



THE LONGLEAF LEADER

**PASSING
THE TORCH:**

**The Next
Generation of
Longleaf Leaders**

VOLUME X- ISSUE 4

WINTER 2018

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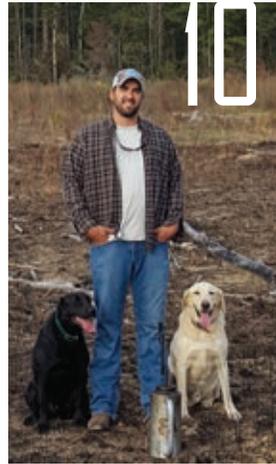
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TABLE OF CONTENTS



President’s Message.....2
 Upcoming Events4
 Letters from the Inbox5
 Understory Plant Spotlight.....6
 Finding Our Place: A Millennial Perspective on Future Land Management8
LANDOWNER CORNER10
REGIONAL UPDATES16

NEXT GENERATION26
ARTS & LITERATURE33
 Longleaf Destinations36
PEOPLE42
SUPPORT THE ALLIANCE48
 Heartpine57

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COVER Driptorch used during a prescribed fire. Photo by Ryan Bollinger.

The Longleaf Leader (USPS#) is an official publication of The Longleaf Alliance, 12130 Dixon Center Road, Andalusia, Alabama 36420 and is published 4 times a year. The Longleaf Alliance reserves the exclusive right to accept or reject advertising or editorial material submitted for publication. Advertising rates quoted upon request. Postmaster: Send address changes to Longleaf Alliance, Address 12130 Dixon Center Road, Andalusia, Alabama 36420. Periodicals Postage Paid at Montgomery, Alabama.

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Passing the Torch: The Next Generation of Longleaf Leaders

BY ROBERT ABERNETHY, THE LONGLEAF ALLIANCE



PRESIDENT'S MESSAGE

As I write this, in November, in South Carolina, the hickories are brilliant yellow, the dogwood berries are bright red and the longleaf provides the backdrop of green. The soft soaking rain that fell steadily for the last 24 hours has passed through, and the sky is clear and a bit darker than robin's egg blue. With every whisper of a breeze, more white oak leaves sail to the ground as fall eases towards winter.

As you read this in January, the holidays have passed, the families dispersed, and once again all is quiet. My kids have scattered to the winds. I have a daughter in Oregon and a son with a new bride in Salt Lake City. In the last couple of years, we have visited them more than they have come home. This is as we would want it but it does tend to make the prescribed burning and the maintenance of the food plots and the fire breaks a little more challenging. The time of planting and burning is upon us and it is a busy time of the year in the Southern Piney Woods. We have gone from having lots of help to just me and my brother like it was 30 years ago when we started burning on our grandmother's farm. We think a lot about passing the torch these days, and this is the topic to which this issue of the Longleaf Leader is dedicated.

As I spend time at meetings and in the field working with

landowners, foresters and wildlife biologists, it seems that an awful lot of the people that work on the land, manage the land and own the land are my age or older. We can lament the fact that times are changing and everyone is moving to the cities, but that will do no good. In this issue, we are talking with a number of young professionals that have chosen the woods for their life's work. They may be environmental educators, prescribed fire professionals, or landowners but they all have made the decision to learn how to manage the forest and build on the last generation's knowledge that has been gained through education and experience. As you read about the paths these young folk's careers have taken, you will see they have one thing in common: a love for the land and a desire to see it protected and managed well into the future.

Seasons change, leaves drop, and time passes. If we all make a concerted effort to train and help young people like we have featured in this issue, then I believe we will have successfully passed the torch and the land will be in good hands and continue to be productive for the people and the wildlife that depend on it. Thank you for caring about these Southern resources, both the land and the people. Have a wonderful and productive winter!

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2018 | Calendar

January 23-25, 2018
 Longleaf Academy: Longleaf 101
 Savannah River Ecology Lab
 Aiken, South Carolina

February 1, 2018
 Landowner Field Day
 Blackman, Florida

February 20-22, 2018
 Longleaf Academy: Fire & Longleaf 201
 Perdido River Farms
 Atmore, Alabama

March 20-22, 2018
 Longleaf Academy: Longleaf 101
 Waycross, Georgia

October 23-26, 2018
 2018 Biennial Longleaf Conference
 Holiday Inn Alexandria - Downtown
 Alexandria, Louisiana

For more information about events please visit The Longleaf Alliance website (www.longleafalliance.org).

WINTER 2018 MANAGEMENT CHECKLIST

- **Site Prep Burns:** It is important to conduct a site prep burn prior to planting longleaf. Site prep burns: remove logging slash, lead to better planting jobs, stimulate early growth by increasing available nutrients, and decrease hot spots that may kill young seedlings in subsequent burns.
- **Planting Longleaf:** To take advantage of the winter precipitation and maximize survival, proper planting depth is critical. For containerized seedlings, follow the guidelines in *Keys to Successfully Planting Longleaf*.
- **Prescribed Fire:** Winter is a prime time to conduct fuel reduction burns in mature or sapling stands. Late December through the end of winter is a good time to introduce fire in young longleaf stands to help control unwanted pine seedlings and other competition. *Monitor the Keetch-Byram Drought Index (KBDI) prior to conducting any prescribed fires. Even after an inch or two of rain, the effects of long-term droughts will persist, leaving trees susceptible to mortality from prescribed fire.
- **Evaluate Young Stands:** Evaluate young stands to determine one-year survival and insure adequate stocking. Wait until after the first frost when the grass stage longleaf is more easily seen.
- **Prune Longleaf:** In some stands that lack fuels or have a low stocking rate, mechanical pruning may be an option to avoid the "Old Field" growth form. Winter is the easiest time to prune and should be finished before the spring green-up. Pruning may not be practical in a large stand.
- **Plant Native Warm Season Grasses:** Later winter through early spring is the recommended time to plant our native understory species. Some plants require a cold-stratification period and need to be planted earlier.
- **Herbicide Treatments:** Basal bark and stem injection herbicide treatments are typically most effective at controlling unwanted or invasive trees and shrubs during the dormant season.



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Q&A

Q. Dear Longleaf Alliance,

I am planning on doing prescribed burning on my property in Liberty County, Florida. I have received training and I'm familiar with some of the equipment needed. What prescribed fire equipment recommendations do you have for landowners?

Florida Tree Farmer

A. Dear Florida Tree Farmer,

You ask a very good question. Landowners who want to do prescribed burning themselves should have some basic equipment on hand. At the very minimum, you should have one or two drip torches, a couple of heavy duty fire rakes, fire swatter flaps, some sort of water pump, usually a backpack type water pump, a fuel container, chainsaw and either a tractor or 4-wheeler capable of pulling a harrow to freshen up firelines. An ag sprayer mounted on your ATV is remarkably useful, as is a backpack blower. You should have personal protection gear as well. At the very least, you should have leather gloves, eye protection, and smoke mask/handkerchief, and wear all cotton clothing or clothing made of natural fibers. This includes sturdy leather work boots with natural rubber

soles. The reason for this is that natural fibers burn off you if ignited. Melted synthetic fibers can cause nasty burns. Some landowners opt to use clothing made of Nomex® which is material specially treated to be fire retardant as well as cooler. Many burners also prefer to wear hard hats as well. You should have a means of communicating with your help, especially if you are spread out working the burn. Some use cell phones, but a better choice would be small two-way radios.

All of this equipment can get expensive. Shop around and look for the best deals. Two companies, Forestry Suppliers and Ben Meadows offer an array of prescribed burning equipment and usually run several sales each year. Another source could be companies that sell agricultural equipment.

The above is just a very basic list of equipment you should have. Talk to your local state forestry commission representatives and look at what they use. Check with your neighbors who do prescribed burning and see what they use. Share equipment and manpower when possible. Do your homework before purchasing your equipment to find the best deals.

Contact The Longleaf Alliance for additional information on prescribed fire equipment.

Sincerely,
The Longleaf Alliance

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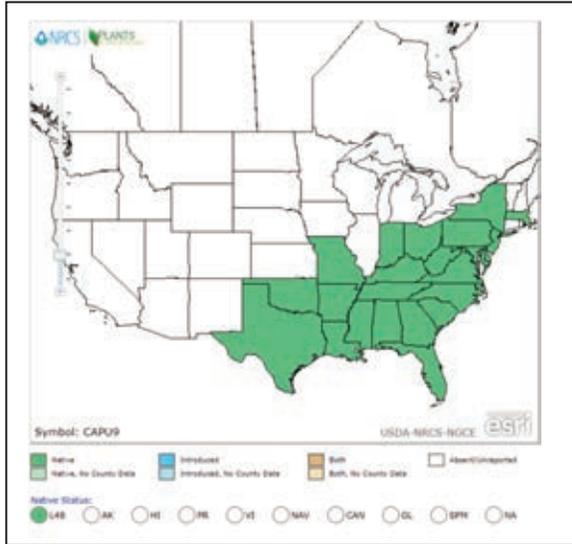
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By Carol Denhof, *The Longleaf Alliance*

PLANT SPOTLIGHT

CASTANEA PUMILA (L.) MILL. CHINQUAPIN



Map showing distribution of Chinquapin. USDA PLANTS Database.



Chinquapin at Kings Pinnacle. Crowders Mountain State Park, South Carolina. Photo by Alan Cressler.

Description

Chinquapin is a rhizomatous shrub or small tree with gray-brown bark that tends to form colonies. It ranges in height based on land management techniques used. In pinewoods with frequent fire, plants remain in the groundcover and typically do not exceed 6ft in height. The twigs are covered in spreading hairs. The simple leaves have serrated leaf margins and measure from 3-6 inches in length. The nuts are enclosed in spiny burs about an inch in diameter and golden in color.

Distribution & Habitat

The range of chinquapin is from northern Florida, west to Texas and Oklahoma, north to Kentucky, Virginia, Maryland, and along the Atlantic coastal plain to Cape Cod, Massachusetts. In the longleaf range, it is typically found growing on well-drained stream terraces, dry pinelands and sandhills, and disturbed sites such as railroad rights-of-way, powerline clearings, fence and hedgerows, pine plantations, and old fields.

Wildlife Uses

Chinquapin is especially useful for wildlife food and cover. The nuts are an excellent food source during the fall and winter.

Squirrels, deer, grouse, bobwhite quail, and wild turkey particularly enjoy the nuts. It can be used as a wildlife component for stabilizing disturbed areas. It can also be planted as a field border, hedgerow, or in backyards and recreational areas.

Commercial Sources

Plants can be purchased from a variety of nurseries in the United States.

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Sullivan, Janet. 1994. *Castanea pumila*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [2017, November 7].

USDA NRCS Plant Materials Program. *Castanea pumila* Plant Fact Sheet. USDA PLANTS Database. (<http://plants.usda.gov>, 7 November 2017). National Plant Data Team, Greensboro, NC 27401-4901 USA.

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We offer great educational events such as our Nov. 2 Forest Owners Program on Longleaf Pine Management -- to be held in conjunction with the SC Forestry Association's convention at the Isle of Palms, SC. Coordinator is Walt McPhail, 2012 National Tree Farmer of the Year (864/288-7618 or TreeVetSC@aol.com).

For more information: SC Tree Farm, P O Box 211173, Columbia, SC 29221 803/798-4170, treefarm@scforestry.org or GSabin@scforestry.org



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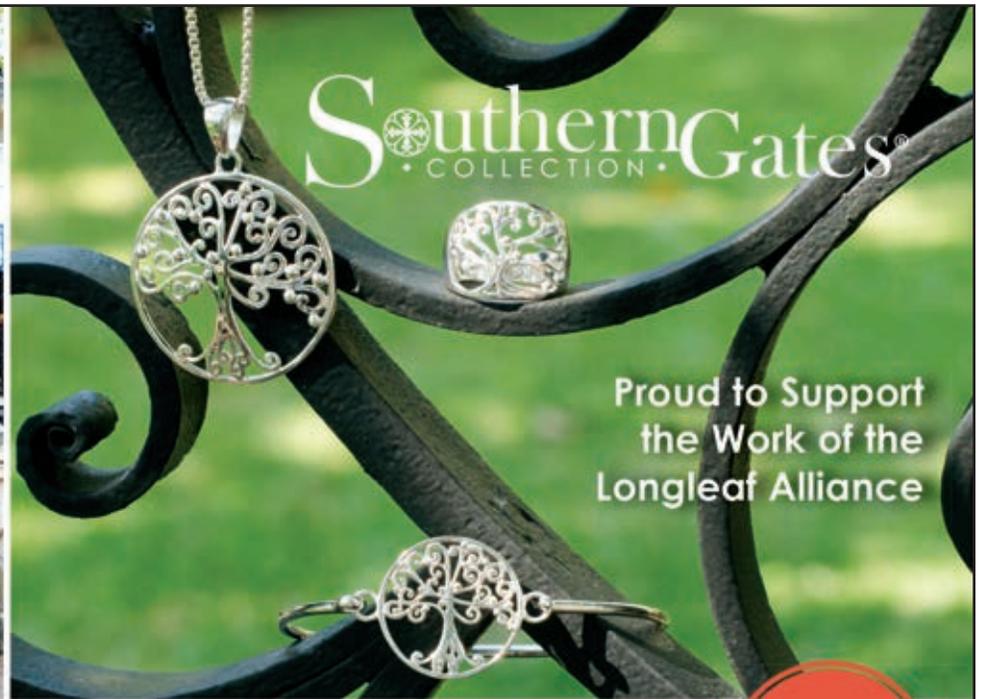
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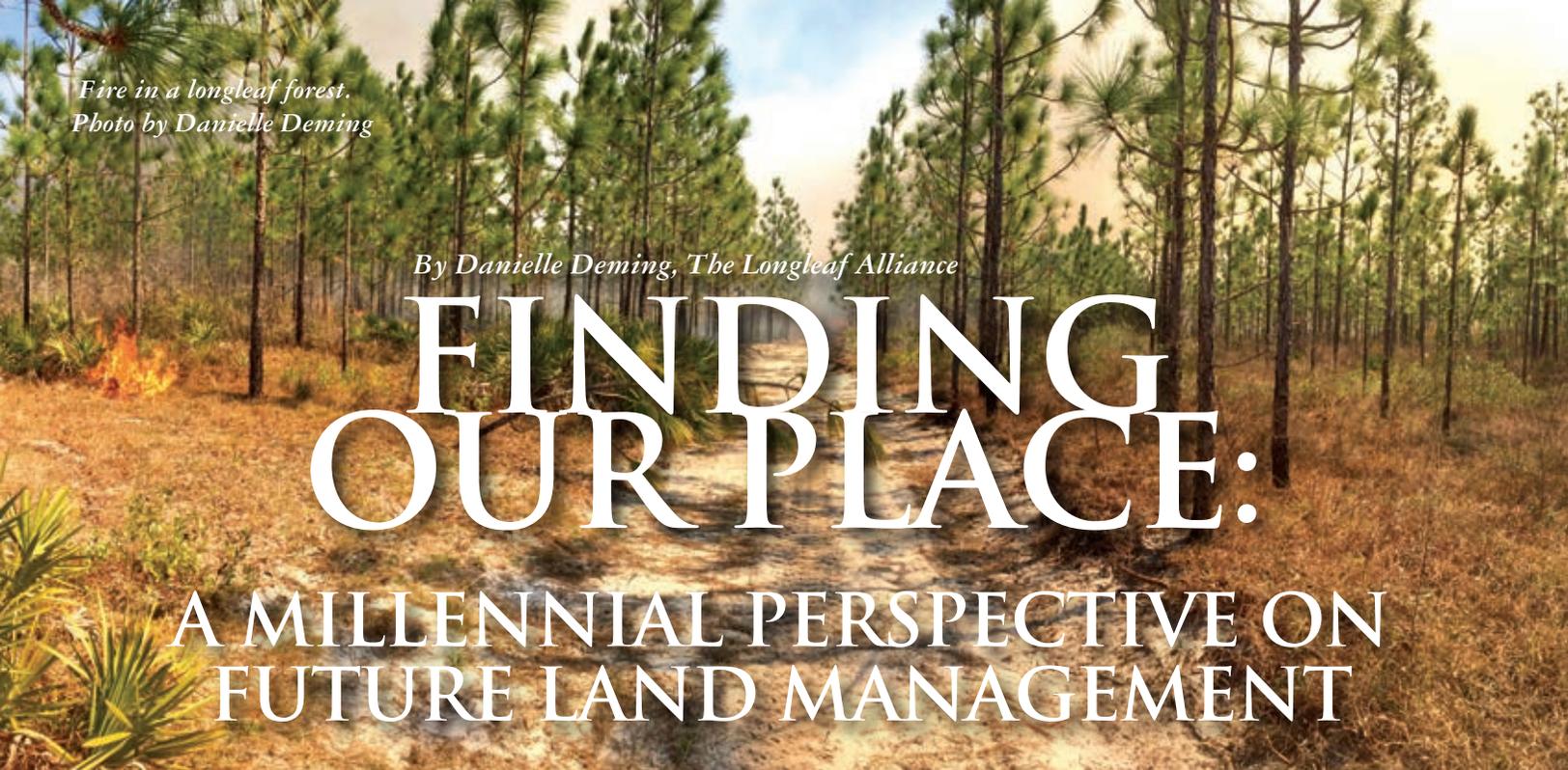
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A photograph of a longleaf pine forest. The trees are tall and thin, with sparse lower branches. The ground is covered in dry, brown grass and some green plants. In the background, there is a fire, with orange and yellow flames visible. The sky is a pale, hazy blue.

*Fire in a longleaf forest.
Photo by Danielle Deming*

By Danielle Deming, The Longleaf Alliance

FINDING OUR PLACE:

A MILLENNIAL PERSPECTIVE ON FUTURE LAND MANAGEMENT

As you walk through the forest, you can't help but take inventory of what you see. The mesh of green to the untrained eye is really a detailed illustration of Mother Nature's masterpiece. You, the conservationist, who lives and breathes the woods, soak in the landscape upon which you stand. It starts in the ground, in the sandy soils that our beloved southeastern coastal plain was built on. The gopher tortoise, whose burrow harbors a seemingly never-ending number of species. Yellow and whitetop pitcher plants fill a seepage bog in the distance. A nearby ephemeral pond shelters the rare reticulated flatwoods salamander. Wiregrass threatens to break your ankle as you walk further along, and you regrettably notice invasive cogon grass growing along the trail. The mid-story is sparsely touched with oak trees, bays, and other hardwoods, while the proud longleaf pine looms above it all. You see a red-cockaded woodpecker curiously chirping at you, and hear a red-shouldered hawk call ringing in the air.

And then, a thought hits you. How will this landscape survive throughout time?

Climate-change is a common focus in most management plans. We see every day what the effect of a rapidly changing climate can do. Natural disasters are becoming more common. Unrelenting hurricanes put a beating on young pine stands, hotter and faster wildfires scorch our southern landscape for decades, and the incessant southern pine beetle takes advantage of our weakened pines, decimating hundreds of acres of our southern forests.

We also face the growing monster that is invasive species management control. For many ecosystems, invasive species

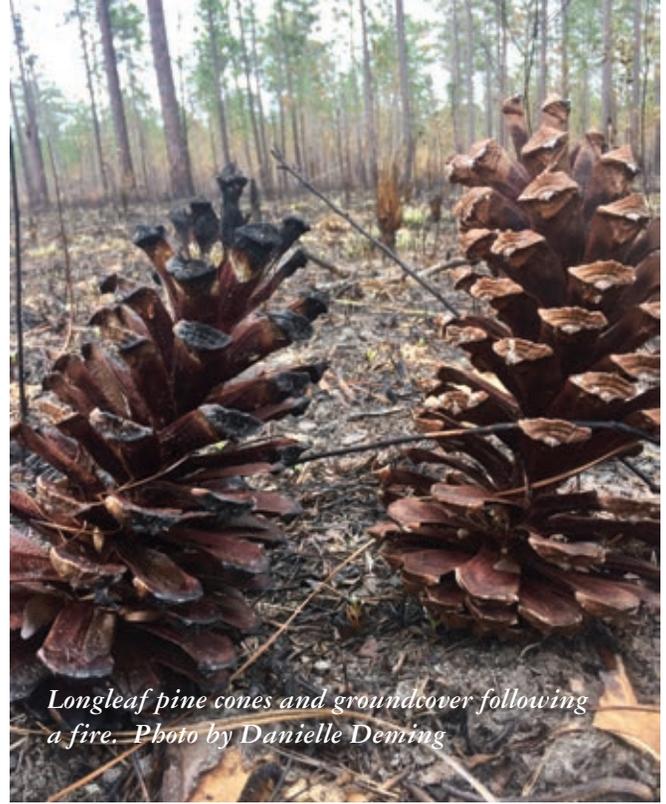
have overrun so much of the landscape that it is not a question of elimination, but rather how to control the spread. Monitoring and herbicide treatments seem to be our most widely used tool, but more needs to be done.

Now in 2018, urban sprawl and development is becoming a much bigger issue. We are losing forested land to our expanding population. The ever-growing demand for residential homes and businesses has taken precedence over keeping our natural areas protected.

As part of the next generation of land managers, biologists, and forest stewards, it is our duty to come into our new roles with innovative thinking. Our predecessors have laid the ground work; now we must carry the torch without extinguishing the flame. So, how do we accomplish this vision?

For the southeastern United States, it is a blessing in disguise that much of our forest land is privately owned. This makes new management practices easier and more efficient to implement and monitor. It will continue to become even more the responsibility of private land owners and managers to use conservation practices for a sustainable future. Many private land owners are adopting endangered species recovery plans for species such as the red-cockaded woodpecker and gopher tortoise. Working together with established public lands can also support wildlife corridors, which for many species is critical for population growth and health. By recognizing the intrinsic value of the ecosystem in addition to owning an economically, yet renewable, resource like timber, landowners allow for many endangered or threatened species to disperse and utilize suitable habitat.

*Whitetop pitcher plant leaves.
Photo by Danielle Deming.*



*Longleaf pine cones and groundcover following
a fire. Photo by Danielle Deming*

Invasive species management is a hot topic of debate for many scientists and stewards. What is worth the investment for removal, and what is just going to become a bigger issue as temperature averages continue to rise? Now that we have experienced the damage of relentless invasive species, such as kudzu and cogon grass, we need to adapt aggressive preventative measures along with removal methods. Monitoring non-native species and their sources consistently and frequently, and diligently regulating exotic transport needs to continue to be a major priority of management plans to ensure the sustainability and longevity of our southeastern landscapes.

It is a common thought that the best way to combat development is to obtain land for conservation. However, the truth of the matter is that development will not stop. Another option is to find ways to work with developers and encourage more urban forestry management to offset these effects. By taking advantage of small acre areas in cities, we can promote a connection to nature, and offset the negative effect of city life. We have already made a significant impact by utilizing the space we are given, like medians, sidewalks, and parking lots. But why stop there? Many cities and metropolitan areas are already in support of city parks, but we could go one step further by also protecting existing natural areas within city limits. Nature parks are unique in that they are a slice of multi-use wooded areas for recreation, conservation for wildlife, and hydrology protection. We should continue to protect large swaths of forested lands, but by not counting out the modest undeveloped parcels, we can make the concrete jungle, well, more of a jungle.

Our biggest and, in some ways, most unpredictable challenge is climate change, and our best defense is promoting sustainable management practices. Planting native species and using tools like prescribed fire has brought us back to a traditional landscape, while man's influence of fuel reduction and timber management has provided a resource for economical and aesthetic gain. Although we must accept the human influence of encroachment, pollution, and recreational abuse, that does not mean we shouldn't manage for it. Our greatest tool for slowing down the effects of climate change is public education and involvement. It takes every person on our planet to make a conscious decision to reduce their impact on the environment and to endorse policies that conserve and protect our natural resources.

As the new generation, we bring fresh eyes to a historic landscape. Restoration will move alongside adaptive management as we try to anticipate for the future and work with our challenges instead of fighting them. Our predecessors have done a great job of recovering endangered species, both flora and fauna, and now it is up to us to conserve and prepare our ecosystems for what the world will become. Our responsibility will be to learn and understand the effective and efficient methods of land management, and it will also be our obligation to maintain an evolving perspective. We accept this torch with reverence and will continue to ignite future generations with the same passion and commitment that was passed down to us.

By Daniel Collins, with Ad Platt, *The Longleaf Alliance*

LANDOWNER SPOTLIGHT

MY PIECE OF THE PUZZLE OF THE LONGLEAF LANDSCAPE

The now reshaped and revegetated gully provides important escape cover for quail. Photo by Ad Platt.

Daniel and Melissa (Riley) Collins are a young couple who live in the Pleasant Home community of Covington County, Alabama, on land they are restoring to a longleaf ecosystem. Although the acreage they currently own is modest, its location and connection to the larger longleaf landscape that surrounds it makes this parcel important for its size, and the surrounding lands enhance its potential as habitat.

Both Daniel and Melissa grew up in rural locations and Melissa's grandparents on both sides own timberland, mostly in loblolly pine or silvopasture. For Daniel, this exposure first began through hunting, fishing, and riding ATVs. Free to roam, he probably first started working with longleaf as a 6-year-old boy making forts in the woods and discovered the difference between longleaf and other pine saplings. He grew up near Birmingham, and originally trained to be a welder, but ventured into natural resources because of a love of the

outdoors. "I really had no clue about forestry as a profession until I got into the college classes." He earned a scholarship to complete an Associate's degree in Forestry at Lurleen B. Wallace Community College. While in college, he lived in a FEMA camper on a friend's land for a year and a half, and came to love the area around Pleasant Home. After earning his degree, he was offered a job with Natural Resources Conservation Service (NRCS) in Covington County as a District Technician in Andalusia, training to replace a long-term employee, Leon Wages, upon his retirement. In this role, much of his focus was on data collection, GPS acreage determinations for practices like burning and planting, and survival checks. He continued to learn about longleaf establishment and management while working with many landowners making the same choices, and particularly enjoyed working with the gopher tortoise and longleaf pine initiative programs. But his

understanding and experience accelerated when he began restoring longleaf on his own property.

Having decided to settle in Covington County, there was no hesitation when the opportunity came to buy property adjoining the Conecuh National Forest, an area that has always been a stronghold for longleaf. Daniel and Melissa were able to acquire the most level part of a larger tract along Eden Creek, land that had been recently clear-cut from a previous Conservation Reserve Program loblolly stand. Knowing how significant incentive programs can be for landowners, they also signed up for the Environmental Quality Incentives Program (EQIP) longleaf program. While waiting to find out if their application would be accepted by NRCS, Daniel began getting the property in shape by gradually cleaning it up, finding and treating the invasive species problems, and taking down some of the residual stems in the cutover area. Once accepted into the program, they contracted the construction of fire lines, but Daniel began burning the property himself, as well as performing the chemical site prep through backpack applications. He anticipates the EQIP incentives will also be very helpful in getting it planted.

Like many properties these days, invasive species of several types were found. Early on, Daniel treated and controlled his own cogon grass infestations, and continues to treat Japanese climbing fern, privet, and tallow occurrences. Now Daniel is helping his neighbors on both sides with their cogon grass infestations, along with treating the other usual invasives as they are located.

In one area, a major gully had formed many years ago, but fortunately along the back line of the property. Keeping cover on the land, now smoothed and reshaped, is very important on these highly erodible Troup deep sandy soils. This linear strip does provide some good escape cover for the quail.

Regarding goals and objectives, the Collins' primary motivations are aesthetics and wildlife. "We want to increase our gopher tortoise population and retain the coveys of quail that use the property as part of their territory, and we recognize that prescribed fire is the key. With the creek near us, a hayfield to the south, another cutover to the east, and then being connected to the vast expanse of the Conecuh, we hope to add more acres over time if opportunities allow. When I began burning we had three years of regrowth and sprouting in the cutover. Now we are burning again, with some of the more problematic parts for the third time."

Being both a participant and a technical assistance provider in the programs changes your perspective, "Early on I was writing plans and tended to look at this more as a cookbook. Having hands-on experience helped me understand the struggles

other landowners face with timing, financial needs, and fire. It is no longer just theory; I am becoming much more knowledgeable in my job as I work to restore a native landscape. And there is a new quail program I would like to apply for in the future."

"My grandfather bought a raw piece of property with nothing on it, and began working to make something out of it, what he called 'blazing a trail.' I like to think about what we are doing on the land, and the long-term implications of it. Many times, we are working with older folks who have to ask,



Daniel with his dogs Daly and Marley in a recently burned field that is ready for planting. Photo by Ad Platt.

‘Will I get any money out of this effort?’ In many cases, investing in forestry is investing for your kids, or what you are leaving on this earth, not something you are doing for yourself. There are not very many people my age managing land, but in the future, many more may become landowners either through inheritance or through purchase. For me, it is all about the trees and the wildlife now.”

Daniel describes their stewardship values in these words: “We built our house here. I want to surround myself in the longleaf world and do what I can to restore the longleaf forests, and have a piece of this puzzle in my name. I may never have the big beautiful tract some of my neighbors have, but I appreciate and take pride in improving what we do have. I am a hunter, but I much more enjoy having the wildlife on this property to view and enjoy. I am proud to own a piece of this puzzle and to keep working with others to restore more of this. My wife and I enjoyed growing up in rural places, and we want to raise our



Collins tract location.

family here and offer them the same kind of opportunities to experience the woods and outdoors.”



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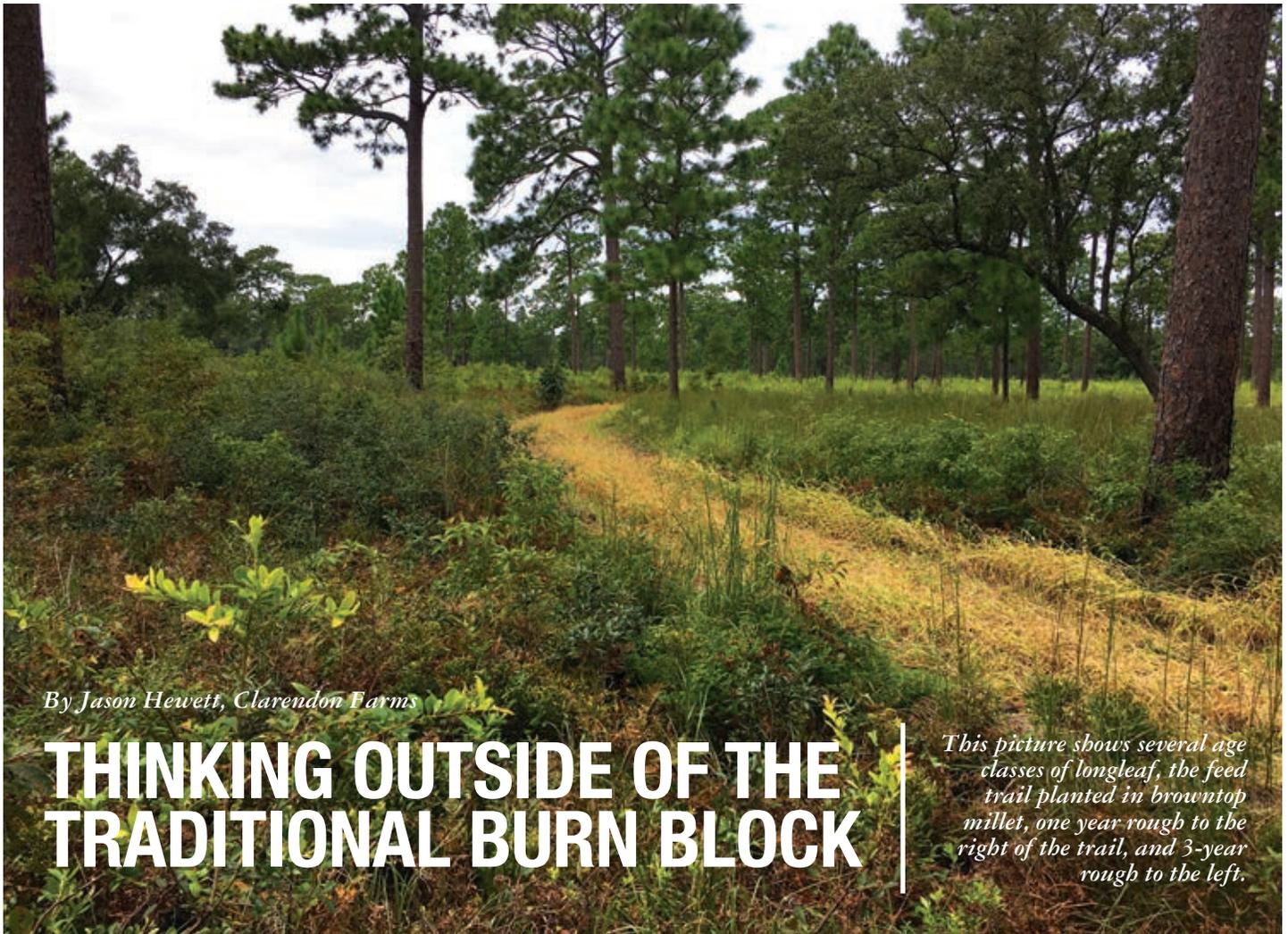
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By Jason Hewett, Clarendon Farms

THINKING OUTSIDE OF THE TRADITIONAL BURN BLOCK

This picture shows several age classes of longleaf, the feed trail planted in browntop millet, one year rough to the right of the trail, and 3-year rough to the left.

“Whether you think you can, or you think you can’t - you’re right.” - Henry Ford. It took reading that one a few times before I really got it. It’s a quote that I think about every time the word “can’t” comes to mind. At 16, I started working on a plantation just outside of my hometown of Albany, Georgia. I learned a lot in those days, but most importantly, I figured out plantation management is what I wanted to do for the rest of my life. It’s a job that requires a lot of hats to be worn, and expectations are high from those paying the bills.

The drive for success and the scale at which we currently work forced us to create a land management system that is efficient, easy to follow, and provides everything that our target game species require to thrive. This system uses burning practices in a mature upland longleaf pine ecosystem on Clarendon Farms, a property in Beaufort County, South Carolina, to enhance early release quail hunting with perpetual sustainability in mind.

First, a little backstory of how and why we arrived where we are today. Like many other quail hunting properties, we employ a continuous feed trail on our quail courses, and we use that trail as a road to hunt from during quail hunts. About five years ago,

the quail hunting wasn’t bad, at just under 3.5 coveys per hour, but it wasn’t great either. We set out to eliminate as many inconsistent hunts as possible. Using GPS/GIS data, we mapped out the feed trails and began to look at exactly where the dogs ran during our hunts. This led to discovering large holes in our quail courses that were untouched by the noses of the bird dogs. Surprisingly, our dogs seldom ran more than 40 to 50 yards laterally from the feed trail. Based on this evidence, distance between feed trails was reduced to between 80 and 100 yards, minimizing overlap in the centers and maximizing the use of the property.

With the new feed trail in place, we had to figure out how to maintain diverse, quality habitat along every inch of the trail. When managing for quail, diverse early successional habitats should include three main plant types: forbs, grasses, and shrubs - each being equally important. For most sites, three years is the longest interval without manipulation before our cover is too tall to hunt. The desire to maximize efficiency, use the longest disturbance frequency interval possible to provide ample escape cover for quail, and the desire to evenly disperse this throughout

the property led to using the feed trail as a fire break. This creates two very large burn blocks stretching across the entire property. We burn one side one year, the other side the next year, and we do not burn anything for a year, giving us a 3-year burn rotation. Our off-year is spent spot spraying fast growing, less desirable hardwoods like sweetgum and cherry.

Traditional wisdom says a mosaic pattern is best for providing the necessary diversity for wildlife. On our scale, a true mosaic is painfully inefficient, and mistakes are easy to make. If fire escapes a block it is not always easily contained. By using the feed trail as our fire break, we disk a worn path that is easily identified, making mistakes unlikely. With this method, we primarily use back fires and flanking fires, making jumping breaks even less of an issue. Containment of spotting fires is easier with the next break never more than 100 yards away. The two cover types are evenly distributed throughout the property, creating an edge, and that edge is at the center of what we hunt.

After burning, we mow any stems that fire didn't top kill. Before quail season, a checkerboard pattern is mowed every 30 to 50 feet using a 6' or 7' mower. From one year to the next, the mowed lanes move. After fire and three growing seasons, a mower has been over most of the property, with the exception of our longleaf regeneration, as they are important to the sustainability of our forest.

In a stand that is more than three years removed from logging or some other type of soil disturbance, we see mostly grasses and small shrubs the first year after a fire. After two growing seasons, the shrubs are large enough for a covey to hide under and the grass becomes less prevalent. In year three, shrubs begin to dominate and thickets are plentiful but are still low enough to hunt after checker boarding. In areas that have been logged

or otherwise disturbed, the first three growing seasons have more forbs than those more than three years removed from logging. In areas where native grasses begin to take over, we will disk after burning to reset the process and keep our grass/forb/shrub

ratio in check. This is only done in areas where the trees are far enough apart to avoid damaging the root systems of any large trees, and again avoid areas with longleaf regeneration.

Most of you that manage property for quail do many of these steps, if not all. If you want a different experience, try changing your strategy. Look at your current feed trail overlaid on a satellite image. Use GIS measuring tools to see how far apart yours is. If you have birddogs, you are likely using a Garmin™ to keep up with them - put the tracks on a satellite image. It might surprise you how small of an area they cover. Even if you don't have access to professional level GIS software, there are easy to use, free options out there with measuring tools. Course design should be mapped out with consideration of the natural topography and obstacles. I have worn out a mouse or two with all the digitizing and measuring. I had to stop looking at things like ditches, fields, or roads as



The colored lines represent dog tracks during a quail hunt. The red dots are covey encounters.

obstacles. To create the most efficient hunting opportunities we had to make changes. We installed ditch crossings to make the feed trail flow like it needed to, let fields go fallow, and clear-cut areas to make new fields. This approach will not be for everyone, but it has improved our hunting success significantly. Before undertaking these efforts, our season averages were under 3.5 coveys per hour. For the last two seasons, our best hunts were over 11 coveys per hour, and the combined average for the last two seasons is 5.34 coveys per hour. This past spring, four guys, four 4-wheelers, and a tractor with disk on standby averaged burning 300 acres per day. They would disk the feed



The red area is scheduled to burn in May of 2018. The purple line bordering the red area represents our feed trail.

trail early in the morning while waiting for the dew to dry and then stage the tractor in the area they were burning. The tractor was only used if rakes and water tanks couldn't get a jump contained.

Every property is unique, and within the property there are areas that may respond differently to a specific treatment. Soil types, hydrology, weather patterns, site index, pH, past uses and practices (just to name a few) are variables that can affect the outcome of implementing any management strategy. There is no silver bullet management plan. Each property manager must gather as much knowledge as possible to determine what the best approach is for the land they are working. They need to recognize if a treatment worked and what to do differently if it didn't. We came up with the idea of the continuous burn block out of the desire to create the greatest opportunity to see quail in the air. It evolved into a system that is challenging to implement, but straightforward to maintain. While this article may help you with a cookbook approach, my hope is to inspire you to try something new on your property. If you find a reason you can't, remember what Henry Ford said.

 An advertisement for Bartlett Tree Experts. The top left features a yellow sun icon. The main title is "GLOBAL REACH & LOCAL ROOTS" in large, bold, green letters. To the right is a large green tree silhouette. Below the title, the text reads: "It's how Bartlett improves the landscape of tree care." This is followed by a paragraph: "We're Bartlett Tree Experts, a 100+ year old company with an unmatched commitment to advancing the field of arboriculture through world-class research and scientifically guided practices. We provide expert, attentive service, a safety-first record and a range of services that includes:". A bulleted list follows:

- Tree & Shrub Pruning
- Cabling & Bracing
- Fertilization & Soil Care
- Insect & Disease Management

 Below the list is a yellow truck with a crane arm, carrying a worker in a bucket. The truck has the Bartlett logo and the text "BARTLETT TREE EXPERTS" and "FOR THE LIFE OF YOUR TREES." At the bottom, it says "Call 877.BARTLETT (877.227.8538) or visit BARTLETT.COM" with social media icons for Facebook and Instagram.



News from the Longleaf Partnership Council

By Partnership Chair Andrew Schock, The Conservation Fund

Field tour during the LPC meeting in Southern Pines, NC. Photo by Susan Miller.

In late October 2017, we held our semi-annual Longleaf Partnership Council (LPC) meeting in Southern Pines, North Carolina. We met there for two primary reasons: 1) it is an iconic longleaf pine landscape with longleaf throughout residential, commercial, State Game Lands, and Fort Bragg Army Installation; and 2) we wanted the meeting to be coordinated with the Southeast Regional Partnership for Planning and Sustainability's (SERPPAS) prescribed fire working group meeting. SERPPAS is comprised of federal agencies (with Department of Defense being the lead) and state agencies that promote collaboration in making resource-use decisions supporting conservation of natural resources, working lands, and national defense. The LPC and SERPPAS have a similar goal of getting more burning completed on the landscape and, as is often the case, more accomplished with partnerships and collaboration.

I am excited to have moved into the Chair position of the LPC because of the partners it represents. The Local Implementation Teams (LITs) are laying the groundwork for reaching our goal of 8 million acres. The LITs are comprised of people living and working in a certain geography who have the common bond of an interest in longleaf pine and burning. The 17 LITs have federal and state agency landowners, institutional landowners, family landowners, and conservation organization landowners all working towards increasing the acres dedicated to longleaf

restoration. We look to these teams to tell us how we are moving the (longleaf pine) needle forward.

The partners that make up the LPC are many of the same organizations and public agencies. The role of the LPC is to provide information, but more importantly to remove any barriers to the LITs achieving their longleaf goals. Before the barriers can be broken down, we first need each LIT to provide the LPC with the number of acres they can influence in the next five years and provide a list of the resources needed to reach those goals. Armed with that information, the LPC can mobilize and leverage its partners to provide the resources needed by the LITs.

Meanwhile, the LPC is asking our federal and state partners to do everything they can on their own lands to create more longleaf habitat through planting and burning. There are over 1,500,000 acres on federal lands alone that are suitable but not yet growing longleaf. Through the coordination of the partnerships you will see a significant increase in the commitment by our public agency partners by the summer of 2018.

I agreed to join the leadership team of the LPC because I thought I could help make a difference in working with our public agencies and private partners. With the hard work of our partnerships we can reach our 8 million acres – watch! (Better yet – help us!)

By Lisa Lord, *The Longleaf Alliance*

SoLoACE (South Lowcountry and ACE Basin) Longleaf Partnership



1. *Growing Season Fire on Lowcountry Plantation. Photo by Bobby Franklin.* 2. *Group discussion of fire equipment at the Fire & Longleaf Academy. Photo by Bobby Franklin.* 3. *Field Day at Webb Wildlife Center, Garnett, SC. Photo by Bobby Franklin.*

The SoLoACE Longleaf Partners have come together to restore the longleaf pine ecosystem in an area just west of the Edisto River which is significant and unique in its size, geography, and conservation ethic. The South Lowcountry and Ashepoo, Combahee, and South Edisto (ACE) Basin are two regions that make up the SoLoACE Longleaf Partnership focal area in South Carolina. The project area includes all or part of ten counties with about 225,000 acres in longleaf and 2.1 million acres estimated to have been historically in longleaf.

Containing over 1.1 million acres of diverse wildlife habitat, the ACE Basin is one of the largest undeveloped estuaries on the east coast with over 225,000 acres of state and protected land in the Coastal Plain of South Carolina, including Bear Island Wildlife Management Area (WMA), Ernest F. Hollings National Wildlife Refuge, Donnelley WMA, and the ACE Basin National Estuarine Research Reserve. The South Lowcountry, known colloquially as “SoLo,” includes the land from southern Edgefield County to Jasper County on the coast. SoLo was first defined by the Atlantic Coast Joint Venture of the 1986 North American Waterfowl Management Plan. NAWMP identified the South Lowcountry as an important conservation focal area because of its mosaic of uplands and wetlands that provide habitat for many wildlife species. SoLo includes Pinckney National Wildlife Refuge, Webb Wildlife Center, Hamilton Ridge, and Tillman Sand Ridge Heritage Preserve owned and managed by the South Carolina Department of Natural Resources (SCDNR).

The project area is bounded on the west by another important landscape feature, the Savannah River, which runs along the Georgia-South Carolina border. The Savannah River watershed basin includes more than 75 rare, threatened, or endangered plant and animal species. Forestry is the primary land use in the Basin.

Representing a diversity of state, federal, and private organizations, the SoLoACE partners have a long, productive track record of working hand-in-hand with private landowners to further land conservation. The vast quantity of conserved land, the rich conservation ethic, and the long history of collaboration between state, federal, and private partners creates an excellent environment for restoring the longleaf pine ecosystem. This landscape also has a strong tradition of prescribed fire, working landscapes, and conservation minded hunters dedicated to habitat stewardship.

The SoLoACE Longleaf Partnership began in 2013 when the need was recognized for a more formal and active collaboration between all the partners to implement the goals under America’s Longleaf Restoration Initiative in the SoLoACE region. Bobby Franklin was hired by The Longleaf Alliance as the SoLoACE Partnership Coordinator with funding from the National Fish and Wildlife Foundation (NFWF). Since its inauguration, the SoLoACE partnership has focused on providing resources to private landowners including cost-share for planting, prescribed fire, and midstory hardwood control. Numerous longleaf academies and field days have been held to engage landowners directly.

Two new initiatives have emerged to accelerate the restoration of key imperiled wildlife species, the red-cockaded woodpecker (RCW) and gopher tortoise. The RCW is a federally endangered species that lives in mature pine forests. Funded by NFWF and most recently American Forests, The Longleaf Alliance in coordination with several SoLoACE partners, began installing artificial inserts for RCWs on public and private lands. RCWs are utilizing the new cavities, laying eggs, and increasing their populations more rapidly than without the artificial inserts. As



Longleaf on Lowcountry Plantation. Photo by Bobby Franklin.

part of an RCW private lands initiative, twenty-six birds were translocated from the Francis Marion National Forest to five private properties enrolled in the Safe Harbor Program. Safe Harbor provides assurances and regulatory incentives to landowners that have RCWs or could potentially have RCWs on their land. South Carolina has the most successful RCW Safe Harbor Program in the country, and is important because landowners can now continue good management practices, including prescribed fire and long rotation timber management, without fear of being penalized.

The gopher tortoise inhabits sandy areas in the longleaf and loblolly pine sandhills of the southeastern-most area of South Carolina. Although not a federally listed species yet in South Carolina, the gopher tortoise is being looked at for potential listing by the US Fish and Wildlife Service (USFWS). The Longleaf Alliance is working with SCDNR, Riverbanks Zoo and

Garden, the US Fish and Wildlife Service, and researchers at the University of Georgia’s Savannah River Ecology Lab to “head-start” gopher tortoises.

Head-starting involves securing and hatching eggs from wild populations by protecting nests, collecting eggs, and rearing the young until they are released at 2 years of age when they have a better chance of survival than natural born hatchlings. This technique helps to augment small populations until they are large enough to be self-sustaining. This summer and fall, almost 100 eggs were collected and will be reared over the next two years at the Savannah River Ecology Lab and released at the Aiken Gopher Tortoise Heritage Preserve. The next step for this project is to provide resources to landowners that have gopher tortoises to enhance and manage their property and eventually work toward releasing head-started tortoises on private lands with the appropriate habitat and management.

FOREST SERVICE LAUNCHES “THE ONE MILLION ACRE CHALLENGE”

By Adam Rondeau, US Forest Service



Newly planted longleaf seedling. Photo by Carol Denbof.

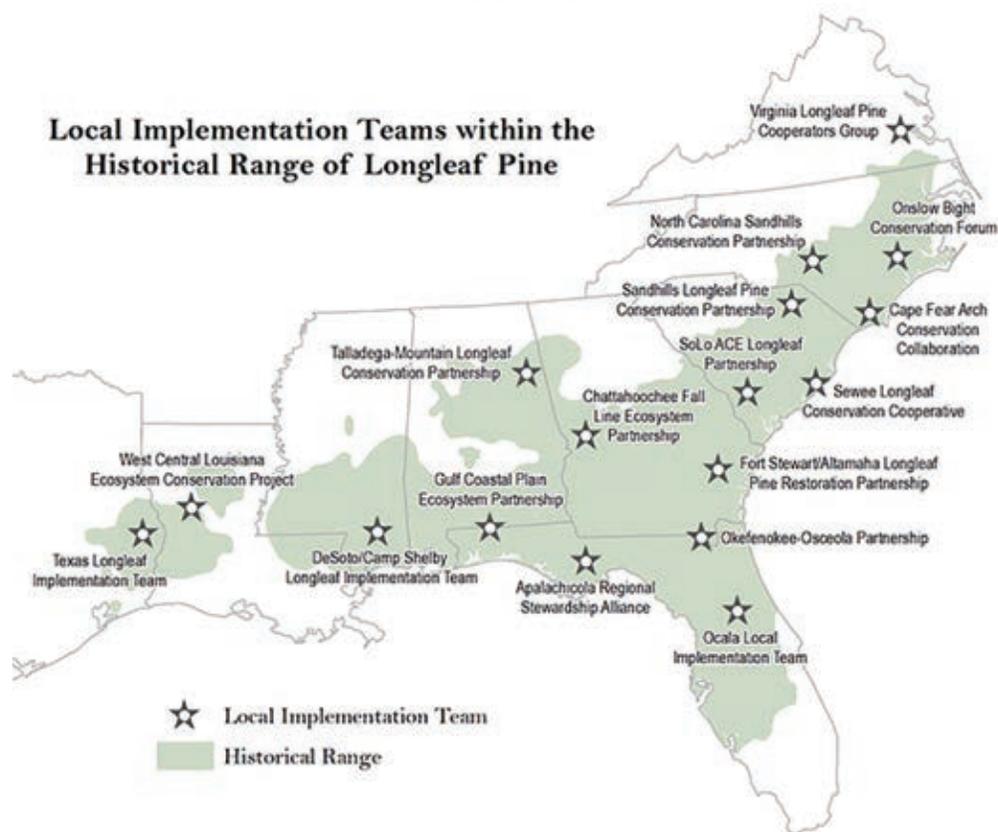
The U.S. Forest Service’s Southern Region recently launched an ambitious campaign to restore 1 million acres of the South’s longleaf pine ecosystem on national forests. First announced during the October 2017 meeting of the Longleaf Partnership Council in Southern Pines, North Carolina, “The One Million Acre Challenge” culminates a 2-year effort to identify opportunities and methods for increasing the pace and scale of

longleaf pine restoration on National Forest System lands.

“With so many national forests within the longleaf pine’s historic range, the Forest Service has a responsibility to do its part in restoring this vital ecosystem,” said Kay Reed, the Forest Service’s regional director of cooperative forestry. “This project will be a massive undertaking, and we thank all of our partners involved in longleaf restoration for their guidance and support.”

National forests in eight states, as well as the Savannah River Site in South Carolina, will participate in the challenge. Currently, national forests in these states administer more than 853,000 acres of longleaf pine forests within its historic range.

As partners and stakeholders to America’s Longleaf Restoration Initiative collectively pursue the goal of restoring 8 million acres of longleaf on public and private lands by 2025, the “One Million Acre Challenge” will provide a significant boost forward in that effort and is a testament to the unprecedented public/private collaboration taking place within this initiative.



Groundcover Symposium Continues to Inform Managers

By Brian Pelc, Restoration Project Manager, The Nature Conservancy



Participants in the field portion of the 2017 ARSA/Southern Fire Exchange Groundcover Symposium view a 3-year-old restored sandhill adjacent to a sandpine plantation closely approximating site conditions on the restoration site before clear-cut and site prep. Photo by B. Pelc 2017.

The restored sandhills of Liberty County, Florida were both the backdrop and the focus of ARSA's 2nd biennial Groundcover Symposium, co-hosted by ARSA (Apalachicola Regional Stewardship Alliance) and Southern Fire Exchange. Thirty-five participants came to The Nature Conservancy's Apalachicola Bluffs and Ravines Preserve to hear presentations about current research projects pertaining to groundcover and then enjoyed a networking lunch and field tour highlighting the equipment and past work in the area.

Lessons learned during the workshop included practical implications of well-planned restoration projects. First, Dr. Joan Walker from the USFS Southern Research Station/Clemson University described a common garden experiment evaluating how the genetics of a small suite of groundcover species may influence site success. The take home from this work suggests keeping seed sources as local as possible and within habitat-type. However, there may be population advantages to mixing up the gene pool; more results will follow. Second, Dr. Monica Rother from Tall Timbers described their research on soil disturbance and site history on the success of establishing fine fuels versus weedy herbs that don't carry fire well. Managers should be careful about putting a plow down as both the soil disturbance and most likely vegetative colonizers are more likely to inhibit

fire. Third, Mike Jenkins from Florida Forest Service described a promising vegetation response after some simple mowing site prep before a longleaf planting project at Tate's Hell State Forest. Finally, staff from the Conservancy described lessons learned in the 20+ years of sandhill and more recent forays into flatwoods restoration.

All of the presentations from the day will be available on the Southern Fire Exchange YouTube page with links on their website. This workshop was possible thanks to a Longleaf Stewardship Fund grant from NFWF and support from Southern Fire Exchange. Look for the 3rd biennial symposium in late October 2019.

Fire in the Pines Festival 2017

By Mansfield Fisher, *The Nature Conservancy*



Students using a telescoping camera to check red-cockaded woodpecker cavities at the Fire in the Pines Field Day. Photo by Angie Carl.

The Nature Conservancy (TNC) along with partners, the North Carolina Forest Service and City of Wilmington, successfully completed the 4th annual Fire in the Pines Festival on October 14th. We had another fun-filled festival with an estimated 5,000 attendees. The Fire in the Pines Festival is held in Wilmington, and highlights the importance of prescribed fire in longleaf restoration. The festival targets elementary aged children and their parents. There is environmental education, many interactive booths, hayrides, music, face painting, crafts, fire equipment, food trucks, other entertainment, and a live controlled burn. Creating a positive perception of prescribed fire is critical to successfully restoring longleaf ecosystems in one of the fastest growing areas in the country, southeastern North Carolina. The public perception of prescribed fire was documented with a survey that attendees complete every year. These survey results were presented at the 2017 AFE International Fire Congress in Orlando, Florida.

This year we expanded our outreach by hosting a field trip for two local elementary schools. TNC partnered with the NC Forest Service, NC Wildlife Resources Commission, Coastal Land Trust, City of Wilmington, and the Cape Fear Museum to create a field day where students participated in hands on activities related to longleaf restoration. They learned about the importance of prescribed fire related to plants such as the venus flytrap and animals such as the red-cockaded woodpecker, and both the historical and ecological importance of the longleaf pine forest.

Mentoring Fire Crews on the Chattahoochee Fall Line

By Geoff Sorrell, *The Nature Conservancy*



A Chattahoochee Fall Line Student Conservation Association crew learns about fire plumbing techniques. Photo by Geoff Sorrell.

How do I get a prescribed fire job without experience, and how do I gain experience if I can't get a job? Maybe some of you have been stumped by this riddle in your own career path. And, breaking into the National Wildfire Coordinating Group (NWCG) fire qualification system used by Federal land management agencies can be especially tough.

For 15 years, The Nature Conservancy in Georgia has offered entry-level positions to prescribed fire practitioners enabling them to gain hands-on experience. In 2011, the Conservancy's Chattahoochee Fall Line (CFL) program hired our first seasonal fire crew to burn on buffer lands around Fort Benning. At the close of every fire season, we have had crew members build the skills required to move on to fire jobs with various Federal agencies. During the 2018 fire season, the CFL crew will be staffed with Student Conservation Association personnel who are military veterans. This is a logical connection with the Department of Defense and the buffering role

that the CFL conservation lands fulfill around Fort Benning.

Other mentoring has taken place through a long-term partnership with the University of Montana fire practicum. These students travel to Georgia to learn about fire ecology and prescribed fire. A more recent development is the collaboration with The University of West Georgia's Fire Ecology class. Students have had the chance to see classroom principles become reality by participating as crew members on fire operations.

The newest concept in mentoring and training on the CFL is the launch of a Prescribed Fire Cooperative. The Cooperative is a collaborative effort between multiple partners and will work to increase the safe and effective use of prescribed fire through training and on-the-ground assistance.

Radford's Mint Project

By Eamonn Leonard, Georgia Department of Natural Resources



Radford's mint in flower. Photo by Eamonn Leonard.

Radford's Mint (*Dicerandra radfordiana*) is a state endangered species with showy pink fall flowers known to exist in only two locations along the north side of the Altamaha River in southeast Georgia. It is an annual that grows up to 26" tall with cinnamon scented leaves. One location is on a private hunt club under a conservation easement with The Nature Conservancy. The second location is on Townsend WMA managed by the Georgia Department of Natural Resources. Townsend WMA is situated over extensive xeric aeolian river dunes and at the time of acquisition (2008) was planted with the invasive sand pine (*Pinus clausa*). Georgia DNR has clear-cut most of this and planted longleaf pine. To protect the mint populations, a 6-acre buffer of mature sand pine remains. In 2009 population assessments, 278 individuals were found. Over time, trees were removed to improve the light environment. By 2015 the population had reached over 3,000 individuals. GA DNR Nongame staff revisited the long-term restoration plan for this species that fall. Immediately after the mint seed set, six out-planting sites were established. These were situated in three elevations that mirrored elevations on which the original populations were found and under two age classes of longleaf pines (5 & 10 years old). In September of 2016 the remaining mature sand pine (6 acres) were clear-cut while a smaller buffer of thinned sand pine was

maintained around the mint. GA DNR Nongame received a grant from TERN (The Environmental Resources Network) to purchase longleaf pine seedlings. Once these longleaf pines get tall enough to provide some shade, the remaining sand pine will be removed. In 2016 the original population dropped to 1218 and the out-plantings had 6 individuals. In 2017 the original populations rose slightly to 1459 and the out-plantings had 40 individuals.

Partners Critical to Accelerating Longleaf Ecosystem Restoration in the GCPEP Landscape

by Vernon Compton, The Longleaf Alliance



Prescribed fire in an isolated wetland during an appropriate season for the embedded wetland. Photo by Kelly Jones, Virginia Tech.

Prescribed fire is central to three grants that the Gulf Coastal Plain Ecosystem Partnership (GCPEP) received to further longleaf ecosystem restoration. The first grant, a Florida State Wildlife Grant titled Wetland Ecosystem Support Team, will fund additional resources necessary to target restoration of embedded wetlands using prescribed fire and other restoration actions. Fire suppression has resulted in wetlands that are now dominated by a woody overstory that prevents the use of these habitats by many of the rare and declining species that depend on them. Focal conservation targets include the Florida bog frog, gopher frog, ornate chorus frog, pine barrens treefrog, reticulated flatwoods salamander, tiger salamander, and the chicken turtle. The GCPEP partners thank the Florida Fish and Wildlife Conservation Commission State Wildlife Grant program and the U.S. Fish and Wildlife Service for providing the funding that makes this work possible.

GCPEP also received a National Fish and Wildlife Foundation Longleaf Stewardship Fund grant titled Partner Collaboration to Restore the Longleaf

Ecosystem in the GCPEP Landscape. The grant will support 333 acres of longleaf plantings, 700 acres of longleaf release, and 55,100 acres of prescribed fire on public and private lands. A key indicator species, the gopher tortoise, will benefit through increased efforts centered on habitat improvement and translocations. In addition, training opportunities will include a Longleaf Academy and 10 fire training classes, and 145 landowners will be provided technical assistance and/or training and education opportunities. The GCPEP partners are very appreciative of the funding provided through the Longleaf Stewardship Fund and the public and private partners who support it, including Southern Company, U.S. Forest Service, Department of Defense, and NRCS.

In addition, GCPEP received important funding from the Hunting Heritage Super Fund Project of the Florida and Alabama Chapters of the National Wild Turkey Federation (NWTf) in support of habitat management and restoration in the GCPEP landscape. The GCPEP partners are thankful for this support from the NWTf allowing more habitat improvement to occur for the wild turkey and other wildlife found in the longleaf ecosystem.

Longleaf Field Day at Kisatchie National Forest Attracts Landowners and Enthusiasts

Dan Weber, WLEP Coordinator, The Nature Conservancy



Steve Shively (USFS) discusses the Louisiana pine snake during field tour on the Kisatchie National Forest. Photo by The Nature Conservancy.

On October 19, 2017, the Kisatchie District of the Kisatchie National Forest hosted a Longleaf Field Day for landowners, industry, and agency partners. Over a hundred participants spent the day enjoying presentations and a tour of several sites in the nearby forest featuring different aspects of longleaf management. The event was organized by the local longleaf implementation team (LIT), the West Central Louisiana Ecosystem Partnership (WLEP), and was funded in part by a grant from the National Fish and Wildlife Foundation Longleaf Stewardship Fund. The 102,000 acre Kisatchie District is part of the Fort Polk/Kisatchie National Forest Significant Geographic Area where the LIT composed of the U.S. Department of Defense, state and federal wildlife agencies, conservation NGO's and others have united to restore longleaf pine and other native ecosystems within a six-parish conservation area. The District contains some of the finest longleaf in the state and is home to Kisatchie Hills Wilderness, the only nationally designated wilderness area in Louisiana. Attendees were treated to expert speakers on subjects ranging from the cultural history and significance of longleaf forests in Louisiana and cost-share opportunities to a landowner's testimony on family land restoration. In the field, four tour stops showed off the amazing work Kisatchie has been doing with longleaf management and instructed the participants in managing lands for game and wildlife, regeneration techniques, timber values, and the biodiversity of longleaf stands. Once back at the pavilion, a barbeque lunch was shared while participants enjoyed the various partner displays on site.

Mississippi Longleaf Implementation Team Update

By Tamara Campbell, US Fish & Wildlife Service



A growing season prescribed burn carries across a pitcher plant bog at a gopher tortoise mitigation bank property, Dead Dog Bog, in MS. Photo by Justin Thayer.

In the face of shrinking budgets and increasing restrictions, cooperative habitat management has gained popularity among partners in Mississippi. The "Dead Dog Bog," a 320-acre longleaf pine property, served as mitigation for highway construction and relocation of gopher tortoises in 2010. Several members of the Mississippi Longleaf Team, along with partners, have been instrumental in three prescribed burns on the property. They carefully planned and executed a prescribed burn in May 2017, followed by a tortoise burrow survey. The survey revealed increases in both total tortoise abundance and recruitment, showing promise that the site may someday support a viable population. This strong partnership shared resources, time, and expertise; and has led to numerous opportunities for future cooperation (i.e. gopher tortoise surveys, prescribed fire implementation, and collaborative research), while subsequently improving strategic habitat and increasing populations of rare and listed species. Partners who participated in the cooperative project included the MS Department of Wildlife, Fisheries, and Parks,

Mississippi Marine Resources, MS Department of Transportation, and the U.S. Fish and Wildlife Service.

Okefenokee/Osceola Longleaf Implementation Team Update

By Hunter Bowman, *The Nature Conservancy*



Three-year-old experimental longleaf planting on Rayonier property bordering the Okefenokee Swamp. Photo by Hunter Bowman.

Since our last update, the Okefenokee/Osceola Longleaf Implementation Team (O2LIT) is excited to have sponsored a Technical Service Provider (TSP) training for qualified foresters and prescribed burners. TSPs write Conservation Activity Plans (CAPs) for landowners that want a turnkey plan for the stewardship of their property. The Natural Resource Conservation Service (NRCS) provides financial assistance to landowners that enroll in the CAP program. The landowner can then pay for the services of a certified TSP. Having more TSPs in the O2 landscape will give our landowners access to better technical resources, which will lead to better management for fire resiliency as we work towards our goal of a longleaf pine buffer between the fire prone Okefenokee and the private lands adjacent to it.

The O2 also received a visit from Secretary of the Interior Ryan Zinke, who came to the Okefenokee National Wildlife Refuge in October. Refuge staff were extremely excited to teach the Secretary more about our landscape, and the unique wildfire challenges we face.

We hope that the Swamp will receive the dollars and attention it so richly deserves as a result of this historic visit.

Finally, the O2LIT had the opportunity to present some of the work it has done on the Fire Resilient Buffer around the Okefenokee Swamp at the November 2017 International Fire Congress in Orlando, Florida.

Getting Back in the Swing of Things Post-Irma: Ocala Longleaf Pine Local Implementation Team (OLIT) *By Cheryl Millett, The Nature Conservancy*

Wildland Restoration International conducted longleaf restoration and maintenance work on 94.3 acres on 10 public and private properties, including controlled burning, hardwood thinning, and non-native invasive species treatment.

The Florida Forest Service private landowner incentive program is fully booked with longleaf projects, and we look forward to getting projects done on the ground.

A Prescribed Burn Association workshop was planned for December 2017 in Gainesville with private landowners, Florida Fish and Wildlife Conservation Commission, and the Prescribed Fire Training Council, among other partners. The 7th International Fire Ecology and Management Congress was held in Orlando November 28 - December 2, 2017.

Sandhills Longleaf Pine Conservation Partnership (SLPCP) Update

By Susan Griggs, USDA Natural Resources Conservation Service



NRCS Biologist Sudie Thomas talks with Savannah Rogerson as they complete understory inventory in one of five permanent monitoring plots established on her grandparents' land. Photo by Susan Griggs.

Charles Babb, SLPCP Coordinator, recently finalized efforts with five landowners to protect 220 acres of mature longleaf from being clear-cut. These landowners have made a commitment to manage and improve their stands via midstory control, reintroducing prescribed fire (slowly), and using supplemental plantings of native understory plants. "In our area, we have landowners who have never been taught that managing a tract (of timber) can have many benefits," said Babb. "We are excited to have the opportunity to walk alongside several families and help them navigate a new plan for their forests."

The stands are in close proximity to public lands with active red-cockaded woodpecker (RCW) colonies. Babb anticipates the proposed management activities will produce premium RCW forage habitat in addition to potential nest sites. In fact, four landowners have expressed interest in installing artificial nest cavities in an effort to attract new RCW pairs once restoration is complete and all families desire to enroll in the South Carolina DNR's Safe Harbor Program.

Babb, along with Natural Resources Conservation Service Biologist Sudie Thomas, have installed permanent monitoring plots to document changes in understory vegetation over time. Landowners will plant locally harvested native seed in selected areas to increase plant diversity and improve fuel conditions for prescribed fire. "We are excited to have this cooperation from landowners who see the bigger picture in longleaf management," said Babb. The Partnership plans to use their forest inventory data (collected this summer) to identify other tracts of mature longleaf, and to build on the strides already gained. "Being able to foster a relationship with landowners who possess the same level of commitment as this core group would be fantastic," he said. "Preserving these older (privately owned) stands will allow us to preserve a glimpse of the past while building our future."

Funding for the SLPCP and its programs is provided through multiple sources including NFWF grants, USFWS Partners for Wildlife, and USDA's EQIP.

Mountain Longleaf LIT Initiates Conservation Planning Process

By Alex Varner, The Nature Conservancy



TMLCP Conservation Planning workshop. Photo by Ad Platt.

The Talladega Mountain Longleaf Conservation Partnership (TMLCP) met this past fall for its first of two workshops to develop a more focused conservation plan. The plan will help identify priority areas for longleaf restoration and provide great clarity to the strategies needed to increase the progress of restoration. Twenty-nine team members were present for this first workshop.

The majority of the workshop had team members gathered around maps refining focus area boundaries and listing short and long-term restoration acreage goals. Workshop participants also discussed planning targets that divide longleaf pine restoration into either public or private lands and categorizes restoration stage as maintain/improve or restore. Lastly, the barriers to restoring longleaf pine were identified during the workshop.

These will be ranked and used as the starting point to develop strategies at the next workshop in early or mid - January 2018.

The TMLCP partners are again happy to have been selected to receive a 2017 National Fish and Wildlife Foundation Longleaf Stewardship Fund Grant. This recent award of \$205,452.86 will be instrumental in longleaf restoration throughout the TMLCP. This award will fund 447 acres of longleaf establishment and improve 17,700 acres of existing longleaf habitat with prescribed fire. Funds will be used to support a seasonal prescribed fire crew and help the development of a Conservation Plan. We would like to thank the National Fish and Wildlife Foundation and the Longleaf Stewardship Fund public and private partners for their important support for longleaf restoration within the TMLCP.

Texas Longleaf Implementation Team

By Kent Evans, Team Coordinator



Wes Pruet (Left) and Mike Hamilton have restored over 1000 acres to longleaf on suitable lands managed by Resource Management Service in Polk County, Texas. Photo by Kent Evans.

Members of the Texas LIT met with a representative of the Alabama-Coushatta Tribe to offer technical assistance on their 400 acres of 5-year-old longleaf in Polk County. The NRCS District Conservationist and Texas A&M Forest Service District Forester are working together on a management plan which proposes use of prescribed fire to control yaupon holly and allow access through the stands for collecting pine needles for their traditional basketry. Tribal lands are in proximity to longleaf restoration projects on the Big Thicket National Preserve and to longleaf by Resource Management Service. Wes Pruet, forester with RMS, discussed their recent experiences restoring longleaf with the use of herbicides and controlled burning.

International Paper recently committed to an additional five-year partnership with the National Fish and Wildlife Foundation (NFWF) in eight states with a \$10 million donation. The NFWF/IP partnership, known as Forestland Stewards, targets three landscapes: the low country of the Carolinas; the Cumberland Plateau in Kentucky, Tennessee, Alabama and Georgia; and the piney woods on the Louisiana-Texas border. Texas NRCS recently added funds to the mix, targeting work in east Texas. The Texas LIT and Texas A&M Forest Service have been successful in winning some of those grant funds for restoring longleaf in east Texas. TLIT representatives (Hughes Simpson, Texas A&M Forest Service, Brian Gowin, Campbell Global, and Kent Evans, TLIT Coordinator) attended the Forestland Stewards meeting in October and reported on our progress in Texas. Also attending were Salvador Salinas, NRCS Texas State Conservationist, and Christy Oates NRCS State Resource Conservationist. These NFWF grant funds in Texas help private landowners establish longleaf and conduct prescribed burning.

An advertisement for Cox Industries, Inc. featuring a large stack of logs in the background. In the top left corner, there is a logo with the text "CLIMB AMERICAN BUY AMERICAN" and an American flag. The main text reads: "The Largest American Owned Pole and Cross Arm Producer in the Country." followed by "BUYING POLE STOCK" in large green letters. Below this, a green banner contains the text: "Maximize the profitability of your woodland. Poles are the most Profitable of your timber products." At the bottom, the Cox logo is displayed, along with the company name "Cox Industries, Inc. Headquarters" and contact information: "860 Cannon Bridge Road | Orangeburg, SC | 29116" and "800.476.4401 | coxwood.com".

BUILT TO LAST

CLEMSON UNIVERSITY GROOMING NEXT GENERATION OF FORESTRY AND NATURAL RESOURCES LEADERS

By Steven Bradley, Clemson Public Service and Agriculture; College of Agriculture, Forestry and Life Sciences

A field-oriented approach is a hallmark of Clemson University's Department of Forestry and Environmental Conservation programs, immersing students in a variety of vegetative, forest stand and habitat types. Photo by Clemson University.



When it comes to sustainability in any industry, a crucial component is cultivating the workforce and leadership to foster its future into the next generation and beyond. With the 17,500-acre Clemson Experimental Forest located adjacent to campus, students in Clemson University's Department of Forestry and Environmental Conservation (FEC) are groomed to do just that through programs that take advantage of easy access to the only university-owned forestlands in the United States to be certified as sustainable by the Sustainable Forestry Initiative.

"Having the Experimental Forest on the northern and southern portions of the main campus allows us to be able to get students out there fairly easily, within a short amount of time and do a lot of teaching in the field," said Greg Yarrow, Chair and Professor for the Department of FEC. "It also is very accessible for our scientists for research and our Clemson Extension faculty and staff to do demonstration work. We're proud of it being certified as sustainable through the Sustainable Forestry Initiative, and that's a really important designation in terms of the forest being managed in a

responsible manner for multiple uses and products for timber, recreation, wildlife, and biodiversity, with minimal impacts on the land.”

A 2017 analysis by Clemson professors sponsored by the university and several forestry organizations measured the contribution of the forestry sector to the state’s economy at more than \$21 billion and 84,000 jobs, making it the state’s No. 1 manufacturing sector in terms of jobs and labor income (\$4.5 billion).

Clemson’s Department of FEC provides education and training in applied natural resource conservation and ecology that include the academic programs in Environmental and Natural Resources (B.S.), Forest Resource Management (B.S.), Forest Resources (Master of Forest Resources, M.S., Ph.D.) and Wildlife and Fisheries Biology (B.S., M.S., Ph.D.).

A field-oriented approach is a hallmark of Clemson University’s forestry and wildlife programs that immerses students in a variety of vegetative, forest stand, and habitat types, while working closely with state, federal, and private natural resource professionals, and 100 percent of its Forest Resource Management graduates have jobs waiting when they graduate.

“Students have to know how to work once they get out into the job market, and a lot of these jobs require students who have experience in the field, working on timber tracts,” Yarrow said. “A lot of our students go that route, some go into the business aspect of forestry and some go another route, but they have to have that basic foundation and knowledge of how to grow trees, the steps to harvest trees and then regenerate a new forest, and how to do that in terms of economy of scale for landowners so it is done on a profitable basis for landowners and to meet the objectives of landowners and to be able to work in a fashion where they take their knowledge and apply it in the field.”

Combined with the forestry industry’s vitality in South Carolina, the successful track record for job placement has led to the undergraduate enrollment in Clemson’s Department of FEC continuing to grow. While enrollment in forestry programs nationwide has traditionally been cyclical in nature, Clemson’s undergraduate enrollment in Forest Resource Management as of April 2017 sat at 91 students, ranking above institutional peers such as the University of Georgia, North Carolina State, and Virginia Tech.

“Forestry is a very large industry in South Carolina, so there’s a tremendous need for forestry students,” said Jean Bertrand, Associate Dean for Undergraduate Studies for Clemson University’s College of Agriculture, Forestry and Life Sciences. “It’s a very important major and very important industry in the state, so it’s very important that we produce an adequate number of majors as well as have very well-prepared graduates.”

Departmental curricula are designed and taught by faculty recognized in their area of expertise, providing students with

natural resource and ecology-based knowledge that is complemented with strong quantitative, critical-thinking and communication skills. But the preparation for graduates is not only about providing a foundation for students in natural resource conservation, but also developing their skills as future industry leaders.

“We have a professional development course that’s offered to any students in the college that includes leadership and learning



As of April 2017, Clemson University had 91 students in its undergraduate Forest Resource Management program, part of a total enrollment of 436 in its Department of Forestry and Environmental Conservation. Photo by Clemson University.

how to interact with employers, resume writing, how to interact at an event, and all sorts of professional development opportunities,” Bertrand said. “So, leadership is an important part of that too.”

But as a land-grant university, Clemson’s mission goes beyond teaching to also include research and outreach. The Department of FEC also provides research-based natural resource information and program development support for Clemson’s Extension agents who deliver educational programs to landowners and other clientele.

“We provide not only training and professionals who will work with private landowners, but also information to help them with their objectives of managing their forestland, whether it be for revenue for timber or for wildlife or aesthetics — whatever the objectives are, that’s what we’re all about,” Yarrow said. “One thing that makes Clemson unique is our programs, especially our Extension and outreach programs, are focused on private landowners. Because, if you look at the land base across the state, 75 percent of our land base is privately owned. So, if you’re going to make an impact on natural resources, it’s obvious that those you’re going to work with are private landowners — and that’s where we hang our hat.”

Clemson Extension seeks to improve the quality of life of South Carolina residents by providing unbiased, research-based information through an array of public outreach programs. With offices in all of the state’s 46 counties, Extension works

to support South Carolina's \$42 billion agriculture and forestry industries, among other goals.

"We work closely with our Extension faculty and staff and other partners to be able to deliver science-based, research-based, unbiased information to landowners so they can make informed decisions about how they use and manage their property," Yarrow said. "That was the reason land grants were established: to bring that information from the university out to the people."

Another aspect of Clemson's Department of FEC is its partnerships with state and federal agencies and private conservation organizations that allow students access to properties traditionally not accessible to the public and to work with professionals at organizations such as the South Carolina Cooperative Fish and Wildlife Research Unit, U.S. Forest Service Restoring and Managing Longleaf Pine Ecosystems Unit, U.S. Forest Service Center for Forest Disturbance Science

Unit, U.S. Forest Service Upland Hardwood Ecology and Management Unit, National Council for Air and Stream Improvement, Inc., Wood Utilization + Design Institute, and Kennedy Waterfowl and Wetland Conservation Center.

"We're about two things: the development of students and students being successful, and about producing information that can help in whatever area — in our case, help in terms of wise use and management of natural resources," Yarrow said. "For me, it's all about our students, and it's about providing a learning environment that's conducive to them getting the best experience and information possible from faculty who are outstanding. We have a lot of young, bright faculty, so they're getting some of the best education and then giving them opportunities to experience working and combining that with employment. For me, it's all about the students."

LONGLEAF, SOOT, AND STUDYING: STUDENT EMPLOYEE EXPERIENCES ON THE AUSTIN CARY FOREST

by Carrie Kimbrough, Stephanie Moore, and Kenneth Bright, University of Florida

The University of Florida manages the approximately 2,600-acre Austin Cary Forest as an "experimental forest" – providing

roughly 1,000 of which is over 80 years old. Portions of the Forest have been burned every year since 1978, and different areas demonstrate the effects of variations in fire frequency and seasonality. Every year the Forest sees hundreds of students come through to learn basic ecological principles, conduct prescribed burns, oversee replanting and monitor regeneration, inventory and mark timber, and manage visitors, and a few of us students are hired to help manage the property, and as an opportunity to learn.

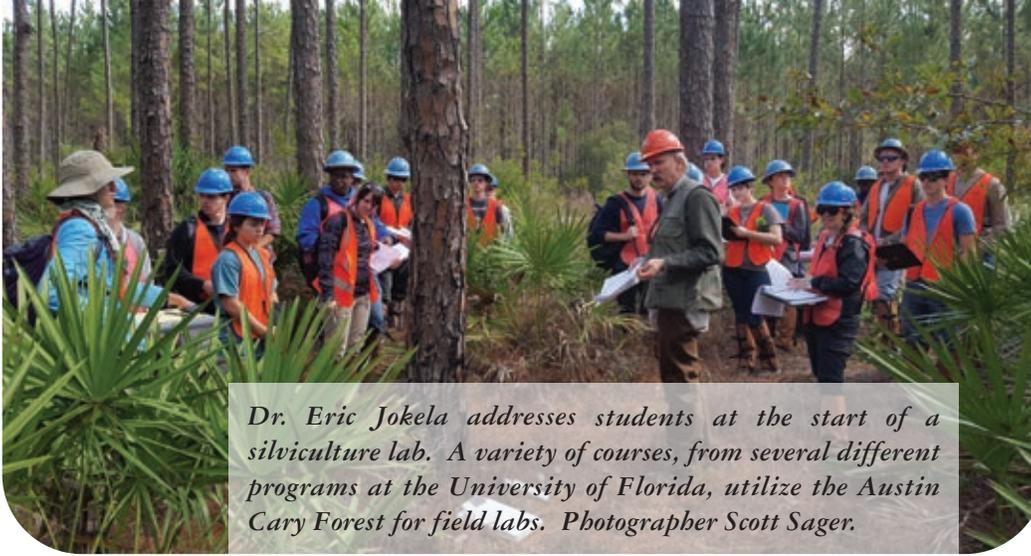
The lessons that we learn on the Forest vary widely – from easy to difficult, and from fun experiences to embarrassing mistakes. Each of us comes from different backgrounds, and learns not only from the Forest Manager, Gary Johns, but also from each other. For Carrie Kimbrough the most important lesson was to listen. "It's easy to think you know what's best from what you've learned in class, but sometimes things work differently in 'real life.'" Her most memorable experience was climbing the 120-foot atmospheric-flux tower on the Forest. Looking out over a canopy of longleaf, interspersed with slash pine and isolated cypress domes, the view "helped put everything in perspective, and made me appreciate working on the Forest so much more."

Some student-employees start their time at ACF having

Student Nicole Barbieri strips fire at ACF, while other students look on. This area is composed of naturally-regenerated longleaf pine, and is burned annually during the growing season as part of the introductory course for new students. Photographer Scott Sager.



opportunities for teaching, research, and landowner outreach through the School of Forest Resources & Conservation. The Forest includes nearly 1,400 acres dominated by longleaf pine,



Dr. Eric Jokela addresses students at the start of a silviculture lab. A variety of courses, from several different programs at the University of Florida, utilize the Austin Cary Forest for field labs. Photographer Scott Sager.

programs and the Florida Forest Service, internships with St. Johns River Water Management District, and events hosted by the Society of American Foresters and Association of Consulting Foresters, we have learned to follow our passions and advance our future careers.

As students, we will be leaving behind a legacy. We hear of those who have come before us and how they have shaped the Forest. This process will continue long after we

never driven a tractor or other heavy equipment. Stephanie Moore recalls being overwhelmed: “There was so much to learn, and I had never operated anything more than a push lawnmower.” Having said that, Stephanie is proud of how much she knows now. “It’s not embarrassing when you can’t do something upon first exposure – the only thing embarrassing is not trying again.”

Beyond building technical foundation, ACF allows us to meet and build connections with professionals both at the Forest and at conferences and meetings. These foundations have allowed many of us to explore our interests and to discover what we want in our careers. Through interactions with outreach

are gone as ACF continues to change and grow. We are furthering the ACF legacy through more than management – we are becoming high quality professionals through our experiences here. We are here to learn and grow, leave our mark, and make way for new students to learn and grow as well. Decades from now the Forest will be different, but also the same... some stands will be harvested, some trees will get bigger, but the mission to further research, forest health, education, and conservation will remain. In coming years, we only see the ACF legacy growing and evolving to both meet the needs of the future and continue to instill a sense of dignity in students.



Established at the former E.A. Hauss nursery site on a long term lease with the Alabama Forestry Commission. The nursery began sowing in March 2017 with seedlings shipped out for the 2017/2018 planting season.

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Passing the Torch to the Next Generation of Natural Resource Professionals

By Bill Palmer, Tall Timbers President/CEO

Former Tall Timbers Fire Ecology Intern Rebekah Wagner helped on a prescribed fire. Photo by Greg Seamon.

A student from University of Georgia recently thanked me for taking his wildlife and habitat class on a tour of Tall Timbers. We toured the “fire plots” and other areas to highlight the effect of fire frequency on plant and wildlife communities. He wrote, “There is only so much one can learn in the classroom before realizing the best way to learn about proper stewardship of our natural resources is to see it in the field.” I believe Herbert Stoddard would have agreed. As with this student, he and other future decision makers likely grew up without having seen a prescribed fire. In his letter, he lamented that growing up in Jacksonville, seeing the ubiquitous scrubby thick woods was what he once thought Florida’s ecology was about. An important and far-reaching effect of operating a fire ecology research station, be it Tall Timbers, the Joseph W. Jones Ecological Research Center, or Archbold Biological Research Station, is passing the torch—the fire culture—to the next generation of natural resource professionals. The Longleaf Alliance, National Wild Turkey Federation, and Quail Forever carry this torch as well. This is an often overlooked, but powerfully-important benefit we provide to future generations and ensures proper fire use and natural resource management.

At Tall Timbers, we have given 100s of interns, research technicians, and graduate students their first experience with prescribed fire, longleaf pine savannas, and their associated species. Our research and management staff benefit from having hardworking, dedicated, and creative people spending 16 weeks to several years in the field collecting data. On the flip side, their experiences provide them with a new perspective on, and dedication to, the long-term application of frequent fire and its impact on our natural resources. Everyone that has managed land with frequent fire, or restored frequent fire to a fire neglected landscape, and watched the transformation over time, knows what perspective I am referring to.

It is with great pride that our interns and technicians go on to graduate school, our graduate students go on to become professors at universities, land managers of large public and private lands, policy makers, and heads of agencies. They carry-on the message of how important prescribed fire is to longleaf and many other ecosystems. Seeing the results drives them to push harder for better policy and practice. They believe in it because they have observed and experienced the fruits of good stewardship of natural resources. We recently pulled together

data from a 10-year period to look at “where they are now.” For undergraduates that worked as an intern or technician, 75% attended a graduate program and 21% work for a NGO or natural resource agency! Many of these professionals end up in key positions that ultimately influence the discussion about fire and wildlife management in a positive and proactive manner.

Here are a few examples of natural resource professionals who worked at Tall Timbers and whose impact ranges from research to policy to management:

- Josh Picotte was a technician in our Fire Ecology program for a Joint Fire Science Program project, mapping burn severity in Florida and Georgia. From there he got a job at the USGS Earth Resources Observation and Science (EROS) Center (Sioux Falls, SD), where he is one of the lead people developing techniques for using LANDSAT to map fires nationwide; he has become the go-to person for the latest and greatest fire mapping techniques throughout the country.

- Vince Carver worked as a graduate student through Mississippi State University, studying season of fire effects on wildlife. After completing his degree, he worked as Tall Timbers’ Natural Resource Manager for a stint before joining the U.S. Fish and Wildlife Service; he is now carrying on the fire culture as the Chief of the Division of Fire Management.

- James Martin conducted effects of fire scale on bobwhites in Central Florida. After completing his Ph.D., and a stint at Mississippi State University, he ended up back at the University of Georgia, a position vacated by his major professor; he continues research and teaching about prescribed fire! One of his graduate students working through Tall Timbers has now completed his Ph.D., and is also at the University of Georgia as a Wildlife Outreach Specialist.

- Tina Hannon was a technician at Tall Timbers, then a graduate student through University of Georgia. She worked on effects of fire scale on cotton rats, and is now the biologist at Three Lakes Wildlife Management Area (WMA), where she leads an award-winning prescribed burn program. In 2015, she led a team that burned over 26,000 acres on Three Lakes WMA, a record year for which she received state-wide recognition.

- Clark Jones cut his teeth working with the nuthatches on Tall Timbers back in 2003, and then returned in 2005 to head up a project focused on Bachman’s Sparrows. Seven research publications emerged from this work for his Ph.D. studying Bachman’s Sparrows. He now works for the U.S. Fish and Wildlife Service in Pueblo, Colorado where he continues to focus on wildlife and habitat. In a publication on fire, Clark stated, “The internship program at Tall Timbers provided

hands-on experience with avian monitoring and habitat management and guided my desire to pursue a career in natural resources.”

These few examples, and all the other dedicated individuals that conducted research at Tall Timbers, would have succeeded regardless of their career path, but their time at Tall Timbers left them with an indelible impression of the importance of prescribed fire and the critical need for its frequent application. We are thankful for their efforts while at Tall Timbers, but more thankful for their efforts carrying the torch forward and dropping “spot fires” of their own in their respective careers. All the interns, technicians and graduate students that have worked at Tall Timbers, and the other fine fire ecology research stations in the Southeast, have had a positive impact and are helping to lead the nation to better fire and wildlife management programs. Investment in budding young professionals costs time and money, yet the return on investment is well worth this cost. It is not only our responsibility to pass the torch through education and mentorship, but a necessity to ensure future generations enjoy natural resources as we do today.

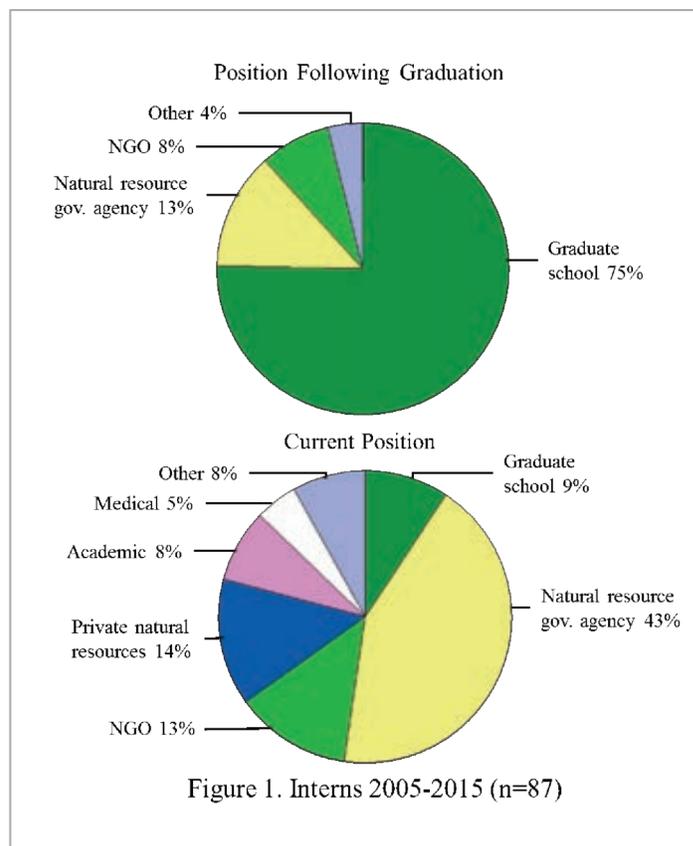


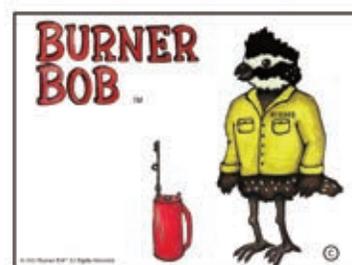
Figure 1. Interns 2005-2015 (n=87)

Graph by Theron M. Terbune.

WHILE YOU'RE IN THE GRASS STAGE

By Anne Rilling, *The Longleaf Alliance*

Once upon a time, before he became a burner, there was a little quail named Bob. Bob had eleven brothers and sisters, and they lived in an unmanaged forest. Bob and his family tried to make this forest their home, but there were not many grasses or plants for good shelter because the trees and underbrush shaded the forest floor. Food was scarce for this family of quail, so one day Bob's mom and dad decided they needed to move to find a better home. After a short journey, just over a fence, they discovered a forest with many clumps of bunch grass homes and plenty of insects and small plant seeds for food. Bob and his family had found the IDEAL forest.



Burner Bob The Early Life

LITERARY REVIEW

By Karen Brown, *The Longleaf Alliance*

Florida: A Fire Survey By Stephen J. Pyne University of Arizona Press

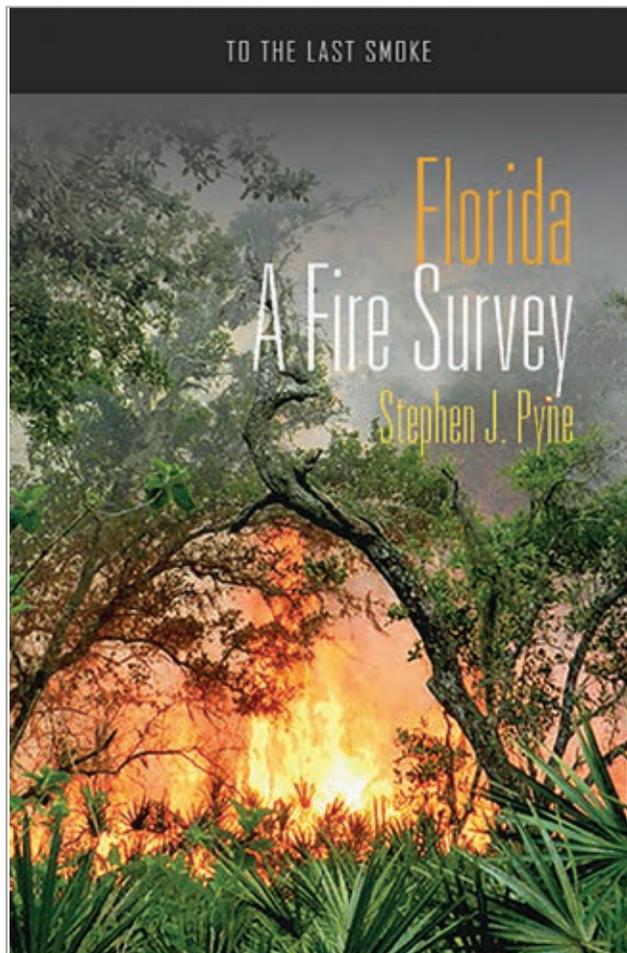
Florida: A Fire Survey is the first volume in an anthology that, once completed, will tell the tales of the major fire regions of contemporary America. In the series titled *To the Last Smoke*, Florida and California are the two individual states that receive their own treatment as “hearths” of American fire culture.

It’s rare to see such a text dedicated to fire in the southeast, fire in longleaf country, or fire in Florida, by none other than the closest thing that wildland fire has to a laureate in Stephen Pyne. If you’re familiar with Pyne’s other work, you know the skill with which he weaves the intellectual with the familiar, classical forestry references with popular culture and vernacular language, so that a reader becomes engrossed in the text almost effortlessly. Pyne’s subject matter is usually found in the West, derived from episodes in our national fire policy evolution and pivotal fire seasons on the vast federal forests and rangelands. Pyne’s landmark text *Fire in America*, published in 1996, still is (and ought to be) a starting point for understanding the complicated past we have with fire and undeveloped lands.

The brevity of this text (154 pages) should not belie the density of Pyne’s writing, each sentence filled with metaphor and context that evokes the historical, cultural, and the ecological. In a series of short, but potent, chapters, the *Survey* takes the reader through the geographic regions of the state, coarsely

sectioned into “Greater Tallahassee” and the “Panhandle and Peninsula.” Each chapter within those regions boils down the pretext for the formation of some of the most well-regarded fire institutions. For many, the legacy of Tall Timbers may be a familiar tale. Even so, one is sure to discover some new angle to the origin story of the legendary fire ecology lab. The institutional knowledge of the Florida Forest Service is reported with the appropriate detail and respect. Eglin Air Force Base, Jones Ecological Research Center (which is in Georgia but had roots in Florida), St. Marks National Wildlife Refuge, Florida Park Service, The Nature Conservancy, all receive their due. If one is familiar with the landscapes it features, then the *Survey* will take your imagination back to that place with ease.

In some respects, the understanding that we have of prescribed fire, as imperative to the longleaf ecosystem, would not be where it is today if not for the persistence, and in some cases defiance, of these significant fire institutions in Florida. This account sheds light on where we’ve come from, collectively as stewards of the land. For any student of fire, *Florida: A Fire Survey* is rightly deserving a place in your collection, the pages ripe for dog-ears, the passages awaiting your discovery.



LONGLEAF ART SPOTLIGHT



A longleaf sandhill restoration burn at Griffin Ridge Wildlife Management Area on the Altamaha River, Georgia, 2015.

About the Artist: Randy Tate

As a trained prescribed fire practitioner, mostly conducting ecological management and maintenance burning – and mostly in longleaf pine ecosystems – Randy Tate gets to see unique beauty that the average person does not. Many of his photographs show the power and intensity of fire, but with the hope that others also see the beauty of color, dynamism, and transformation. The reality of fire is that, if used wisely, it rejuvenates and restores many natural systems, forests, and prairies. Longleaf pine woods and forests need fire to remain healthy, and the wildlife of longleaf pine habitat is adapted to fire and will benefit from having healthy habitat. The longleaf pine forests are “fire forests” and need regular fire to persist and be healthy.

Randy works for The Longleaf Alliance as Coordinator for the Ft. Stewart/Altamaha Partnership, a Local Implementation Team under America's Longleaf Restoration Initiative. He lives and works in Savannah, Georgia. He formerly worked for Georgia DNR as Natural Resource Program Manager for Georgia State Parks and Historic Sites. There, he administrated a statewide program for natural resource management. Before Georgia DNR, Randy worked for TNC for 20 years in four different positions, the last 10 years as Director of Science and Stewardship for TNC Georgia. He has a Master's degree in Biology (U Mass/Boston). He has had a career in prescribed burning and is a RxB2 Burn Boss.



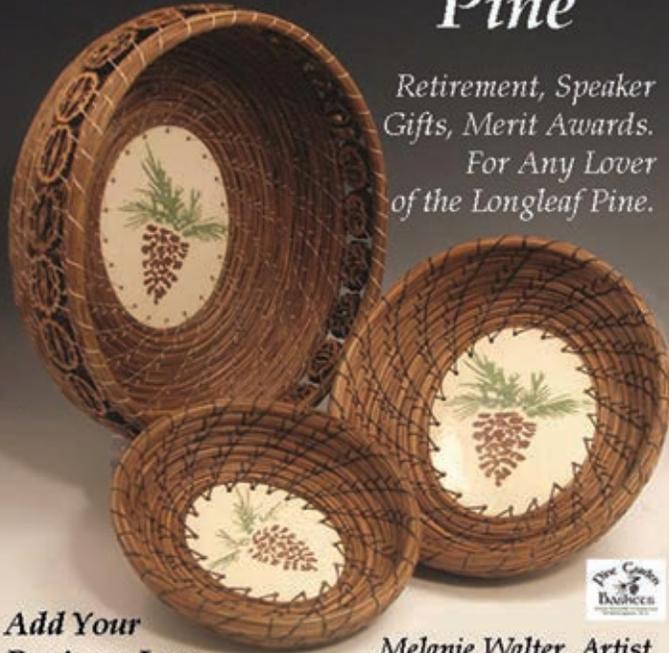
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Gifting the Longleaf Pine

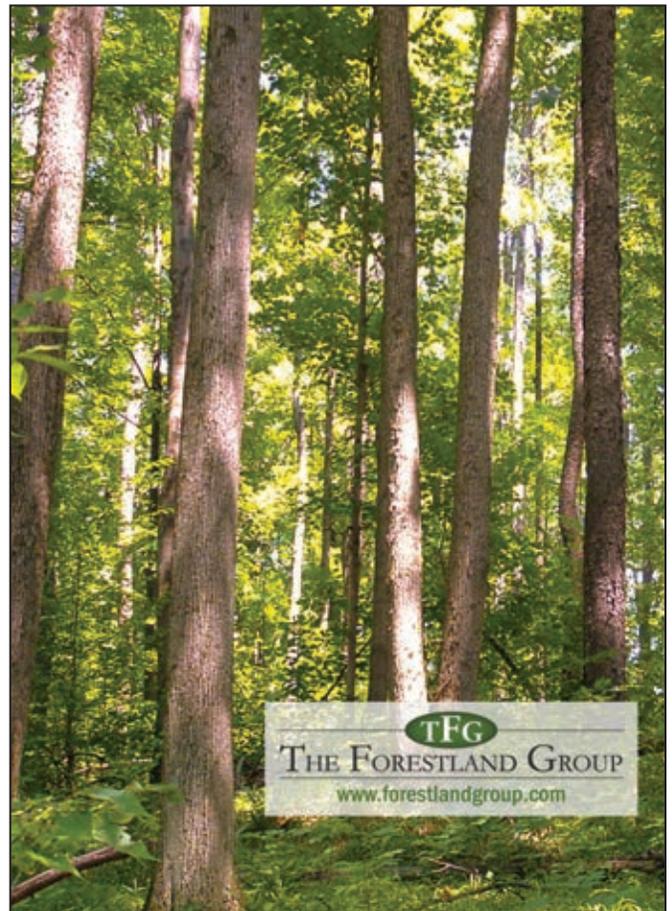


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Longleaf Destinations

SECRETS of the SANDHILLS

Follow along as longtime biologist
Brady Beck leads a special tour of
Sandhills Game Land

WRITTEN & PHOTOGRAPHED BY BRADY BECK

This reprinted article was originally published in the Fall 2017 Wildlife in North Carolina Magazine.

ARRIVED AT SANDHILLS GAME LAND 24 YEARS AGO, FRESH OUT OF N.C. STATE UNIVERSITY, AS A SEASONAL BURN TECHNICIAN. I NEVER LEFT.

Perhaps no one is more surprised than me by my long-term relationship with the 65,000-acre game land in south central North Carolina. I can often be found at Sandhills seven days a week—either for work or personal recreation—and have come to appreciate everything this unique mix of habitats has to offer.

My first impression of Sandhills, however, was not love at first sight. Instead, what I saw when I arrived here in the winter of 1993 were merely pine trees and yellow grass, leaving myself to wonder: “How can you get interested in that? There’s nothing here. It’s a biological desert.” I couldn’t have been more wrong. Now, you can’t get me out of the woods.

Sandhills Game Land is part of one of the most diverse ecosystems in the state. Sandhills longleaf pine forests are home to more than 900 species of plants, rivaling rainforests in diversity, and the hundreds of types of insects and invertebrates include several that are unique to the region. These facts may not be apparent to the untrained eye—they weren’t to mine, at first. The key to appreciating Sandhills is knowing where to look and what to look for. Here’s a hint: keep your eyes focused down. Much of the diversity at Sandhills is found below the waist, in the fire-dependent, early-successional habitat that I originally



Opposite: The winter sun rises over wire-grass in a stand of longleaf pine trees at Sandhills Game Land. Clockwise: Piedmont EcoRegion Supervisor Chris Dawes mans a drip torch during a prescribed burn. A dead longleaf pine tree burns into the ground as part of this natural ecosystem process. A prescribed burn on the Sandhills Game Land as seen from the air; locals should expect to see smoke during these seasonal burns.

thumbed my nose at 24 years ago. There is so much to see that even someone who spends as much time at Sandhills as I do is still learning and coming across new things.

This guide to things you may not know about Sandhills will provide a brief tour of what makes this gem of our game land program unique, and why it is so important.

Fire!

It may sound strange, but fire is the key ingredient to wildlife diversity at Sandhills. When it comes to much of the habitat at Sandhills, the use of fire through controlled burns is at once destructive and restorative. Without fire, the whole system falls apart.

In 2016, our forestry program burned 17,000 acres and replanted 210 acres of longleaf pine trees. On average, the program burns 20,000 acres each year as

part of a “thin and burn” forest management goal: thin the canopy and put fire back in the system. Thinning the canopy allows sunlight to reach the forest floor and brings to life a variety of species that would otherwise have been left in the dark.

An example of the dependent relationship many plants and animals have with fire can be seen in the longleaf pine habitat that has thrived at Sandhills since we began a regular prescribed burning program here over two decades ago. Sandhills is home to one of the largest high-quality stands of longleaf pines in the Southeast—without prescribed burning the forest would otherwise be overtaken by faster growing hardwood trees.

Fire to the longleaf is like rain to the rain forest. The abundance of longleaf pines at

Sandhills provides habitat for over 170 family groups of red-cockaded woodpeckers. These federally endangered birds create nesting cavities in live longleaf pine trees. They feed on the diverse population of insects—including ants, spiders and wood roaches—found under the bark of live longleaf pines. These tree-living insects also rely on a healthy groundcover layer enhanced by regular burning.

Prescribed fire is the most ecologically and economically appropriate management tool for maintaining and improving wildlife habitat in most southern forests, including Sandhills Game Land. It is our most important tool in the toolbox. It manages the pine needle and oak leaf fuels on the ground and controls hardwood competition for light and water resources. And the groundcover response is amazing. The day of the burn, right after a fire goes through, the landscape becomes kind of black and ugly. However, this residual ash is an important natural source of nutrients for plant recovery in a system that provides harsh growing conditions. Less than three weeks later, the invigorated groundcover has completely responded and come back to life.

In fact, many plant species will not flower or set seed without periodic fire. They will only fruit after a fire and can sit dormant for years and years until they are burned. Then they will flower, go to seed and germinate in the mineral soil exposed by the recent burn. These plants, as well as the fire-dependent creatures, come in all shapes and sizes and help make Sandhills Game Land unique.

Frogs, Lilies and Sparrows (Oh My!)

Sandhills Game Land is home to numerous rare reptiles and amphibians that require a large, contiguous acreage of healthy longleaf pine forest. One of these unique critters is the Carolina gopher frog, including one frog in particular that we tracked at Sandhills and nicknamed the marathon frog. He earned the name by traveling 2.4 miles from his stump hole home to his breeding pond—a marathon of sorts for such a small critter.

Carolina gopher frogs are about the size of a small bullfrog and require seasonal wetlands that periodically dry up (typically in the hot summer months) so that they remain free of fish that prey on their tadpoles. The grassy habitat that is exposed when the ponds dry up is maintained by frequent fires. We tracked our marathon frog for two seasons from one of these breeding ponds to his stump hole by fitting him with a radio transmitter mounted as a belt around his waist. Technicians followed him daily to record his travels. During the first winter, after fall and winter rains filled his breeding pond, we followed this frog for 2.4 miles after he bred in the pond back to his stump hole. The following winter, he returned to the pond for breeding season. We then followed him again for 2.4 miles back to the very same stump hole.

This impressive migration by Carolina gopher frogs showcases the need for large tracts of well-managed longleaf pine habitat surrounding these increasingly rare wetlands. If we're trying to manage habitat for these frogs, we can't just manage the wetland. We're talking about providing a 2.4-mile buffer (or more) around the wetland of high-quality longleaf pine habitat for these frogs to make the annual round trip from stump hole to pond and back to stump hole.

So, you may wonder, how is it possible that Sandhills' fire-dependent longleaf pine system can provide ideal habitat for creatures as different as the red-cockaded woodpecker and the Carolina gopher frog? It's because they have similar needs. The longleaf system provides not only the clay-based ponds that gopher frogs need to breed in, but also the high-quality natural groundcover that provides both hiding places as well as habitat for their food source: insects. The insect habitat is well maintained through the use of fire. Gopher frogs need the breeding ponds for only five to six months of the year; the rest of the time the groundcover layer provides habitat for the frogs' food—from mole crickets to katydids.

Over 900 species of woody and herbaceous plants are known to occur in Sandhills habitats. One of the most impressive is the Sandhills fire lily (*Lilium pyrophilum*). This lily, like many other fire-adapted plants, stores nutrients in an underground rhizome, allowing it to respond quickly to a periodic fire. These frequent fires help to keep woody shrubs in check that, if left unburned, would outcompete the lilies for space and eventually cause them to disappear. This lily, which was believed to be part of a Gulf Coast breed of lilies before being identified as its own species in the early 2000s, is an indicator of habitat health for wetlands. Just like the red-cockaded woodpecker is an indicator for good longleaf pine health, the presence of Sandhills fire lilies is a good sign for the health of a wetland system that is surprisingly fire dependent.

The same groundcover that Carolina gopher frogs and Sandhills fire lilies need for survival is also critical to the health of a rare bird called the Bachman's sparrow. And like the others, the Bachman's sparrow





Opposite clockwise: A banded red-cockaded woodpecker prepares to eat a wood roach. Like red-cockaded woodpeckers, the Carolina gopher frog, Bachman's sparrow and luna moth are also dependent upon fire for favorable habitat. Pitcher plant bogs are becoming increasingly rare, and they too, are dependent upon fire.





Fall colors in the Sandhills may not be as vibrant as those of the mountains, but they have a beauty all their own.



The John F. Lentz Hunter Education Complex is located at Sandhills Game Land and features rifle, pistol, archery and shotgun ranges.

requires frequent fire to maintain its preferred habitat. It is a longleaf pine specialist, but if its habitat has not burned in the past three years, the bird will not be present in that portion of the forest. Without frequent fire, their preferred grassy habitat will begin to be dominated by woody stems that shade out the forest floor, and the birds will simply go elsewhere to look for recently burned habitat.

So, it is not a coincidence that Sandhills Game Land has one of the largest populations of Bachman's sparrow in the state. They were far more abundant at the turn of the 20th century, when there was 90 million acres of longleaf pine forest in the Southeast. Now, the Federal Species of Concern relies on areas like Sandhills Game Land for high quality longleaf pine habitat. These birds are more like mice in many ways; they crawl around in the groundcover, searching for food and utilizing grass and branches for protection from predators. If you see them flying, it's to go up on a branch to sing to announce their territory.

Great for Humans, Too

Wildlife are not the only ones that benefit from Sandhills Game Land. It is also managed for a variety of activities geared toward us humans, including hunting, fishing, hiking, and horse and dog field trials.

Hunting season typically begins with dove season in September, followed by deer seasons into December. Squirrel and quail seasons run into February. And finally, a turkey permit hunt ending in early May wraps up hunting season.

Over 300 acres of food plots are planted each year, including corn, chufa, millets, peas and wheat to benefit species such as deer, turkey, quail, songbirds and fox squirrels. A well-managed longleaf pine forest can provide adequate resources for most wildlife to survive, however food plots can provide hunters with increased opportunities to harvest game in a normally nutrient poor system.

The John Lentz Hunter Education Complex is located on the western edge of the Sandhills Game Land and provides rifle, pistol, shotgun and archery opportunities to the general public. The range is open Tuesday through Saturday, 10 a.m. to 5:30 p.m. (Memorial Day to Labor Day) and 9 a.m. to 4:30 p.m. (Labor Day to Memorial Day). The complex is closed Sunday, Monday and on state holidays.

The shooting range was renovated in 2014 and now features a 100-yard rifle range with six shooting lanes and a 25-yard pistol range that can be set up for either three or six shooting lanes. It also offers skeet and trap ranges, as well as a 5-stand sporting clays range, a standard archery range and a 3-D archery range. It is the site of the annual Youth Hunter Education Skills Tournament, the state championship for pre-collegiate shooting sports. This past year, 61 middle and high school teams participated in rifle, shotgun and archery

marksmanship, compass orienteering and a hunter responsibility exam.

Sandhills Game Land also contains the J. Robert Gordon Field Trial Area. This nationally acclaimed facility of about 9,000 acres provides early successional

habitat managed for quail to host bird-dog field trials. Retriever trials are also becoming more popular. The grounds include a club-house, stables, kennel facilities and an RV camping area. Special hunting regulations apply on the field trial area, so be sure to check the Regulations Digest for more information. Versatile hunting dog hunt tests are conducted on other parts of Sandhills.

When Sandhills Game Land was acquired from the Department of the Army after World War II, the military retained training rights. Today, a number of different branches use Sandhills for navigation and other training due to the remoteness of the landscape. No live ammunition is used in their training, but you may hear the sounds of automatic gunfire using blank rounds. Some outdoors men have reported seeing helicopters overhead and troops in formation, but more often than not you will never even know they were there.

You may not find the biggest deer in the state, or grand vistas of the mountains or the coast, but if you look closely, Sandhills Game Land will become a favorite of yours as well.

Q&A with the Next Generation of Longleaf Leaders



Brannon Knight - The Orianne Society



Joe Lemeris - South Carolina State Park Service



Kacie Bauman - National Wild Turkey Federation



Karen Brown - The Longleaf Alliance



Ryan Mitchell - The Longleaf Alliance



Sarah Crate - North Carolina Forest Service



Stephanie Hertz - Texas A&M Natural Resources Institute



Will DeGravelle - The Nature Conservancy

Brannon Knight - The Orianne Society

What is your background, and where do you work? I went to Telfair County High School in McCrae, Georgia – just down the road from my preserve. I went to Abraham Baldwin Agricultural College in Tifton and got a Bachelors of Natural Resource Management with a focus on Wildlife. I work for the Orianne Society as Director of Land Management.

How did you get started in longleaf? Mainly it began with fire. I was dragging a torch at 12 or 13 years old. Fire is such an important part of longleaf; they go hand in hand.

What inspires you about longleaf ecosystems? For me everything happens at a ground level. So much inspires me from a cultural standpoint to an ecological value. The main satisfaction is putting down fire during the right time of year and seeing the fruits of your labor in the fall. Really, just everything.

Where do you see opportunities for young folks to work in longleaf? Fire is huge. The next generation is important. Most of the people into fire are older and closer to retirement; the next generation must be serious about fire.

What is the biggest challenge you see with longleaf restoration, and what can your generation bring to the table to solve it? That's easy; understory restoration that's associated with longleaf restoration. That's the pillar in longleaf restoration that's not understood well and can be overlooked.

What one change, if made, could increase interest and engagement with longleaf restoration in young conservation leaders? Right now, I think more job opportunities, more permanent jobs. We hire seasonals but can't always keep them around.

Where is your favorite longleaf site, and why? Reese Thompson's place [in Wheeler County, Georgia] because it's special and it's the woods I first walked in and saw about the most intact site. It was my first experience in seeing what the woods were meant to look like.

Joe Lemeris - South Carolina State Park Service

What is your background, and where do you work? I grew up in Enfield, Connecticut, a suburb of Hartford. I received my Bachelors in Ecology and Conservation Biology from Boston University in Massachusetts, and my Master of Environmental Management from Duke University in North Carolina. I am currently the Senior Biologist for the South Carolina State Park Service. I work statewide on resource management projects across our 47 state parks and historic sites.

How did you get started in longleaf? Coming from New England, I didn't have much experience with longleaf pine ecosystems until moving to North Carolina for graduate school, where I learned about fire ecology, the benefits of fire on habitats across the southeast, and the integral role of fire within longleaf ecosystems. Since then, most of what I've learned has been through direct experience working to restore longleaf within South Carolina State Parks, as well as seeking advice from other partners who work in the longleaf landscape. Taking several of LLA's Academy courses also gave me a huge amount of fantastic information to guide our restoration efforts!

What inspires you about longleaf ecosystems? It always amazes me just how diverse longleaf ecosystems can be, even when at first glance it might just look like pines and grasses. Once you start looking closer, it becomes clear just how many plant and animal species cohabitate, and it all revolves around fire.

Where do you see opportunities for young folks to work in longleaf? I can see a large need for more educational/advocacy programs surrounding longleaf pine ecosystems directed towards private lands, as well as the continued need to increase the number of qualified/certified people for burn crews within longleaf ecosystems. And of course, new relevant research is always needed to guide land management within the longleaf range.

What is the biggest challenge you see with longleaf restoration, and what can your generation bring to the table to solve it? One of the biggest challenges to longleaf restoration (and burning in general across the range), is the massive increase in urban and suburbanization as more and more people move to southeastern states, making it harder to burn without running into smoke or wildland-urban interface issues. To get the most amount of public support, restoration needs to not only be about bringing back threatened species and ecosystems, but equally about how restoring longleaf can reduce hazardous fuels to protect people's homes from catastrophic wildfire.

What one change, if made, could increase interest and engagement with longleaf restoration in young conservation leaders? I think in general, there aren't enough easily-accessible examples of intact or 'restored' longleaf stands where future conservation leaders can be inspired to conserve the ecosystem. If it were possible to increase the number of demonstration sites closer to where people live, there might be more young conservationists gaining understanding for the importance of longleaf ecosystems.

Where is your favorite longleaf site, and why? One site that's near and dear to me has to be our longleaf pine forests at Cheraw State Park in Chesterfield County. South Carolina State Parks has been working to restore longleaf at Cheraw for almost 10 years, and though we've still got plenty of work to do, the results so far have improved the forest dramatically. Just ask the red-cockaded woodpecker population – they've over tripled in number of active clusters since we started restoration work, from 4 to 14!

Kacie Bauman - National Wild Turkey Federation

What is your background, and where do you work? I grew up on a small cattle farm in southeast Missouri. Early in the mornings or late into the afternoons I helped with the cattle and various other animals on the farm. It developed in me a passion for caring for domestic animals and conservation of wildlife. Later on, I

completed my B.S. in Biomedical Sciences from Maryville University in Saint Louis in 2010 and then pursued a M.S. in Wildlife Biology & Mgmt. at Southeast Missouri State University. My Masters work focused on the “Efficacy of Feral Swine Removal Techniques” in Southeast Missouri, specifically on the Mingo National Wildlife Refuge near Puxico. Upon graduation, I accepted a position with the National Wild Turkey Federation as a Wildlife Biologist in southeast Mississippi.

How did you get started in longleaf? My position within the National Wild Turkey Federation is part of a multi-state agreement with the Natural Resources Conservation Service (NRCS). I work with NRCS and private landowners to help landowners receive financial assistance for habitat management (specifically longleaf pine) on their properties. I work to promote the restoration and management of the longleaf pine ecosystem through government programs like the Longleaf Pine Initiative and Working Lands for Wildlife federal programs, as well as some state and public and private sector programs.

What inspires you about longleaf ecosystems? What excites me about longleaf is, in a well-managed stand, the ecosystem can support many different species of plants and animals. It is second in diversity only to the rain forest, and we have them right here in the southern United States!

Where do you see opportunities for young folks to work in longleaf? Longleaf is making a comeback. With federal programs like the Longleaf Pine Initiative and Working Lands for Wildlife as well as many state, public, and private sector programs, longleaf pine is being restored to areas where they were once abundant across multiple landscapes. Young folks have the opportunity to carry on the great work being done already and be a part of restoring and managing longleaf ecosystems through various habitat practices like prescribed fire. Federal, state, public, private, and non-profit

organizations involved in conservation are great places to start.

What is the biggest challenge you see with longleaf restoration, and what can your generation bring to the table to solve it? Longleaf is known as “the pine that fire built.” Longleaf without fire management or any other alternative management to promote the early successional habitat will become grown up and what wildlife biologists consider a “dead zone.” With the right management plan and assistance, landowners can learn how easy it is to maintain and manage a productive longleaf ecosystem on their property. Getting the word out about cost-share assistance and free technical advice from trained professionals can help promote the managed longleaf ecosystem. Young professionals can spread the word about the benefits of prescribed fire and promote active management on the landscape. Promoting longleaf as a strong and economically viable tree can also be a benefit in the eyes of the landowner to help them understand the importance of management, especially for their future generations.

What one change, if made, could increase interest and engagement with longleaf restoration in young conservation leaders? The need for conservation is ever-growing. Conservation maintains healthy water, soil, air, flora, fauna, and habitats. Therefore, conservation should be vitally important for everyone. Through sound science, partnerships and policy, young conservation leaders can make informed decisions for protecting nature so that future generations can enjoy it just as we do. Helping federally listed or endangered species could be at the forefront of conversations, because wildlife and wild places spark an interest in us all. Well-managed longleaf ecosystems can support a variety of species that engage younger generations. Engaging the young conservation leaders through the wildlife they love, can light a spark and a sense of duty to conserve it for fellow peers and future generations to come.

Where is your favorite longleaf site, and why? My favorite longleaf stand is not the ideal, well-managed mature longleaf stand that most would think of. It is not any stand in particular, really. It is the recently-planted and unmanaged stand. The one that is over-grown and ugly. The one that with a little habitat restoration and time, could become that “ideal, well-managed” longleaf stand.

Karen Brown - The Longleaf Alliance

What is your background, and where do you work? I moved around a little bit as a kid, growing up in Tulsa, then Cleveland, and then moved to Amherst, Massachusetts. I stayed in Amherst to attend the University of Massachusetts where I got my Bachelors in Wildlife Conservation. I traveled and worked in fire management and conservation for a number of years before getting a Masters in Ecological Restoration from the University of Florida’s School of Forest Resources and Conservation. And I have worked with the Longleaf Alliance since 2012 as the Technical Assistance and Training Specialist.

How did you get started in longleaf? I had been working in California for several years after college, and decided I wanted to move back to the east coast. I called up an old friend to keep an eye out for any jobs in my field. Coincidentally, he was putting together a prescribed fire team for South Carolina that winter. I came on board and was introduced to mature longleaf-turkey oak stands, RCWs, burning in pocosin fuels and southern rough. And I’ve worked in this ecosystem ever since.

What inspires you about longleaf ecosystems? With longleaf ecosystems, the more you learn about them the more there is to admire. The diversity of species is remarkable, but also the adaptations to fire in all of the plants and animals that comprise the ecosystem. It’s fascinating to come back to a place after it has been burned and to see the revitalization after fire, both immediate and long-term.

Where do you see opportunities for young folks to work in longleaf? I think that with longleaf, with conservation in general, you have to start at the bottom in order to build your knowledge and experience with the resource. Seek out internships, seasonal work, and learn all you can in those jobs. Longleaf is also somewhat of a small world, so making personal connections through your work will often pay off towards your next opportunity.

What is the biggest challenge you see with longleaf restoration, and what can your generation bring to the table to solve it? This generation of professionals, and the next one, will deal with more uncertainty and more change than ever before. Not only will the resource management aspects of longleaf restoration be challenging under future climate instability, but the practical aspects of land protection in a growing and sprawling population will also need our attention. As people in this cohort of longleaf professionals move up and eventually become the leaders of organizations with influence over policy and land management decisions, it will become more and more important to remain adaptive, creative, and responsive.

What one change, if made, could increase interest and engagement with longleaf restoration in young conservation leaders? Increasing exposure of younger kids to the environment around them. I never would have followed this career path if I didn't grow up getting my hands dirty camping or fishing or just exploring in the backyard. So, I think that first getting kids outside more with field trips, or outdoor clubs, is important to build that appreciation for the world outside. And secondly, to increase exposure of our types of careers to younger audiences. I think if younger kids knew more about wildlife and forestry professions, lots of them would want to do what we do!

Where is your favorite longleaf site, and why? I'd have to say my favorite longleaf site is the Sandy Island Preserve north of Georgetown, South Carolina. It is owned

and managed by The Nature Conservancy. It is a sentimental choice for me since it was the first place that I saw longleaf. I can't separate the place from the people though, and perhaps that is what makes this my favorite site, working together with other extremely dedicated staff to restore this pine island. I hope to make it back there one day and see how it looks.

Ryan Mitchell - The Longleaf Alliance

What is your background, and where do you work? I am from North Alabama, and earned a B.S. in Wildlife Sciences from Auburn University. Since 2014, I've worked for The Longleaf Alliance as Outreach and Technical Assistance Coordinator.

How did you get started in longleaf? While at Auburn I worked for Dr. Sharon Hermann doing gopher tortoise/vegetation surveys at Ft. Benning and pre/post burn assessment of longleaf at Horseshoe Bend National Military Park (Dadeville, Alabama), and in the Longleaf Pine Stand Dynamics Lab with John Kush and Becky Barlow. It was a phenomenal experience working in healthy longleaf stands at Ft. Benning and restoring the function to long unmanaged stands at Horseshoe Bend.

What inspires you about longleaf ecosystems? One of the most inspirational parts is the resilience of the system. Longleaf, with the reintroduction of active management, has the ability to go from a neglected forest to a functional ecosystem that provides benefits to a whole suite of native wildlife species. Having the ability to manage a tract for wildlife, aesthetics, recreation, and timber at the same time is a beautiful trait of the longleaf forest.

Where do you see opportunities for young folks to work in longleaf? One of the biggest opportunities is to start as an intern or volunteer with professionals in the longleaf field – i.e. natural resource managers, fire crews, invasive species control. This allows you to develop intimate knowledge of the longleaf forest, and gain experience before graduation.

What is the biggest challenge you see with longleaf restoration, and what can your generation bring to the table to solve it? The biggest challenge is finding the way to get and keep prescribed fire on the ground. Across the range, countless young stands of longleaf have never been burned and are full of off-site pine and woody competition. So, the task is to restore fire to unburned stands while keeping it going in other stands. We can make a difference by working with experts and landowners to help increase confidence in prescribed burners. Keep the knowledge growing!

What one change, if made, could increase interest and engagement with longleaf restoration in young conservation leaders? Increase exposure to the ecosystem through early childhood education, college forestry/ecology programs, and communications programs in general.

Where is your favorite longleaf site, and why? My top two – A private tract in Chilton, County Alabama that was a loblolly stand with scattered longleaf on a few hills. The landowner cut out the loblolly and with a combination of planting and natural regeneration on the site, is restoring to longleaf forest. It has rolling topography with amazing groundcover and seeps

The other is Oak Mountain State Park in Birmingham, in the heart of Alabama's largest city; the stand is currently fire suppressed but is a phenomenal example of how persistent the systems are.

Sarah Crate - North Carolina Forest Service

What is your background, and where do you work? I grew up on a farm in Warrensburg, Missouri, where I inherited my love for the land from my family. These early experiences led me to pursue a biology degree (William Jewell College in Liberty, Missouri) and then plant ecology research in Texas and Florida. I am currently the Longleaf Program Coordinator for the North Carolina Forest Service, stationed in Raleigh.

How did you get started in longleaf? got

How did you get started in longleaf? got started on my first longleaf-related research project working at Archbold Biological Station, studying the reproductive biology of *Polygala lewtonii*, a federally-endangered sandhill/scrub endemic in Florida.

What inspires you about longleaf ecosystems? Its diversity--its species diversity and the large number of endemic species found in these habitats, but also the diverse array of longleaf communities, from flatwoods to xeric sandhills to montane longleaf.

Where do you see opportunities for young folks to work in longleaf? There are opportunities for young leaders anywhere there is longleaf now, or could be in the future. Just get started with the “doing” to find your niche. Restoration and conservation are inherently long-term efforts, so the success of our longleaf work will depend on preparing and enabling the future leaders of longleaf to move the initiative forward with new perspectives and fresh enthusiasm.

What is the biggest challenge you see with longleaf restoration, and what can your generation bring to the table to solve it? As we all know, longleaf requires active management with fire and, as a result, longleaf requires active landowner engagement, whether it is in private or public ownership. This is a cross generation issue. We have the opportunity to build upon existing work, while bringing in creative and novel ways to engage others through education, outreach, assistance, etc.

What one change, if made, could increase interest and engagement with longleaf restoration in young conservation leaders? I believe the best way to engage people is to mentor them—Share your longleaf passion with others to get them hooked while sharing your knowledge/expertise to set them up for future success. This is not a new concept by any means, but often overlooked as so many are tasked with more and more duties but fewer and fewer resources.

Where is your favorite longleaf site, and why? I have a new North Carolina favorite after a recent trip to Carvers Creek State Park. This site demonstrates the collaborative nature of longleaf conservation, beginning with private landowners and eventually leading to permanent protection through The Nature Conservancy and now North Carolina State Parks. The park is relatively new, but I believe the restoration work here using prescribed fire will not only continue to provide excellent longleaf habitat, but will be a valuable education opportunity for resource professionals as well as the public.

Stephanie Hertz - Texas A&M Natural Resources Institute

What is your background, and where do you work? I currently live in Austin, Texas and graduated from Texas A&M University with a B.S. in Zoology and Master of Wildlife Science degree. I work as a Project Manager for the Texas A&M Natural Resources Institute, and provide contract support to the Department of Defense Readiness and Environmental Protection Integration program.

How did you get started in longleaf? I was actually unfamiliar with longleaf pine until I started my job with Texas A&M. My background in college was wildlife-focused, so the transition to more forestry and agriculture-related topics was an exciting and new experience for me! Then, when I learned how longleaf pine forests play an important role to Department of Defense by buffering installations from incompatible development, I was hooked!

What inspires you about longleaf ecosystems? As a wildlife enthusiast, I love the biodiversity that longleaf pine ecosystems support. I also love how longleaf can bring so many different interests together – I am always amazed to watch industry professionals, federal and state government, private landowners, recreationists, and conservationists working together to restore this historic forest.

Where do you see opportunities for young folks to work in longleaf? If you like to work outside, why not consider a career in natural resource management or prescribed fire? There are also important roles to play in education, forestry, large landscape partnerships, stewardship, and environmental policy.

What is the biggest challenge you see with longleaf restoration, and what can your generation bring to the table to solve it? Public lands are an important player in longleaf restoration, but private lands play an incredibly important role too. If we can find ways to encourage and support private landowners to plant and manage longleaf, we'll be able to ensure that longleaf forests persist now and into the future.

What one change, if made, could increase interest and engagement with longleaf restoration in young conservation leaders? I've learned that people of different professions and industries can still come together for a common cause. To achieve results that really matter, young conservation leaders should be taught to look outside their comfort zones and find common ground with a variety of partners.

Where is your favorite longleaf site, and why? I actually would love to mention two of my favorite longleaf sites. The Wade Tract Preserve in Georgia features some incredible old-growth longleaf. The Aiken Gopher Tortoise Heritage Preserve in South Carolina is a great place to see longleaf too, but it's also special because of its role in protecting the gopher tortoise. Gopher tortoises are actually quite charismatic!

Will DeGravelle - The Nature Conservancy

What is your background, and where do you work? I was born and raised in Baton Rouge, Louisiana. I have a BS in Forest Management from Louisiana State University (2007) and an MS in Forest Resources from Clemson University. (2010). I am a Land Steward with the Louisiana Chapter of The Nature Conservancy. One of my primary responsibilities in this position is the

restoration and management of our preserves to their historically appropriate ecological condition. This includes several preserves in the longleaf range, and longleaf is our primary focus.

How did you get started in longleaf?

Although I was introduced to the longleaf system in undergrad, during college and grad school I was most interested in and focused on forested wetlands – bottomland hardwoods and cypress-tupelo swamps. It wasn't until I got a job with the Mississippi Forestry Commission out of grad school that I had to quickly learn about longleaf and its similarities to and differences from other pine-dominated forests, both in terms of historical context and ecology and management. It wasn't until I joined TNC in 2015 that I truly fell in love with the longleaf system and all its nuance and diversity.

What inspires you about longleaf ecosystems?

One of the main things I love is the connectivity of the system – from southeastern Virginia all the way to east Texas. It is an ecosystem which unites the South perhaps like no other, but with this fluid and geographical diversity.

Where do you see opportunities for young folks to work in longleaf?

We don't just want, we NEED more young people entering into the longleaf realm. There are opportunities in longleaf at multiple levels. There are positions as foresters and biologists for state government and with the USFS. There is research on longleaf happening at every land-grant university within the tree's range, and many outside institutions, such as Tall Timbers. Plus, longleaf requires a relatively high amount of on-the-ground management – constant prescribed fire, herbicide work, work with nurseries growing seedlings. We also really need folks who work with private landowners to promote and properly manage longleaf – consulting foresters, extension agents, soil scientists, wildlife biologists.

What is the biggest challenge you see with longleaf restoration, and what can your generation bring to the table to solve it?

Longleaf is an unforgiving system to work with when you are trying to achieve the open condition and rich, diverse ground cover that provides the greatest diversity. At the foundation, you simply have to burn – and keep burning. It takes time and constant attention.

I think it's on my generation to find a way to get more fire on the landscape, even as rural development continues in many regions. I think we can bring a new level of creativity and technology to this – finding ways to connect groups of private landowners together, helping facilitate more trained burn contractors, and helping promote the beauty and the diversity that the fire achieves so more people are inspired to take on the restoration.

What one change, if made, could increase interest and engagement with longleaf restoration in young conservation leaders?

We've got to find a way to get more people (especially young people) out into the best examples of longleaf that we have, and show them the incredible beauty and amazing (often rare) wildlife that is so beautifully adapted to it. If they were more exposed to this ecosystem, they would engage more, talk about it more, and commit to its restoration.

Where is your favorite longleaf site, and why?

The Vernon Unit of the Calcasieu Ranger District of Kisatchie National Forest has some really fine longleaf. It's got all the factors you'd want as an ecological restorationist. It's got big, mature, flat-topped longleaf and multiple age classes, including natural gaps with seedlings. It's got very high-quality ground cover with lots of diversity. And it has these big, scenic vistas which the early settlers talked about where you can see from one hill across to the top of the next.



By Lynnsey Basala, *The Longleaf Alliance*

High-Impact Donations Allowed The Longleaf Alliance to Allocate 85% of Income to Programs and Services This Year

Before we celebrate the beginning of the New Year, let us pause and give thanks to the wonderful, dedicated and important non-profit state and federal conservation partners, individuals and families, corporations, foundations and organizations that have allowed The Longleaf Alliance to continue to lead the effort in maintaining longleaf pine forests and their biologically diverse habitats throughout the southeast. There were many exciting and collective successes achieved in the areas of education, rare species recovery, and habitat restoration this past fiscal year.

The Longleaf Alliance (LLA) has been especially active in red-cockaded woodpecker (RCW) recovery work in 2017. Through grants from the National Fish and Wildlife Foundation (NFWF), International Paper, and American Forests, LLA teamed up with SC Department of Natural Resources, US Fish & Wildlife Service, and Hitchcock Woods Foundation to provide South Carolina RCWs with 80 new homes. We also placed a biologist funded by NFWF on the Francis Marion National Forest to monitor and band RCWs that that will be relocated from the National Forest into new artificial cavities on 5 private properties in South Carolina. We also worked with the Apalachicola National Forest in Florida, through another NFWF grant, to translocate an additional 30 birds to the Desoto National Forest and other properties as part of the RCW recovery plan. The LLA's Ecosystem Support Team spent time on the Conecuh National Forest and Blackwater River State Forest where they upgraded and replaced old RCW inserts. This program expanded to the Desoto National Forest this past August with funding provided by American Forests.

Our staff provided longleaf technical assistance on topics such as proper planting techniques, prescribed fire management, understory restoration, and stand management to over 2,960 landowners via in-person and hands-on presentations. This included 36 meeting presentations, 15 workshops, 8 Longleaf Academies, 7 fire training courses, 491 technical assists, and the 11th Biennial Longleaf Conference.

We also worked with partners and landowners to assist with the planting of 1.8 million longleaf seedlings on 3,220 acres and assisted with prescribed burns on over 44,000 acres. Last, but certainly not least: The Longleaf Alliance allocated an astounding 85% of income to programs and services this year; a figure that steadily increases and we're quite proud of.

Thank you for choosing to give your high-impact donations to the Longleaf Alliance through our wide array of multi-channel giving vehicles. Whether you donated \$10 or \$10,000 this year, your contribution does not go unnoticed. With that said, the Longleaf Alliance strongly encourages you to not only renew support this year, but consider increasing your donation. We are forever grateful for your trust and efforts to strengthen LLA's mission.

This 2017 Supporter List contains those that contributed funds between October 1, 2016 and September 30, 2017. If you find that we have made an error, please don't hesitate to call our headquarters in Andalusia, Alabama or email us at office@longleafalliance.org so we can correct our records.

The Longleaf Alliance is a 501(c)(3) organization and contributions may be tax-deductible to the fullest extent permitted by law.

Carahsoft Technology Corporation Makes Waves for Longleaf

Supporting a good cause and having fun while fundraising brings out the kid in all of us. Case in point: Ellen Lord, Carahsoft Technology's Director of Contracts, was dunked 90 times at Carahsoft's Company ReggaeFest Picnic on July 15th, 2017. The dunk tank was a big hit (pun intended), raising \$355 for The Longleaf Alliance.

"Carahsoft Technology Corp. proudly supports The Longleaf Alliance because we share the organization's commitment to habitat protection, education and restoration," said Ellen Lord.

Do you have a third-party fundraiser idea? Make LLA your charity of choice! Contact Development Director, Lynnsey Basala, at (314) 288-5654.



The annual company family picnic was held at The Pavilions at Turkey Run, McLean, Virginia. Photo by: Ellen Lord.

2017 SUPPORTERS

Members of The Longleaf Alliance's Palustris Society

The Palustris Society was founded by several members of The Longleaf Alliance Board of Directors to further the legacy that Rhett Johnson and Dean Gjerstad created to protect and restore longleaf forestlands. Since its inception in Fall 2015, fifteen founders representing seven states across the range, have joined the elite group of dedicated conservationists who share a dream of restored and viable working longleaf forests by making a donation or pledge of \$10,000 or more to The Longleaf Alliance. Commitments range from annual contributions of \$10,000 or more, to single commitments of \$10,000 to be paid over a period of up to five years. For more information on the Palustris Society, contact Development Director, Lynnsey Basala, at (314) 288-5654.

\$50,000 Level

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The Longleaf Alliance Endowment

The Longleaf Alliance Endowment was established in Fall 2015 and is comprised of memorials, restricted Palustris Society and individual contributions. The endowment offers a unique opportunity to strengthen our mission and ensure that the longleaf forest is conserved for our children and grandchildren to enjoy for future generations.

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James & Susan McCracken
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*— Becky Humphries,
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HEARTPINE

By Ryan Bollinger, *The Longleaf Alliance*

I will be the first to admit that I am a relative newcomer to the longleaf community. My first love was the foothills of the Southern Appalachians. I grew up in Rock Hill, South Carolina playing in the woods behind my house building tree forts with my brothers and fishing at the pond up the street. The two things I knew about pine trees was that they were sappy and bad for climbing. I didn't get my first real experience with longleaf until college. As an



Saving Tortoises: Taking a selfie with my new buddy I found crossing a busy road near Pace, Florida. Photo by Ryan Bollinger.

undergraduate at Clemson University studying Environmental and Natural Resources, I spent one of my summers working as a field technician for a graduate student evaluating species diversity within ecotones between bottomland hardwoods and upland habitat in the lower coastal plain of South Carolina. The position granted me the opportunity to see some amazing longleaf sites on hunting plantations in the lowcountry and practice plant ID while assisting with vegetation plot surveys, but it also dropped me square in some of the buggiest, muggiest places one can think of in the heat of summer. I learned a lot over the course of those three months, but working in longleaf ecosystems as a career path never crossed my mind.

A few years later, I moved to Charleston, South Carolina as a student in the Master of Environmental Studies program at the College of Charleston. This provided more opportunities to explore the longleaf communities nearby. On a late spring weekend, my friends from the program and I thought it an excellent idea to hike and camp in the Francis Marion National Forest. We had a grand time the first day until the next morning came along, and we were all covered in chigger bites. The experience, lasting more than a week, left its mark on me and especially my sweetheart who said at the time... "I will never come to this @#\$@# forest again." Little did we know, in just a few short years we would both be back working in the land of the longleaf pine.

Needless to say, my early experiences with longleaf had not made a great impression. Fortunately I discovered I was mostly to blame and had just missed out on all the good stuff! In 2011, I began my longleaf career as a conservation planner with the North Carolina Sandhills Conservation Partnership in

Southern Pines. It was the Sandhills where I first picked up a drip torch and caught the fire bug, spent time wandering the forest discovering rare plants with great botanists, listened to Bachman's sparrows, nuthatches and red-cockaded woodpeckers chattering in the trees, ran into funny fox squirrels while disc golfing at the local park, and learned from and got to know the many partners of the longleaf community. I jumped at the opportunity when The

Longleaf Alliance came to town one year to host a Longleaf 101 Academy. It was there I first met Rhett Johnson, Mark Hains, and Ryan Mitchell. I'm not sure where I thought I was in understanding the management and restoration of the longleaf ecosystem, but those three days taught me how far I had to go and just how much there is to learn! The experience was both inspiring and humbling and only whet my appetite. When an opportunity to attend an Understory Academy the next fall arose, I headed to Andalusia to learn more. That's where I met Carol Denhof and Ad Platt, two more amazing Alliance folks. The trip sealed my impression of The Longleaf Alliance. How can one small organization make such a positive impact on the longleaf world? Whether it was a coincidence or just luck, a new position opened up within The Alliance, and I had the good fortune to apply for and be selected as the Longleaf Implementation Team (LIT) Consul.

For the past three years I have had the privilege of traveling across all nine longleaf states working with Local Implementation Teams, meeting great people, seeing new sights, and learning all along the way. In my ever expanding world of longleaf, I am inspired every day by individuals doing their part in every corner of the longleaf range. It has been an absolute pleasure getting to know and be inspired by staff and supporters of The Longleaf Alliance. That makes this community so special, and the diversity of people and places to go along with the plants and animals we all like to talk about are second to none. I am neither a forester, a wildlife biologist, a botanist, nor any other usual suspect. Lucky for me and others, opportunities for supporting longleaf restoration can be just as diverse as its natural communities.

