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PUBLISHER The Longleaf Alliance, **EDITOR** Sarah Crate, **ASSISTANT EDITOR** Margaret Platt

DESIGN Bellhouse Publishing, **ADVERTISING** Sarah Crate – editor@longleafalliance.org

COVER A pair of Mississippi Sandhill Cranes walk through a wet pine savanna filled with blooming flowers, pitcher plants, and a lone longleaf pine sapling at the Mississippi Sandhill Crane National Wildlife Refuge.
Photo by Lauren McLaurin.

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The Longleaf Alliance

PRESIDENT'S MESSAGE



CAROL DENHOF

If you look up the word *alliance*, you will find the term describes a close, collaborative relationship between entities that share complementary assets and strengths to create increased value that would be difficult to achieve independently.

Rhett Johnson and Dean Gjerstad chose their words wisely when they formed and named The Longleaf Alliance (TLA) back in 1995. This is a perfect description of our organization that works alongside a diverse assemblage of individuals, organizations, and agencies across the southeastern United States to bring back longleaf pine. All who are affected by the longleaf ecosystem are important to our cause – this includes everyone from our restoration partners to elementary-aged children to urban dwellers to longleaf landowners – and we want to make sure that they all have the opportunity to play their own unique role in the work that we do.

Throughout the year, we meet many interesting people across the region, some of whom have never heard of longleaf pine, even though these trees have been such a significant member of the landscapes in which they live. It is exciting to share information about the longleaf ecosystem and ignite an appreciation and understanding of why these forests are so special and why it is important to conserve and restore them.

These interactions often lead to new TLA Members and Conservation Partners. In fact, in 2022, we reached a milestone number of over 1,200 members, and of that group, 210 had never before been a part of The Longleaf Alliance. We are beyond grateful to have all of you on “Team Longleaf,” and so appreciate all that each of you bring to the cause.

Over the past six months, our Team has hosted or attended a number of outreach and training events that have brought us in contact with thousands of existing or new longleaf

enthusiasts. Educational opportunities are central to our connections and engagements with landowners and supporters. In this issue, you will learn about some of these events and how they are building a community of people who will make a difference in longleaf restoration moving forward.

TLA collaborated with the Longleaf for All Working Group of America’s Longleaf Restoration Initiative to launch a new Longleaf Academy called Longleaf & the Landowner. Thanks to Mr. Herbert Hodges (our 2022 Gjerstad/Johnson Landowner of the Year Award recipient!) for hosting this course on his property in Georgia. With this Academy, we connected with a cohort of traditionally underserved landowners navigating heirs’ property and other issues commonly faced with land ownership. Customizing our training courses to fit specific needs will better serve different audiences.

In addition to meeting the technical needs of landowners and partners, raising awareness of longleaf among the general public of all ages is equally important. In North Carolina, we were fortunate to participate in the Hoke Community Forest (HCF) Planting Day in December 2022. This was a true partnership effort with representatives from Hoke County, Boys & Girls Club, and the HCF Steering Committee in attendance to help the kids with the planting and to share information about careers in forestry and natural resources. Connecting the next generation to the land is crucial; we must foster positive experiences in the forest while also serving as career role models.

To ensure the sustainable future of the longleaf ecosystem, we must continue the good work of restoration and management while also growing the “Alliance” that keeps our longleaf community strong. Thanks to all of you for being a member of our Team!

The Longleaf Alliance

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*The Longleaf
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Staff

Carol Denhof
President
carol@longleafalliance.org

Lynnsey Basala
Vice President for Development
lynnsey@longleafalliance.org

Ad Platt
Vice President for Operations
ad@longleafalliance.org

Anne Rilling
Vice President for Business
anne@longleafalliance.org

Ryan Bollinger
*Regional Initiatives Director &
LIT Consul*
ryan_b@longleafalliance.org

Vernon Compton
GCPEP Director
vernon@longleafalliance.org

Lisa Lord
Conservation Programs Director
lisa@longleafalliance.org

Charlie Abeles
Wildlife Biologist
charlie@longleafalliance.org

Jacob Barrett
*Technical Assistance & Training
Specialist*
jacob@longleafalliance.org

Karen Zilliox Brown
Resource Specialist
karen@longleafalliance.org

Kameron Burgess
Biological Restoration Technician
kameron@longleafalliance.org

Sarah Crate
*Outreach Communications
Coordinator*
sarah@longleafalliance.org

Samantha Dillon
Wildlife Technician
samantha@longleafalliance.org

Alexis Feysa
Natural Resource Technician I
alexis@longleafalliance.org

Susan French
GA Sentinel Landscape Coordinator
susan@longleafalliance.org

Lucas Furman
GIS Coordinator
lucas@longleafalliance.org

Jennie Haskell
Coastal Partnership Coordinator
jennie@longleafalliance.org

Abe Huang
Biological Restoration Technician
abe_h@longleafalliance.org

Wendy Ledbetter
*Fort Stewart/Altamaha Partnership
Coordinator*
wendy@longleafalliance.org

Emma McKee
Invasive Species Coordinator
emma@longleafalliance.org

Kay Nail
Accounting Specialist
kay@longleafalliance.org

Alan Patterson
Natural Resource Technician I
alan@longleafalliance.org

Cody Pope
Western TA & Training Specialist
cody@longleafalliance.org

Sean Seid
Biological Restoration Technician
sean_s@longleafalliance.org

Kaiden Spurlock
Natural Resource Supervisor
kaiden@longleafalliance.org

Donna Vassallo
Natural Resource Technician II
donna@longleafalliance.org

Haley Welshoff
Biological Restoration Team Lead
haley@longleafalliance.org

Casey White
Administrative Assistant
office@longleafalliance.org



MANAGEMENT CHECKLIST | SPRING 2023

EVALUATE YOUNG LONGLEAF STANDS

- Assess winter seedling plantings for any early mortality from freeze damage or other factors.
- Uncover and/or lift any viable containerized longleaf seedlings that were planted too deep.

PLAN FOR YOUR NEXT LONGLEAF PLANTING

- Order your seedlings early for 2023 fall and winter plantings (by April, if possible). Nurseries usually sell out of preferred seed sources by early summer.
- A list of our partner nurseries can be found at www.longleafalliance.org.

ASSESS LONGLEAF RECRUITMENT

- If promoting natural regeneration is your goal, conduct your longleaf pine cone and flower counts in May to assess the developing crop, as well as next year's potential crop.
- If a good crop is developing, prepare the seedbed with prescribed fire – see the burning section below.

SPRING RELEASE OR EARLY SITE PREPARATION TREATMENTS

- Assess stands for herbaceous competition to determine if there is a need for chemical release, especially on former agricultural sites. If using any Oust® product, test pH to ensure it is below 6.2 to avoid seedling mortality. For any release, avoid periods of stress or late-planted seedlings.

- Apply hexazinone as a site prep treatment or to control oaks on sandy sites after bud break but before full leaf-out. Hexazinone is tough on oaks but easy on many desirable understory species.
- For site preparation following a cutover, ensure adequate time for resprouting to develop before applying a herbicide site prep treatment. If in doubt, wait a year to improve the effectiveness of treatment.

PRIORITIZE BURNING

- Evaluate what you burned in the winter to determine if you accomplished your desired fire effects.
- Burn young longleaf stands invaded by short needle pines or hardwoods that are too large to control with winter burns.
- Avoid disking firelines around wetlands and ponds; reptiles and amphibians are actively traveling to wetter areas for breeding, and plowlines can impede their movement.
- Promote viable wiregrass seed production, increase wildflower abundance, and control hardwoods with growing season prescribed fire.

PREPARE THE SEED BED

- Consider the best timing for a seedbed preparation burn on mature longleaf stands with good cone crops to promote natural regeneration.
- The goal is to increase the likelihood that seed falls on bare mineral soil but not so clean that predators can find and destroy most of the new seed.

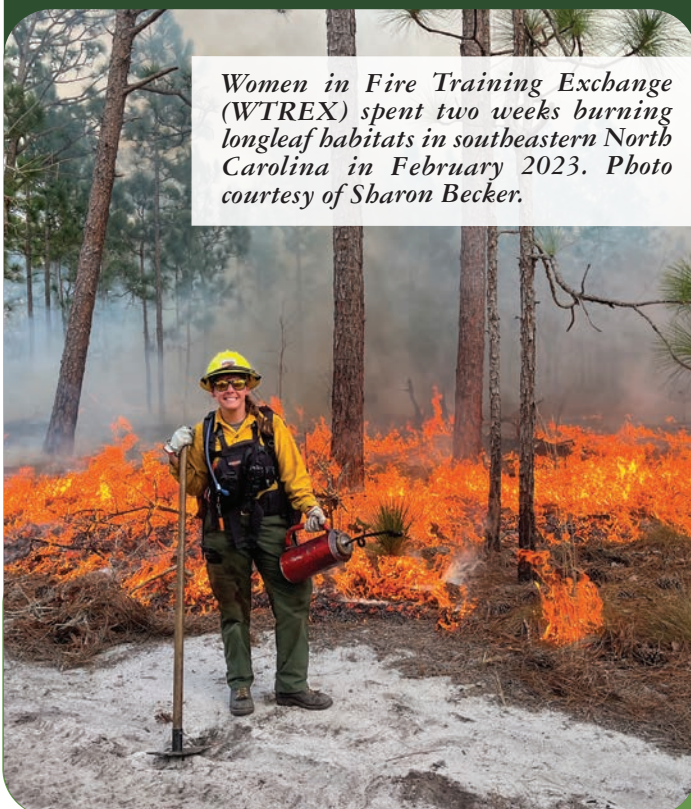
IF WE MOW

- Burning is better, but mowing can be a tactical tool to combat competition. Consider combining mowing with periodic patch burning to enhance habitat development and condition.
- Avoid complete mowing in spring to early summer to reduce the loss of ground-nesting birds. Most birds will re-nest if damage does occur and suitable habitat is nearby.

PLANT NATIVE WARM-SEASON GRASSES

- Check for weedy competition 7-10 days prior to seeding. If needed, treat with herbicide.
- Time planting with seasonal rain events.
- For successful germination, seed must be planted less than 1/4 inch deep.

Reach out to The Longleaf Alliance for any questions about establishing and managing longleaf stands at longleafalliance.org/contact.



Women in Fire Training Exchange (WTREX) spent two weeks burning longleaf habitats in southeastern North Carolina in February 2023. Photo courtesy of Sharon Becker.



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Top Left: Ellis Martin and Roy O. Martin, Sr.

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Q&A

Q. Dear Longleaf Alliance,
I just began managing a property with an unknown fire history. It's a mixed-age stand, including longleaf 14" in diameter. I've heard a lot about duff and the considerations when bringing fire back, but I also understand the hazards of keeping fire out. My problem is the midstory. It's so dense and shady that I have very few fine fuels available to burn when I do get a good "duff day" with recent and forecasted rain. I'm thinking about mulching before burning. Is this a good idea?

Engulfed in Duff

A. Dear Engulfed,
When you're reintroducing fire to a site, it's all about balancing a set of conditions. Those larger longleaf you mentioned are susceptible to death from long-burning duff fires. The current advice on gradual duff reduction says to burn those areas as frequently as possible under conditions where the surface fuels are dry, but the fuels beneath hold moisture down to the mineral soil. Think of each burn as peeling back an "onion layer" of duff.

Adding mechanical treatments to address midstory encroachment adds another layer on top of that. Mowing or masticating can quickly transform the stand's structure while also affecting fire behavior in a few ways. It can reduce the fuel load, bring the fuel arrangement closer to

ground level, and reduce or eliminate the risk of ladder fuels carrying fire to the tree canopy.

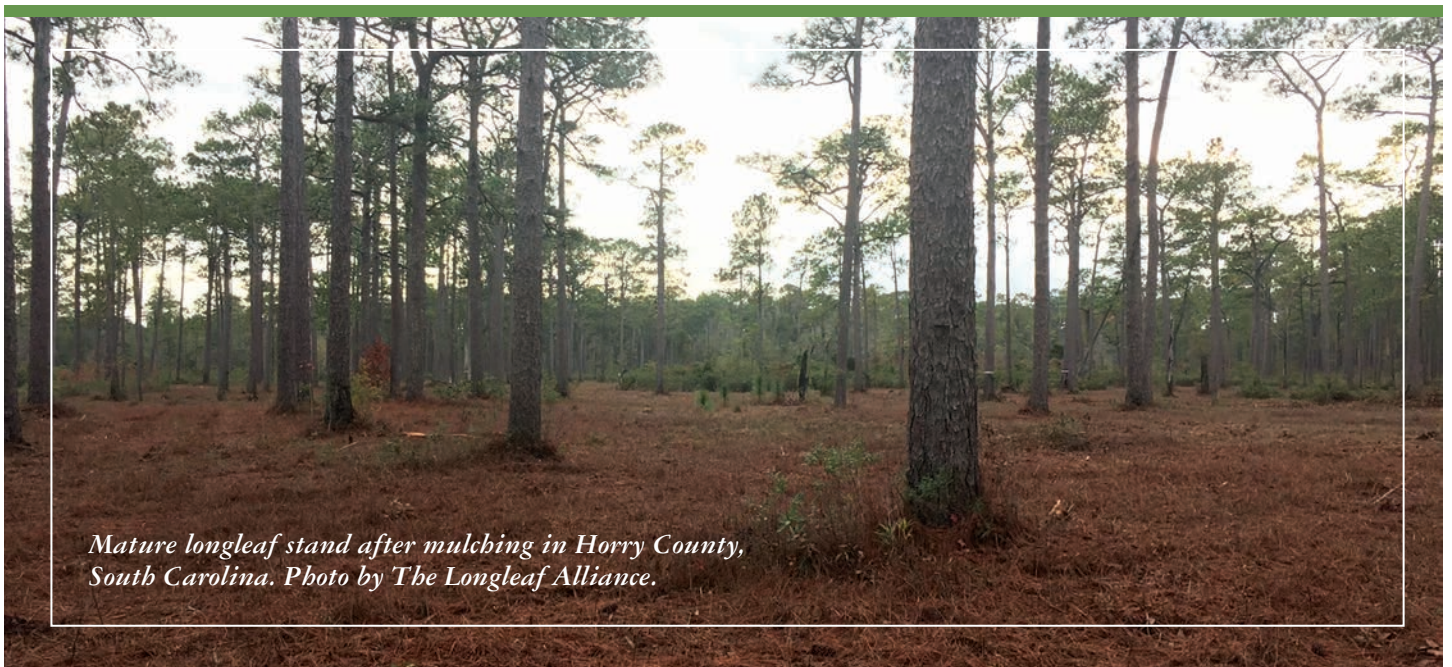
In most cases, though, mechanical treatments don't alleviate the problem of fuel accumulation but instead relocate the chipped materials to the forest floor. This can cause more moisture to be held at the ground level, but under prolonged drying, you have a lot more surface fuels available to combust. The mulch can serve as a "vector" that transmits surface fire into the duff beneath. The input of masticated wood can add more smoldering time to your burn, allowing the duff to ignite when, under other circumstances, the duff wouldn't have caught.

Bottom line, burning in duff areas that have also been mechanically treated should be done with care and the utmost attention to your site's fuel moisture conditions.

However, if you can arrange to have the mulched material taken off the site, you will have reduced the fuel load in the stand. Even if you don't make any money in the process, removing that mulched debris is well worth it for the success of your burn program.

It's important to think about how successive treatments (like mulching and burning) may interact since we're never managing only one aspect of a longleaf stand at any given time.

Sincerely,
The Longleaf Alliance



Mature longleaf stand after mulching in Horry County, South Carolina. Photo by The Longleaf Alliance.

APPALACHIAN MOUNTAIN BREWERY



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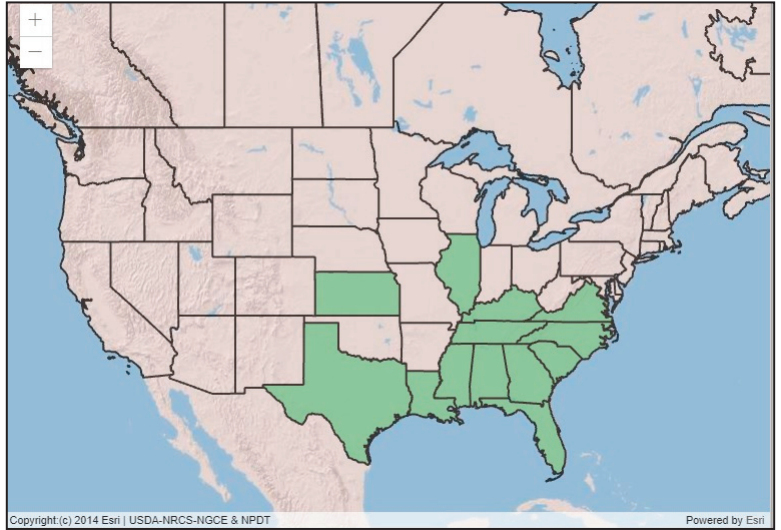
By Abe Huang, *The Longleaf Alliance*

PLANT SPOTLIGHT

Mimosa microphylla Dryander
Littleleaf Sensitive-briar
Legume Family — Fabaceae



Photo by Richard Holzman



Map showing distribution of Eastern sensitive-briar.
USDA PLANTS Database.

Description

Littleleaf (or Eastern) sensitive-briar is a perennial and sprawling leguminous herb with alternate blueish-green bipinnately compound leaves and short prickles covering the plant.

Pink-lavender stamens radiate out into a globular “pom-pom” flower with yellow pollen tips from April-September.

The “sensitive” moniker is owed to their thigmotropic (rapid movement of water in the leaf cells) folding when touched. The leaves will open again after a period of undisturbance.

Habitat

Sensitive-briar is found in dry pinewoods, prairies, sandhills, and roadside banks across the longleaf range as well as adjacent states.

Wildlife Value

Sensitive-briar flowers, leaves, and seed pods provide forage and cover for insects, Bobwhite Quail, gopher tortoise, and white-tailed deer.

Availability

Mimosa strigillosa (powder puff mimosa) is more commonly cultivated, favored for its absence of creeping growth and thorns, but *M. microphylla* seed is also available commercially.

Related species

Take care in distinguishing native *Mimosa* species from the invasive mimosa tree, also known as silk tree (*Albizia julibrissin*), and take advantage of the many medicinal qualities of their other briar cousins - *Mimosa pudica* and *Smilax* spp.

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REVENUE

By Samantha Dillon, The Longleaf Alliance

Eastern Coral Snake

Micrurus fulvius

Eastern coral snake range shown in blue, with black points marking occurrence records. Map by Jennifer Arches, et al., 2018.



WINDOW into WILDLIFE

Eastern coral snake. Photo by Zack West.

IDENTIFYING FEATURES

Broad, alternating bands of red and black that are separated by thinner yellow bands that starts at their rounded head, which is always black.

Small, slender body usually does not exceed 30 inches.

DIET & BEHAVIOR

Coral snakes are secretive and spend most of their time underground or under litter cover. They prey on snakes and lizards.

Coral snakes are generally unwilling to bite unless handled.

DISTRIBUTION & HABITAT

Eastern coral snakes occur in the southern Coastal Plain from North Carolina to Louisiana, including all of Florida. They can be found in pine and scrub oak sandhills habitats, hardwood areas, and pine flatwoods.

FUN FACTS

Coral snakes are New World relatives of cobras; both are members of the family Elapidae. The only elapid species that might be encountered in longleaf forests is the eastern (or harlequin) coral snake.

Their striking coloration is thought to be aposematic, meaning that it warns potential predators of their toxicity. Despite being the most venomous snakes in North America, coral snakes have poor venom delivery.

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- Jackson, D. R., and R. Franz. 1981. Ecology of the eastern coral snake (*Micrurus fulvius*) in northern peninsular Florida. *Herpetologica* 37:213-228.
- Archis, J., et al., (2018). Is the future already here? The impact of climate change on the distribution of the eastern coral snake (*Micrurus fulvius*). *PeerJ*. 6. 10.7717/peerj.4647.

The best way to avoid a snake bite is to maintain situational awareness. Learn about native snakes BEFORE hiking, wear protective footwear, stay on the trail, and never put your hands or feet where you can't see them. Most importantly, when you encounter venomous snakes, give them space. Venomous snakes don't want to waste their venom on something they cannot eat and, thus, do not bite unless threatened. All snakes, including coral snakes, play an important role in the food web and contribute to ecosystem biodiversity.



Scarlet snake. Photo by Kameron Burgess.



Scarlet kingsnake. Photo by Samantha Dillon.

Coral Snakes and their Mimics

Anyone that grew up in the southeastern United States is familiar with the age-old rhyme, “red touch yellow, kill a fellow” and “red touch black, friend of Jack.” These mnemonics are used to differentiate between the venomous coral snake and non-venomous mimics like the scarlet kingsnake (*Lampropeltis elapsoides*) and the scarlet snake (*Cemophora coccinea*), as they all have alternating bands of red, yellow, and black. Additionally, all three of these species are slender-bodied and usually don’t exceed 3’ in length, so coloration is key when it comes to identifying them.

Scarlet snakes and scarlet kingsnakes are non-venomous Colubrid snakes that can be found everywhere the coral snake ranges; this implies that the two species are Batesian mimics, meaning they evolved their coloration to mimic a dangerous

species as a means of deterring potential predators. The coloration is variable between these two species, with scarlet snake pattern being more “saddled” than the banding of scarlet kingsnakes. Still, the key identifying factors are the same: both snakes have red faces, and red bands always touch black bands. An alternative rhyme for these species would be “red face means safe!”

When it comes to tricolored snakes in longleaf, mnemonics are important for a quick identification if you run into one of these species. Note: The rhymes only apply to eastern North American species! It is still a best practice to never handle a snake until it has been positively identified as a nonvenomous species, and unless absolutely necessary.

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Established longleaf seedlings with shelterwood canopy still present in DeSoto National Forest, MS.

By Cody Pope, The Longleaf Alliance

LONGLEAF NATURAL REGENERATION

Natural regeneration can be a cost-effective recruitment strategy in specific forested sites, given that enough mature, cone-bearing trees are in the overstory.

Natural regeneration is a forest management term that describes the restocking of woodlands by seed that naturally falls from existing trees, distinct from artificial regeneration, which involves the labor-intensive process of site preparation followed by tree planting or direct seeding.

What is a good longleaf cone crop?

Successful seedling recruitment depends on sufficient cone production by available overstory trees, which generally occurs every 5–7 years in longleaf pine stands.

Monitoring for a good cone crop takes place in spring or early summer and requires binoculars to count developing green cones on sample trees. For successful longleaf regeneration, a minimum of 30 green cones per tree, on 30 or more seed trees per acre, should be present.

Fire and thinning assist natural regeneration.

Though the cone crop of longleaf pines varies yearly, seed fall occurs every fall from October to November. Unlike other southern pines, most longleaf seeds germinate in 7 to 21 days, wherever they land, not in the following spring. Longleaf germinants survive and thrive where they can put down roots directly in the soil.

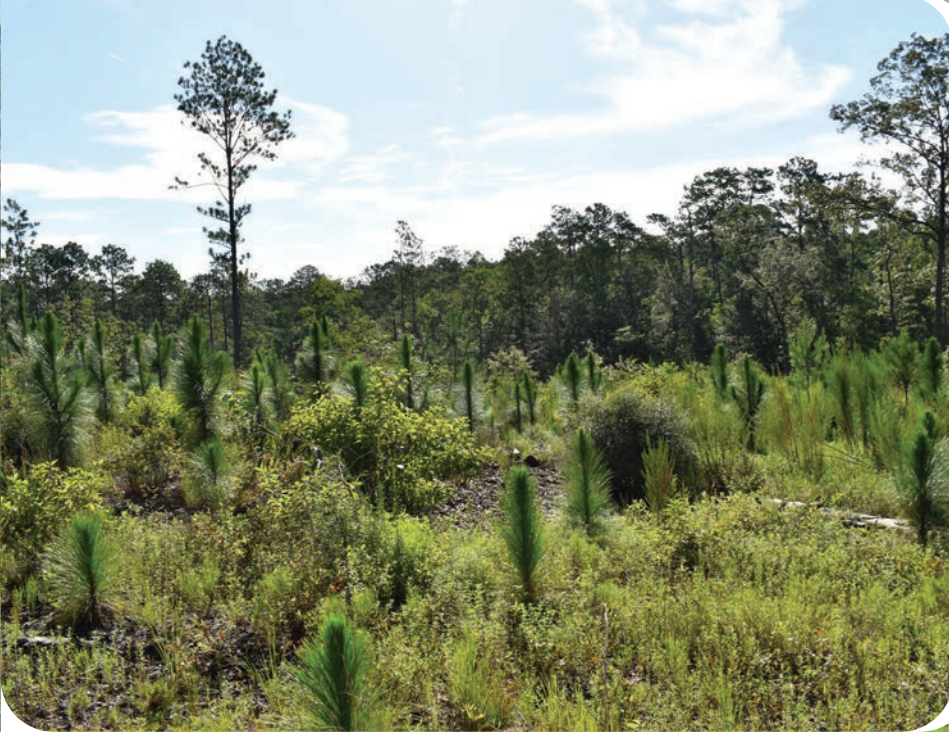
Prescribed fire will prepare a receptive seed bed, but the burn should take place in advance of, though not immediately before, the anticipated seed fall. The goal is to expose enough mineral soil so that most of the seed falls where it can successfully become established, but not create such a clean site that the many seed predators can find and consume the crop.

Seedling success is dependent on available light which is abundant in low-density stands or stands with canopy gaps or openings. Two common methods for supporting the natural regeneration of longleaf pine include the shelterwood method and the group selection method. Both mimic some of the natural processes (i.e., lightning strikes, pest outbreaks, and windthrow) that historically maintained open pine habitats.

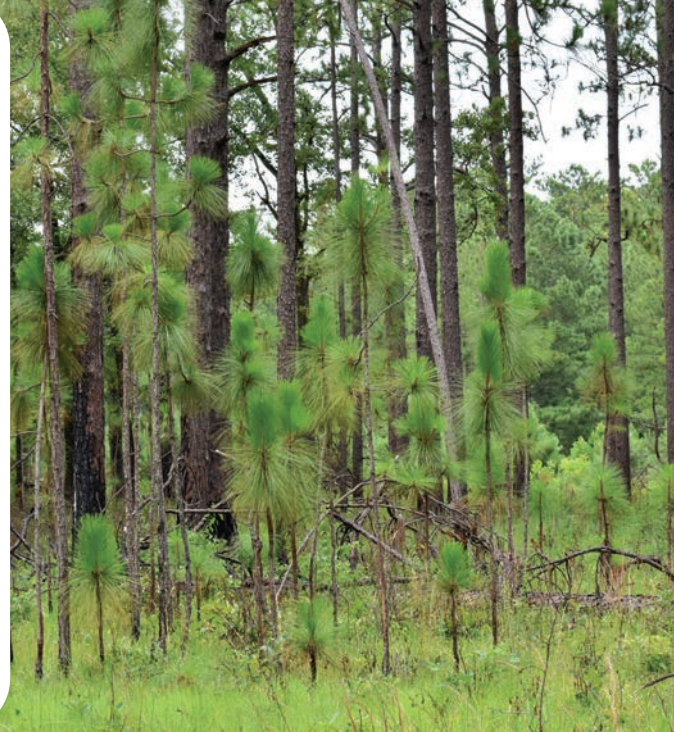
Shelterwood vs. Group Selection

The shelterwood method involves significantly thinning the stand while leaving high-quality, evenly spaced, mature trees as the seed source for longleaf regeneration. The group selection method retains more of the overstory by creating gap openings, appealing to land managers whose objectives focus on wildlife, biodiversity, or aesthetics.

Shelterwood stands should be thinned to roughly 25–35 trees (> 10" dbh) per acre, leaving the remaining trees evenly spaced to allow for sufficient seedling recruitment and needle fall to carry future prescribed fire. This regeneration harvest



Young longleaf initiate height growth once released from competition with the removal of the overstory shelterwood trees in DeSoto National Forest, MS.



Natural regeneration that has formed within a forest gap at The Jones Center at Ichauway, GA.

Photos by Cody Pope

The limiting distance for sufficient needle fall for future prescribed burning is about 165 feet, an important consideration for all thinning operations in longleaf pine stands.

With either regeneration method, prescribed burning is paused until the seedlings have become large enough to withstand fire, are generally vigorous with bushy needles, and have a root collar diameter greater than 0.4 inches.

allows the seed trees to expand their canopies and increase conelet initiation while increasing light to the understory. Parent trees may be harvested 1–2 years after sufficient seedlings are established. Removing parent trees allows more light to reach the seedlings, but logging damage will also occur. It is recommended that stands reach 3,000–6,000 seedlings per acre before harvesting due to anticipated losses. To maintain adequate stocking, roughly 600–1000 seedlings should remain after harvesting the parent trees.

However, some may choose to retain the seed trees, preferring the appearance of a two-aged stand. The downside is that the valuable overstory trees may be at risk and some shading of the new seedlings slows their development.

Group selection consists of harvesting clusters of trees to form gaps instead of uniformly thinning the entire stand. Gaps can be circular or irregularly shaped and should range

in size from around 0.25 acres to 1.5 acres. An irregular shape for larger gaps helps manage the limiting width (165') needed to ensure sufficient needle fall.

Regeneration occurs over time with group selection instead of the distinct, shorter period associated with shelterwood. Once seedlings are successfully established, mature trees on the edges of gaps may be harvested to increase light availability and reduce below-ground competition. Cutting cycles can be planned for every 10–20 years to develop a stand with trees in many size and age classes.

Additional Resources

Brockway, D.G. 2015. Protocol for Counting Longleaf Pine Cones and Conelets. Southern Research Station, USDA Forest Service. <https://www.srs.fs.usda.gov/longleaf/research/silviculture/protocol-for-counting-longleaf-pine-cones-and-conelets.pdf>.



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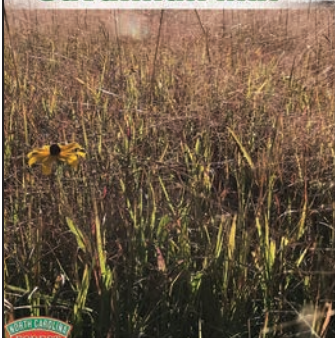
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Developing A LONGLEAF LEGACY

By Karen Brown, *The Longleaf Alliance*

The Longleaf Alliance, National Wildlife Federation, and Longleaf for All partners present a new Academy addressing the underserved longleaf landowner experience.



On the field tour, Mr. Hodges relays the importance of keeping some mature timber in reserve. Photo by Karen Brown.

“A pine tree has been a part of my life since the beginning,” a landowner at our latest Academy said as he introduced himself to the group. Each of the 40 Academy participants had their own reason for gathering at the Willie Hodges Estate Family Farm outside of Swainsboro, Georgia for three days in late January 2023. Some were brand new to longleaf and land ownership, others had tended the land that had been in their family for 100 years or more, and some were bringing their family farm back to a forest with longleaf as a tree that would meet their goals. One family attended the Academy with members from three generations, learning together and going home more informed on the future choices they will make together.

The course, titled “Longleaf & the Landowner” was designed to focus on economically sustainable and ecologically productive longleaf stewardship, along with land ownership issues, particularly heirs’ property challenges.

“When you start out behind, it takes you a while to catch up.”

The National Wildlife Federation (NWF), through a partnership with USDA Natural Resources Conservation Service (NRCS), has been working closely with the Academy host, Herbert Hodges, on a model farm approach. Hodges has long been a mentor to others, particularly minority landowners of color, and easily takes on the educator role for various groups that come to see the longleaf restoration work he has achieved at the farm, with the help of his local NRCS and Farm Service Agency contacts.

During the Academy field tour, Mr. Hodges brought the group to see longleaf stands that gopher tortoises have occupied since he was a young boy on the farm. Today, he manages those areas with prescribed fire and monitors the tortoise populations with help from the Georgia Forestry Commission and Georgia Department of Natural Resources.

The first graduates of the Longleaf & the Landowner Academy. Attendees came from as far away as Mississippi and Maryland for the 3-day course. Mr. Hodges's niece and great nephew were among the group as well. Photo by LuAnn Craighton.



A: A field just planted with longleaf, continuing the legacy for the next generation. Photo by Karen Brown. B: Herbert Hodges welcomes the class and tells a part of his story of the family land. Mr. Hodges was awarded the 2022 Landowner of the Year at the Biennial Longleaf Conference. Photo by Tiffany Woods. C: The Hodges Model Farm was established to demonstrate sound stewardship practices and provide landowner-to-landowner learning experiences. Attendees gather around an informative sign that has been installed on the property through grant funding from the National Wildlife Federation. Photo by Tiffany Woods.

Deriving an income from the land is a priority for the family as well, and some areas of the farm are managed primarily for pine straw. Mr. Hodges employs different raking techniques depending on the longleaf stand conditions. For example, on sites with active gopher tortoise burrows, lifting straw (instead of mechanical raking) minimizes impacts to native groundcover and adapting herbicide use keeps those sites wildlife-friendly.

This farm has remained in the family since the 1890s, a remarkable fact and a testament to the wisdom of the prior generations to hold on to as much land as they could. Though acreage had been lost over time, they always kept the farm.

The legacy was evidenced by four of the oldest longleaf on the property, trees that bear the “cat faces” of their turpentine days and now remain on an overlook of a field that had just been planted in longleaf, days before the Academy.

“Always keep the land,” was a family adage that many attendees cited, heard from grandparents and great-grandparents who had resisted the immense pressures and discriminatory campaigns that led to systematic land loss by black families during the Reconstruction era and the century and a half that followed. Keeping the land was about more than owning an asset; it signified a legacy that could only be made



▲ *Family ties run deep with three generations of the Williams family from Florida, welcomed by Mr. Hodges, left of center. Photo by Tiffany Woods.*

◀ *The oldest longleaf on the property. As a young boy, Mr. Hodges recalls dipping tar from these very trees, some even have remnants of the nail where a pail had been hung. Photo by Karen Brown.*

possible with land, having a place that could provide for the generations to come. A foundation for building generational wealth.

Today, the challenges to creating that land legacy include heirs' property, or clear title, disputes that "blight" many properties for families of all backgrounds. Heirs' property is most commonly generated when a property is passed down from generation to generation in a way in which multiple people own the same piece of property. This can often lead to roadblocks for making any land management decisions, even land loss when partial ownership is transferred outside of the family. Fortunately, there are organizations designed to help landowners address those challenges; staff from the **Georgia Heirs Property Law Center** became an invaluable resource for their legal expertise in these matters, and their approachability for families in need of their services.

"I need help, and I don't know what kind of help I need."

Presenters also spoke on the historical and economic context that land has played in the African-American experience. Speakers from the **Theodore Roosevelt Conservation Partnership** and the **U.S. Forest Service** presented on the deep history of land loss in the Southeast and the efforts of recent decades that bridge sustainable forestry and land retention. Anchor organizations within the Sustainable Forestry and Land Retention (SFLR) Network connect landowners with

the resource professionals who can assist them, for the long run, through the steps to obtain cost-share, connecting with legal resources, and forestry education.

For Georgia, that organization is **McIntosh Sustainable Environment and Economic Development (SEED)**, and several members met with the Academy group to share the services they are providing landowners, some of whom were in the room, in forest stewardship planning and practices on their own community demonstration forest.

And in South Carolina, the **Center for Heirs' Property Preservation** is the anchor for SFLR resources and a participant and contributor to this first "Longleaf & the Landowner" Academy. The non-profit, based in Charleston, provides professional forestry services in addition to legal counsel on heirs' property.

"There are no words that can describe how much I enjoyed and gained from the Academy."

Many participants shared how meaningful it was to attend an event on a property owned by an African-American family, that recognized the specific barriers that minority landowners have long faced, and presented a means for empowerment through educated land management decision-making. Looking ahead, the goal is to bring this program to other states in the longleaf range, particularly to areas where resources have historically been limited.



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By Amy Robertson Fuselier,
USDA Farm Production and Conservation

Growing Longleaf

FOR FUTURE GENERATIONS

Beginning in 2016, through the Longleaf Pine Initiative (LLPI), the Lewis family has successfully planted close to 400 acres of longleaf. Not long into his conservation journey, Charles realized the need and positive impact that fire would have on the landscape. So, along with some family members, he signed up for the burn boss course through the Louisiana Department of Agriculture and Forestry (LDAF) and received his certification.

Today, the landscape reveals gentle rolling hills, bursts of big blue stem and little blue stem grasses, along with a wide variety of forbs that all serve as a “welcome” mat for wildlife to return. And return they have! The sweet call of the Bobwhite Quail, a sound many in this area have not heard in years, can now be heard. Everything from the Eastern Wild Turkey to white-tail deer make their home on this beautiful land in the heart of Louisiana.

In addition to providing an ideal home for wildlife, the Lewis’ land is also a place for education and outreach. Charles is passionate about conservation and the time and effort he and his family have invested over the years; so much so, that he is quick to share the good news about planting longleaf and its many benefits with other landowners and neighbors. Charles hosted a field day in conjunction with the Wild Turkey Federation to bring awareness of longleaf pine and the many programs available to private landowners interested in planting longleaf. He also partners with the Louisiana Department of Wildlife and Fisheries (LDWF) with projects and programs that promote conservation and build diverse ecosystems.

When Charles decided to plant longleaf, he realized his decision was being made for posterity. The economic investment of planting this pine is long-term but one that brings honor to his father and will provide a bright future for his family. Charles is quick to let you know that the benefits of longleaf — creating wildlife habitat and reforesting the land back to its historic state — are two wonderful byproducts, but the most significant benefit is the knowledge that he is building a legacy for the next generation.

“Mr. Lewis realizes the value in conserving his land and the value of native species. He wants to continue conservation efforts so that his grandchildren will grow to appreciate the value of conservation and the benefits to wildlife and people that conservation brings,” said James Boyett, NRCS District Conservationist.

When Charles Lewis inherited his family’s 500 acres of forest land in the historic longleaf region of Louisiana, he knew he wanted to build a legacy that would honor his father and create a lasting heritage for his children and grandchildren. Conservation roots run deep in western Louisiana, where the Lewis family has cared for their land for sixty-nine years. As a young boy, Charles recalls planting pine trees and becoming all too familiar with a dibble bar.

Over the years, Charles’ father harvested the pines, and years later, Charles harvested as well, with the dream to replant the once slash and loblolly pines with majestic longleaf. Charles reached out to the Natural Resources Conservation Service (NRCS) field office in Leesville and DeRidder. Through meetings with NRCS district conservationist Corby Moore and soil conservationist Adam Malcomb, Charles worked with NRCS to develop a conservation plan he used as a road map to reforest the land.

Q&A with Charles Lewis

What are your upcoming plans for your land?

We have seen an increase in the deer population, and we have had several sightings of turkey and quail so things are coming along. The longleaf pine trees look great, and we'll be finishing up our prescribed burns in the coming weeks.

Our plan one day is to run cattle in the pine trees. Our entire property is now planted in longleaf except for some pasture that we may consider planting later if we can figure out how to run cattle on what we've already planted. NRCS is working with us to figure that out.

What USDA/NRCS programs have you utilized recently?

We are creating larger riparian buffers through the Conservation Stewardship Program (CSP) and creating additional snags and dens that will help increase wildlife habitat. I have access to some oaks that we will plant soon. We want to finish the burns before we start planting the seedlings in those areas, as they will be sensitive to the fire. We currently have an Environmental Quality Incentives Program (EQUIP) application in to repair and abandon trails to address erosion issues.

For more information about NRCS, the Longleaf Pine Initiative, and how it can help you reforest your land with longleaf pine, reach out to your local USDA/NRCS service center.



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By La' Portia J. Perkins, M.S.

BLACK LANDOWNERS & FIRE

A SUMMER IN THE RED HILLS REGION

I ecstatically watched each needle reach into the sunlight as I drove through the pine-filled capital of Florida, Tallahassee, in May 2019. I was researching the use of prescribed fire by black landowners and tenants for my master's degree in forestry. Prescribed fire is a tool essential to species like the gopher tortoise, the longleaf pine, and the snake mouth orchid tattooed on my left forearm. I had already learned much about the contributions of indigenous tribes and white landowners to burning practices in the southeastern U.S. but little about the contributions of black people. As a descendant of black sharecroppers and landowners, I was keenly aware that traditional survey methods had poorly represented the perspectives of these groups on prescribed fire. I wanted to fill this gap and write about practical solutions. I started my work by learning about landownership issues.

The 20th century saw a devastating decline in black-owned land. Around 1910, there were 240,000 black farms in Georgia, Florida, and Alabama alone. In 2017, there were barely one-tenth that many. This decline in black-owned land, often resulting from a lack of legal counsel to secure assets, tragically depleted household resources. Often, the land was passed to the next generation through verbal agreements. Without a written Last Will and Testament, more generations joined in ownership as tenants in common, and land tenure became less secure for each individual landowner. Land in this situation is known as "heirs' property." The landowner stories I captured that summer

explored this land loss in the shift from plantation culture to landownership, as well as land ethics, limitations to fire use, and memories of fire.

A landowner noted, "The land is not really owned by us. I'm a caretaker. I maintain [it]. I grew up in a rural area on a plantation, and I moved to another small farm. I'm on my own this time."

I interviewed 21 landowners and tenants. Eighteen used prescribed fire on their property annually, biannually, or five to fifty years ago. One interviewee was a science teacher/cattleman carrying his father's legacy as a firefighter to the land. Another was a retired forestry employee and son of a logger who was a professional prescribed burner/wildland firefighter. I even spoke with a retired firefighter who remembered Tallahassee school desegregation in the 3rd grade. I gained a deep and rich understanding of social, cultural, and political changes that had affected their land management. Like other landowners, they had worked to maintain a network of landowners and focused on improving native ecosystems and wildlife habitat. Their burning practices included attention to wind patterns and timing burns to achieve wildlife management or fuel reduction goals.

One landowner said, "They [i.e., 'people around the property'] see you burning they gone light a fire. That's the way it was. They go in there and light a match down. Let it burn. Then they call somebody. 'We got a fire over here,' so and so say, 'oh watch at that fire, let it burn.' Well, they didn't believe in no permit back in them days. Just go and set a spot on fire."




La' Portia J. Perkins at Pebble Hill Plantation in front of longleaf pine stand following a prescribed fire.

A Georgia centennial farmer — one whose working farm has existed for 100 years — noted, “[We] just did it... and it helps maintain undergrowth and keeps the veg fuel... [vegetative fuels] you know you get too many leaves in pine it gets built up too much fuel. So, you try to keep that from happening, that way if a fire happens it just won't get out of control.”

I found that the story of prescribed fire in the southeastern U.S.A. was deeply enriched by understanding the trials of life surrounding black landowners and tenants. There were unique factors affecting them: Black landowners still needed secure access to educational and financial resources, help with heirs' property legacy issues, and greater representation in wildlife, forestry, and agriculture professions. Yet their love of the land was a common theme that united them with other peoples of this extraordinary region.

In my search for answers about black landowners' history in fire use within my ancestral home, the Red Hills, I came to understand that their knowledge was a beautifully sewn piece in the tapestry of prescribed fire science and land management.

Prescribed burn at Pebble Hill Plantation in Thomasville, Georgia. Photo by La' Portia J. Perkins.


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GET TO KNOW *Carol Denhof*

The 2023 Chair of the Longleaf Partnership Council (and President of The Longleaf Alliance)

Recently, America's Longleaf Restoration Initiative Communications Team interviewed Carol Denhof for her thoughts on a variety of topics regarding longleaf pine and the Initiative.

Your longleaf roots are deep. What led you to devote much of your professional life to longleaf pine?

My background is in plant ecology, and going all the way back to my graduate school days, the plants that I've been most passionate about grow in and around longleaf pine habitats. For my master's degree project, I studied the plant species that inhabited a tract of land in southeast Georgia that contained both longleaf-turkey oak sandhills and pitcher plant bogs. This project ignited my love for this iconic longleaf ecosystem and led me to concentrate my focus on the diverse groundcover components of the forest. Of course, the tree itself is special with its unique life stages, relationship with fire, and the premium forest products it provides, but the draw of longleaf, and the reason we do what we do, lies within the ecosystem where it resides. It's inspiring to work in a system that plays such an important role in providing essential ecosystem benefits here in the Southeast.

The America's Longleaf Restoration Initiative is all about partnership. What are the key elements of successful partnership?

It is true, the successes of America's Longleaf are directly traced to the working partnerships that exist within the Longleaf Partnership Council (LPC) and the Local Implementation Teams (LITs) that work collaboratively across the nine-state range of longleaf to facilitate real change on a landscape scale. This is no easy task, but having representation from all sectors within the longleaf community strengthens these partnerships and brings diverse perspectives to the table when making decisions that guide our work in longleaf restoration and management. Leveraging the skillsets and connections of the federal and state agencies, non-profit organizations, industry, and private landowner allows for building solid teams that achieve far more than what we could individually. Just like the ecosystem is comprised of many parts, the partnership is made up of partners that all play different roles, but we must all come together as a group to achieve the ambitious goals that we have set for range-wide longleaf restoration.

Much of the land in the South is privately held by individual landowners. What role can the Partnership play in reaching more private landowners?

With private landowners holding the majority of existing longleaf acreage and most of the land within the range that would be available and appropriate for longleaf restoration also in private ownership, it is essential to be working with those



Longleaf pine candle. Photo by Jessica Williams.



American chaffseed. Photo by Carol Denbof.

landowners to ensure that we are not only adding longleaf acres but also maintaining those forests that are currently in longleaf. Within the LIT landscapes, the Partnership has numerous opportunities to engage with private landowners, such as outreach events, restoration programs, and Prescribed Burn Associations. Organizations like The Longleaf Alliance and others that are represented on the LPC have experience and expertise working directly with landowners to provide technical assistance, education and outreach, and cost-share assistance to guide them through the process of longleaf restoration. By advocating for private lands, communicating science-based longleaf-related information to landowners, connecting them with appropriate longleaf restoration programs, and addressing bottlenecks that restrict the restoration process, the Partnership is and will continue to make every effort to expand longleaf on private lands.

We'll soon be celebrating the 15th anniversary of America's Longleaf. Moving forward, what do you see as the key elements to success in the coming 15 years?

This is an exciting time for the Partnership as we approach our 15th anniversary and look toward the next phase of America's Longleaf. Learning from the lessons of the first 15 years, members of the LPC are working collaboratively to update the Range-wide Conservation Plan for Longleaf Pine. This document serves as a working plan that guides the work of the Partnership by setting goals, objectives, and recommended actions for the next 15-year period. While we are still focused on many of the actions included in the original plan that was produced in 2009, some priorities have shifted over the years due to new and changing needs. We have the opportunity to be more strategic with our goals, to utilize innovative tools for measuring success, and incorporate new

approaches to expanding longleaf restoration across the landscape in the context of climate resilience, all while bringing a wider variety of partners into the effort. I see these as our keys to success moving forward – by involving additional and different voices and viewing longleaf restoration through the lens of how this ecosystem brings advantages not found with other forest types will lead to the collective work of the Partnership, widening the impact that longleaf forests have in our region.

We talk about longleaf as if it is one tree, but of course, we are talking about the whole ecosystem. What's your favorite plant or animal that calls longleaf home?

As a plant person, this is a tough question to answer. The longleaf forest is home to hundreds of plant species, and asking me to pick my favorite is like asking me to pick my favorite child. Each has unique characteristics, function, and season that make them stand out. For example, wiregrass is important for its role in fire, pitcher plants for their charisma and carnivorous ways, and plants like sandhill milkweed for their beauty and ability to survive in some of the toughest longleaf habitats. In all my years working in longleaf systems, though, the plant species that rises to the top is American chaffseed (*Schwalbea americana*). An understated and easily overlooked plant, unless it is in flower, it is a federally endangered hemiparasitic species with limited occurrences across the range. The majority of the populations occur in South Carolina, but I was fortunate to work extensively with the species during my time at the Jones Center at Ichauway and then at the Atlanta Botanical Garden. Its dependence on other longleaf understory species, host specificity, and response to fire make it such an interesting plant to study. To find this rare plant blooming in the spring makes for an extremely exciting day in the field!

By the Hoke Community Forest Steering Committee

Kids, Families, and Volunteers Gather at Hoke Community Forest to Restore Longleaf Pine and Learn *the Nuts and Bolts of Conservation*



Jeff Marcus of The Nature Conservancy teaches students how to plant longleaf pine seedlings in a recently harvested tract.



A: Rob Drummond from Milliken Advisors explaining how to identify and estimate the age of Southeastern trees such as longleaf, loblolly, and slash pine. B: People of all ages gather for welcoming remarks to kick-off the public planting event at Hoke Community Forest.

It was a bright and hopeful marker of the future when at least 100 people – children, families, and leaders of Hoke County, North Carolina – gathered Saturday, December 3, 2022 at the Hoke Community Forest (HCF) to celebrate the restoration of longleaf pine and renewal of civic stewardship on this small but important patch of public woodland. As Hoke County grows, so do its efforts to provide access to natural resources for its citizens; that work is on prominent display at the HCF.

The event opened with welcoming remarks from Hoke County Manager Letitia Edens, Commissioner James Leach, Sam Cook of North Carolina State University (NCSU), and Jesse Wimberley of North Carolina's Sandhills Prescribed Burn Association (SPBA). The county provided enthusiastic support for the event, and leaders directly engaged with county citizens and interested stakeholders of all ages.

Almost 40 local youngsters eager to 'learn by doing' planted hundreds of vibrant longleaf pine seedlings (and many pounds of native plant seeds) in a special area where the forest's productive soils border an increasingly busy Vass Road. While some kids planted trees under the watchful eye of adult volunteers like David Auman, ranger from Camp Mu-Sha-Ni, others rotated through learning stations where seasoned natural resource professionals shared knowledge about growing and managing trees, identifying animals, caring for soil and water, using forestry tools, and the joys of forest exploration. Kids took turns helping senior forester Rob Drummond of Milliken Advisors extract core samples from nearby loblolly pines to understand how trees

age. After an hour or two of conservation work and education, people of all ages raced to the Hotdog King food truck for a well-earned break and lunch.

Teachers and leaders from across the region who generously volunteered their weekend time were proudly represented by the following organizations: The Longleaf Alliance, USDA Forest Service (USFS), USDA Natural Resources Conservation Service (NRCS), North Carolina Forest Service, Enviva, Milliken Advisors, The Nature Conservancy, Great Woods Companies, National Wildlife Federation, NCSU, Lumbee Tribe of NC, Girl Scouts/Camp Mu-Sha-Ni, U.S. Fish & Wildlife Service (USFWS), Hoke County, and SPBA.



Steering committee members and partners meet to discuss management plans for HCF in a recently thinned stand.

A Forest for the Community

Hoke County is a diverse and growing community, home to one of the few community-owned forests in the Southeast. Hoke Community Forest's 510 acres contain hidden gems – like a unique stand of Atlantic white cedar trees, now considered a rare and High Conservation Value Forest type – and special places like the diverse bottomland hardwoods lining the banks of HCF's main waterway, Rockfish Creek. The Forest is certified under the globally

recognized Forest Stewardship Council® standard and is annually audited and checked for ground-level proof of sustainable forest management.

Hoke Community Forest is owned by the County in the public interest under conservation easements which guarantee the long-term stewardship of its soil and water resources for



A: HCF entrance sign informs passersby about the longleaf pine restoration project. Photo by Angela Gaskell. B: Tiffany Woods helps a student plant a longleaf pine seedling in a recently harvested tract at HCF. Photo courtesy of Tiffany Woods. C: Learning about tree core samples with an increment borer. Photo by Tiffany Woods

perpetuity. HCF exists due to the earnest financial efforts of the U.S. Department of Defense, The Conservation Fund, The Nature Conservancy, International Paper, Hoke County, and the North Carolina Clean Water Management Trust Fund.

The restoration of this Forest generates income for the County and will eventually provide an outdoor classroom and recreational area for Hoke citizens.

Bringing Back Longleaf to HCF

HCF's recent successes in kickstarting longleaf pine restoration are a direct result of the financial generosity of corporate, governmental, and non-governmental organization sponsors. A steering committee led by Jesse Wimberley of SPBA works to implement HCF's forest management plan. The plan was developed by the North Carolina Forest Service and is being put into action by Milliken Advisors with generous support from Enviva.

Phase I of the plan included a harvest to reduce loblolly pine density in preparation for longleaf pine planting and restoration. In a landmark operation, the proceeds from this initial thinning directly benefited the citizens of Hoke County, with all timber sale funds going to the County and its budget.

Phase II, currently underway through funds provided to the National Wildlife Federation from the National Fish and Wildlife Foundation, USFS, USFWS, and NRCS, includes not only planting high-quality native longleaf pine seedlings in key areas but also establishing and managing for native warm-season grasses and forbs that allow for the application of a regular schedule of prescribed burning. The Longleaf Alliance

advises on understory restoration throughout the process so that wiregrass, legumes, and wildflowers will thrive in this vibrant landscape.

Hoke County Commissioners and staff will work alongside this team of partners to ensure that the best interests of Hoke County citizens are represented and met throughout the process, as outdoor recreational and educational opportunities are built alongside economic and community wealth.

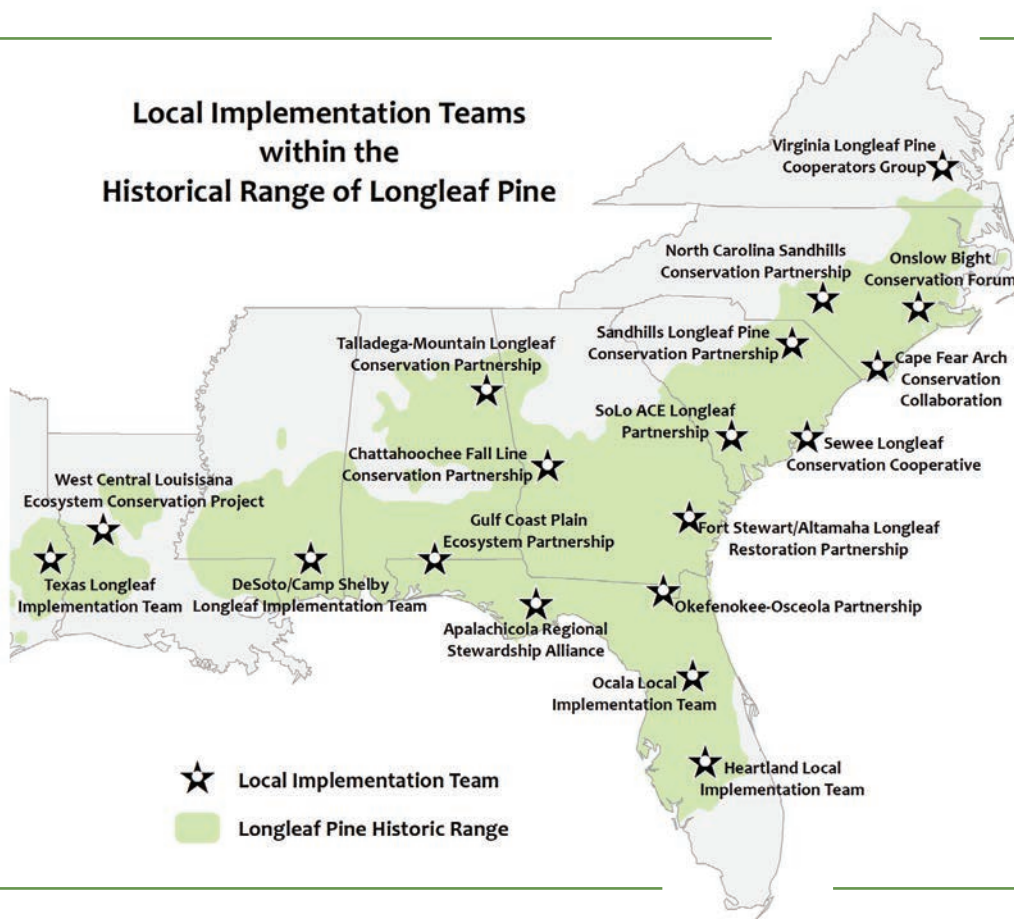
Implementing cooperative forest restoration is hard and time-intensive work. Cooperative partnerships between environmental, social, and economic stakeholders and supporters of the forest are the only way public projects of this type move forward.

Financial support for the current activity schedule has been provided by NRCS of North Carolina, the Arbor Day Foundation, and a grant to the National Wildlife Federation from the National Fish and Wildlife Foundation's Longleaf Landscape Stewardship Fund, which includes funding from Altria Group, the U.S. Department of Defense, USDA NRCS, USFWS, and USFS.

The views and conclusions in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Government or the National Fish and Wildlife Foundation and its funding sources. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government or the National Fish and Wildlife Foundation and its funding sources.

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Local Implementation Teams within the Historical Range of Longleaf Pine



Tellurian and Kisatchie Partner on National Forest Restoration

By Dan Weber, *The Nature Conservancy*



Planting the first seedlings — Ken Arney, USDA Forest Service Regional Forester, Charif Souki Executive President of the Board, Tellurian, Inc., Jack Montoucet, LA Secretary of Wildlife and Fisheries, Jonny Fryar, Calcasieu District Ranger. Courtesy of U.S. Forest Service.

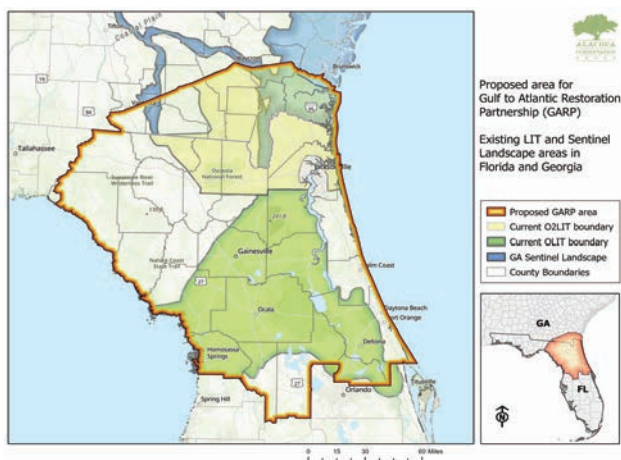
Tellurian, Inc., a natural gas company headquartered in Texas, has donated 25 million dollars to the National Forest Foundation (NFF) for reforestation of the nation's national forests. The NFF, in collaboration with the U.S. Forest Service, identified multiple projects across the country that will be supported in the coming years by this largest-ever donation to NFF. The Kisatchie National Forest in Louisiana was chosen as the site for the kick-off event, where the first of the seedlings were planted in January. "What a great day for the Kisatchie National Forest and the National Forest System," stated Kisatchie Forest Supervisor Lisa Lewis. "These are the first of millions of trees to be planted across the nation because of this generous donation."

While constructing a liquefied petroleum plant in south Louisiana, Tellurian became aware of the damage caused to the Kisatchie by Hurricane Laura in 2020. Current plans will see 300,000 trees planted on the forest to replace the loss of thousands of acres of native trees due to the storm. The Kisatchie National Forest consists of 604,000 acres in several large tracts throughout northwest and west-central Louisiana. It forms the core of the Kisatchie/Fort Polk Significant Geographic Area (SGA), where the local longleaf implementation team, the West Central Louisiana Ecosystem Partnership, composed of the U.S. Department of Defense, state

and federal wildlife agencies, conservation NGOs, and others have united to restore longleaf pine and other native ecosystems within a six-parish conservation area.

Change and Expansion - Framework for the Future

By Rebecca Shelton, *The Nature Conservancy*



In 2022, the Okefenokee-Osceola (O2LIT) was focused on educational outreach, securing leadership change, and building a collaboration with the overlapping Ocala to Osceola (O2O) Wildlife Corridor.

The Nature Conservancy's Georgia Chapter has been a part of the Okefenokee-Osceola LIT leadership team since its inception in 2013. For the past six years, this has included serving as the LIT Coordinator. Looking back at nearly a decade of coordinated conservation, it's remarkable what's been achieved by LIT partners in the landscape, including the protection of thousands of acres of habitat and the restoration of thousands more.

After careful consideration, TNC decided to transition out of the O2LIT coordinator role and worked to find a partner organization to take on the mantle of LIT leadership. After much consideration,

the Alachua Conservation Trust (ACT) has agreed to serve as O2LIT Coordinator, beginning July 2023. ACT submitted a National Fish and Wildlife Foundation (NFWF) Longleaf Stewardship Award proposal in February to support these efforts.

If awarded, NFWF funds will be matched by contributions from multiple partner organizations. This will help to increase landowners' ability to implement fire management and longleaf restoration, as well as provide increased personnel for public land management. The project will focus on management practices, including prescribed burning, invasive species removal, planting, and forest management to promote longleaf pine. This award will also allow for the O2LIT's inclusion into the Gulf to Atlantic Restoration Partnership (GARP).

The GARP project area includes 32 counties in Florida and Georgia. The boundary merges the Ocala and Okefenokee-Osceola LIT working areas and expands to meet neighboring LIT boundaries for seamless restoration coverage. In total, it encompasses more than 14 million acres, the vast majority of which is in private ownership. The entire region is part of the historic range of longleaf pine in the southeastern U.S.

With respect to landowner outreach, the Florida Fish and Wildlife Conservation Commission, in cooperation with the University of Florida/IFAS Extension Office, held another landowner outreach meeting at the South Prong Plantation in Baker County, Florida. This outdoor meeting discussed growing season land management, including scouting for invasive species, wildlife management, cool-season forages, and winter natives. Other educational opportunities included fire festivals and Longleaf Academy Courses.

Moving forward, we aim to ensure a smooth leadership transition, develop more long-term restoration goals, strengthen and develop new and existing partnerships, and provide resource education to all our members.

Alabama Landowner Conference Field Tour

By Tim Albritton, *State Staff Forester, USDA Natural Resources Conservation Service*



Photo by Tim Albritton, State Staff Forester, USDA Natural Resources Conservation Service

Last fall, the 2022 Alabama Landowners Conference included a fantastic field tour highlighting longleaf pine. Attendees visited the Sharp property, which hosts a mixture of natural pine (longleaf and loblolly) and mixed hardwoods.

Most timber on the upper slopes has been heavily thinned, favoring longleaf. In some areas, this involved leaving longleaf seed trees for natural regeneration, and in other areas, the overstory was too thin so longleaf were underplanted. Much of the mid-slopes were also thinned, leaving an open stand of both fire-tolerant hardwood and longleaf.

The understory has been intensively managed with prescribed fire and chemicals to release the natural understory plants that have been suppressed from the dense overstory. The result is a wonderful mix of native grasses and young longleaf pine.

Environmental Leaders Explore the Chattahoochee Fall Line

By LuAnn Craighton, *The Nature Conservancy*



Institute for Georgia Environmental Leaders (IGEL) visited Buena Vista, GA and stopped for a picture in front of a new mural which celebrates the cultural and natural history of the longleaf pine ecosystem. Photo courtesy of The Carl Vinson Institute of Government.

The Institute for Georgia Environmental Leadership (IGEL) class of 2022 spent several days learning about the ecology and economy of the Chattahoochee Fall Line region near Columbus, Georgia. IGEL is an immersive learning program dedicated to building and sustaining a diverse network of environmentally educated leaders across the state. It provides leaders with the knowledge, advanced skills, and network necessary to help resolve Georgia's environmental challenges now and in the future. The program's inaugural visit to the Fall Line included a field trip to Fort Benning, which investigated the interface between the critical mission of training soldiers, active natural resources management, and environmental obligations on the 182,000-acre installation. The IGEL group also visited Buena Vista, a rural community near Fort Benning. They met with community leaders and Carl Vinson Institute of Government faculty (University of Georgia) to discuss the River Valley Community Compatible Development (RVCCD) project. The RVCCD project is working to identify and foster new compatible economic development strategies that will help rural communities

near Fort Benning thrive. IGEL participants also hiked through a well-managed longleaf pine forest and met with Chattahoochee Fall Line Conservation Partnership partners working collaboratively to restore and maintain the longleaf ecosystem in the Army Compatible Use Buffer (ACUB) near Fort Benning. During the multi-day IGEL program, participants also delved into land reuse and historic building repurposing in Columbus, as well as aquatic and ecotourism issues associated with the Chattahoochee River. Through their Fall Line experience, the IGEL class of 2022 gained a deeper understanding of the rich biodiversity of the region and engaged with a broad spectrum of partners who are working together to maintain the natural environment and healthy economy of the Fall Line for current and future generations.

North Carolina Partnerships Advance Land Protection

By Hervey McIver, *The Nature Conservancy*



Longleaf and turkey oak ridge on Goldsboro Milling Co. tract. Photo by Hervey McIver.

The North Carolina Local Implementation Teams (LITs) had a banner year conserving new lands in 2022. Seven closings by The Nature Conservancy brought 5,632 acres into conservation, leveraging funds from the U.S. Army and Navy, the North Carolina Land & Water Fund, other federal funds, and private monies.

The most significant acquisitions occurred in the Onslow Bight LIT, where three projects totaling 5,250 acres will be added to Holly Shelter Game Land helping to buffer Marine Corps Base Camp Lejeune. These properties protect longleaf pine savannas and flatwoods rich in wildflower diversity, including Venus flytraps, and extensive pocosin wetlands. The Goldsboro Milling Co. tract also includes vernal pools which could support rare gopher frogs. The North Carolina Mountains-to-Sea Trail will also course among the longleaf ridges.

On the other side of Camp Lejeune, 197 acres were added to The Nature Conservancy's Horse Swamp Preserve, an effort to create a corridor between Camp Lejeune and the Croatan National Forest. Returning fire to these sites will help restore suppressed native grasses and the diverse groundcover for which longleaf forests are renowned.

In the Sandhills, 119 protected acres of mature longleaf pine habitat further the connection between Fort Liberty (formerly known as Fort Bragg) and Sandhills Game Land. Another 35 acres with mature longleaf and an Atlantic white cedar wetland were acquired and will be added to the Game Land.

Meanwhile, the Cape Fear Arch LIT protected an additional 30 acres of cypress swamp forest on the Black River.

Flagg Mountain Protection – Fenvkvcēkv Creek Preserve

By Thomas Reddick, *The Nature Conservancy*



Finikochika Creek. Photo by Keith Tassin, The Nature Conservancy

The Nature Conservancy in Alabama recently closed on a 772-acre tract along Finikochika Creek (Fenvkvcēkv in indigenous Maskoke) at Flagg Mountain. This acquisition will establish the Fenvkvcēkv (*finuh gub che gub*) Creek Preserve at Flagg Mountain.

The lands around Flagg Mountain have been identified as one of the most significant landscapes in our efforts to protect a resilient and connected network of protected areas from the Gulf of Mexico to the Appalachians and an area important for freshwater and terrestrial biodiversity. This property is part of a decade-long effort to expand protected lands on and around Flagg Mountain, the first and most southern mountain in the Appalachians, and an important area for protecting old-growth montane longleaf pine forests and associated habitats.

In cooperation with a vast array of partners, The Nature Conservancy (TNC) is working to restore these unique Appalachian montane hardwood and longleaf pine plant communities with fire. TNC's new Fenvkvcēkv Creek Preserve at Flagg Mountain will be a landscape-scale demonstration area that will serve as a representative example to guide restoration of more heavily disturbed areas in this landscape.

Isolated Wetlands Restoration by Wetland Ecosystem Support Team a Huge Success

By Vernon Compton, *The Longleaf Alliance*



Early WEST Team with Florida State Wildlife Grant and Virginia Tech Staff. Photo by The Longleaf Alliance.

December 2022 marked a milestone for the Gulf Coastal Plain Ecosystem Partnership (GCPEP) Wetland Ecosystem Support Team (WEST) as the team completed a multi-year Florida State Wildlife Grant focused on restoring priority isolated wetlands in the landscape.

Wetlands of the southeastern coastal plains were historically influenced by recurring fires that would have maintained these habitats as early successional vegetative communities dominated by a dense herbaceous layer. Fire suppression has resulted in wetlands that are now dominated instead by a woody overstory that prevents the use of these habitats by many of the rare and declining species that depend on them. A Florida State Wildlife Action Plan previously stated the following about incompatible fire management: “Many native wildlife and plant species depend on periodic fires to maintain desirable habitat conditions. Changes in vegetation structure and composition occur where fire frequency, seasonal timing, intensity and extent are altered. These changes have

resulted in the loss of habitat value for particular wildlife species, even in lands managed for conservation.”

Since 2018 the WEST has helped to address this by focusing on habitat restoration through mechanical/chemical actions and prescribed fire, working through very demanding weather and habitat conditions to complete the on-the-ground restoration. The WEST did outstanding work, far exceeding restoration goals in all areas. For mechanical/chemical habitat restoration, the team completed work on 66 half-acre units, with an additional five units having work in progress. The grant goal was the completion of 14 half-acre units. Likewise, the WEST efforts with prescribed fire totaled 31,716.38 acres, nearly double the grant goal of 16,315. Their work benefited many wildlife species, especially the reticulated flatwoods salamander and the Florida bog frog.

Throughout the Florida State Wildlife Grant, the WEST was under the direction of The Alliance's Natural Resource Supervisor Kaiden Spurlock, with many staff playing a role over the years, including team leads Jessica Sandoval, Ed O'Daniels, Nicole Barys, and Kameron Burgess. A very special thank you to all the WEST members who served on the team from 2018 to 2022! Your dedication and work accomplishments are very much appreciated, and your impact on habitat restoration is evident in the landscape.

Longleaf Reforestation at Fort Stewart-Hunter Army Airfield, Georgia

By Wendy J. Ledbetter, *The Longleaf Alliance*



Longleaf pine planting crew, American Forests Reforestation Project, Ft. Stewart, GA. Photo by Brandon Crummey.

With support from American Forests, The Longleaf Alliance partnered with Ft. Stewart to plant 189 acres of containerized longleaf pine in January 2023. Ft. Stewart is the anchor point for the Ft. Stewart/Altamaha Local Implementation Team's 5-million-acre landscape in southeastern Georgia. As the largest U.S. Army installation east of the Mississippi River, maintaining the ability to conduct training operations is essential to the military mission. These activities coincide with protecting, restoring, and maintaining Georgia's largest tract of longleaf pine.

At 279,449 acres, Ft. Stewart harbors the largest population of Red-cockaded Woodpeckers (RCW) in the state, now the 2nd largest population anywhere. The RCW population has increased by 71% since achieving its recovery threshold of 350 pairs in 2012. Ft. Stewart provides habitat for twenty at-risk species, including seven endangered species and 948 plant species.

T.J. Quarles, Planning Section Supervisor with the Forestry Branch of Ft. Stewart, stated, "Ft. Stewart-Hunter Army Airfield is thankful to receive a grant for longleaf pine restoration on the installation. The longleaf pine planted this

year will help the Army meet its mission objectives while restoring the ecosystem, supporting threatened and endangered species, game and non-game species, and the Soldier who trains on the landscape. The longleaf pine-wiregrass ecosystem is important to the Army, and its recovery on the landscape enables the military to conduct mission-critical training. This ecosystem and the sustainable flow of forest products it provides for the Army Conservation Reimbursable Forestry Program will provide reimbursable funding for current and future generations."

This reforestation project contributes to building a longleaf-dominated resilient forest on Department of Defense lands in Georgia. Ft. Stewart lands and waters provided recreational opportunities for 74,418 individuals in 2022.

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LONGLEAF LITERATURE

The Forest That Fire Made: An Introduction to the Longleaf Pine Forest

By John McGuire, Carol Denhof, and Byron Levan
Published by The University of Georgia Press, 2023

The Forest That Fire Made is a unique addition to longleaf literature collections combining natural and cultural history, a species guide, and travel destinations into a single book.

Authors John McGuire, Carol Denhof, and Byron Levan cover a wide range of topics, including the anatomy of the longleaf tree, its history (and revival), the surrounding fauna and flora, and the landscape's dependence on fire.

This guide includes 300 color images of species found in longleaf pine forests and more than 44 detailed drawings documenting the most common animals, plants, and insects.

It also describes more than forty longleaf pine forests to visit in nine southern states: Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, and Virginia.



I highly recommend this book to virtually any audience with a desire to know about one of the nation's most diverse forests with both unparalleled natural and historical significance.

— *Rhett Johnson, cofounder and past president of The Longleaf Alliance and retired director of the Solon Dixon Forestry Education Center*

Every fire province has its poster-child tree. The longleaf is special because it was also the fulcrum for promoting fire restoration nationally. This wonderfully illustrated book shows how this was possible and why the longleaf woods deserve their epithet as 'the forest that fire made.'

— *Stephen Pyne, author of Between Two Fires: A Fire History of Contemporary America*

This beautifully produced book introduces the general reader to one of the biologically richest and most aesthetically pleasing ecosystems in all of North America. The technically accurate yet highly accessible writing provides a thorough review of the ecology of longleaf pine ecosystems, including their absolute dependence on frequent fire. Packed with fascinating information about natural and human history, this contribution from John McGuire, Carol Denhof, and Byron Levan is one of the finest tributes yet to a now-endangered ecosystem that once dominated the southeastern coastal plain.

— *Reed F. Noss, author of Forgotten Grasslands of the South and Fire Ecology of Florida and the Southeastern Coastal Plain*

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Four Mississippi Sandhill Cranes taking flight. Photo by Lauren McLaurin.

By Cody Pope, The Longleaf Alliance

Longleaf Destinations



MISSISSIPPI'S RESIDENT SANDHILL CRANES *Find a Home Among the Pines*

In southern Jackson County, Mississippi, visitors can view the remnants of a once common sight throughout the coastal plains of Alabama, Mississippi, and Louisiana. The wet pine savanna of the Mississippi Sandhill Crane National Wildlife Refuge (NWR) is a unique habitat with charismatic flora and fauna that are the subjects of a large-scale conservation effort led by the U.S. Fish and Wildlife Service (USFWS) and the Audubon Nature Institute.

A Successful but Ongoing Effort

With support from the Endangered Species Act, the Mississippi Sandhill Crane NWR was established in 1975 to protect the subspecies of Sandhill Crane (*Grus canadensis*

pulla) that lives year-round in the Magnolia State, as well as its associated habitat that is also at risk. The resident population of cranes was reduced to roughly 30 individuals when the Refuge was first established, but thanks to the collaborative conservation efforts, countless volunteers, and the help of a captive breeding program, the population now consists of over 130 adults.

Sandhill Crane breeding pairs will generally lay 1–2 eggs per year, and if USFWS biologists are able, they will collect the second egg to be sent off, hatched, and adopted by a pair of foster cranes, or they will be “costume-reared” by workers at the Refuge. Costume-rearing consists of workers dressing as an adult crane and mimicking foraging behavior, as well

Visitors can listen to crane calls while learning about the Mississippi Sandhill Crane National Wildlife Refuge's rich history and ongoing conservation work.



▲ *A lone crane walking among blooming pitcher plants in a wet pine savanna at the MS Sandhill Crane NWR. Photo by Lauren McLaurin.*

◀ *Educational display at the Refuge Visitor Center showing Sandhill Cranes, their associated wet pine savanna habitat, and other species that rely on that unique habitat. Photo by Cody Pope.*



as predator aversion training where fake predators are used to reinforce the correct defensive behaviors that chicks will need to know when they're released. When the chicks are about 6 months old, they are returned to the Refuge, where a "soft release" is implemented by utilizing a large pen. There the cranes adjust to their new environment for 2–4 weeks before they are fully released into the wild.

Visiting the Refuge

The Mississippi Sandhill Crane NWR is east of Biloxi and consists of three main land units, which total over 19,000 acres and features two scenic trails. The Visitor Center — located just a mile from I-10 in Gautier, MS — houses exhibits that showcase the variety of plant and animal life found in wet pine savannas and the work that goes into

Young Sandhill Cranes are introduced to the Refuge using a “soft-release” where they remain in a protective enclosure for 2–4 weeks. Photo by Cody Pope.



A



B



C

A: The C.L. Dees Trailhead is located near the Refuge Visitor Center and is designated as a Mississippi Coastal Birding Trail. Photo by Cody Pope. B: A pair of Mississippi Sandhill Cranes walk through wet pine savanna filled with blooming flowers, pitcher plants, and a lone longleaf pine sapling. Photo by Lauren McLaurin. C: The view from the observatory deck overlooking the wet pine savanna with the crane “soft release” enclosure in the distance. Photo by Cody Pope.

conserving and protecting the Sandhill Cranes. Visitors can listen to crane calls while reading about the Refuge’s rich history and enjoy a short video that dives even deeper into the ongoing work. An observation deck behind the visitor center allows a unique vantage point overlooking the savanna, which is also the site where young cranes are housed during their “soft release.”

The C.L. Dees Nature Trail is right beside the Visitor Center and leads guests through the open pine savanna down toward a cypress-laden bayou. The trail is about 1-mile long and hosts educational signage that covers topics ranging from prescribed fire to carnivorous plants. While walking the trail, visitors can observe the slow conversion that is happening overhead. Thanks to the reintroduction of fire back into the ecosystem, the slash pine that remain from timber plantings are slowly being replaced by the fire tolerant longleaf pine.

For visitors looking for more opportunities to walk in the woods, the Fontainebleau Nature Trail is located about 10 miles southwest of the NWR Visitor Center. This trail hosts an overlook of Davis Bayou. Slight elevation changes take hikers through pine flatwoods, seepage bogs, and bottom-land hardwoods.

Want to Explore Further?

The Mississippi Sandhill Crane NWR is part of a collection of National Wildlife Refuges that make up the Gulf Coast Complex, which includes Mississippi’s Grand Bay NWR in Moss Point and Alabama’s Bon Secour NWR in Gulf Shores. These areas have similar management needs and are protected with similar goals in mind, allowing visitors to enjoy the myriad of ecosystems found throughout our coastal region.

Visit www.fws.gov/refuge/mississippi-sandhill-crane for more information.



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A.R.T. members: Abe Huang, Sean Seid, Haley Welschhoff, and Kameron Burgess

WELCOME A.R.T. – TLA'S NEWEST FIELD TEAM ASSISTS RETICULATED FLATWOODS SALAMANDER RECOVERY

By Charlie Abeles, The Longleaf Alliance

The Longleaf Alliance is excited to introduce a new field team assisting the reticulated flatwoods salamander project on Escribano Point Wildlife Management Area in Florida.

The *Ambystoma bishopi* Restoration Team, or A.R.T. for short, will be part of the greater AMBBIS team and primarily work on wetland restoration goals for the reticulated flatwoods salamander.

This full-time team consists of all returning staff: Haley Welschhoff, A.R.T. crew lead, and biological restoration technicians Abe Huang, Kameron Burgess, and Sean Seid. These veteran team members have certainly gotten wetland restoration down to an ART-form.

A.R.T. will also assist with reticulated flatwood salamander monitoring as well as participate in long-awaited prescribed burning on Escribano Point. Many TLA staff have put years of literal blood, sweat, and tears into restoring this unique area and look forward to continuing this critical work.



*Reticulated flatwoods salamander, *Ambystoma bishopi* (AMBBIS for short). Photo by Jessica Sandoval.*

About the Reticulated Flatwoods Salamander

The reticulated flatwoods salamander historically occurred throughout the Florida Panhandle west of the Apalachicola River. This species has drastically declined, and only a few populations remain. It is now considered federally endangered.

The flatwoods salamander requires fire-maintained pine flatwoods for survival. They rely on terrestrial and aquatic habitats to support their complex life cycles, developing from egg to

larvae in seasonal wetlands and then emerging into longleaf pine stands as newly developed adults.

Read more about how the Gulf Coastal Plain Ecosystem Partnership (GCPEP) collaborates to restore and protect this endangered salamander in *The Longleaf Leader* Winter 2022 issue (<https://longleaf.info/RFS>).

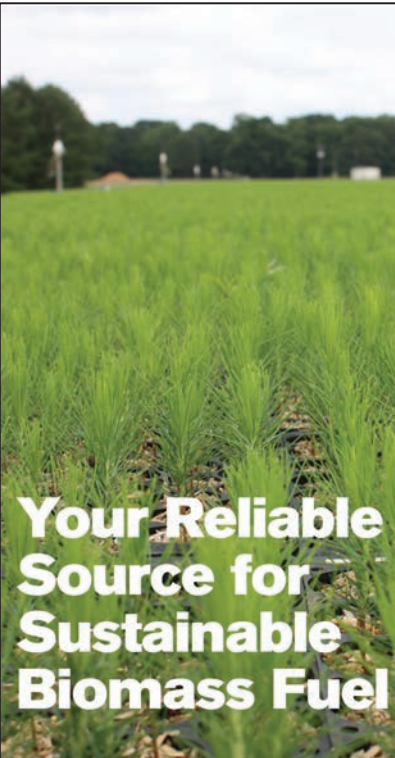








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TLA MEMBERS

By Lynnsey Basala, The Longleaf Alliance

Put the Fun in Fundraising



Pottery palustris by artist Debbie Folkerts

Debbie Folkerts, Associate Professor Emerita of Biological Sciences at Auburn University, has been exploring a number of different hobbies since retirement. She has put two of her interests together, pottery and weaving, in her new project – Pottery palustris (@pottery_palustris).

Debbie makes stoneware bowls, either thrown or slab, drilled with holes for attaching pine needle weaving. After bisque and glaze firing, she embellishes each bowl with coils of longleaf pine needles attached with artificial sinew. She tells her customers, “Each bowl is an homage to the longleaf pine forest, unique to the southeastern U.S. and one of the most biodiverse ecosystems on earth.”

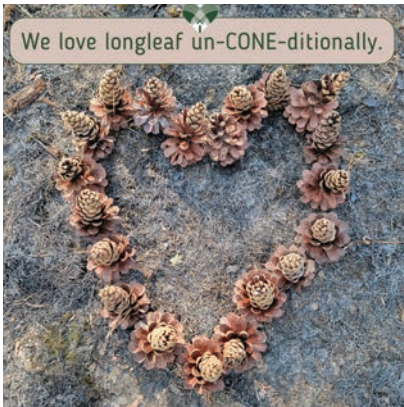
Debbie donates 100% of profits from the sale of bowls and workshops on pine needle weaving to The Longleaf Alliance.

The Alliance is Debbie’s charity of choice because of our work to ensure a sustainable future for longleaf pine ecosystems. Her passion for longleaf pine forests stems from her childhood in central Florida and her biology career at Auburn. She taught for thirty-four years and researched pitcher plants and pitcher plant insects with her late husband, George Folkerts.

Debbie’s bowls are available for purchase at Botanic in Opelika, Alabama.

Do you have a third-party fundraiser in mind?

Get in touch with Lynnsey@longleafalliance.org.



We Love Our Members

The Longleaf Alliance hosted the third annual "We Love Our Members Week" in February. We enjoyed the virtual celebrations including member testimonials, longleaf trivia giveaways, merchandise promos, and longleaf-inspired valentines. We are incredibly lucky to have this community that shares our passion for longleaf.

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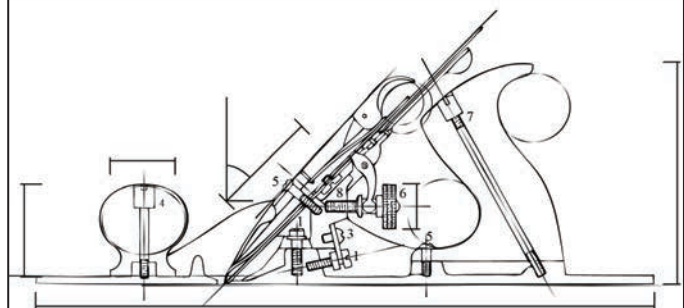
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THE TREE OF THE FUTURE

By Julie Moore, Southern Conservation Partners



At the 2022 Longleaf Conference, when Lytton Musselman and I were trading places to receive our Longleaf Champion Lifetime Achievement awards, Lytton said under his breath, we certainly didn't learn anything about longleaf in botany graduate school at the University of North Carolina Chapel Hill in the early 1970s. As the loss of the once expansive forest was so nearly complete by the 1930s in the state, there was no conversation or discussion about longleaf pine other than in taxonomy class when learning to distinguish pine species of the Southeast. And very little recognition of the natural force, lightning-started fire, that created this once pervasive southern forest.

I recollect only a single field trip to the Sandhills, one of the last remaining longleaf strongholds in the state, to look at psammophytes (sand-loving plants) in a very dry forest. Little time was given to longleaf in biology curriculums in North Carolina, at least in the botanical world. Basically,

longleaf forests were regarded as historical artifacts. And I may have fallen into that way of thinking, too. I've spent decades in remnant natural stands of longleaf from eastern Virginia to east Texas, looking to the past rather than the longleaf of the future.

What has been learned in the past 50+ years about longleaf beyond the long-recognized disease resistance and fire tolerance?

**** We successfully learned how to reestablish longleaf using plugs rather than bareroot stock.

**** For botanists, the big change in longleaf interest and conservation happened with the publication of Joan Walker's Ph.D. thesis in 1984, which showed the incredibly high number of groundcover species in longleaf savannas with numbers rivaling diversity in tropical systems.



**** Documentation of the ability of longleaf to withstand high winds and hurricanes was only speculated until Hurricane Katrina, an extreme test.

**** Prescribed burning is essential for managing longleaf and is well-accepted as an effective management tool. Suppression of all wildland fires is a thing of the past.

Perhaps most importantly, people have heard of the successes in restoring existing longleaf forests, understand longleaf can be successfully planted, and know it is a commercially valuable tree. And they like longleaf; it is a handsome tree.

What other desirable native tree in the South with financial value can better stand up to the unpredictable forces of a changing climate – more storms, greater temperature extremes, and unpredictable precipitation levels?

Longleaf trees should do well in the coming decades. The tree can grow in an amazing variety of physical sites - from wet sandy soils to deep sand hills, from coastal forests at sea level to rocky piedmont/montane forests along the interior edge of the range - supporting a wide diversity of natural communities when fire is kept as the driving management force. Many of the characteristic perennials and grasses growing in longleaf forests also evolved with it and will have the capacity to survive the anticipated climate changes.

That said, longleaf forests, without the amazingly diverse groundcover and all the other parts and pieces, are just attractive pine plantations. How to reintroduce these missing components to a longleaf plantation is the next challenge, and it is a big one.

Today, hearing from people interested in getting longleaf back on the landscape is amazing. It is no longer a hard “sell” to landowners and agencies. And not just in forestry circles. Last fall, the managers of Bentonville Battleground in Johnston County, North Carolina, decided to plant several hundred acres of longleaf to replicate the open forest that soldiers fought in during the last battle of the Civil War.

I was delighted to see so many old longleaf friends at the fall conference and even more pleased to see so many young people I didn’t know – Lytton brought a whole table full. I am eager to learn what aspects of longleaf ecosystem biology and conservation will interest this next generation of longleaf champions. I do look forward to talking to them again at the Longleaf Conference in 2024.

Julie Moore received the True Longleaf Champion Award in 2022 in recognition for her many contributions to longleaf over her professional career (including conservation biologist with the N.C. Natural Heritage Program and The Nature Conservancy, first director of the Tall Timbers Conservancy, and the U.S. Fish and Wildlife Service, where she managed the Safe Harbor Program nationally) and tenure on the Board of Directors of The Longleaf Alliance.

In her “retirement,” Julie serves as co-founder/officer of the Southern Conservation Partners, board member for North Carolina’s Plant Conservation Program, advocate for the North Carolina Longleaf Honor Roll Program, and leads the Venus Flytrap Champions Program.

