to connect.

So we launched a new program series to encourage FMNP Friends Groups' continued engagement throughout the state. These virtual, statewide programs host guest speakers to allow members to learn about a particular area or topic. For example, presentation covered mammals such as manatees, dolphins and jaguars; another highlighted an archeological site in Titusville; and another shared how to use history to guide ecological restoration efforts.

There's more to come for 2021!

This virtual program has been a huge success. Over 300 people participated in the first 5 months, with 99% of the 121 post-event survey respondents saying they would likely attend another FMNP Monthly Friends Chapter Program webinar. Future webinar topics are being explored, but facilitators are currently considering speakers from Mote Marine Laboratory and the Florida Wildflower Foundation.

Further Opportunities

Are you interested in organizing a local FMNP Friends Group in your area? Information on how to do so can be found [here](#).

Katherine Clements, ecology and natural resources educator for UF/IFAS Extension Sarasota County, is the facilitator of the Suncoast Friends Chapter of the FMNP; and Holly Abeels, UF/IFAS Extension Florida Sea Grant agent in Brevard County, facilitates the Space Coast Regional Friends Group.

Zooming through 2020, Poised for 2021

By Joan Landis, Friends of Pinellas Master Naturalists

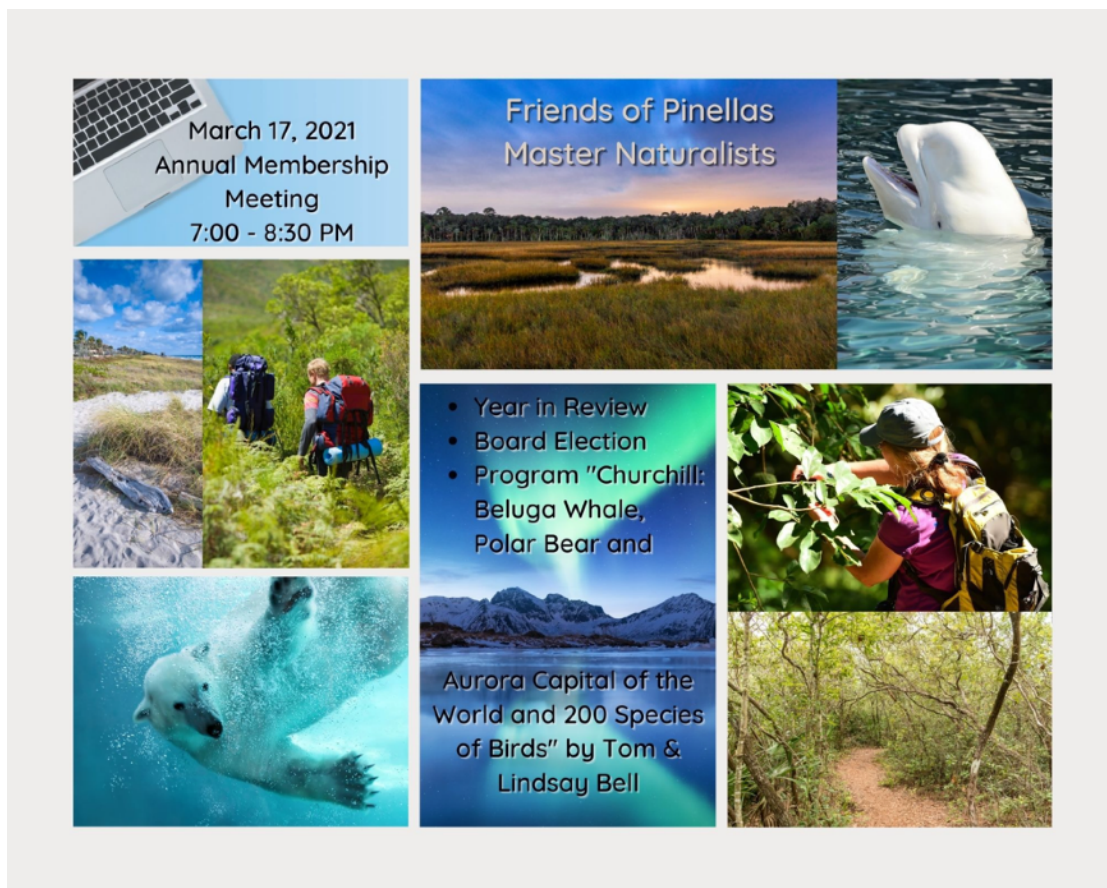
I have two extremely exciting announcements about our upcoming Annual Membership Meeting on March 17th, but first, let us look back.

It has been almost a year since restrictions related to the pandemic had their first impact on our Friends Group. I remember that mark in time because our Annual Membership meeting occurs every March; it is a big and happy event where we review the past year, elect new Board members,

hold a silent auction, congratulate our scholarship winners, and enjoy an inspiring keynote presentation – all together. In person. Well obviously, that could not happen, so what did we do?

Thanks to some creative thinking on the part of our Board members, along with the technical assistance and Zoom abilities of Jeanne Murphy and Brian Lane, we held our first-ever virtual Annual Membership meeting late April! Not only that, but Dr. Main headlined, we elected new Board members and then continued the year uninterrupted with monthly Board meetings and monthly/quarterly Friends Group programs. We did this all virtually.

By the time this year’s Annual Membership meeting rolls around, we will have hosted 6 monthly virtual Friends of Pinellas Master Naturalists programs, co-marketed all the Statewide Friends Group virtual programs and run an on-line auction fundraiser that exceeded our expectations. We on the Board were concerned at first that doing our programs via Zoom might diminish attendance and minimize the “enjoyment factor”. What we have found was quite the opposite: our memberships have increased, feedback from our programs has been incredibly positive and the reach attained with Zoom has far exceeded the participation we used to enjoy with our “in person” programs!



This past year has been challenging and rewarding in so many ways! Now, for the exciting announcements.

First, our Keynote Speakers this year are our great friends and gifted Advanced Florida Master Naturalists Tom and Lindsay Bell who have curated a wonderful presentation for us called “Churchill: Beluga Whale, Polar Bear and Aurora Capital of the World and 200 Species of Birds”. You do not want to miss this; Tom and Lindsay have a unique flair and never fail to inform, entertain, and amaze! Check out the details and registration information in the next Friends of PMN email.

Next, we have several members of the Board of Directors whose term will be expiring and will be stepping down effective March. This means we have some wonderful opportunities for members to take that next step and come join us on the Board of Directors of YOUR Friends group. The roles are voluntary, two-year terms and you get to work with great people for a great cause. If you have taken at least one core module of the Florida Master Naturalist program, you qualify. If you are interested, you can self-nominate (email us at Friends@PinellasMasterNaturalists.org) or let us know if you know a member who might be interested in serving on the Board.

Finally, on behalf of the Board, I want each one of our members to know how much we appreciate you. Without you, quite literally, we would not have a Friends Group. But more than that and especially this year, it is supremely rewarding to know that we can count on you, your interest, and your participation. Thank You.



Member participating in a flyfishing class at the Battle Island Adventure Club.

Friends of Volusia FMNP

By Sarah Cushing

This month the Friends of Volusia FMNP group would like to promote our members who are involved with the Battle Island Adventure Club in the beautiful New Smyrna Beach area. This club was started by a dedicated Volusia County FMNP member who wanted to continue to promote environmental resiliency and education after completing the courses.

The group is a non-profit with a mission to interconnect with other groups that have the same environmental interests in mind. Some groups they partner with are the Atlantic Center for the Arts for their soundwalk events and Oceans of Hope which provides opportunities for individuals of all capabilities to get out and enjoy the lagoon. The photo seen is of a recent flyfishing class that was held on the property. If you would like to see other activities and events that the club is involved with, please visit the [Battle Island Adventure Club Facebook page](#). This is just one of many exciting endeavors our members are involved in, and we continue to stay inspired at our members' dedication and enthusiasm for the beautiful place we get to call home.

A New Resource for Florida Naturalists

By Kent Morse

A new resource, rich with detailed information about the coastal, shallow water bottlenose dolphins resident to Southwest Florida, recently became available.



Photo Credit: Kent Morse

The Dolphin Study, a 501(3)(c) nonprofit dedicated to raising awareness about the challenges facing our local dolphin communities was founded by a FMNP graduate. They recently launched a [website](#) that gives visitors direct access to the database of an ongoing photo-identification study begun in 2006.

It is often easy to find general information about a species such as dolphins but a struggle to find information about the dolphin communities specific to our area. This study focusses on the dolphin communities from Sanibel Island to Everglades City with an emphasis on those that live in the vicinity of Marco Island.

With over 12,000 sightings recorded during over 3500 surveys, the study provides a comprehensive portrait of these communities. You can browse the profiles of each of the dolphins that use the area, see their ranges mapped, learn their association patterns and view the reproductive history of each of the adult females.

Often the profiles provide insights into the challenges facing our local dolphins and point to ways that we can be better stewards of the coastal habitat we share with them.

One dolphin named Halfway gave birth to seven calves over the course of the study. Most of her births were exactly three years apart and five of her offspring are still alive. About 2 years ago she became a grandmother. That is a pretty good track record for a female bottlenose dolphin but it didn't always go smoothly. Two of her calves became entangled in monofilament fishing line. They would not have survived without interventions to disentangle them.

I am happy to share this database with my fellow Florida Master Naturalists. The Dolphin Study's vision is a community alive to the needs of our local bottlenose dolphins and engaged in the work of sustaining an environment where they can thrive. It is surely the next generation of naturalists that will be the leaders in making this a reality.

The Florida Manatee

By Diane Howell

The Florida manatee is the West Indian manatee (*Trichechus manatus*) and is listed as a threatened species. In 2017 the US Fish & Wildlife Service down-listed the manatee from endangered to threatened due to an increasing population. During surveys in the 1970's the manatee counts were between 1,500 to 2,000. Today they are counting between 5,500 to 6,500 manatees with the most recent survey in early 2019



Photo Credit: Cora Berchem

counting at least 5,733 manatees. In 2020 there were 637 manatee mortalities. Because manatees have slow reproductive rates, it can take years to replace those losses. Manatees are protected under several laws, including the Endangered Species Act of 1967, the Marine Mammal Protection Act of 1972, and the Florida Manatee Sanctuary Act (1978).

Manatees can be found in salt, fresh, and brackish water. They prefer water temperatures above 72°F and if water temperatures dip below 68°F, it is dangerous to manatees. The average adult

manatee size is about 10 feet long and weights between 800 to 1200 pounds. Females are larger than the males. Manatees have long life spans and can live more than 60 years. Manatees have a keen sense of hearing and touch and are covered with tiny hairs that serve as sensory organs. Manatees are herbivorous (plant-eating) marine mammals and can consume up to 10% of their body weight per day. Females can reproduce at 3-4 years of age and have one calf every 2-5 years. Calves at birth are around 60 to 70 pounds and 3 to 4 feet long. Most mating occurs in spring and summer with a gestation period of 13 months.

Manatees face many threats today. Watercraft collision is the largest known human cause related to manatee mortality. Manatees are slow moving, usually moving between 3 to 5 miles per hour, which is no match to a fast moving boat. Manatees can get entangled in items such as mono-filament fishing line, crab traps, and debris. Also, it is against the law to feed, water, or harass a manatee.

Algal blooms is another threat for manatees. Red Tide occurs naturally off-shore in saltwater, mostly in SW Florida. It can be fueled by nutrients from runoff, such as fertilizer, pesticides, and decomposing organic material, plus by warmer waters. Blue/green algae blooms occur in fresh water on both coasts. Algal blooms block sunlight needed by seagrasses and can kill seagrass meadows that serve as a manatee food source. This takes away a manatee food source and its effects often are not visible until years later.

Another natural threat is loss of warm water habitat which can cause cold-stress syndrome. Manatees migrate to warm water sources in the wintertime because they have no insulation to keep them warm. They seek out natural springs or the warm water flow from a power plant. Older power plants are being retired with no contingency plan for replacement of the lost warm water locations and natural springs have a reduced water due to over-pumping and withdrawal.

If you need to report a distressed or injured manatee call the FWC hotline at 1-888-404-3922. If possible, stay with the manatee and take a photo or video without disturbing the manatee.

For more detailed information about manatees [click here](#) to view a video presentation by Cora Berchem from Save the Manatee Club.

Living Fossils, Saving Lives

By Justina Dacey

The COVID-19 vaccine has slowly rolled out to states across the country. Behind the scenes an ancient marine creature with ten eyes, twelve legs and magical, milky blue blood is being utilized worldwide for testing vaccines and sterility of medical equipment.

The American horseshoe crab (*Limulus polyphemus*) has been shuffling its spidery jointed legs along beaches and estuaries for over 445 million years (1). We're talking millions of years older than dinosaurs. They are more closely related to spiders, than true crabs. Most beachgoers recognize them from their half-moon shaped shell (prosoma) and long sharp tail (telson). Unknowing tourists sometimes mistake their long telson as a stinger. It does not sting at all but allows the horseshoe crab to right itself if turned upside down by waves or predators.



Photo Credit: UF/IFAS

In the grand scheme of coastal ecology, horseshoe crabs are prey for sea turtles, crabs, fish and migrating shorebirds. Many migratory birds rely on their eggs to sustain arduous northern migration routes. One, in particular, the federally threatened *rufa* Red Knot (*Calidris canutus rufa*) migrates 9,000 miles from the tip of South America to the Canadian Arctic every spring. It is a route they time with peak horseshoe crab spawning activity (2). The *rufa* Red Knots competition comes in the form of a unique fishery on the Eastern United States. Fishermen collect live horseshoe crabs for pharmaceutical facilities to harvest one third to one half of their blood. After processing, they are re-released into the wild. Florida does not harvest horseshoe crabs for this purpose, but some are harvested as bait for an eel fishery (1).

The horseshoe crab's blue blood is highly sought after in the biomedical industry. If you've ever had a saline drip, flu shot, heart stent, epidural or you guessed it, the COVID-19 vaccine, a horseshoe crab was involved. Their blood is copper-based containing a compound that coagulates blood when exposed to bacterial contaminants or endotoxins. The compounds extracted are made into the "Limulus Amebocyte Lysate" or LAL test (1). Endotoxins can be deadly if minuscule amounts make



Photo Credit: UF/IFAS

their way into the bloodstream, which is why the LAL test is required by the U.S. Food and Drug Administration.

The high demand for the COVID-19 vaccine has conservationists concerned it will impact wild horseshoe crab and migratory shorebird populations. Bird conservation organizations are working on a solution. In recent years, other countries have developed a synthetic alternative

recombinant Factor C (or rFC for short). Unfortunately, United States regulations have kept the standard LAL test, but the conservation groups are trying to change the use of the LAL test and transition to the synthetic versions. Only time will tell the outcome.

For now, next time you're forming footprints along a sandy beach and witness a horseshoe crab scuttling along the tide's edge, take a moment to appreciate the evolutionary adaptations living millions of years can provide and the humility that we rely on these living fossils to save humanity.

Resources:

1. [UF/IFAS Extension: The American Horseshoe Crab \(Limulus polyphemus\)](#)
2. [Florida Fish and Wildlife Conservation Commission: Facts About Horseshoe Crabs and FAQ](#)

If you're interested in learning more about horseshoe crabs and want to get involved with monitoring efforts in your region, check out the [Florida Horseshoe Crab Watch](#).

NEWS FROM THE FMNP OFFICE:

FMNP Courses - 100% Online and Hybrid Offerings. Safety measures to fight the spread of the COVID-19 virus have resulted in many changes in the way FMNP courses have been offered during the past year. This includes courses offered with 100% online lectures and group discussions with self-directed field activities and group reporting.

As we better understand how to minimize the risk of spreading this virus and more people become vaccinated, we are also beginning to schedule courses with in-person field trips and activities that include masks and social distancing. Lectures are still only being offered online due to social distancing requirements, which makes in-person classroom lectures impractical.

People are enjoying the online courses and they are filling at a record pace. If you haven't tried an online or hybrid course, we encourage you to do. And for 100% online, it doesn't matter where you live!

[Click here](#) to see current course offerings and check back often!

New FMNP Courses Released! Two new FMNP courses have been recently released in the restoration series. These include Marine Habitat Restoration and Florida Invasive Plants. Both courses are in the Special Topics format with of 24 contact hours. We encourage you to enroll and if you don't see a course in your area, let your local instructors know that you'd like to be on a waiting list.

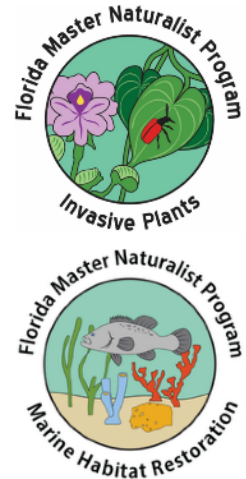
You can find your local instructors [here](#).

The Volunteer Monitoring System is Down. During the transition to our new website, we encountered an issue with the Volunteer Monitoring System. We have alerted IT and hope that it will be resolved soon. In the meantime, hold on to your hours! We apologize for the inconvenience.

Donate to the Florida Master Naturalist Program Endowment. We are building a legacy of informed citizens to promote awareness, understanding, and respect of Florida's natural ecosystems. To ensure we continue inspiring conservation education and action for decades to come, we need to raise \$2 million to establish an endowment for an FMNP Program Leader in perpetuity. Ripples spread when a single pebble is dropped. Please watch a short [video message](#) from Dr. Main. Contact Dr. Main at info@masternaturalist.org to discuss options for a major gift.

All endowment donations during 2021 will receive a comparative FMNP 20-year pin. Thank you for your ongoing actions to help conserve Florida's environment for future generations to enjoy!

To donate, please [click here](#). To read more, [click here](#).



OPPORTUNITIES:



Scallop Sitter Volunteer- Florida Fish and Wildlife and Florida Sea Grant. The Florida Fish & Wildlife Conservation Commission and UF/IFAS Extension - Florida Sea Grant have partnered to implement an innovative community-driven effort to restore scallop populations, and we need your help! “Scallop Sitter” volunteers are trained to assist in Bay, Gulf and Franklin Counties. The goal of the program is to increase scallop populations in our local bays. Scallop sitters help reintroduce scallops into suitable areas from which they have disappeared.

Volunteers manage predator exclusion cages of scallops, which are either placed in the bay or by a dock. The cages provide a safe environment for the scallops to live and reproduce, and in turn repopulate the bays. Volunteers make monthly visits from June until December to their assigned cages where they clean scallops (algal and barnacles can attach), check mortality rate and collect salinity data that helps us determine restoration goals and success in targeted areas.

So, how do I get started in becoming a Scallop Sitter? Register on Eventbrite to be a [Franklin County Scallop Sitter](#), [Gulf County Scallop Sitter](#), or a Bay [County Scallop Sitter](#).

Volunteer- The City of Plant City Water Resource Management Division.

The City of Plant City Water Resource Management Division is looking for a volunteer or two in the Walden Lake community of Plant City. These volunteers will collect monthly water samples on Walden Lake. The program provides all the equipment and training. You’ll need to provide your own boat or canoe. It takes about 1 hour per month. The data you collect helps us keep Plant City’s lakes and streams clean. Contact the Environmental Coordinator: jmcgee@plantcitygov.com 813-659-4298 x4904.



Solitary Bee Monitor- University of Florida. Ph.D. student Sherri Kraeft with the University of Florida is studying *Hesperapis oraria*, a rare, ground-nesting solitary bee that only occurs in the



coastal dunes of the Northern Gulf of Mexico. Sherri is looking for volunteers to help monitor the bee and its sole host plant, *Balduina angustifolia* during the bees' limited flight season in September and October. Sites for volunteer opportunities include several state parks, private properties, and county parks from Escambia to Bay county in the panhandle. Sessions would be divided into either morning or evening time slots and would take place in the scrub, dunes, and coastal, sandy habitats where the plant and the bee both occur. The ability and willingness to

receive training on plant phenology and bee identification is all that is absolutely required; photography experience with insects would be a bonus. They do ask that volunteers and participants help by carrying minimum equipment, water, and their own necessary provisions. Volunteers should also understand that convenient restrooms or reliable cell service close by are not necessarily guaranteed. If you are interested or would like more information regarding this volunteer opportunity, please feel free to contact Sherri at sjkraeft@ufl.edu or (850) 728-4734.

Nature Knowledge- March 18. Nature Knowledge is a speaker series developed to share current knowledge on issues affecting nature in Florida. Dr. Shelly Johnson, State Specialized Agent in Natural Resources with UF/IFAS Extension, hosts an expert each month. On Thursday, March 18th from 3-4pm, Dr. Marty Main, Professor, Department of Wildlife Ecology and Conservation, UF/IFAS, will join us to discuss how the establishment and spread of coyotes in Florida has ramifications associated with how to classify these animals as well as understanding their potential positive and negative roles regarding environmental, economic, and human welfare impacts. This presentation discusses these issues to separate fact from fiction regarding Florida's coyotes in Florida. [Register online in advance.](#)



Share your FMNP Story. Has the FMNP significantly impacted your career, life, or outlook? We want to hear about it! We are looking for FMNP graduates to share their stories in our newsletter and in our [monthly blog!](#) We would love to hear from K-12 teachers, ecotourism guides, natural resource managers, or volunteers who have completed an FMNP course to talk about their experience and the impact that the program made. Please email info@masternaturalist.org if interested!

Upcoming Courses:



Come Be Social!

Don't forget to check out our Facebook and Instagram pages! As a follower, you will be able to communicate with the FMNP staff and other environmental enthusiasts. We share events, news, and photos from all across the state and FMNP courses. We encourage you to post and tag us throughout your own FMNP journey and to use the hashtags #FloridaMasterNaturalistProgram and #FMNP to find other posts. Click below to follow!

Follow us on:



@OfficialFMNP

Sign up for the Listserv!

Stay up to date on FMNP news by signing up for our listserv! We only send out a few emails a year (including our newsletters). [Sign up here.](#)

Don't forget to share our newsletter!