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OLD GROWTH FOREST

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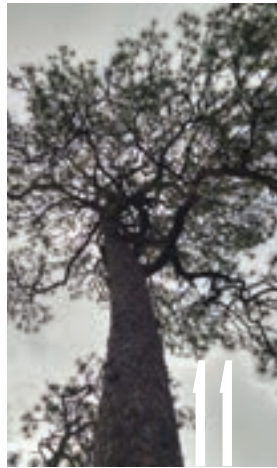
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COVER Vernon Compton appreciating an old growth longleaf forest in Thomas County, GA. Photo by Randy Tate.

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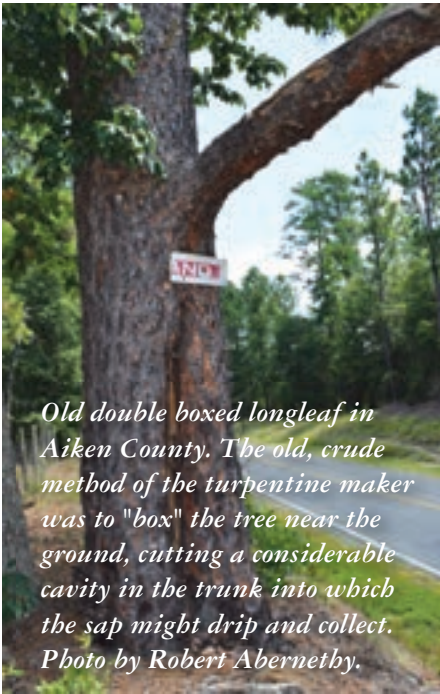
BY ROBERT ABERNETHY, THE LONGLEAF ALLIANCE



PRESIDENT'S MESSAGE

An Old Boxed Longleaf

I was driving to the Aiken Gopher Tortoise Preserve this past July when a particularly large longleaf on the side of the road caught my eye. It was over 3 feet in diameter but what made me stop and snap a picture was not one, but two long scars running from the ground up about 5 feet on opposite sides of the trunk. These old turpentine scars had almost completely healed over. Only about 3 inches of scar were still exposed. Living turpentine trees are often found further south but I had never seen one in South Carolina.



Old double boxed longleaf in Aiken County. The old, crude method of the turpentine maker was to "box" the tree near the ground, cutting a considerable cavity in the trunk into which the sap might drip and collect. Photo by Robert Abernethy.

In "Tapping the Pines" (Louisiana State University Press, 2004), Robert Outland reported that the South Carolina turpentine industry dropped from the nation's leader in 1880 to third place by 1890. In just ten years, the turpentiners exhausted these longleaf forests and moved on to Georgia and Florida. This old pine on the side of the road was present when the original old growth longleaf forest stretched "far as the eye can see" and lived to witness this forest's destruction and conversion to towns, polo fields, and farms.

We still have excellent examples of well managed longleaf in the South Carolina Sandhills, the Aiken Gopher Tortoise Preserve being one example. But privately held longleaf is going fast where we lack committed landowners that value forests for their beauty, hunting, and timber. With the upturn in the stock market over the last three or four years, land clearing has started anew at a fevered pace and what was growing longleaf yesterday will produce a crop of corn within 12 months. Even on these old, desperately poor sandy hills,

beautiful crops can be grown with the addition of center pivot irrigation.

We are losing longleaf but the story is not all bleak. Total longleaf acreage is increasing, and committed landowners from Virginia to Texas are planting longleaf in agricultural fields and converting loblolly pine stands back to longleaf. Many of these stands have intact ground cover and nearly the full complement of plants and animals that existed in the mid-1800s. On many sites the only ingredients missing from the restoration recipe are longleaf and the fire needed to maintain the ecosystem.

Those of us alive today will likely never see vast expanses of old growth longleaf stretching across the landscape. However, if we are committed to the mission and all work together to protect what is left with proper management, we have the opportunity to see vast expanses of young longleaf plantations that will mature into longleaf forests over the next 100 years. An old forester once told me, "Son, the best time to plant a tree is 50 years ago and the second best time is today." Enjoy a wonderful fall; planting season is just around the corner.



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2015

Covey Film Festival

Thomasville, Georgia
October 8-18, 2015

World Premiere of *Secrets of the Longleaf Pine* on October 12th For tickets go to <http://coveyfilmfestival.com/>

Longleaf Academy: Understory 201

Brooksville, Florida
October 20-22, 2015

Herbicide & Longleaf 201 Academy

Brooksville, Florida
November 17-19, 2015

2016

***Longleaf Academy: Longleaf 101**

Louisiana
January 11-14, 2016

***Longleaf Academy: Longleaf 101**

Texas
January 19-22, 2016

***11th Biennial Longleaf Conference**

Savannah, Georgia
November 1-4, 2016

*Registration is not open at this time. Email The Longleaf Alliance office (office@longleafalliance.org) if interested, and we'll notify you when it is open.

Check The Longleaf Alliance website (www.longleafalliance.org) for updates on scheduled events.

FALL MANAGEMENT CHECKLIST

- Apply Fall Site Preparation Herbicides: For maximum efficacy, foliar active herbicides such as glyphosate (Roundup®/Accord®) should be applied to pasture grasses before the first frost. Conversely, triclopyr (Garlon®) may be delayed until after the first frost if targeting waxy leaf competitors while minimizing impact to herbaceous groundcover. Allow time for soil active herbicides to break down before planting longleaf, especially those with the active ingredient imazapyr (Arsenal®/Chopper®).
- Apply Mechanical Site Preparation Treatments: Scalp agricultural sites, but remember to stay strictly on the contour and pick the scalper up regularly. Leaving waterbars in the furrow will greatly reduce erosion. Subsoil or rip sites with hardpans, but remember to not plant seedlings directly into the subsoiled/ripped furrow. Clean up or establish fire lanes for site prep or fuel reduction burns.
- Harvest Native Herbaceous Seeds: Certain species, such as the Indian Grasses (*Sorghastrum* spp.), ripen and fall in a very short time window (as little as 1 or 2 weeks). Ripe wiregrass *Aristida stricta* or *A. beyrichiana* can lose all of its ripe seed if a cold front blows through. Be watchful and move quickly!



Fall woodland on the Solon Dixon Forestry Education Center in Andalusia, AL. Photo by Carol Denhof.

- Order Native Seed for Understory Restoration: Seed from local ecotypes and endemic species is limited and expensive. Some landowners and land managers have the time and expertise to collect their own seed, but most restoration will be done with seed purchased from the few seed companies that sell southeastern seed sources.
- Order longleaf seedlings and native grass seed for upcoming planting season.
- Plant Longleaf: It's never too early to plant longleaf if the following conditions are met: the site is prepared (see Fall Site Prep recommendations), there is adequate soil moisture, seedlings are available, and a planting crew is available.



Financial assistance for The Longleaf Leader provided by the U.S. Department of Agriculture's Natural Resources Conservation Service and the National Fish and Wildlife Foundation through a grant from the Longleaf Stewardship Fund.





Q&A

Longleaf sandhill habitat with abundant wiregrass groundcover. Photo by Carol Denbof.

Q. To The Longleaf Alliance:
I have a question about wiregrass. What is it, do animals eat it, what's it good for, can it still be found in the region, etc.? I have read an old article from Dothan's Landmark Park newsletter, so I have some information already, but it doesn't address whether wiregrass can still be found in the region and the full role it plays or played, in the ecosystem.

Thank you in advance,
JS
Dothan, Alabama

A. Hi JS,
Thanks for your questions regarding wiregrass. Yes, wiregrass can still be found in the region and we work with landowners in longleaf restoration across the wiregrass belt. Some of the best remaining wiregrass resides in southeastern Alabama, though its acreage has been greatly reduced as discussed in the article you referenced. Today, longleaf is no longer rare but the healthy longleaf ecosystem, of which wiregrass was a major component within its range, remains in only a very small fraction of the former range. Those landowners who have healthy natural wiregrass are very fortunate indeed, and increasingly they realize it. These are the lands that never got plowed, and if of significant size, may still retain tremendous wildlife diversity and potential.

Across the range, there are two main species that are commonly called wiregrass, *Aristida beyrichiana* (what we see in Alabama, also known as Threeawngrass) and *Aristida stricta* (occurring in South Carolina and North Carolina, also known as pineland threeawn).

Seeds of wiregrass are infrequently consumed by songbirds. Although it is not considered an important wildlife forage species when mature, our ancestors knew well that burning wiregrass quickly brought forth new growth that was highly nutritious and that burning brought the free range cattle running to the area, along with the deer and turkeys, seeking the new growth. Most importantly, wiregrass is heavily used

by the gopher tortoise, a keystone animal of the longleaf ecosystem. The term "keystone" refers to the many other species whose survival is dependent upon it (the gopher tortoise).

To produce viable seed, wiregrass needs to be burned in the earlier part of the growing season. Beyond food, wiregrass provides an excellent fuel that enables frequent, low-intensity fire, essential to maintaining a healthy wiregrass ecosystem. All plants and animals that occur with wiregrass in this diverse ecosystem are fire adapted, and many need fire to successfully reproduce or maintain themselves. Finally, the physical structure of wiregrass and other "bunch grasses" provides essential cover and habitat where quail, young turkey, rabbits, and many other species can feed, and more importantly, hide from predators.

So important is wiregrass to a healthy natural ecosystem that some landowners are planting or sowing it to restore their lands to more closely resemble what their grandparents experienced. But this is an expensive proposition and requires a committed landowner. Best of all is to protect wiregrass during management of your property, if you are lucky enough to still have it.

Here is a link to some beautiful photo examples that help show the tremendous diversity of wiregrass/longleaf systems in Alabama and adjoining states, well maintained by frequent, low intensity, controlled burns:

http://bethyoung.net/photos_longleaf.php#.

Beth Young is one of the most outstanding photographers of this important part of our heritage. These ecosystems may contain 150 or more species per acre, so much more than just wiregrass, but wiregrass helps facilitate the fire that makes it possible.

I hope this helps you and thank you for your questions! Please explore our website for much, much more.

Best,
Ad Platt

GREEN SIDE UP

Advice from Mark

By Mark Hains

RESTORING FIRE

Duff buildup around longleaf trees. Photo by The Longleaf Alliance.

Applying prescribed fire is a management decision.

Not burning your longleaf forest is also a management decision.

In some ways owning a mature longleaf forest is akin to owning livestock. Let us imagine a landowner with forty acres of silvopasture. In this scenario, we have longleaf planted in a Bermuda field with an intermittent stream running through the pasture. The landowner stocks the pasture with 40 head of cattle, leaves for vacation in Spain, and returns a year later. It is a safe bet that the pasture will be devoid of living cattle upon his return. At some point, the cattle will eat all the forage, and/or the intermittent stream will dry up. The cattle will either stay and die or break through the fence in search of food and/or water.

If a landowner has a 50 year-old stand of longleaf, and they do not burn said timber, they have neglected their trees as badly as the farmer or rancher who did not tend their cattle.

In the absence of fire and the continuity of time, accumulations of organic matter will form around the base of longleaf. These mounds are often referred to as “donuts” and

they are deeper at the base of the tree because the sloughing of bark from the bole contributes to the accumulation of organic matter.

As the duff layer builds, the tree will send fine roots up into this organic matter. The more this process continues, the more fragile the tree becomes. Because this takes place in the absence of fire, it is a safe bet to assume an accompanying invasion of shrubs and hardwoods.

A healthy fire maintained stand of mature longleaf may have as few as fifteen longleaf per acre. A frequently burned stand of longleaf is generally accompanied by a diverse herbaceous layer, and few if any hardwoods or shrubs in the mid-story.

A fire excluded stand of longleaf may have hundreds or even thousands of hardwood stems in the mid-story. This is a much more competitive environment for the longleaf. In periods of severe drought stress, mortality of the mature longleaf will increase as the pines compete for limited water and nutrients in the forest floor.

Restoring a long-time fire-excluded forest to a healthy resilient condition is a daunting process that is seldom



Burned out duff layer that was surrounding base of longleaf tree prior to prescribed burn. Photo by The Longleaf Alliance.

accomplished without losing a significant portion of the stand.

Our recommendations are based on the experiences of land managers and scientists who have attacked this problem with varying degrees of success on longleaf stands in the lower Coastal Plain. Some of the best work on this subject was conducted by Dr. John Kush on the Flomaton Old Growth Stand – in the years before it was sold to a developer and clearcut in 2007. How's that for a happy ending?

Land managers on Eglin sent crews to rake the duff layers away from the bases of the fire-excluded longleaf. The raking away of the deeply accumulated duff layer proved to be such a shock to the root systems that it led to mortality of the longleaf treated in this manner.

Dense stands of invasive hardwoods shade the duff layer and interfere with the drying of fuels necessary for the reintroduction of fire. Thus, treating the hardwoods is often the first step towards the reintroduction of fire.

The broadcast application of soil active herbicides should be strenuously avoided in these situations. Remember the longleaf are in a fragile condition, much like a burn patient that has not yet replaced their skin. The application of labeled rates of hexazinone or imazapyr will likely result in the death of a large percentage of the remaining longleaf.

The mechanical removal of hardwoods is one option. Even this option is fraught with peril as heavy equipment running over the site may be detrimental to the shallow longleaf roots. Hand crews or cutting machines with low-pressure tires and/or tracked machines that minimize compaction of the soil may be reasonable options.

Stem injection is a viable option to kill hardwoods in place. Again, make sure the herbicide stays in the targeted hardwood and is not applied to the forest floor.

Once sunlight can reach the forest floor, the upper few inches of duff should be allowed to dry, and a light, fast fire should be prescribed. Before lighting the match, be sure that the lower duff layer is still wet. The first several fires on these stands should take place very soon after a rain. Reach your hands into the duff layer to make sure it is moist several inches down.

If a deep duff layer is removed in one, two, or three fires, it is reasonable to expect most of the longleaf to die. Remember to be patient and gradual as you reapply fire. It took decades for the duff to accumulate, and it may take decades of carefully applied prescribed fire to recover the stand.



MANAGING FOR THE FOREST AND THE TREES

By Rhett Johnson

*Day hiker in Weymouth Woods in Southern Pines, NC.
Photo by Robert Abernethy.*

When we talk about old growth forests we tend to imbue them with a mystical intangible quality that separates them from other forests. Understandably, old forests filled with large ancient trees command respect and awe. But “old growth” can mean different things in different locales. The oldest longleaf pine forests pale in comparison to the ancient redwood, cedar, and Douglas fir forests of the Pacific Northwest, if only in the sheer size and age of the trees. Yet longleaf forests can also inspire awe. The Wade tract and the Big Woods on Greenwood Plantation near Thomasville, Georgia are certainly iconic examples of old growth longleaf that recall the descriptions of the early explorers, including DeSoto when he led his band across the South in the 1500’s. These open sunny forests of well-spaced big, straight trees emerging from one of the most diverse grass and herbaceous understories in the world define primeval longleaf forests to most of us who love longleaf. The extensive old growth in the sandhills of Eglin Air Force Base in the Florida Panhandle are different, but the term “old growth” still comes to mind when you see the big gnarled limbs and the flat topped crowns of the old trees scattered across that mostly xeric landscape. On the other hand, the oldest known individual longleaf, has been aged at over 450 years. It resides in a stand of similarly aged trees in Weymouth Woods

in Southern Pines, North Carolina. Despite impressive boles and the typical huge limbs and flat tops, it is a stretch to call this an “old growth” forest. The trees are certainly old, but lack of management, particularly fire, has allowed hardwood species to almost dominate the understory and midstory, shading out wiregrass and other herbaceous plants that typify natural longleaf communities. Efforts to recover that community are underway, but necessarily slow. No one wants to be the one who lights the fire that might well cause the demise of these living treasures. And make no mistake, fire can and will kill these giants without proper caution.

Most of us are inspired by these “jewels in the crown” of the southern forest landscape, but most do not aspire to them. We just don’t live long enough to even approach old growth on our forests unless we have a huge headstart. After all, it still takes 300 years to grow a three hundred year old tree. In addition, these museum pieces aren’t expected to generate the income most landowners desire or need from their forest holdings. Many of the old longleaf forests I am familiar with actually experience negative growth rates, with mortality, usually from lightning, killing from 1 to 3 percent of the standing timber annually. Growth slows with age and if recruitment of younger cohorts is not robust, mortality exceeds growth even if timber

is not harvested. Most of the landowners of my experience appreciate the presence of large old trees in their forest, but want their forest to provide any number of values over time, including income from timber. It is possible to manage longleaf forests for timber income, old trees, aesthetics, biodiversity, and wildlife value, but as usual it requires planning and some trade-offs.

Perhaps the most familiar approach to managing mature longleaf is the Stoddard-Neel or ecological forestry philosophy. Named for the two conservationists, Herbert Stoddard and Leon Neel, who developed it in the quail woods around Thomasville, Georgia and Tallahassee, Florida, this approach was styled to yield some timber income, but was primarily focused on improving the habitat for bobwhite quail and the appearance of the property. The typically wealthy owners were happy to get some income from their properties, but were more interested in creating a forest that they enjoyed hunting in. Basically, this approach attempts to use deliberately planned disturbances like frequent fires and single tree or small group harvests to mimic natural events. Decisions on trees to be removed are highly subjective, but done with a guiding principle of improving the stand. Spacing and position in the stand are factors for each tree. Small gaps are created and designed to encourage recruitment of younger cohorts into the stand by releasing seedlings in place. The economies of scale tend to limit return and the system is probably most successful when the owner's financial needs are not pressing, where markets value high quality wood, and where a logging workforce exists that will cut scattered high value trees over a large landscape. One study I am familiar with calculated internal rate of return using this method at about 2%. On the other hand, the owner always has a full range of options in well stocked stands, little or no regeneration costs, and the pleasure of owning one of the most biodiverse and beautiful forests in the world.

Some managers of old forests employ small group harvests to generate more volume, decrease the unit cost of logging, and more quickly encourage the ingrowth of new trees. Typically, harvests are used to create gaps of less than one half acre about a year after a successful seed crop. The young seedlings can stand most logging damage and will typically respond to the

release from the overstory and surrounding trees with good growth. One strategy is to enter the stand periodically after each successful seed catch, enlarging existing gaps and creating new ones. Over time, the forest should consist of small similarly aged groupings, like many natural stands, with the oldest and tallest trees in the middles of these domes. Although many owners don't like the appearance of these clumps of trees throughout the stand, it does occur naturally in longleaf and the mosaic created will eventually yield a multi-aged forest, allowing the retention of old trees.

As early foresters and others examined and described remaining natural forests at the end of the 19th and beginning of the 20th centuries, some commonalities became apparent. Many relatively undisturbed natural forests, as well as those woodlots which had been lightly utilized for long periods of time by their owners, contained a range of trees of different sizes and, presumably, age classes. If graphed out by diameter class, the curve very often took the shape of a reverse "J", with numbers of stems on the y axis and diameter class on the x axis. In other words, lots of small stems and fewer stems as the diameters increased. The slope of the line was not constant, but described a gentle curve, plunging steeply at small diameters and leveling off at the higher end. Recognizing this as a possibly natural sustainable state, formulae were developed to guide managers toward creating this relationship and maintaining it. The lightly managed woodlots had presumably reached this stage through deliberate harvest of trees of all sizes at various times to obtain

products ranging from kindling to firewood to fence rails to lumber and everything in between. A good example is Brosnan Forest, owned by Norfolk Southern Railroad near St. George, S.C. This beautiful 10,000 acre 100+ year old forest is managed using a modified Stoddard-Neel approach to produce income, induce recruitment, and maintain rich wildlife populations and unmatched vistas.

One systematic approach to achieving and maintaining this kind of forest structure is the "BDQ" method. The "B" is Basal Area, a measure of the area occupied by wood at 4.5 feet above the ground on a unit basis, usually square feet per acre. The "D" represents the maximum diameter that trees will be allowed to grow before being targeted for harvest. The "Q" is



Old catface pine at Moody Forest Natural Area in Appling County, GA. When using ecological management methods, these relict trees would be preserved. Photo by Randy Tate.

{continued on page 10}



Longleaf regeneration in the Conecuh National Forest due to gap opening in the canopy. Photo by Carol Denbof.

the quotient or relationship between the number of stems in a specific diameter and the number of stems in the next smaller diameter class. For instance, if the “Q” is 1.2, then a stand that contains 20 eight inch trees per acre would contain 24 six inch trees per acre (20×1.2) and so on. This quotient describes the shape of the curve and is determined by site quality, ease of achieving recruitment, species being managed, and landowner preference. The higher “Q” is, the steeper the curve. “B” is the total area occupied by wood per acre and again is set as a management goal by the manager and impacted by the silvics of species being managed and the available markets. Finally “D” is the maximum diameter trees are allowed to reach before being harvested. Again, these parameters are set by the manager or landowner to reflect site quality, species, local markets and the desired role of old trees in the stand. When the system is in place and the actual stand structure is at or approaches the desired curve, each successive harvest cuts trees across all size classes to “re-fit” the curve by removing trees that have outgrown the pre-set parameters. Application of this system requires high intensity inventories, decisions on the fate of virtually every tree to determine its role in the future of the forest, careful attention to the potential for recruitment into the stand, releasing seedlings in place and timing harvests and fires to encourage rather than discourage them. This is especially important with longleaf and its sporadic seed crops. Finally, this labor intensive approach suffers from loss of economy of scale unless large numbers of acres are involved, since the harvest might include small amounts of each product. A much less complex approach to this system has been developed by Dr. Dale Brockway of the U.S. Forest Service

Research Station at Auburn University and Ed Lowenstein of the Auburn School of Forestry and Wildlife Sciences. They’ve termed their approach the Pro-B system and it reduces the number of decisions to be made and lessens the intensity of the inventory required while achieving approximately the same forest structure over time. Mississippi landowner Judd Brooke manages his Brookwood Forest to achieve this sustainable multi-aged forest condition and plans to apply the Pro-B approach as both a demonstration and a learning experience on a portion of his forest.

All of these approaches are intended to develop and maintain a sustainable multi-aged forest. The age and size structure of the resulting forest can be determined by the owner/manager depending on his or her income needs, wildlife goals, and desire to have older trees represented at all times in the forest. If done thoughtfully, regeneration costs are nil, but timing of natural reproduction can be sporadic and unpredictable due to the uncertain seed production of longleaf pine. The size/age structure can be skewed in either direction. Inevitably, the more old trees retained, the lower the economic return, at least in today’s markets. Any premium recognized for old growth timber is far outweighed by the time/cost of growing it over an extended period. Markets that recognize old growth values beyond timber beckon, but remain on the horizon. Carbon credits can offer some return and may appeal to owners who really want old trees on their forest and are willing to manage for overall forest health. There is interest in the marketing of “ecological” credits in a sort of mitigation banking scheme, but parameters are yet to be developed and potential buyers yet to be identified.

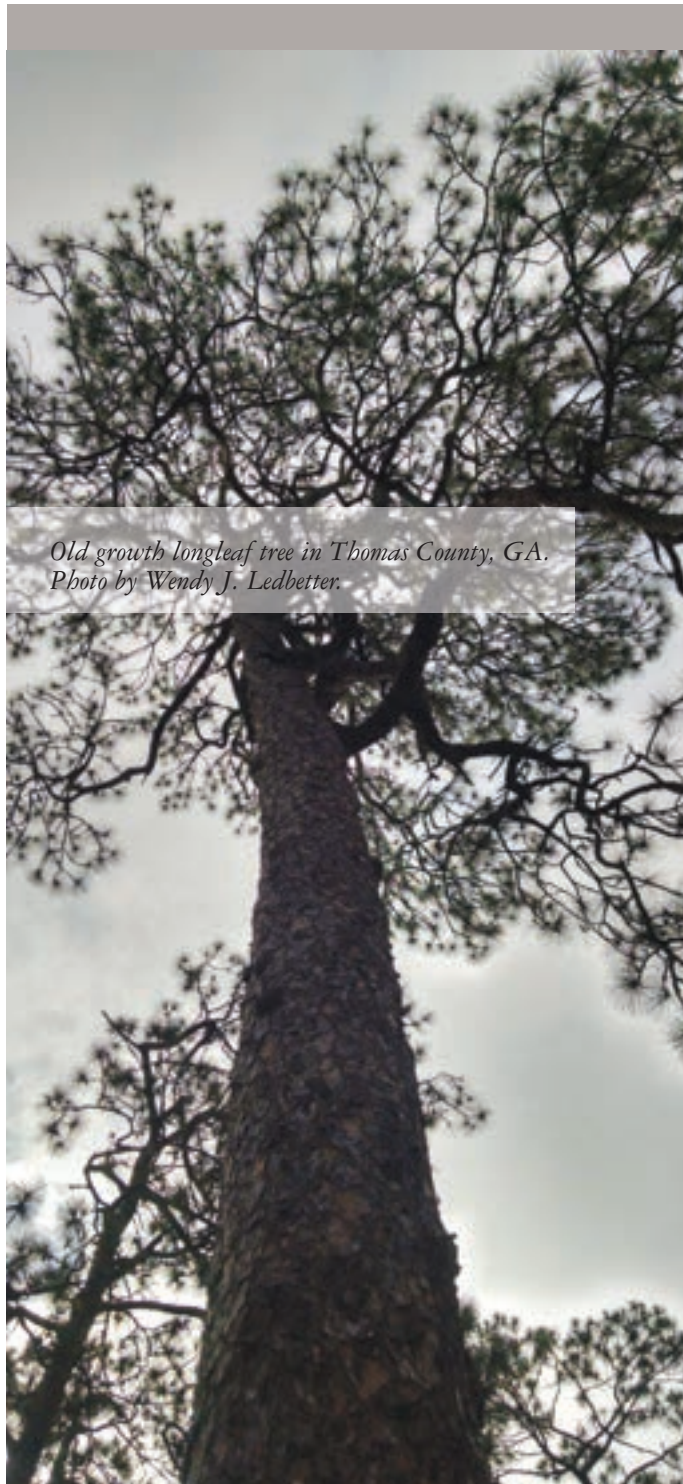
Another approach, a shelterwood with retention, employs even aged management where regeneration is achieved via the shelterwood method with the retention of some or all of the seed trees as the overstory of a two aged stand. The burst of income from the initial harvests represents all of the income to be regenerated from the stand until the old trees are eventually, if ever, harvested. The threat of lightning and wind throw are ever present.

While owners just beginning their longleaf journey won’t see old growth on their lands, those with intermediate aged stands and even relatively mature timber can create old-growth like conditions in a reasonable time period. The ecological difference in a 100 year old longleaf and a three hundred year old longleaf is significant, but a forest filled with 100 year old trees is impressive and can support virtually all of the ecosystem values of the older forest. Most of us think of longleaf as a multi-generational prospect anyway and managing to leave old trees is quite a legacy.

SEARCHING FOR OLD GROWTH

“We find ourselves on the entrance of a vast plain which extends west sixty or seventy miles.... This plain is mostly a forest of the great long-leaved pine, the earth covered with grass, interspersed with an infinite variety of herbaceous plants, and embellished with extensive savannas, always green, sparkling with ponds of water, and ornamented with clumps of evergreen, and other trees and shrubs...” William Bartram, 1791 Travels through North and South Carolina, Georgia,...

We all know the story. Prior to European settlement, longleaf forests dominated the landscape of the southeastern United States. What once covered approximately 90 million acres, now can only be found on at last count around 4.7 million acres. The good news is that this acreage is on the rise, due to the efforts of the active partnerships working to bring back this great forest. In each issue of *The Longleaf Leader* we place the spotlight on areas where you can go to see longleaf; but what about the remaining “Old Growth” forests that are in such limited supply? With this article, we’d like to shed some light on what defines an old growth forest and where they can still be found within our region.



*Old growth longleaf tree in Thomas County, GA.
Photo by Wendy J. Ledbetter.*

Longleaf pine is the longest lived of the southern pine species. Throughout most of its range, individual longleaf pines can reach 250 years in age (with trees in excess of 450 years old having been documented). To reach that point of old age the life history of longleaf pine can be described in several stages. These stages include seed, grass, bottlebrush, sapling, mature, and old growth. More than 100 years is needed to reach the final climax stage of old growth.

Trees are defined as mature somewhere around 30 years after height growth initiation. As the forest begins to mature, lower limbs may be shed or pruned off by fire. The trunk of the tree begins to fill out into a straight, relatively branch-free tree that resembles a living telephone pole (in fact, many longleaf pines are sold for telephone poles). On more fertile soils, the tree may continue to grow in height up to 120 feet. On the poorest soils, the tree may only grow to 40 feet. After about 70 -100 years longleaf essentially ceases height growth. During the later stages of this period, trees may begin to show signs of decay and rot. In particular, longleaf pine reaching 80 years in age may become infected with a fungus called red heart that causes the otherwise dense heart of the tree to become punky, soft, and full of small channels and resins.

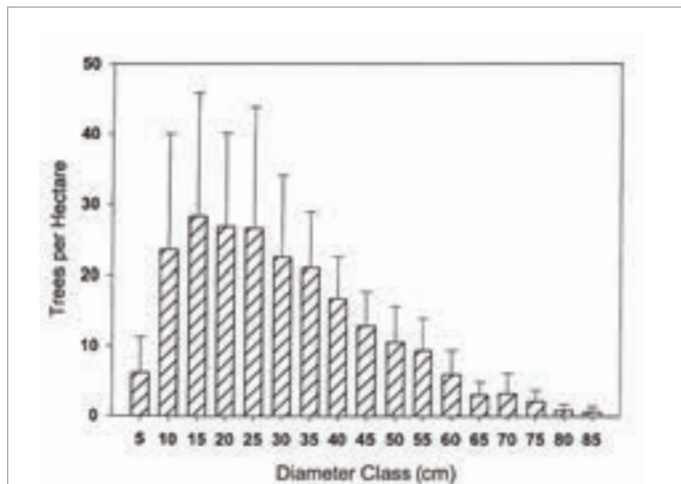
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As a forest transitions from mature to old growth, most trees have reached a steady state. Large diameter trees with flat-topped crowns dominate the forest. Historical accounts describe longleaf pines in excess of 120 feet tall and 3 feet in diameter. Conventional wisdom suggests that old-growth longleaf pine trees stop growing in size at these advanced ages. However, many instances exist where old-growth longleaf pine trees had actually increased growth rates at 200 years (+) when resources became available. At older ages, more and more trees begin to show signs of internal rot from red-heart fungus. In some localities, as many as half the trees per acre can be affected with red-heart in the boles.

Although mature stands of longleaf do resemble old growth, there are some structural differences of the canopy that set them apart. Old-growth stands contain many large pines (> 50 cm dbh) with only a few primary branches and substantial percentages of woody biomass in heartwood (Wahlenberg 1946). These stands also consist of persistent large snags and large downed woody debris (Schwarz 1907, Hermann 1993, Landers and Boyer 1999, Varner et al. 2003b). Due to the frequent occurrence of small-scale disturbances, the forest as a whole is transitioning at all times through at least one of the longleaf stages of growth simultaneously. Research has shown that although a longleaf forest looks like and is defined as an "old-growth" stand (i.e., large, scattered, old trees) it still has approximately 2/3 of its population at less than 50 years old. The table below from Varner & Kush 2004 illustrates the "Reverse J" structure of the old growth forest.

When determining if a forest is old growth, attention should



Diameter distributions (+/- 95% confidence intervals) of 14 old-growth longleaf pine stands taken from published data in Schwarz 1907, Forbes 1930, Varner et al. 1999, and Varner et al. 2003. Old-growth longleaf pinelands contain many large pines (>50 cm DBH) and many age classes, with peaks of individuals exceeding 200 years old.

also be given to the groundcover that is present in the stand. Species diversity in this layer will be high in these sites, with many long-lived species represented that are not tolerant to ground disturbance. In many second growth forests that have

at some point been cultivated, a different suite of species will be found as compared to undisturbed sites (Kirkman et al, 2004).

There are few remnant old-growth longleaf stands that can be seen today. Existing forests are threatened by urban interface issues, duff fire danger, non-native species invasions, and uncertain management. Other major threats include fragmentation and groundcover degradation, which to some degree threatens all remaining sites (Varner & Kush 2004.)



Map showing significant known old-growth longleaf pine sites within the southeastern US using sites listed in Varner & Kush 2004.

Site #	Site Name	State	Acres
1	Eglin Air Force Base	Florida	9019.33
2	Mountain Longleaf National Wildlife Refuge	Alabama	111.20
3	Gostwick Longleaf Forest	Georgia	494.21
4	Wade Tract	Georgia	205.10
5	Thomasville Plantation	Georgia	988.42
6	Goethe State Forest	Florida	185.33
7	Moores Tract	Georgia	296.53
8	Benpolymile	Florida	420.08
9	Plant Beach	Florida	393.37
10	Venas Flarwoods	Florida	98.84
11	Bord Tract	North Carolina	59.31
12	Bonnie Doon Tract	North Carolina	160.62
13	Camp Leeson Tract	North Carolina	49.42
14	Cowan National Forest	North Carolina	49.42
TOTAL ACREAGE			12533.17

However, if you wish to experience a walk through what once was, there are some amazing old growth longleaf stands that you can visit. The map shown above shows the locations of some of the most significant remaining old growth stands. Each has its own character, reflecting the many different kinds of longleaf forests that developed when this most adaptable pine occurred across various habitat types. There are quite a few amazing second growth forests out there that are approaching the old growth stage, but for the purposes of this article, only those sites identified as old growth in Varner & Kush 2004 were included. Forests were considered old growth if they contained two or more age classes with trees in excess of 150 years and individuals exceeding 200 years.

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Forest Legacy Program

Protecting Forests through Partnership

The Forest Legacy Program protects private, working forests and provides multiple public benefits.

The majority of the nation's forests are in private ownership and they are trending toward some type of non-forest conversion. These forests are key to providing timber products, wildlife habitat, scenic views and recreation. They help to protect soils and provide clean water.



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State agencies throughout the nation assist the Forest Service in locating land owners interested in protecting their forests for generations to come.

You can learn more about this program at our website

<http://www.fs.fed.us/spf/coop/programs/loa/flp.shtml> which also contains a link to federal and state personnel (Federal and State Coordinators List) who could answer specific questions about participating in this program.

Protecting Private Forest Lands from Conversion to Non-Forest Uses



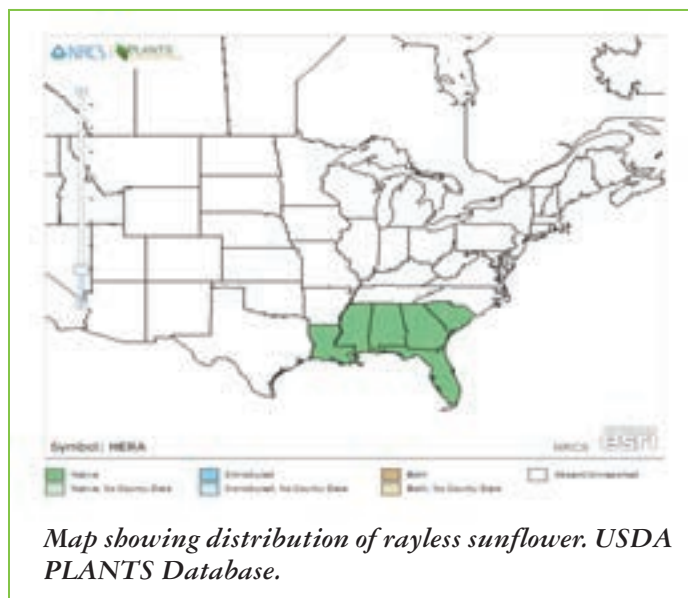
By Carol Denhof, *The Longleaf Alliance*

PLANT SPOTLIGHT

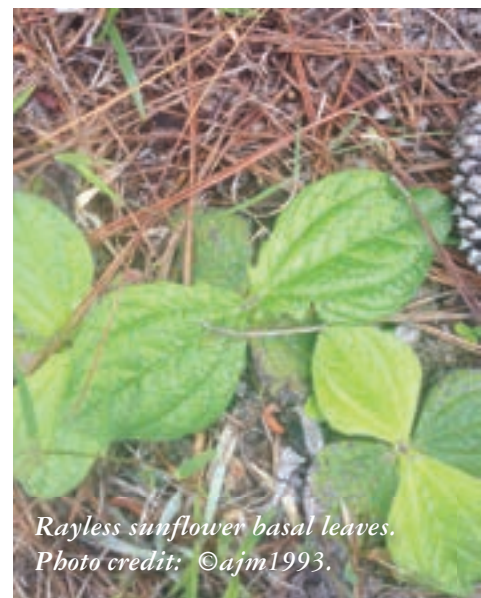
RAYLESS SUNFLOWER *HELIANTHUS RADULA* (PURSH) TORR. & A. GRAY



Rayless sunflower flowering stems. Photo by Carol Denhof.



Map showing distribution of rayless sunflower. USDA PLANTS Database.



Rayless sunflower basal leaves. Photo credit: ©ajm1993.

Description

This perennial member of the Aster family is not your typical sunflower. The rayless sunflower, for the most part, lacks the yellow ray flowers that are seen in most other *Helianthus* species. These are the flowering parts of the sunflower that most folks would call the “petals.” For most of the growing season, this plant exists as pairs of oppositely arranged basal leaves that lie flat on the ground. These leaves are mostly rounded in shape and can measure up to 5.7”x4.7”. The whole plant is covered in rough hairs. In late summer to early fall, a single flowering stem will grow out of the center of the basal leaves, and the stem can reach a height of approximately 40”. A single head of flowers is borne at the end of the flowering stem. The flower cluster can have greatly reduced ray flowers (less than ¼”) but generally have none. The disc flowers that make up the flower head are brown-dark purple in color and bloom in the fall.

Distribution & Habitat

Rayless sunflower can be found in the southernmost portion of the longleaf range from South Carolina, south to Florida and west to Louisiana. It is most commonly found in more mesic, flatwoods sites but also grows in sandy, pine barrens.

Wildlife Uses

Rayless sunflower is an attractive nectar plant for butterflies.

Other common species

Helianthus radula is unlike any other *Helianthus* species. However, other common sunflowers include swamp sunflower (*H. angustifolia*) and woodland sunflower (*H. divaricatus*).

Commercial Availability

Seeds of rayless sunflower are available from Florida Wildflower Growers Cooperative and Ernst Conservation Seed.

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EXCERPT FROM LONGLEAF PINE CONE PROSPECTS for 2015 and 2016

The regional cone crop, based on green cone counts, is poor for 2015, at 12.4 cones per tree. The natural variation typically seen throughout the longleaf pine range is evident in this year's data. Table 1 shows cone production data collected from selected low-density (e.g., shelterwood) stands of mature longleaf pine, throughout its native range. It is not unusual for a large cone crop, such as that which occurred last year, to be followed by a much smaller cone crop during the subsequent year. Perhaps the trees require a year or so to recover their internal resources (i.e., photosynthate) following a year of extraordinary reproductive output (e.g., 2014).

The regional cone crop outlook, based on counts of unfertilized conelets, is also poor for 2016, at 22.2 cones per tree. The cone crop is forecasted to be fair at seven sites and failed at the other four sites. However, keep in mind that cone

crop estimates based on counts of unfertilized conelets are less reliable than those based on counts of green cones, because of conelet losses during their first year, with often fewer than half surviving to become green cones during their second year.

This regional report is intended as a guide which broadly forecasts the overall status of longleaf pine cone production. Therefore, even during a year with a lower overall regional average number of cones per tree, certain localities can experience substantial longleaf pine cone production. Thus, we encourage forest managers to take binoculars to the field and carefully examine any individual stands in which they have an interest. In this way they can, for those specific stands, acquire more detailed site-specific information that will aid them in making management decisions.

Cooperator	State and County	Estimated cones per tree from green cones for fall 2015	Estimated cones per tree from conelets for fall 2016
Kisatchie National Forest	Louisiana, Grant	17.3	3.3
T.R. Miller Woodlands	Alabama, Escambia	18.6	26.3
Blackwater River State Forest	Florida, Santa Rosa	16.8	9.4
Eglin Air Force Base	Florida, Okaloosa	2.8	4.5
Apalachicola National Forest	Florida, Leon	21.4	25.8
Jones Ecological Research Center	Georgia, Baker	6.5	24.9
Tall Timbers Research Station	Florida, Leon	14.7	28.4
Fort Benning Military Base	Georgia, Chattahoochee	32	40.6
Sandhills State Forest	South Carolina, Chesterfield	1.1	30.2
Bladen Lakes State Forest	North Carolina, Bladen	4.3	43.5
Ordway-Swisher Biological Station	Florida, Putnam	1.2	7.8
Region Averages		12.4	22.2

Estimated Longleaf Pine Cone Production.

Frank & Reese Thompson with indigo snakes. Photo courtesy of Reese Thompson.



FRANK AND REESE THOMPSON

By Reese Thompson

Jordan, Georgia is located at the junction of two highways in the lower end of rural Wheeler County. It is near where the Oconee and Ocmulgee Rivers merge to form the Altamaha River. Jordan is where two brothers, Frank and Reese Thompson, are passionately practicing community-based conservation.

Jordan is known as the home place of Reese Jordan (pronounced “Jerden”). Mr. Jordan was a significant landowner, businessman, and turpentine operator in the 1930s and ‘40s. At one time, there were over 100 families working on the farm and turpentine. Frank lives in the old commissary that was remodeled into a home. It contains 16 inch wide boards as paneling from timber grown and sawed at Jordan.

Frank and Reese are the 6th generation on the land. A great, great uncle was a Methodist circuit rider. The local Methodist Church at Shiloh, two miles away, was founded in 1807. It was built of close grain longleaf heartpine and is now surrounded by a stand of old longleaf. The brothers continued turpentine until 1984. At the time, we were in the second year of a drought, losing big timber because they were being bled to death without rain. After enduring three more years of drought, the cultivated land was planted in pines.

Our father, a turpentine operator, always told us to plant longleaf. We had marginal success planting bare root. Slash was the reliable fall back. We never drank the “loblolly Kool-Aid.” Slash was easy to plant with high survival rates. Reese, age 61, still enjoys riding a tree planter after 42 years. He says, “Planting a tree is as close to immortality as I will ever get.” When containerized longleaf became available and after some planting trial and error, we switched to planting longleaf. Slash is easy but after seeing the fusiform, you will regret planting it. We are aiming for straw and high-value products.

Being of a turpentine background, we had a tradition of burning. When tree planting was finished around the middle of January, we would start burning. There are many memories of lighting a fire at dusk and letting it burn until the humidity of the wee hours extinguished it. There is a unique beauty of the forest that can only be experienced by lying on wiregrass under a clear sky on a crisp night while watching a fire transform lighter to smoky flame and shadows. My college aged children think I lead a dull life, but I can get all the excitement I need by burning.

A wise man once said, “If you see a gopher tortoise sitting on a fence post, he did not get there by himself.” In a sense, we

are a gopher tortoise sitting on a fence post. Without the hard work and foresight of our parents, grandparents, etc. we would not have the opportunity to be good stewards of the longleaf ecosystem we have been entrusted. Also, without the guidance and assistance of numerous individuals, organizations, and agencies, we could not do active community based conservation, where we take a holistic approach. Several years ago while attending a Longleaf Alliance Academy, we met

*The Thompsons regularly use prescribed fire to manage their lands.
Photo by Reese Thompson.*



Rhett Johnson. We believed the message he was preaching. Along the same time, The Orianne Society was establishing a local presence. Their primary concern was the protection of indigo snakes and their habitat. The indigo is the largest snake native to North America and is federally listed as a threatened species. We are blessed with some undisturbed longleaf wiregrass sandhills, home to indigos and gopher tortoises, a keystone species, whose burrows are used by the indigo to winter.

As tree farmers striving to make a profit to support our families, there are areas that we intensively manage for timber production. We are ever mindful of the effects on wildlife. Shifting our burning from dormant to growing season has caused a dramatic response by the native grasses and forbs. The Almighty in his infinite wisdom made the longleaf fire tolerant and the trash hardwoods not so. The burns have really cleared the woods, allowing sunlight to reach the forest floor stimulating the native groundcover.

The Longleaf Alliance Understory Academy led by Carol Denhof opened our eyes to the universe we had spent a lifetime trampling. Now we recognize and appreciate the unique plant diversity and animal life in this rapidly dwindling treasure known as the longleaf ecosystem.

By participating in various National Resource Conservation Service (NRCS) programs, such as Working Lands for Wildlife and the EQIP Longleaf Initiative, we have been able to protect, enhance, and restore more longleaf environment than we could have done by ourselves. There are numerous individuals, agencies and organizations (USF&WS, GA DNR, NRCS, LLA, NWTF, Orianne) we wish to acknowledge and thank. One organization in particular that we have recently become involved with is the Partners For Conservation (PFC). PFC began in the West by a group of landowners addressing the issues of sensitive species while maintaining viable working lands. Collaboration is their keyword. They support public/private partnerships and large-scale cooperation to address our natural resource challenges.

In closing, we would suggest that to expand longleaf restoration even further, there are two critical issues that the longleaf community should focus upon. The first issue to address is more burning with an emphasis on growing season burns. The NRCS should be encouraged to make a distinction between dormant and growing season with a higher reimbursement rate for growing season burns. The second issue is that of longleaf genetics. We have settled with results of picking low hanging fruit for too long. Quality improvement of longleaf seedlings would positively impact establishment survival across the southeast and in turn large scale restoration of this important ecosystem.

*Mature longleaf stand on Thompson property.
Photo by Reese Thompson.*



Partner Spotlight



Q&A with Bill Palmer, President of Tall Timbers Research Station and Land Conservancy

The Kate Ireland Model Quail & Conservation Area is a model quail course at Tall Timbers named in honor of the late Kate Ireland. Photo by Rose Rodriguez, Tall Timbers Research Station & Land Conservancy.



Could you share a bit of the history of the Tall Timbers Research Station and Land Conservancy (TTRS)?

The Thomasville, Georgia area was originally settled post-Civil War as a curative spa and hunting resort. Over 400,000 acres of hunting lands for bobwhite quail were bought up from the 1890s through the 1920s. Unfortunately, the new owners did not bring a culture of fire and began putting in infrastructure and stamping out fires. Long story short, a biologist named Herbert Stoddard was hired to conduct a project on bobwhite quail. Stoddard did his classic work in the area, which was the beginning of wildlife management from a scientific standpoint and developed an uneven-aged management system of forestry that mimicked natural processes. He and others recognized and proved fire was critical for bobwhite and other species and saw the need to educate

others. In 1958, Stoddard, Henry Beadel the owner of Tall Timbers Plantation, and Ed and Roy Komarek founded the fire ecology research station to study the effects of fire on wildlife and vegetation. Mr. Beadel later bequeathed his property and a small endowment to establish the Tall Timbers Research Station.

Can you describe in your own words the mission of your organization?

The Mission of Tall Timbers is to foster exemplary land stewardship through research, conservation and education, that results in getting more appropriate fire return intervals in upland habitats in the southeastern coastal plain.

What do you say TTRS is most well-known for?

Tall Timbers Fire Ecology Conferences put us on the map. We like to say fire ecology was born at Tall Timbers, although there were other people working on this at the time. These conferences were huge during the 70s and 80s. We reinvigorated the bobwhite quail program in the 90s and have since been known nationally for our strong research program in bobwhite management. Tall Timbers helped write the recent National Bobwhite Conservation Initiative (NBCI) and the National Plan in conjunction with partners and states. Some people may not realize that we still have a very strong program in fire ecology, research, and outreach. Tall Timbers just partnered with Yale's School of Forestry to hold a 2-day symposium workshop for bringing fire back into the Northeastern forests. We have projects in North Carolina, Alabama, South Carolina, South Florida, and even reintroduced bobwhite into New Jersey.

Can you describe some of the Tall Timbers programmatic components?

We have a very strong Stoddard Bird Laboratory led by Jim Cox, which works primarily with fire adapted songbirds that are endangered, threatened, or at the top of state watch lists. We are also an accredited regional land trust with 127,000 acres

under conservation easement, and a great staff. And finally, we are building awareness by working with the local community to build pride of ownership for the Greater Red Hills Region to gain community support for conservation. The Greater Red Hills Awareness Initiative is a campaign that grew out of good working relationships with the large and small landowners with like interests in conservation, and the serious threat of Tallahassee sprawling northward. We have a planning program that works with county and city planning officials on projects that impact our region. We work in Thomasville, Tallahassee, and the surrounding counties of the Greater Red Hills, educating the public about the economic and ecological benefits provided by this region. The Greater Red Hills Awareness Initiative campaign is intended to promote that message. The other thing that people don't know about Tall Timbers is that we are working on approximately 147,000 acres of public land. We work with our partners in Georgia and Florida towards a goal of reaching over 100,000 acres of frequently burned upland forests to benefit all the fire-dependent species, including bobwhite.

What is your relationship with The Longleaf Alliance?

I view The Longleaf Alliance as almost a sister organization. We share similar views on landowner rights, provide technical assistance, and do research. We work with landowners to bring them the best information, so they can make the best decisions for their objectives. So, I feel like we complement each other. Where Tall Timbers leans more toward the research angle, The Longleaf Alliance focuses more on implementation and education of landowners. Tall Timbers has built its programs through collaboration with University of Georgia, Auburn, NC State, and other universities, as well as agencies and NGOs like Quail Forever and The Longleaf Alliance. We believe in partnership, and as we go through a strategic planning effort to determine our next five and ten year plan, you will see a lot of effort on our part to solidify and find out where the need is out there for partnerships and plug into these organizations, creating a multiplier effect. The Longleaf Alliance is certainly one of those organizations on our radar screen.

What is next on the horizon for Tall Timbers?

We will continue to protect the Greater Red Hills Region and work with the landowners there on best management practices, but I see Tall Timbers playing a bigger role in private land management across the southeastern US. The landowners and managers here have reached an incredible level of knowledge and ability. So I see us extending the model of what has been built in the Red Hills, working with private landowners, and extending it across the longleaf range as best as possible. I see our fire research and outreach programs growing substantially in the future, but we will make a decision

through strategic planning where the greatest need is. We are currently completing a Bobwhite Management Handbook that should be out in the next year or so. The handbook will be comprehensive -- based on 20 years of research and experience.

How can people get involved?

The best way is to become a member with an annual membership. We put out multiple publications. The Tall Timbers eJournal is an online magazine published twice a year, with in-depth articles on various natural and cultural history topics, and we publish various print and digital newsletters. We are a membership-based organization; the best way we can get our word out is to know who you are, and then be able to help you with your wildlife and fire and timber management goals.

For more information, visit the Tall Timbers website: www.talltimbers.org



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Pine Garden Baskets

By Kevin McIntyre, JW Jones Ecological Research Center
Partnership Council Chair

Longleaf Partnership Council Update

“ A T I M E T O C E L E B R A T E ”

This issue of The Longleaf Leader highlights the subject of old growth, the rarest of the rare in the world of longleaf pine, with just over 12,000 acres remaining according to a 2004 survey. Old-growth longleaf, with older trees of “only” 3 feet in diameter scattered through a typically mixed-age stand, is arguably a more subtle representation of old growth than its western counterparts such as giant sequoia or Douglas fir, but to me it is no less magnificent. These few remaining acres of old-growth longleaf provide valuable insights into the structure and function of the native longleaf forests that once dominated the landscape. Many of the Local Implementation Team (LIT) Coordinators had the opportunity to spend time in one of the old-growth stands near Thomasville, GA during a recent meeting in Tallahassee, and I think we all found the field trip inspiring.

I am also fortunate to come to work every day at a place that allows me to look out my office window at a hundred year-old second-growth longleaf stand. Like many other examples of mature second-growth longleaf across the South, the forests found at Ichauway today originated from what was left behind when this area was logged in the early 20th century. But, while we have done a pretty good job of conserving the little old-growth longleaf that remains, many of our mature second-growth longleaf sites remain at risk. These sites represent our only opportunity for the next generation of old-growth, the forests that will inspire our children and grandchildren the way today’s few old growth stands inspire our passion for longleaf. To quote my friend Leon Neel, who for 60 years was responsible for the stewardship and management of most of the old growth around the Thomasville-Tallahassee area, “it takes 100 years to grow a hundred year-old tree.” While Ichauway and many other second-growth longleaf sites are secure from threats, we continue to lose others every year. Robert Abernethy and I

compared notes recently and discovered that, hundreds of miles apart, significant second-growth longleaf sites had been lost in our respective home counties to potato farming. How do we stem the loss of these critically important longleaf sites that remain and ensure their stewardship into the future?



Clay road running through old growth in south Georgia. Photo by Randy Tate.

A significant first step is to identify these remaining sites across the range. Our partners at the National Fish and Wildlife Foundation will be funding a pilot remote sensing project to identify existing longleaf. Researchers at Auburn University are cataloging longleaf stands through voluntary submissions from landowners. Our LITs represent one of the most powerful tools available, local knowledge. Together we can figure this out. Once identified, how can we help maintain these sites that represent the potential

old-growth of the future? While no one expects that all of our longleaf will be managed for future old-growth, there are tools available for landowners and managers of these unique sites that wish to continue moving in that direction. Management strategies such as the Stoddard-Neel system of single tree selection provide reasonable economic returns from high-quality longleaf products while maintaining conservation values. Conservation easements offer another valuable tool for stewardship of these special forests. But we also need to develop new tools to help us deal with the multiple threats these forests face. Perhaps we can develop incentive programs that reward landowners for maintaining these second-growth stands, or develop market mechanisms such as payments for ecosystem services such as carbon storage or maintenance of water quality and quantity. These are thorny problems to solve and I certainly don’t have all the answers, but now is the time to figure this out and act before we lose many more of these sites and the irreplaceable investment in time that they represent. Because I do know one thing – it takes 100 years to grow a hundred year-old tree.

ARSA Update: Apalachicola Longleaf Initiative Phase 3 Funded!

By Brian Pelc, *The Nature Conservancy*



24 participants completed S130/190 firefighter training in the ARSA region. This is the first of four workshops aimed at increasing the number of prescribed fire practitioners working in longleaf pine habitat management. Funding was provided through ARSA's NFWF/Southern Company Apalachicola Longleaf Initiative-Phase 2. Photo by Brian Pelc.

The members of the Apalachicola Regional Stewardship Alliance (ARSA) are pleased to announce that the Apalachicola Longleaf Initiative Phase 3 was approved for funding by the National Fish and Wildlife Foundation (NFWF) and Southern Company. ARSA partners will use this funding to restore 1368 acres from off-site pine to native longleaf. 608,000 longleaf seedlings will be planted in the area between the years 2016 and 2017. Private landowners in the ARSA region will also have access to a new source of cost share assistance administered through the Florida Forest Service whereby 20,000 acres of existing longleaf habitat will benefit from fire assistance and competition control. ARSA will continue to fund a coordinator position to help write work plans, facilitate meetings, and develop the ARSA LIT conservation plan. Finally, land managers will be teaming up with the staff from Wallwood Boy Scout Camp to develop a longleaf pine ecosystem youth enrichment program. The next two years will continue the momentum for longleaf restoration and management in the ARSA region and we are looking

forward to a productive relationship with NFWF and the Southern Company.

In other news, ARSA members co-facilitated a multi-agency S130/190 introductory firefighter course and graduated 24 new fire practitioners. A follow-up S131/133 course filled up in less than a day and will take place in October 2015.

News from the Chattahoochee Fall Line Conservation Partnership (CFLCP)

LuAnn Craighton, *The Nature Conservancy – Georgia Chapter*



Janisse Ray signs books and chats with guests after her longleaf pine lecture at The Columbus Museum. Photo by D. Tipton.

The CFLCP is pleased to be a recipient of 2015 Longleaf Stewardship Funds. This funding will be used to accelerate and demonstrate longleaf conservation on more than 22,000 acres in west Georgia and east Alabama. Activities which will be implemented under the grant include: planting 1,500 acres of longleaf, enhancing over 20,000 acres with prescribed fire as well as other ecological treatments, and creating demonstration sites for landowners to showcase both the ecological and economic costs and benefits of longleaf forests. Outreach programs designed to motivate landowners to conservation action will be continued in Georgia and be expanded into the fall line of Alabama with support from this grant.

The CFLCP is collaborating with an ever expanding circle of partners to accomplish longleaf outreach activities in our region. Recently, we teamed up with The Columbus Museum, Trees Columbus, The Nature Conservancy, Chattahoochee RiverWarden, Coalition for Sound Growth, and the Chattahoochee Valley Land Trust to host Janisse Ray, award-winning writer, naturalist and author of *Ecology of a Cracker Childhood* for a lecture entitled, “An Evening with Janisse Ray: Reflections on Longleaf Pine.”

Over 250 people packed the auditorium at The Columbus Museum, and Janisse inspired the diverse audience with readings and reflections on longleaf and the natural world. After her lecture, she signed books while the audience enjoyed a reception featuring locally sourced food. In addition to her lecture, we invited key stakeholders to meet her during a dinner at a local farm, planted longleaf on a school campus with student volunteers, and enjoyed a hike on the new Chattahoochee Fall Line Wildlife Management Area with local conservation staff and a small group of landowners. Working with multiple partners on this event allowed us to cross-market our longleaf message to new audiences both inside and outside the traditional conservation community. This program focused on building awareness of the longleaf story in our urban constituents who often have great influence over longleaf restoration activities in the more rural portions of our landscape.

De Soto-Camp Shelby Oral History Project

By Becky Stowe, *The Nature Conservancy*



The first interview – Tate Thriffiley and Keith Coursey of the De Soto National Forest with Stephenie Scull-DeArme. Photo by Becky Stowe.

The De Soto-Camp Shelby Local Implementation Team has embarked on an outreach project to promote longleaf restoration in Mississippi. We are working with the University of Southern Mississippi's Center for Oral History and Cultural Heritage to record interviews with local restoration experts as well as with private landowners who are in the process of converting their lands to longleaf. We will use these interviews to educate the public about the legacy and importance of longleaf in Mississippi and to inspire landowners to create and enhance their own longleaf forests.

Ft. Stewart/Altamaha Longleaf Partnership Awarded Grant Extending the Partnership

By Randy Tate, *The Longleaf Alliance*



The Nature Conservancy's LEAF Interns (Leaders in Environmental Action for the Future) help collect groundcover seed for use in groundcover restoration demonstration plots at Moody Forest Natural Area, Baxley, Georgia. Photo by Randy Tate.

The Ft. Stewart/Altamaha Longleaf Restoration Partnership was recently awarded a Longleaf Stewardship Fund grant from the National Fish and Wildlife Foundation (NFWF) to continue on-the-ground longleaf ecosystem restoration and assessment of lands for future restoration within its Significant Geographic Area (SGA). This new grant commences January 1, 2016, and it builds on relationships established and work completed by the Partnership over the last three years. It will also strengthen ties and improve information flow between different partners while providing a mechanism for sharing resources. It will also help ensure the continuation of the vital military missions of the two Department of Defense (DOD) installations within the SGA, especially for Townsend Bombing Range and its expansion plans.

The new grant will continue funding for the Local Implementation Team Coordinator and provide partial funding for several other positions at the Georgia Department of Natural Resources and The Orianne Society. These positions will provide direct prescribed fire management assistance on both public and private lands.

One focus area for the new grant is groundcover restoration. A 46 acre groundcover donor site is being established at the Orianne Indigo Snake Preserve in Telfair County, GA. This will be a site for seed collection to aid groundcover establishment in other areas of the SGA on both public and private lands.

The new grant also provides funding for longleaf pine establishment at Sansavilla Wildlife Management Area along the Altamaha River in Wayne County, GA. Two Longleaf Academies will also be funded.

Longleaf Alliance Awarded Two Grants for Conservation Work in the GCPEP Landscape

by Vernon Compton and Karen Zilliox, *The Longleaf Alliance*



Longleaf forest after a growing season fire at Blackwater River State Forest. Photo by Vernon Compton.

The Gulf Coastal Plain Ecosystem Partnership (GCPEP) is pleased to have been awarded two grants that will further longleaf pine ecosystem restoration goals in the GCPEP landscape. A National Fish and Wildlife Foundation Longleaf Stewardship Fund grant titled “Increasing Longleaf Restoration and Management on Public and Private Lands in the GCPEP Landscape” in the amount of \$325,000.00 was awarded for multiple priority conservation projects. The grant will support 24,206 acres of prescribed fire, 245 acres of invasive species control, 589 acres of mid-story and over-story treatments, 10 acres of native understory establishment, and two Longleaf Academies and one Longleaf Field Day. The grant will also provide for planting of 730 acres of longleaf pine and for habitat improvement projects that will benefit both the reticulated salamander and the red-

cockaded woodpecker. In addition, partners will increase private landowner outreach, education, and technical assistance. 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 the U.S. Department of Agriculture’s Forest Service and Natural Resources Conservation Service, the U.S. Department of Defense, the U.S. Fish and Wildlife Service, Southern Company, International Paper’s Forestlands Stewards initiative, and Altria Group.

The Longleaf Alliance also received a Florida State Wildlife Grant of \$46,670.00 titled “Increasing Prescribed Fire and other Treatments in a Significant Landscape for the Conservation of the Longleaf Ecosystem in Florida” as announced by Florida’s Wildlife Legacy Initiative. The projects will help achieve important conservation goals identified in the State Wildlife Action Plan. The GCPEP project objective is to increase the quality and quantity of habitat for priority wildlife species on 9,542 total acres of natural pineland and sandhills in the GCPEP landscape through the use of the Ecosystem Support Team (EST) and through the EST’s facilitation of cooperative partnership burns on priority sites within the landscape. 9,000 acres will be burned on GCPEP partner lands. 542 acres of additional treatments consisting of invasive species control (200 acres) and mechanical treatments (342 acres) will occur in the same habitat type. The GCPEP partners thank Florida’s Wildlife Legacy Initiative and the U.S. Fish and Wildlife Service for providing the funding that makes this work possible.

Cape Fear Arch Conservation Collaboration

By Dan Ryan, *The Nature Conservancy*



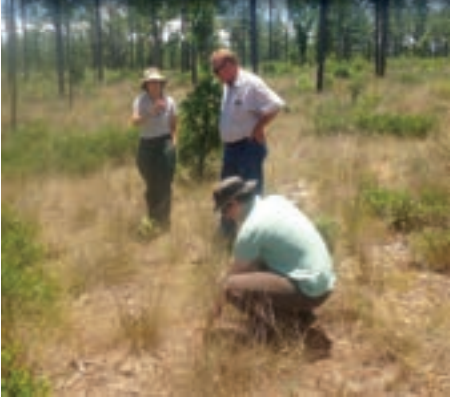
Setting a prescribed fire in North Carolina. Photo by Angie Carl.

The Arch was recently notified that its 2015 proposal to National Fish & Wildlife Foundation’s (NFWF) Longleaf Stewardship Fund, the Cape Fear Arch Longleaf Initiative Phase II, was awarded \$300,000. Phase II will continue to contribute substantially to the conservation goals of the Arch partners and many of the range wide objectives of the Longleaf Stewardship Fund. With the participation of private landowners, state agencies, and The Nature Conservancy, Phase II will plant 500 acres of longleaf pine seedlings, 1,048 acres of native grasses, treat 302 acres of mid-story, provide outreach to 300 private landowners, enhance 10 acres of bottomland hardwood habitat, and permanently protect 246 acres of bottomland hardwood habitat and 217 acres of longleaf pine. Outstanding existing partnerships will allow for extensive opportunities to collaborate and execute more than 3,500 acres of prescribed fire in a technically challenging environment filled with encroaching residential development, unpredictable weather patterns, and organic peat soils.

In addition to the lands managed by Cape Fear Arch participants, an emphasis of Phase II will be to continue to engage and benefit the habitat restoration efforts taking place at the Military Ocean Terminal Sunny Point (~12,000 acres), privately-held Orton Plantation (~10,000 acres) and the Bladen Lakes State Forest (BLSF) (~35,000 acres).

Watch us grow (longleaf)!: Ocala Longleaf Pine Local Implementation Team (OLIT)

By Cheryl Millett, *The Nature Conservancy*



Ocala National Forest's Janet Hinchee leads a field visit about longleaf pine restoration and maintenance with O2LIT Coordinator Alan Dozier and Longleaf Consul Ryan Bollinger for the Ocala LIT. Photo by Cheryl Millett.

You may have read in the New York Times that salvaged longleaf pine is highly valued for current building projects. Well, we are working on growing the longleaf of the future!

After participating in the April Longleaf Partnership Council meeting, it was time to get in the field at the Ocala National Forest. Led by Senior Forester Janet Hinchee and accompanied by the new Longleaf Consul and O2LIT Coordinator to our north, we visited and discussed the forest's unique longleaf restoration and maintenance history, work in progress and plans, and were surprised to spot some wandering Florida scrub-jays too.

Eager to apply the results of the Florida Forest Service (FFS)/Florida Natural Areas Inventory Longleaf Pine Ecosystem Geodatabase to prioritize future work, we invited their team to present at OLIT's June meeting. The meeting was jam-packed. A highlight was a combined presentation about a public-private longleaf restoration project in progress in Gainesville that spans multiple land ownerships; the Kincaide Loop Partnership was sparked by private landowners. This is only one of the projects made possible in part through the current OLIT FFS private lands incentive program.

The Ocala LIT is thankful the National Fish and Wildlife Foundation Longleaf Stewardship Fund is supporting continued work on the ground on public and private lands in our region with a \$250,000 award for 2016-2017. This will help restore endangered red-cockaded woodpecker habitat at Ocala National Forest, restore longleaf habitat with hardwood reduction at Camp Blanding Joint Training Center (with an associated study into the impacts on rare species), support controlled burning by the Northeast Ecosystem Restoration Team, and restore and maintain longleaf on private lands through FFS. It will also support team efforts such as applying the longleaf geodatabase to prioritize our future work and developing a conservation plan.

Okefenokee and Osceola Local Implementation Team (O2LIT)

By Alan Dozier, *Coordinator*



Okefenokee Gator. Photo by Joe Sorenson.

Continuance of the Okefenokee and Osceola longleaf pine restoration effort was confirmed in early July by the National Fish and Wildlife Foundation's award of a 2015 Longleaf Stewardship Fund grant. The two year grant, submitted by The Nature Conservancy, will fund the coordinator's position, the Job Corps Burn Team, additional longleaf maintenance and establishment, forest fuel reductions on private lands, and a TNC mapping project to further identify priority restoration efforts. Our two year goal is to establish 3,100 acres of longleaf, prescribe burn 51,000 acres and perform mid story treatments on just over 700 acres. "We are very thankful for the support that makes our progress possible" says O2LIT Coordinator, Alan Dozier, "all the way from the federal partners at the coordinating committee

level, to support given by NGO's, the Southern Company and other private sector contributors, all the way down to the local landowners who support longleaf and wildlife on their own property."

In other news, The Conservation Fund has been successful in receiving a grant from the Dobbs Foundation to allow the Georgia Forestry Commission to hire a Longleaf Forester to serve southeast Georgia. Over a two year period this forester is expected to provide forest management plans to landowners, conduct longleaf outreach and education, and train other natural resource professionals on the restoration of longleaf pine. Much of this project will be focused on making landowners aware of cost-share opportunities available through NRCS programs.

Sandhills Area Land Trust (SALT) Longleaf Restoration Project

By Susan Miller, US Fish & Wildlife Service



Prescribed burn in a mature longleaf stand in North Carolina. Photo by USFWS/Susan Miller.

The “Longleaf Restoration on Private Lands in the North Carolina Sandhills SGA” project represents a unique collaboration between SALT, Natural Resources Conservation Service, North Carolina State University Extension Forestry, and the North Carolina Forest Service (NCFS). This collaboration will address one of the most challenging parts of the North Carolina Sandhills Conservation Partnership’s Strategic Plan and America’s Longleaf Range-Wide Conservation Plan, the engagement of private landowners and a lack of capacity for landowners to implement farm bill programs.

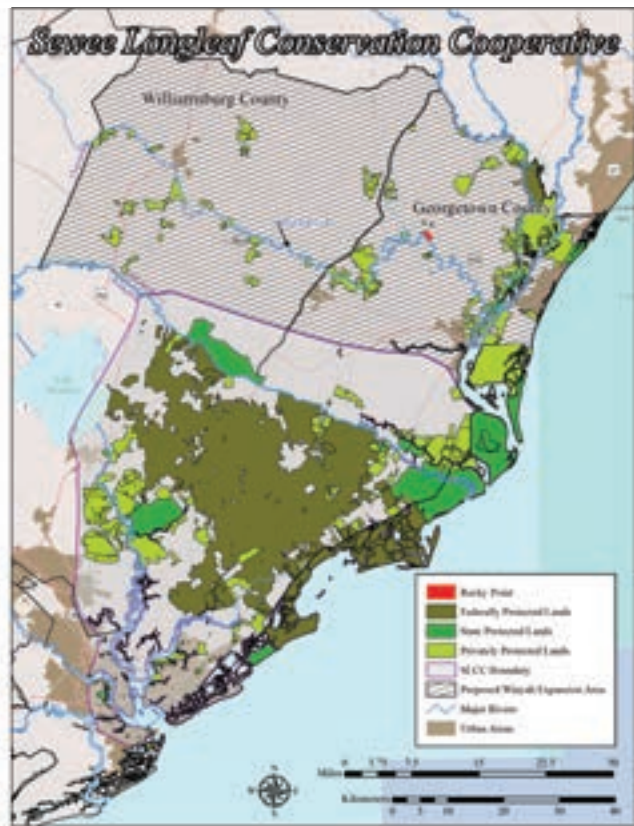
Through field days and workshops led by Extension and NCFS personnel, SALT will engage with landowners to provide educational and training opportunities and also the expertise and skills landowners needed to implement management practices. Additionally, SALT will identify individual landowners who can serve as peer educators - those landowners who are willing to mentor others. This will encourage a cohort of landowners to develop with the ability to safely and effectively implement management practices such as the use of

prescribed fire on the landscape and develop prescribed burn associations.

SALT believes that engaging private landowners in the management of their own land holds the greatest potential for long term, sustainable longleaf restoration.

Sewee Longleaf Conservation Cooperative Possible Expansion

By Colette DeGarady, The Nature Conservancy



Map of SLCC project area.

The Sewee Longleaf Conservation Cooperative (SLCC) was awarded \$100,000 by the National Fish and Wildlife Foundation to investigate longleaf restoration and maintenance in the Winyah Bay area of South Carolina, including all of Georgetown and Williamsburg Counties. Partners will expand signature pine mapping efforts into these counties, implement 1,000 acres of prescribed fire on private land with longleaf, and treat 180 acres of water hyacinth to improve bottomland habitat along the Black River and Mingo Creek. The project will also protect a key 482-acre property, Rocky Point, to be managed as a community forest and demonstration site with 283 acres of potential longleaf habitat. We hope to look beyond the Sewee landscape and incorporate new partners and landowners into our successful efforts towards longleaf pine forest restoration.

Sandhills Longleaf Pine Conservation Partnership (SLPCP) Receives Funding

By Jimmy Lisenby, SLPCP Coordinator



SLPCP will continue assisting private landowners like Kim Easterling, shown here with 2013 coordinator Wayne Harris and NRCS partner Charles Babb (L to R). Photo by: Susan Griggs.

The SLPCP has been awarded \$250,000 through the National Fish & Wildlife Foundation's (NFWF) Longleaf Stewardship Fund to support our continued longleaf restoration efforts in the Sandhills of Chesterfield, South Carolina.

Education and outreach will be an important part of this grant project. The SLPCP will host Longleaf Alliance courses, CPFM courses, and field days focusing on private landowners. The field days will cover a variety of topics including longleaf establishment and management as well as easements, third-party forest certification and invasive species management. The SLPCP will continue to offer "learn and burn" workshops that consist of a hands-on burn day to help landowners increase their knowledge and experience with prescribed fire.

In order to assist private landowners who want to burn on their own properties, a fully equipped burn trailer will be purchased with grant funds. This trailer will be offered to private landowners within the focal area at a minimal cost. The trailer will be stocked with equipment necessary for burning safely and effectively.

Grant funds will allow the SLPCP to continue offering locally collected longleaf understory species seed for restoration purposes on private lands. Cost share will be available to private landowners for longleaf establishment as well as timber stand improvement and

prescribed burning. The SLPCP's goal is to have 700 acres of longleaf established, 500 acres of longleaf enhanced through burning, and 25 acres of longleaf understory restored through this project.

South Lowcountry–Ashepool-Combahee-Edisto (SoLoACE) Longleaf Partnership Update

By Bobby Franklin, The Longleaf Alliance



Field trip during the July Longleaf 101 Academy in Aiken, SC. Photo by Robert Abernethy.

It's been a busy spring and summer in the ten counties that comprise the SoLoACE Longleaf Partnership. We continue to assist landowners with longleaf management questions. We've followed up with survival checks on acreage planted to longleaf this past winter through our cost share program. So far, survival looks good despite an intensely hot and dry two-week period in mid-June. By the time you read this, we will have completed both of our scheduled Longleaf Academies. Longleaf 101 was held July 14-16 at the Savannah River Ecology Lab's UGA Conference Center near Aiken. The 3-day workshop included classroom and field experience in management and was attended by 31 landowners and natural resource professionals. Longleaf 201, Fire and Longleaf, was held to a capacity audience at the Webb Wildlife Center in Hampton County August 18-20. Participants received classroom and field experience in learning how to use prescribed fire in longleaf forests. We continue to educate landowners

about cost share opportunities that assist with the planting and managing of longleaf pine. We cohosted a longleaf and prescribed fire field day on September 23rd with the South Carolina Prescribed Fire Council at Clarendon Plantation in Beaufort County. This was the day before the annual South Carolina Prescribed Fire Council Meeting in Walterboro on September 24.

In early July we received word that the National Fish and Wildlife Foundation and their partners agreed to fund SoLoACE II through fiscal year 2017. This will provide additional support for cost sharing of planting and prescribed burning of longleaf pine and the funding of two additional longleaf academies and field days during the cycle. In addition, we will be partnering with South Carolina Department of Natural Resources and interested private landowners in installing red cockaded woodpecker nesting cavity inserts on qualified land within the Partnership. We will still be focused on getting seedlings planted in this next cycle, but we are also excited about getting more longleaf acreage prescribed burned through our cost share and Fire and Longleaf Academies. We have applied for two additional funding sources that, if awarded, will greatly enhance the opportunity to increase landowner capacity for prescribed burning in the region! Stay tuned for additional details on this exciting project. For additional information on programs and services, contact Bobby Franklin, SoLoACE Coordinator, 843-893-7775 or bobby@longleafalliance.org.

Advancing Longleaf Pine Conservation in East Texas

By Wendy Jo Ledbetter, *The Nature Conservancy*



Wendy Jo Ledbetter and Shawn Benedict (TNC Texas staff) looking at mechanical treatment area on Campbell Global conservation easement tract, Hardin County, Silsbee, Texas. Photo by Alexandra Lodge.

The Texas Longleaf Implementation Team (TLIT) and the Texas A&M Forest Service have been awarded a grant from the National Fish & Wildlife Foundation to accelerate longleaf restoration in the Big Thicket Significant Geographic Area of southeast Texas for use in 2015-2017. This funding will allow the TLIT to assist private land owners to restore 950 acres to new longleaf stands and enhance 4,900 acres of existing longleaf through woody plant control, prescribed burning, and forest stand improvement.

Outreach and technical assistance efforts will strive to educate 100 private landowners on longleaf ecology and related resources through county landowner association meetings, SFI sponsored landowner workshops, small focused field workshops, training sessions, and fact sheets. Targeted technical assistance will seek to engage willing private landowners in stewardship practices, and possibly forest certification programs, that are beneficial to longleaf pine ecosystem restoration, enhancement, and sustainability.

Organizational capacity will be enhanced through extending the time of the TLIT coordinator through June 2017 to interface with team members and potential partners, strengthen public/private relations, and coordinate efforts with existing longleaf conservation initiatives.

Lastly, the Landowner Suitability Geodatabase will be updated to support and target future restoration efforts within the Big Thicket SGA. Willing landowners with suitable tracts (size, soil, and location), interest, and commitment to perform silvicultural and

wildlife management practices to promote longleaf pine ecosystems will be identified and targeted.

Donate a Vehicle to Support The Longleaf Alliance

Got a vehicle you don't need anymore? Donate your car, truck, boat, motorcycle, tractor, jet skis, or farm equipment to the Longleaf Alliance. Your donation will help support the Alliance's mission.



Simply go online to the website at www.1car1difference.com or call 877-557-1CAR. It is easy and quick. They will pick up the vehicle, handle all the paperwork, auction it and send the proceeds to the Alliance. You receive a receipt for tax deduction purposes. Thank you for making a difference!!!

NFWF AWARDS \$4.6 MILLION IN LONGLEAF STEWARDSHIP FUND GRANTS

By The National Fish & Wildlife Foundation with Vernon Compton, The Longleaf Alliance



“The progress made over the past decade in restoring the longleaf ecosystem is truly remarkable,” said Jeff Trandahl, executive director and CEO at NFWF. “The \$4.6 million in Longleaf Stewardship Fund grants will continue to build on that record of success and serve as a powerful reminder

Success with the restoration of the longleaf ecosystem will require a broad resource base and the National Fish and Wildlife Foundation has been key to doing just that through the Longleaf Stewardship Fund. The diverse public and private partners that support the Longleaf Stewardship Fund have had a large impact on the restoration and management of longleaf pine through providing funds for results-oriented actions and emphasizing collaboration among public and private landowners. A major benefactor of these additional resources has been Local Implementation Teams, who have been able to increase their collaborative efforts and conservation actions as a result.

In 2015 the National Fish and Wildlife Foundation (NFWF) awarded \$4.6 million in grants to support the longleaf ecosystem and advance the objectives of the Range-Wide Conservation Plan for Longleaf Pine. Funding was awarded to 22 projects across nine states in the historic longleaf range that ultimately will restore more than 11,600 acres and enhance more than 163,000 additional acres of longleaf pine habitat, while leveraging over \$6.4 million in additional funds from grant partners.

The grants are administered by NFWF’s Longleaf Stewardship Fund, a landmark public-private partnership that includes the U.S. Department of Agriculture’s (USDA) Forest Service and Natural Resources Conservation Service, the U.S. Department of Defense (DoD), the U.S. Fish and Wildlife Service (FWS), and private funding from Southern Company, International Paper’s Forestland Stewards Initiative and Altria Group. The fund, now in its fourth year, combines the financial and technical resources of the partnership to accelerate restoration of the longleaf pine ecosystem and implementation of the Range-Wide Conservation Plan for Longleaf Pine as part of America’s Longleaf Restoration Initiative.

of the importance of public-private partnerships in conserving America’s natural wonders.”

The longleaf pine ecosystem once encompassed more than 90 million acres, reaching from Virginia to Texas. Unique to the southeastern United States, it contains a stunning diversity of plants and animals — including rare and endangered wildlife such as the red-cockaded woodpecker, indigo snakes, and gopher tortoise — and provides a range of additional benefits, including supporting forest-dependent economies and military readiness. With many agencies, nonprofits, private landowners and businesses committing to longleaf pine restoration in recent years, the acreage of longleaf pine forest has grown 8 percent over the past decade to an estimated 4.7 million acres, reversing a century-long decline across the South.

The 22 projects selected to receive support include 11 Significant Geographic Areas for longleaf pine conservation. Additionally, it is expected that the funding will provide more than 2,500 private landowners with educational and technical assistance related to longleaf restoration and available cost-share programs, with 380 landowners entering into stewardship programs on private lands.

“Public and private organizations working collaboratively to restore the longleaf pine ecosystem is critical to continued progress,” said Robert Bonnie, USDA’s Under Secretary for Natural Resources and Environment. “We encourage this team effort and the use of USDA conservation programs to provide assistance to landowners while furthering the objectives of America’s Longleaf Restoration Initiative.”

“The Longleaf Stewardship Fund provides a tremendous opportunity for DoD to work with partners to achieve wide ranging benefits for the military,” said John Conger, performing

the duties of Assistant Secretary of Defense (Energy, Installations and Environment). “Protection and restoration of longleaf pine forests strengthens military readiness by promoting compatible land uses near military facilities and enhances habitat for imperiled species, which in turn provides greater flexibility for our training, testing and operational missions. In 2015, as a result of our partnership with National Fish and Wildlife Foundation, approximately 11 dollars will be spent by our partners for every dollar DoD spent, resulting in over 5,500 acres of longleaf established and 87,676 additional acres enhanced to benefit seven military installations. Working with partners in the Longleaf Stewardship Fund helps DoD achieve beneficial outcomes in support of national defense, and we’re glad to continue to be a part of the effort.”

“Longleaf pine forests are an integral part of the culture, economy and ecology of the Southeastern landscape,” said Cindy Dohner, the U.S. Fish and Wildlife Service’s Southeast Regional Director. “Restoring these open, fire-maintained forests will help in the recovery of numerous at-risk or listed species. The Service recognizes the valuable role that the Longleaf Stewardship Fund plays in longleaf pine ecosystem restoration efforts and is proud to support the Fund.”

“The results of our partnership with the National Fish and Wildlife Foundation, natural resource agencies and others demonstrate the power of collaboration and a shared long-term commitment,” said Southern Company Chief Environmental Officer Dr. Larry S. Monroe. “Southern Company is proud to continue our support of this critical conservation work in the Southeast.”

“International Paper is proud to work with the National Fish and Wildlife Foundation to demonstrate the economic, social and ecological value of working forests while conserving and restoring some of nature’s most treasured landscapes,” said Mark Sutton, chairman and CEO of International Paper. “Throughout our 117-year history, our company has encouraged sustainable forestry practices and the stewardship of renewable natural resources. Through the Forestland Stewards Initiative, we are building on this commitment and supporting the important work of the agencies and partners who are advancing healthy forests across the Southeast United States.”

“Promoting the sustainability of natural resources is a core part of Altria’s mission,” said Wendy Shields, Manager of Corporate Contributions and Community Relations for Altria Client Services. “By helping restore the longleaf forests, we are improving our communities while protecting the resources on which we depend.”

Since 2012, the Longleaf Stewardship Fund has invested more than \$14.1 million in projects that will restore more than 47,400 acres, improve more than 552,000 additional acres of longleaf pine forest, and benefit the native species that rely on those forests. The grants awarded by the Longleaf Stewardship Fund in 2015 continue to build on the success of this public-private partnership and further expand the restoration of the longleaf pine ecosystem.



Local Implementation Team representatives touring an old growth forest in south Georgia. These teams would not be as successful in progressing with longleaf restoration in their areas without the Longleaf Stewardship Fund. Photo by Randy Tate.

LITERARY REVIEW

By Robert Abernethy, *The Longleaf Alliance*

The Art of Managing Longleaf

by Leon Neel with Paul S. Sutter and Albert G. Way, Published by the University of Georgia Press, 2010

The Art of Managing Longleaf: A Personal History of the Stoddard-Neel Approach by Leon Neel with Paul S. Sutter and Albert G. Way is really a history of the lives of Herbert Stoddard and Leon Neel in the Red Hills region around Thomasville, Georgia where they worked. The book is also about how they came to develop the Stoddard-Neel Method of managing longleaf pine forests and the philosophy of ecological land management.

Mr. Neel grew up in and around Thomasville in the 1920s and 1930s, studied to be a forester and in 1950 went to work for Herbert Stoddard managing the quail plantations and longleaf forests of the Red Hills. This book describes his youth and adventures in the South Georgia fields and forests and helps explain why the pairing of Stoddard and Neel was such a fortuitous event.

Herbert Stoddard came to South Georgia in 1924 at the age of 35 to work on the Cooperative Quail Investigation. He stayed until his death in 1970. For the last 20 years of Herbert Stoddard's life, Leon Neel worked for him and learned how to manage the longleaf forest in such a way as to generate income while maintaining forest cover, ground cover, and excellent populations of bobwhite.

The Stoddard-Neel Approach of managing timber allows the landowner to keep the forest and the ecosystem intact while still cutting timber.

The life experiences of Herbert Stoddard and Leon Neel span 100 years. Mr. Stoddard started working in the longleaf woods when logging was done with axes, crosscut saws, and mules and

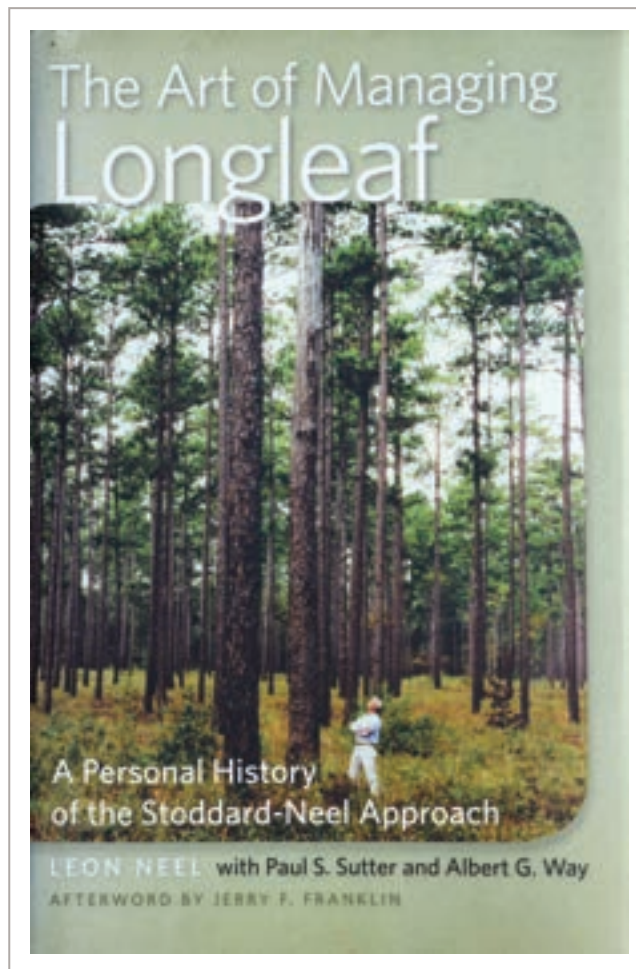
there was a great effort by the state and federal agencies to take the fire out of the woods. Stoddard and Neel worked together between 1950 and 1970 and witnessed the transformation of logging and land management to short rotation, loblolly, and slash pine plantations logged with heavy equipment. Mr. Neel's career has continued into the 21st century where he has witnessed a resurgence in the interest of longleaf and the increased application of fire on the landscape as a management tool. This book describes that transformation of the southern timberlands over the last 100 years.

In the afterword, Jerry Franklin said it well.

"It seems as though in each major forest type a forester emerges who is known for the breadth of his knowledge of the natural history and practical management of that type – a 'forest guru' so to speak. Certainly, Leon Neel has attained that status for the longleaf ecosystem, based on a lifetime spent observing and caring for

these forests. By doing so he has provided us with both a powerful management philosophy and a demonstrated approach to the application of that philosophy. He has also embodied for us the virtues of personal integrity and dedication to the core principles of resource Stewardship."

This book is about Mr. Neel's love for the land and how landowners really can have it all: beautiful forests, lush understory, income from timber, and abundant quail. This is a must read for all those that care for the longleaf ecosystem.



LONGLEAF ART SPOTLIGHT

About the Artist:

Beth Maynor Young is an accomplished conservation photographer who has spent much of her life chronicling the natural beauty and remnant wild places of the contemporary South. The photographs are mostly from unprotected places - each with its own story of biological compromise and imminent threat. But these places also embrace a Southern tradition - of being saved and preserved, of restoration and resurrection. Her latest project was the book, *Longleaf, Far as the Eye Can See*.

Her newest venture is in real estate, selling land with Cyprus Partners. Mark Bailey, Bill Finch, and Beth have been using their combined talents to secure buyers for significant conservation lands in Alabama. These real estate endeavors have opened up new lands to photograph as well as secure with good land stewards.

Beth's fine art photographs are part of many private and corporate art collections across the country. Her renown and



popularity is a testament to the caliber of her work. Today, Beth's photographs give us a moving vision of the natural world and speak quietly yet deeply of our need to preserve the South's unique environmental heritage. Visit her website to see more of her work. www.BethMaynorYoung.com.

Secrets of the Longleaf Pine

Televised on Georgia Public Broadcasting: Wednesday, October 21, 2015

Atlanta, GA – October 1, 2015 – The Emmy® Award-winning production team of Chattahoochee Unplugged Red Sky Productions is proud to present *Secrets of the Longleaf Pine*, a new documentary about one of the most biodiverse locations in the Northern Hemisphere: the forgotten forest of the Longleaf Pine.

Secrets will transport the viewer into the coastal plain of the Southeastern United States and show how this incredible place

continues to thrive. Viewers will also see the ways in which conservationists work to restore this incredible biologically diverse ecosystem and help animal species such as the Gopher Tortoise, Eastern Indigo Snake, and Red Cockaded Woodpecker survive and thrive in this incredible habitat. Watch *Secrets of the Longleaf Pine* on Georgia Public Broadcasting on October 21, 2015 at 8: 00 p.m. ET.

By Robert McCartney, Woodlanders and Julie Moore, USFWS

Longleaf Destinations

Longleaf of Southeastern Virginia

Over 400 years ago, in 1607, three ships under the command of Captain Christopher Newport sailed into Chesapeake Bay to establish what became the first permanent English settlement in America. Here at Jamestown on the James River and surely south of this broad river they found longleaf pine. In the colony's first years they recorded the first "tryalls of pitch and tarre." These "naval stores" were a necessity for sailing ships. Though it could not rival tobacco, this commodity would become an important export for the Virginia colony and fledgling U.S. into the 19th century. Longleaf, the main source for naval stores, was estimated to occur on a million acres in what is now Virginia. From this northern limit it extended southward to Florida and west to Texas covering an estimated 92 million acres.

Settlement, clearing for crop fields, abundant free range hogs, turpentine and lumbering, followed by fire suppression in the 18th and 19th centuries, doomed longleaf and much of the associated flora and fauna in Virginia. It is hard to imagine that a once abundant and valuable tree and ecosystem could almost completely disappear from southeastern Virginia. In 1893 a forester named B.E. Fernow claimed that the longleaf pine in Virginia was "for all practical purposes, extinct."

Today, 125 years later, only a few hundred native longleaf trees can be found. In 1970 Joni Mitchell wrote and recorded the hit song Big Yellow Taxi with a second verse that says: "They took all the trees and put them in a tree museum then they charged the people a dollar and a half just to see 'em. Don't it always seem to go that you don't know what you've got 'till it's gone (they paved paradise and put up a parking lot)." Her inspiration came in Hawaii, but she could have been singing about longleaf in Virginia. Fortunately, Virginia has not followed the lyrics and in the present century has undertaken an extensive and ambitious effort to restore longleaf in the northernmost part of its natural range. This effort involves state, federal, and private forestry and conservation agencies, non-profit organizations, corporations, an Indian tribe, and individual land owners.

Today we can "see 'em" not in a "tree museum" but scattered all over southeastern Virginia. One can visit a preserve with mature trees, see acres of recently planted ones, and let the kids try to count the many mature longleaf in front yards of almost every town. In addition, visitors can enjoy any number of other diversions in rural southside Virginia. Nearby are Jamestown, Williamsburg, Yorktown, and the Hampton Roads area (Hampton, Newport News, Norfolk, Virginia Beach).

Virginia longleaf forest. Photo by Robert Abernethy.





Zuni Pine Barrens sign. Photo by Robert Abernethy.



Virginia Diner in Wakefield, VA. Photo by Robert Abernethy.

Where to start

The small town of Wakefield is a good base for a Virginia longleaf trip. About four miles south of town, beside a scenic old mill pond, is Airfield 4-H Conference Center with excellent motel style rooms, and other amenities including nature trails and fishing. Check it out at www.airfieldconference.com.

Start the morning with a huge breakfast at The Virginia Diner. The Virginia Diner has been a landmark for hungry folks since 1929 when it started serving country ham biscuits to vacationers heading to the beach. For menus and a map go to www.vadiner.com.

What to see

As you exit the gate at Airfield 4-H Conference Center, turn left (west) and take a right fork on an unpaved road. Within a few hundred yards you will see acres of young longleaf on both sides of the road planted by the Westervelt Corporation and some older trees planted by the Virginia Department of Game and Inland Fisheries on the Big Woods Wildlife Management Area.

From Wakefield, head west on county roads 620 and 622 to Littleton and watch for longleaf along the way. Continue on route 35 toward Courtland then right on Peters Bridge Road. In a few miles, you will be at Chub Sandhill Natural Area Preserve on Nottoway River. Here, there are acres of thriving young longleaf maintained by an active prescribed fire program managed by the Virginia Department of Conservation and Recreation (DCR). A number of native plants that are rare or otherwise unknown in Virginia occur amongst the taller pines beyond the planted longleaf. Also, enjoy the walk to the little observation deck at a remote scenic spot on the river.


Now saving the best for last is the Zuni Pine Barrens Preserve owned by Old Dominion University and the adjacent Antioch Pines Natural Area Preserve more recently acquired by Virginia DCR. These preserves total over 1000 acres and are dedicated to preserving and managing this rare example of the once extensive longleaf pine ecosystem. To get there, take U.S. 460 south from Wakefield to the town of Zuni and then take Route 614 down along the east side of the Blackwater River to the preserves. The original preserve has well maintained flat, mowed walking trails through fire-managed piney woods with mature longleaf, pond pine, and interesting plants, some very rare in Virginia. Antioch Pines has several old native Virginia longleaf and a large acreage of recently planted longleaf.

Various partners in the effort to restore longleaf in Virginia have made a special effort to locate relict longleaf that were native Virginia trees. In trials, the seedlings from these trees have proven to be better adapted than longleaf from farther south. At considerable trouble and expense, the Virginia Department of Forestry has led the effort to collect seed from these native trees, propagate planting stock, and use this stock exclusively to restore longleaf on state owned lands. This effort, led by Billy Apperson also involves grafting native trees to develop a seed orchard, a future seed source for the restoration of Virginia's longleaf.

We applaud the small group of committed longleaf enthusiasts in Virginia that have worked so hard to make sure the native Virginia longleaf has a future, and Virginians of the 21st century will not be haunted by Joni Mitchell's lyrics "Don't it always seem to go that you don't know what you've got 'till it's gone."

VISIONARY LONGLEAF CONSERVATIONIST M.C. DAVIS REMEMBERED

By Vernon Compton, *The Longleaf Alliance*



MC Davis (r) with Nokuse Plantation Manager Matt Aresco surveying the growing longleaf forest. Photo by Carlton Ward.

I am saddened to share with you the passing of noted conservationist and partner to many, M.C. Davis. M.C. passed away recently after a battle with cancer. M. C. bought, preserved, and helped to save so many special places including lands now protected in Mississippi, Alabama, Florida, Georgia, Tennessee, and North Carolina. But his project in the Gulf Coastal Plain Ecosystem Partnership landscape, the 53,000 acre Nokuse Plantation, is one I'm most familiar with and is such an inspiration and a legacy. In addition to working to restore this important wildlife corridor back to the native longleaf pine, he also built an amazing education center, the E.O. Wilson Biophilia Center that has touched so many lives, especially youth who have now learned about the longleaf ecosystem and the amazing diversity of plants and animals. I will always remember walking on Nokuse Plantation before the restoration effort began and being so encouraged by the vision and passion that M.C. had. Although much biodiversity had been lost due to conversion to agricultural fields, M.C. had a vision for a future Nokuse Plantation which would become a restored longleaf ecosystem, once again with abundant wildlife such as the gopher tortoise and Florida black bear. It has been so rewarding to see that actually occurring, along with numerous positive changes since the restoration began in 2000.

I wanted to share below a direct quote from the Nokuse Plantation website that describes so well what Nokuse Plantation is about.

Nokuse Plantation is a 53,000-acre private nature preserve located in Walton County in northwest Florida. It is the largest private conservation project east of the Mississippi River. Northwest Florida has long been recognized for its environmental wealth. It is an ecological "hot-spot", a geographic area that hosts an unusually high concentration of plants, animals, and natural communities. However, much of the natural ecosystems of northwest Florida have been destroyed

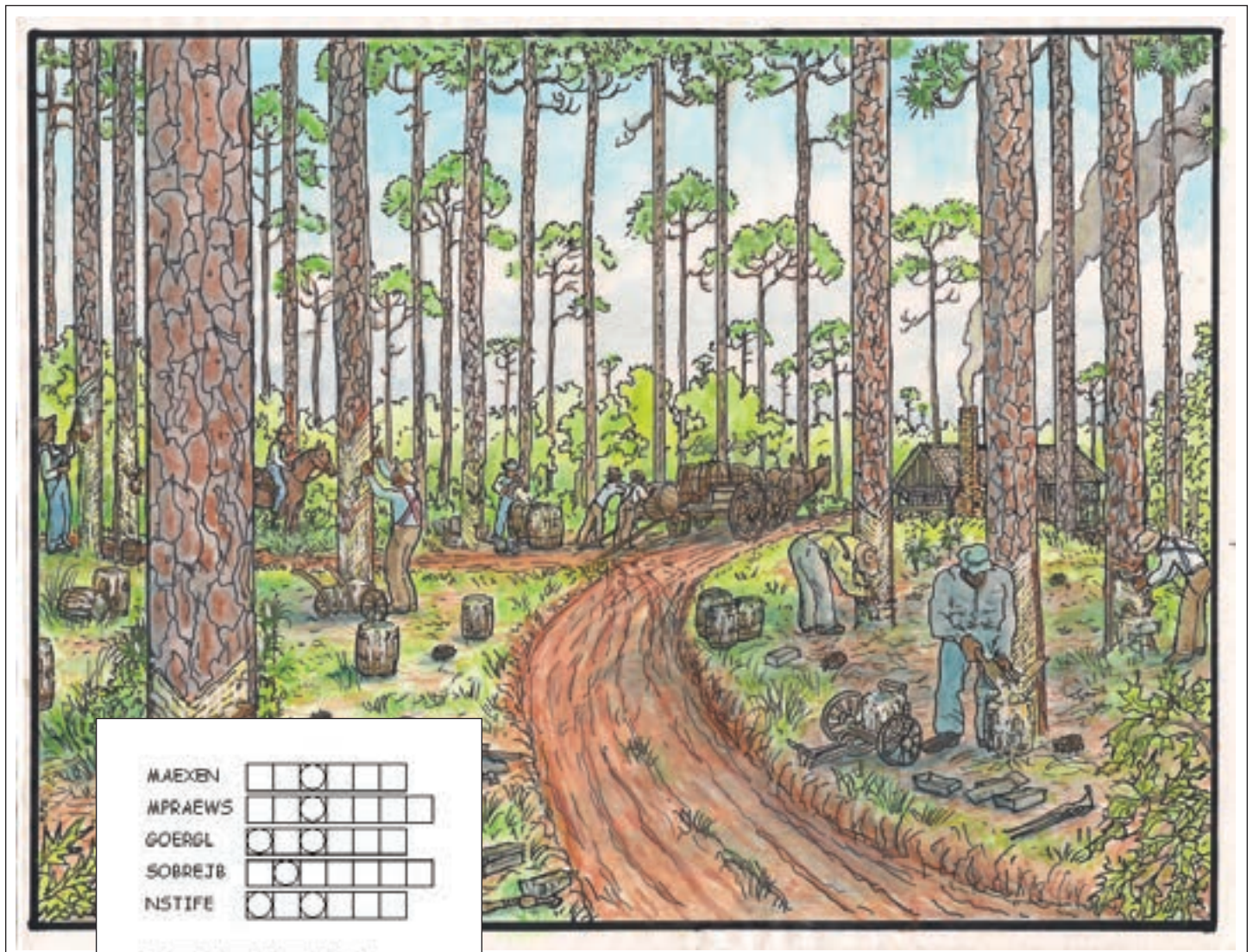
by agriculture, silviculture, and urban and residential development and many species that were once common are now rare, threatened or endangered. Habitat loss is the greatest threat to wildlife and habitat protection is the greatest hope for the future. Nokuse Plantation was established by M.C. Davis in 2000 to preserve, protect, and restore a critical part of Florida's unique natural landscape. Inspired by the core reserve and corridor hypothesis, M.C. Davis sought parcels of land that became Nokuse Plantation because of their proximity to over one million protected lands in the area. Nokuse Plantation is a vital link between large conservation lands to the west, including Eglin Air Force Base Reserve and Blackwater River State Forest in Florida, and the Conecuh National Forest in Alabama, and the Choctawhatchee River Wildlife Management Area to the east. It is also part of the planned Northwest Florida Greenway which would link State, Federal, and private conservation lands across southern Alabama and the Florida Panhandle from the Eglin/Blackwater/Conecuh system all the way to the Apalachicola National Forest and St. Marks National Wildlife Refuge. At the heart of the initiative is the understanding that the combined resources and passion of entrepreneurs, government, scientists, and individuals are necessary to accomplish the scale of restoration and land conservation needed to reestablish the area's natural ecosystems and historic biodiversity.

Many in the longleaf community knew M.C. as a man with a deep love of the land and wildlife. He was a man of vision and conservation action. That action is clearly evident through the outstanding restoration work occurring on Nokuse Plantation, the education and outreach occurring through the E.O. Wilson Biophilia Center, and the numerous conservation areas protected. M.C. will be greatly missed by all of us who had an opportunity to know and work with him, but his vision related to longleaf will live on through his conservation projects and the impact of the continuing work of those he touched.

While you're in the Grass stage...

"Grass Stage" is a section just for kids and/or kids-at-heart. Longleaf forest management is a long-term endeavor; in order to keep the longleaf pine ecosystem in longleaf, the next generation must get engaged or else all of the hard work, restoration, and protection currently going on will be for naught. We hope you share "Grass Stage" with your "next generation" longleaf enthusiast.

Lesson Seventeen: Old longleaf pine trees produce beautiful lumber, highly valued for its strength, straightness, and resistance to rot. Some have even called longleaf pine "one of the finest timber trees the world has ever known." Use Lesson Seventeen found on our website (www.longleafalliance.org/next-generation) to help unscramble the words. Answers can be found below the picture.



MAEXEN	□	□	○	□	□	□
MPRAEWS	□	□	○	□	□	□
GOERGL	○	□	○	□	□	□
SOBRETB	□	○	□	□	□	□
NSTIFE	○	□	○	□	□	□

□ □ □ L □ □ □

Answer
axemen, swamper, logger, jobbers, finest, longleaf

By Lynnsey Basala, *The Longleaf Alliance*

Digging Deeper for the Beloved “Piney Woods”

As the seasons change and we enter the fourth quarter, is it fair to assume the latter months of the year bring out the best in you? Historically, giving trends peak this time of year and the influx is attributed to the generosity of individuals and families that fund our efforts to restore the longleaf pine ecosystem throughout the South. The Longleaf Alliance continues to dig deep to identify and protect those last great stands of longleaf and ensure they remain for our children and grandchildren to enjoy for generations to come. Our scope of work is evolving outside of current grants, contracts, and day-to-day operations of the organization. Now more than ever, we respectfully encourage you to dig deep and support LLA’s annual campaign. In a few days you will receive the fall



campaign letter, providing a wonderful opportunity to make a meaningful monetary donation to ensure a sustainable future for the “piney woods.”

To double or possibly triple your contribution this year, be sure to mark your calendar for the annual Giving Tuesday campaign on December 1, 2015. #GivingTuesday has become quite the social, digital, and philanthropic trifecta in recent years. Please look into your company’s matching gift program before donating as LLA is an eligible 501(c)(3). Make us your charity of choice this year and be sure to post &/or Tweet your support

with #GivingTuesday #LongleafAlliance in support of the longleaf ecosystem. Donations can be made at www.longleafalliance.org or (334) 427-1029.

**SAVE
THE
DATE**

11th Biennial Longleaf Conference
November 1-4, 2016
Savannah Marriott Riverfront
Savannah, GA




By Wade Harrison, *The Nature Conservancy*

Rocks in the Stream

*Prescribed fire in Thomas County, GA.
Photo by Greg Seamon.*

There is a place down the road from where I grew up where Dad liked to say he got two birds on the rise with one shot, back when he was a young man, on a point from his favorite bird dog. Like many bird-hunting spots in the Carolina piedmont, it was a brushy old field at the time, near an old tenant farmhouse, growing up in broomstraw and pine trees after Dad's own father gave up on almost a hundred years of cotton. Most of another century has now passed, during which the field grew up in the big loblolly pines of my childhood, cut long ago for the local sawmill, leaving another brushy field, itself overtaken by a new cohort of pines, this time in orderly rows, which today are small sawtimber trees, already thinned.

Over his adult life, Dad saw two long growth cycles on that old field, and on many others around the home place... field to woods to field to woods. He had a long view of the changing land that I found simultaneously endearing and disconcerting. He saw and remembered the last cotton fields, the tenant farmers, the dirt roads. He watched a shifting mosaic of farmsteads, oak groves, old fields, kudzu patches, pine thickets, log decks, and clearcuts-- crowding, lapping over, and replacing each other-- observed from his childhood perch on a horse-drawn wagon, then the window of a car, then the seat of a beat-up golf cart. Even after his advanced age (and my mother) forced him to stop such driving, he craved getting out to go for a ride, to see what was changing, what was growing, who cut where, who built what. Those old cotton fields lived fast and hard, and wore a coat of many colors.

I've never been as comfortable as Dad was, with this rapid-fire land-use movie reel. I watched a different version of the same story play out in the Lowcountry pinelands of a paper company for the first half of my own career. Between the immovable walls of the wettest hardwood flats and bottoms, on soil we bladed and plowed, grew armies of fast-growing pines, thick and dark and lush with fiber to feed a mill and then start over again 20 years later. These were pulpwood-heavy rotations that I sometimes saw from start to finish, or mid-way to mid-way again, discrete cohorts of softwood stems that rearranged themselves like platoons on a drill field. Unlike my father, I couldn't quite warm to the pace of it. We were creating amazing landscape art, paint-by-numbers style, and my heart was missing the original canvas.

I found myself gravitating to the odd little vestiges of a former world, the cypress swamps, shaded blackwater creeks, islands of upland hardwood, and small groves of lonely old longleaf with nest cavities, usually long abandoned, but dutifully preserved and avoided by the industrial plantation machine. The rare active woodpecker sites even got a little tender-lovin' fire, and a management plan that slowed the churn, stopped the madness, for as long as the birds could hang on.

Since those days, I've sought out more and more of those odd vestiges, even larger remnants, of our former world. Places that feel more like sacred ground and less like accidental artifacts. Places where time stands almost still. Many of them are places where longleaf pines have grown gnarly, thick-limbed, and flat-topped, where the groundcover still carries low-intensity fire, or will do so again. Where wildlife and plants, adapted to these precise conditions, can still linger despite all the lost and converted habitat. Where individual trees, a hundred years ago, looked much like they do now.

Such places, such trees, such forests, need not be accidents of history. They are more than heirlooms. More even, than monuments. Functionally speaking, an ancient longleaf pine is canopy structure, wildlife habitat, and a stable source of litter fall to carry fire and of seed fall to someday replace itself. But it is also a compelling demonstration of biological strategies to resist change, to survive drought, to flourish amid fire, to stand up in the wind. Old-growth forest is a history book with a scientific story, a story of how the former world worked, and the things it endured, a story we are still learning, or trying to remember. It is a story our future may depend on, as we manage this planet through population explosions, real estate booms, financial crashes, exotic pests, climate change, and rising seas.

Like all things biological, forests are dynamic of course. Succession happens. Trees fall. Fires burn where and how they want to. Gaps are invaded by impatient youth. Chaos ensues. A friend and fellow-forester once shared with me a beautiful metaphor, that a forest is really a flowing stream, changing, meandering, tumbling here and pooling there, whether we choose to manage that change, or just sit back and watch it. We would be wise to appreciate the rocks in the stream.

