

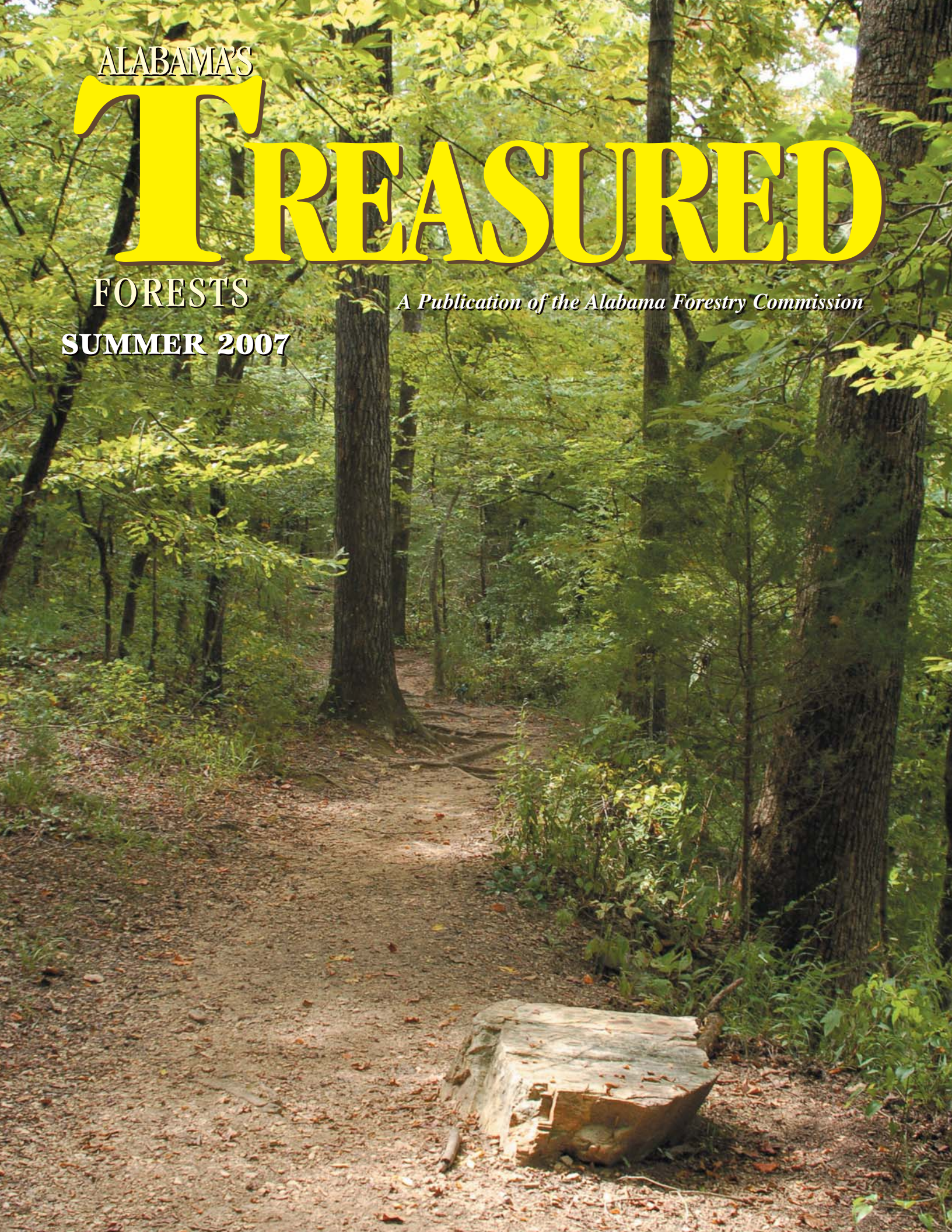
ALABAMA'S

TREASURED

FORESTS

A Publication of the Alabama Forestry Commission

SUMMER 2007



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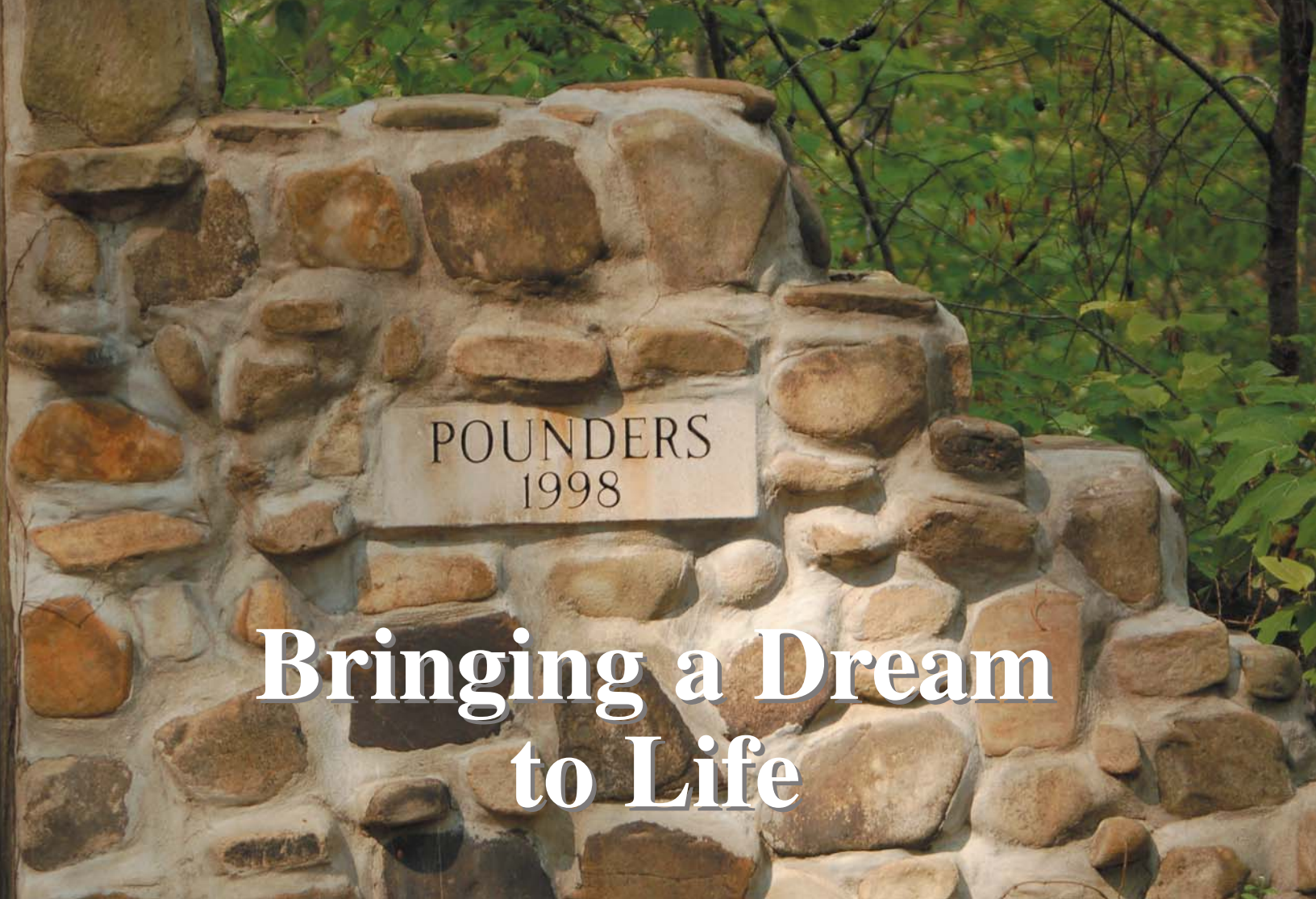
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On the Cover: This shady trail leading into the forest offers a retreat from the hot sun on an Alabama summer day. (See more on trails, pages 23-25.) *Photo by Kelvin Daniels*
Background this page: While following a trail in the woods, this pitcher plant on the forest floor caught the eye of photographer *Mike Kyser*.

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Bringing a Dream to Life

By *Coleen Vansant*, Public Information Manager, Alabama Forestry Commission

As children, we all have dreams. Dreams of what we want to do or be when we grow up. Some of us have visions of being astronauts, professional athletes, school teachers, firemen, or race car drivers. We dream of what kind of house we want to live in, the kind of car we want to drive, and even who we want to marry. For most of us, time and life circumstances change those dreams, and before long they're just a faint memory that we laugh about years later. For one pair of brothers in Franklin County, they are actually living the very dream they shared as young boys.

Twin brothers Joel and Jeff Pounders sat as boys on the top of high cliffs near their home in Franklin County and looked down into a beautiful pristine cove and dreamed of owning it one day. You can almost shut your eyes and listen as the two talk about what they wanted to do when they were the masters of the farm they so treasured. The two never

imagined that around three decades later they would actually stand as men on the top of the same cliff, looking down on the beautiful cove that they now share together.

Acquiring the Dream

Although it had been a long time since the two had dreamed of owning the property, when the first parcel came up for sale, they had not forgotten the promises made to one another long ago. They purchased their first 20-acre tract of land together, and as the years passed, they gradually added to it as property became available. They even managed to bring land back into the family that had been owned by their father and grandfather. Now, the farm includes around 360 acres that the twins' families own and manage together.

They may not have known it at the time, but life was preparing the two men for the dream that was to come. When time came for college, both attended the

University of North Alabama in Florence where they received their degrees in environmental biology. Being aware of natural science, when the time came to begin managing the property, they not only relied on their own knowledge, but went to the professionals that could help. Through the Alabama Forestry Commission, the Natural Resources Conservation Service, the Cooperative Extension System, and other natural resource and farm agencies, they got the assistance they needed to develop their farm plan and bring their dream to life.

Developing the Dream

Through an intensive management plan, the brothers were able to bring the land to life, with every action enhancing another element of the farm's environment. With wildlife as their primary objective, they knew the first thing they had to do was implement actions that would give them the quality and quantity of species they wanted. "Early on, there



Photo by Coleen Vansant

were not numbers *or* quality of wildlife here,” Joel explains, primarily in reference to whitetailed deer. Providing a habitat that would grow quality antlers and enhance fawn production was first on their list. Through practices such as timber harvesting and planting, food plots and other routines, they have increased the deer population to a point that every year they do a very selective harvest, removing only the older age class deer. Now they may harvest six to eight mature, high-quality deer a year.

Turkey was another priority, which to them was measured by their brood rearing success. They targeted predator control, carefully planned mowing as not to disturb nests, conducted prescribed burns, and planted both warm and cold season annuals. Now they both talk about how it’s not a visit unless you see a gobbler fly down and strut in the distance.

Not only are native plant species encouraged to grow but supplemental plantings of oats, clover, chufa, millet and other game foods are planted and maintained to help attract wildlife. According to Jeff, the fescue and Bermuda grasses, originally started to sustain cattle farming years ago, have been removed and replaced with herbaceous plants.

With cost-share assistance the Pounders built a shallow water pond, or artificial wetland, that is drained every spring. This has brought many wildlife benefits, including habitat for wood ducks and visits from mallards. In the spring, turkeys also take advantage of the drained pond to forage for insects.

Managing the Forest

They both realized that developing the timber resources was one of their top priorities if they wanted to increase their wildlife habitat. According to Jeff, they



Jeff (left with Tatonka) and Joel (right with Ol' Yeller) show the quality of deer that they have harvested from their property. The brothers give names to the deer that frequently roam the property.

wanted to maintain the integrity of both the bottomland hardwood and water quality, but they knew they must manage for pine to give the deer and other wildlife species the habitat necessary to thrive. Through a lot of thought, planning, and design, they decided to intensively manage their ridge tops in a pine monoculture. Every harvest was carefully conducted, and they struggled with what to grow and where it should be grown. Now, around 30% (approximately 100 acres) of their forest resource is intensively-managed monoculture pine in early succession phases that provide thermal cover (bedding areas) for the white tailed deer, turkey, and other species. The two men together planted around 50,000 trees over a period of time.

During the harvest, special care was taken to keep irregular shapes and maintain wide streamside management zones (SMZs). Approximately 50% (about 180 acres) of their forest is in natural mixed

stands or bottomland hardwood that runs along Little Bear Creek. The remaining 20% of land area is maintained as forest clearings interspersed with wildlife plantings.

Water Quality

Little Bear Creek runs all the way through the cove and is actually the focal point of the farm. Preserving this feature is important to the brothers, and every action they take enhances the stream. Best management practices are followed

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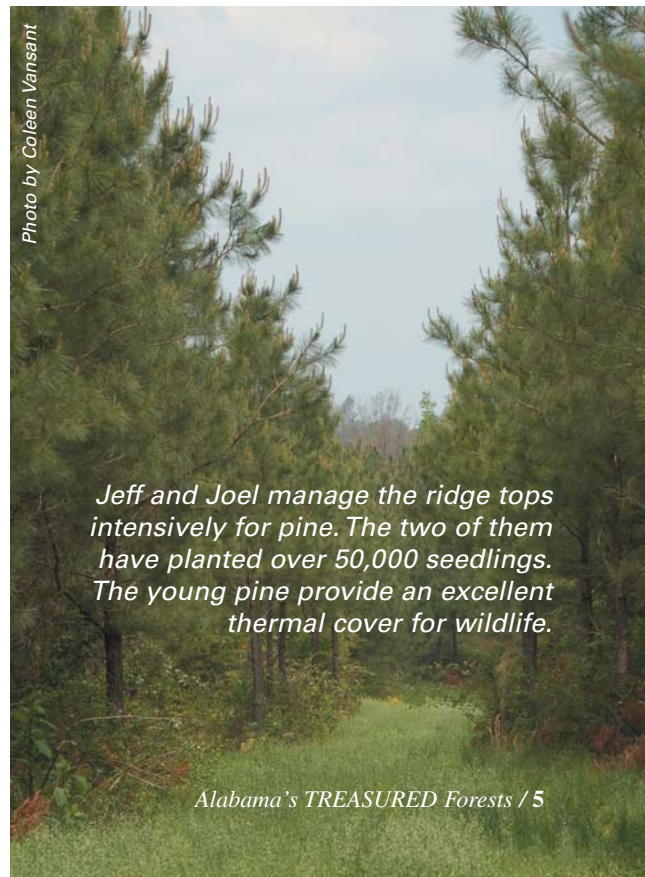


Photo by Coleen Vansant

Jeff and Joel manage the ridge tops intensively for pine. The two of them have planted over 50,000 seedlings. The young pine provide an excellent thermal cover for wildlife.



The Pounders built this one-room cabin themselves, which includes a loft, kitchen, bathroom, and fireplace. The floors are cedar plank. The two also designed the porch railings.

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during all timber harvesting, and a very wide riparian zone is maintained. Stream crossings are maintained to allow little disturbance to the banks of the creek, and along their forest roads, water bars are established every 100 feet.

With the new cabin overlooking a sharp bend in the stream, keeping the integrity of the water is important. Both want their children to enjoy wading in the cool clear water and benefiting from all the diversity it brings. Joel and Rhonda have one daughter, Chloe, age 8. Jeff and Paula have three children: Gracie, age 5; Lily, age 3; and Ben, 8 months old.

History

The Pounders' farm is located in a valley rich with local history. A collection of artifacts from broken bits of miscellaneous pottery to arrowheads have been found all across the farm. Primitive tools, hidden for thousands of years, have been discovered by the brothers inside rock shelters; evidence that early man once called this valley their home.

Two lonely graves, one a Native American burial mound, and the other marked only by a rough hand-hewn marker that reads "Josh Hill - 1814," give testimony to the rich and diverse history of the area, and to the fact that this peaceful valley had been a home and refuge to others before them.

Preserving the historical, cultural, and natural heritage of the property is a high priority to both men. Everything they do is carefully planned, and development is kept to an absolute minimum. Even the rustic cabin the pair built looks as if it could have been there at the turn of the last century.

Artifacts from Native Americans can be found around the valley, along with this lone grave of an early settler.



Photos by Coleen Vansant

Working Together for the Dream

Being twins, you would expect the brothers to have been close as children, but that bond has lasted into their adult lives. "We're the management team and the labor force," says Joel.

It's unusual for two people to share a single dream, and much more unusual for them to be able to work together to achieve and enjoy it. According to Joel, the benefits they enjoy are not financial ones. The greatest advantage they receive from their work is "preserving the integrity and beauty of the valley" that both have loved for a lifetime.

"We have shared objectives and shared responsibility," explains Jeff. "We set our goals and principals early, really early in life, and we've embraced them." Second to the Bible, the *Sand County Almanac* by Aldo Leopold is both Jeff's and Joel's favorite book. In it, Leopold explains that with the land comes values that can be educational, economic, recre-



ational, and even moral and religious. "We embrace all of those," Jeff says. "The land is to be loved and respected."

Passing the Dream to Others

Education, or sharing what they have with others, is another priority with the Pounders. Both men are married to school teachers, so the property is used as an outdoor classroom for many of the local schools. They host educational programs each year which include local forestry groups, school teachers, school children, church groups, horses and riders, and many others.

Recently, a woman who was recovering from cancer came to the farm and participated in a turkey hunt. Fathers bring their sons to the valley to teach them hunting and an appreciation for the land.

These activities, along with many others, is what earned the pair the honor of Alabama Forest Conservationists of the Year in 2003 and the Helene Mosley Memorial TREASURE Forest award in 2005.

Keeping the Dream Alive

Keeping this valley in its native, pristine condition is a major priority for Jeff and Joel. According to them, a lot of blood, sweat, and tears have gone into their dream, as well as a lot of love for the land. For them, it's all about doing what is right and protecting the integrity and biodiversity of the land. "We bought into all the things we love," says Jeff. And with that investment has come the responsibility they both honor and embrace – being good stewards of the gifts and opportunities with which they have been blessed and entrusted. 🙏

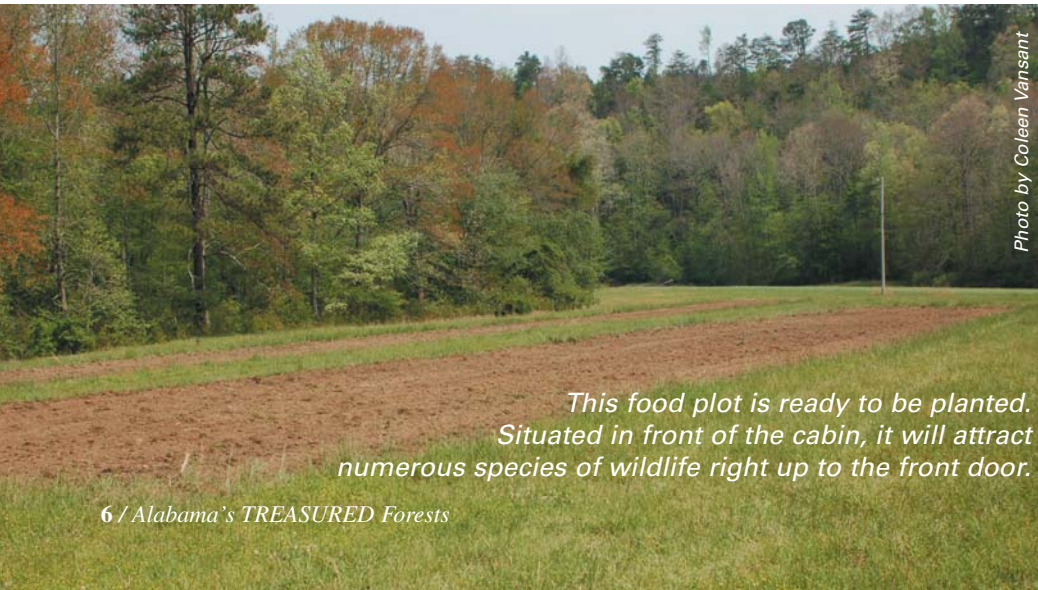


Photo by Coleen Vansant

This food plot is ready to be planted. Situated in front of the cabin, it will attract numerous species of wildlife right up to the front door.

Fastballs and Forestry

By *James P. Jeter*, Registered Forester
Forest Management Specialist, Alabama Forestry Commission

Photo by Mike Kyser

Two things happened the other day that caused me to reflect on the status of my forestry career. The first event causing this reflection was a question asked by a Boy Scout instructor as I gave a talk on careers in forestry and/or natural resource management and basic merit badge requirements. The question was: What do you like most about your job? Ever heard that one before? I used to answer that question pretty quickly, but after 32 years I had to think about the answer a little. My ultimate answer was, trying to help landowners solve their land management problems . . . i.e., problem solving.

The other event happened later that same evening as I watched the Tennessee Lady Vols play Arizona for the National Summer 2007

Softball Division I title. Monica Abbott, who was pitching for the Lady Vols, was quoted as saying that when she was in high school, pitching for her “was all about speed and power.” Now that she is playing at a new level, she has had to learn that “there have to be more pitches than just a fastball.” She went on to say that “ball placement, timing, and a particular batter” all help her make up her mind on “which pitch to make.” Sounds a lot like problem solving to me.

One might ask how this relates to forestry and my forest management career. Well, early on as a new forestry graduate I was given a job with a land management company dealing with private landowners. My bosses were all very old, at least 50 at the time. In most

cases my decisions were based on what and how they told me to do things. I did not realize until later how valuable my two years with those “old” men would be . . . they were problem solving and I was their major project. They were coaching me along.

My next assignment was on a management area dealing with all aspects of forestry, from procurement and logging contract supervision to prescribed burning and boundary line maintenance. Boy, was I ready to go. I had two years of experience and knew everything, except how much I did *not* know. I was throwing fastballs all the time, head high. Thank goodness for the patience of my “coaches” and their ability to cope with

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Fastballs and Forestry

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such a knucklehead. From older, wiser, hardworking independent contractors, to some of the men I supervised, they all had a part in coaching me along. They taught me how to pitch, not just throw fastballs.

Now, as I have a little hair left and it is truly gray, I have started to see some things that help me decide which pitch to throw. Think about the environmental events that have taken place in the last 12 months, or are taking place presently. The drought of 2006 . . . what effects did it have on seedling survival — hardwood and/or pine? What really stopped the Ips

Engraver Beetle outbreak after one life cycle? Why did the Ips strike in a given pattern vs. random spots? Are these outbreaks ever just random spots? Where are the Southern Pine Beetles that usually follow the Ips? How much stress was put on upland hardwood stands? Why are mature hardwoods dying in major river

basins? How long did the drought last?

Fast forward a little bit to the last few weeks of March 2007. The afternoon temperatures are in the high 70s and sometimes near 80. Vegetation is green and the turkeys are starting to gobble. Then comes the first week of April and sub-freezing temperatures — what a curve ball. The turkeys quit and the green foliage turned brown. I have never observed the hardwoods being burned by cold weather as they were this spring. What problems will this present? Which pitch do I throw when asked questions about the results of this freeze?

Simple stuff that we often take for granted . . . the white oaks were flowering, getting ready to set acorns for this year's crop — for the most part, all gone. What does this matter except for a few hungry deer? Well, it probably does



Photos by Mike Kyser

not matter, unless you were counting on a good acorn crop to help you naturally regenerate a hardwood stand. What about next year's red oak acorn crop? Will it suffer the same failure? What about the fruit-bearing trees for wildlife, not to mention human consumption? Basically gone.

What effect did this freeze have on newly planted seedlings? It should not have bothered most pine seedlings. However, those being planted during this time were not only planted late, but I have heard of some having ice on them when they were planted. Ice on

seedlings before they're in the ground is never good. Look out, another curve ball. Hardwood seedlings, in some cases, had already leafed out. The freeze defoliated some of these seedlings which should and have re-foliated by now. The

question is, how much added stress did this put on those seedlings . . . ball or strike? Time will tell. Will we all remember the week of cold weather that preceded the drought of 2007?

At 17 inches behind in rainfall by June, what pitch can we be looking for? Will the pine stands that got a little hot from prescribed fires make it through without a Southern Pine Beetle attack? We better watch close. Will the wildfires get worse and kill trees? You bet. Is it all gloom and doom? Never.

So what can we do?

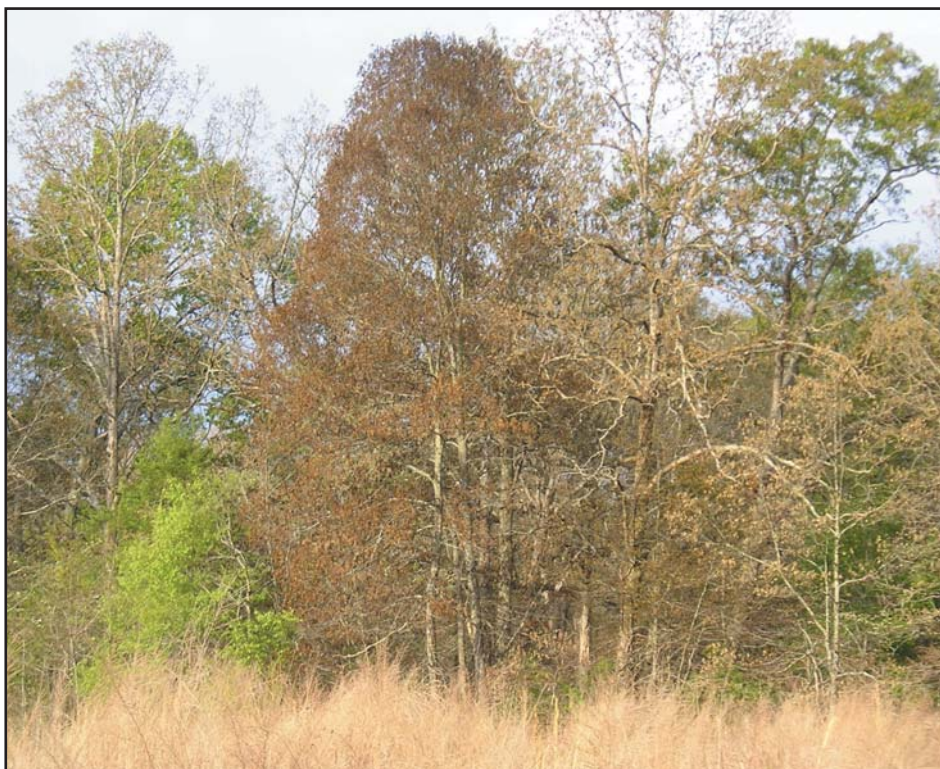
How about problem solving . . . decide which pitch to throw to prevent the other team from beating you. Good forest management will prevent detrimental results from a lot of the curve balls that are thrown our way . . . proper site selection for the proper species to be planted; proper site preparation before planting; proper timber sale planning; and careful observance of what is actually going on in your forest. All of the decisions you make now may prevent catastrophic events from raining out your ballgame.

In the days and months to come, we will be faced with many forest management problems that need to be solved. Prescribed burning, reforestation, timber sales, Best Management Practices (BMPs), insects, disease, and forest tax information are just a few of the areas with which we at the Alabama Forestry Commission can help you. As I am in the seventh inning of what I hope to be an extra inning ballgame, I want to continue to sharpen my pitching skills and not be content with just throwing fastballs. ♣

Forests Continue to Shudder from the Spring Freeze of 2007

By *Arthur Hitt*, Landowner Assistance Forester, Alabama Forestry Commission

Photo by Arthur Hitt



When the temperatures dipped down into the teens and twenties for several days this past Easter, it affected agricultural crops, urban trees, and hardwood forests across the Southeastern states. The dieback of leaves was apparent on trees in northern parts of Alabama, Mississippi, Georgia, and north into Tennessee, Kentucky, and parts of the Carolinas.

The late season freeze did the greatest damage to plants and trees that were already flowering or leafing out. Many hardwoods had leafed out early because of the warm temperatures during the previous month. Freezes such as this are not common, but they do occasionally occur. The answers to the following questions may help you understand more about what happened where you live.

What short-term impacts do these late-season freezes have on trees?

Dr. Wayne Clatterbuck, Associate Professor of Forest Management and Silviculture at the University of Tennessee, explains that red and white oaks, hickories, yellow-poplar, hackberry, and sycamore were affected most by the freezing temperatures; maples were not. Trees use a great amount of stored carbohydrates (energy) to produce new leaves, and the plant tissues produced from these energy reserves were destroyed during the freeze. To releaf, trees must re-mobilize additional carbohydrates, a demand that creates unexpected stress. Most trees progressively burst buds, such that there are some buds remaining to leaf out after a freeze. Dormant and other suppressed buds are

then activated during the second leaf emergence. Since carbohydrate and energy reserves are lower during the second refoliation, the crowns of refoliated trees are sparse with fewer, smaller, and less dense leaves than normal.

What are the possible long-term effects from the freeze?

Dr. Clatterbuck answers that most trees will recover from a single defoliation associated with a freeze. However, any other stress encountered by the tree may cause irreversible damage and loss. Defoliation is a primary, initial cause of tree decline, and the role of climatic and other environmental factors influence the severity of the defoliation. Both prolonged droughts and the secondary impacts of opportunistic insects (defoliators and wood borers) and disease (fungi and cankers) that are attracted to stressed trees can have severe detrimental impacts on tree health. To alleviate additional tree stress, keep landscape trees watered during droughty periods. Slowly, trees should regain lost carbohydrates and continue to strengthen energy reserves. In forested areas, there is little that can be done on a large scale. If trees have declined severely but have an economic value, a harvest should be considered before they further deteriorate.

Another future consequence of the freeze will be limited flower and subsequent fruit and seed production. Not only are the current year's flowers affected, but reduced energy reserves will impact next year's flowers too. In our current scenario, most all commercial fruit orchards have substantial losses. The yield of both hard and soft mast (acorns, nuts, and fruits) will be low. The flowers

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Forests Continue to Shudder

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of white oaks were affected such that acorn crops will be limited, having an impact on wildlife populations. Because it takes two years from pollination to produce red oak acorns, this production will be affected in 2008. However, the “acornets” (immature acorns) of red oaks from flowers pollinated in spring 2006 will probably produce some acorns for this year, if they are not aborted due to stress. This process is further examined in the following paragraphs.

What are the consequences of the freeze for wildlife?

Dr. Becky Barlow, Extension Forester/Assistant Professor at the School of Forestry and Wildlife Sciences, Auburn University, and Dr. Edward Loewenstein, Assistant Professor, Silviculture at the School of Forestry and Wildlife Sciences, Auburn University, explain the impacts of the cold weather on mast production and wildlife:

The 2007 late-spring freeze killed back new growth on many hardwoods trees, particularly those in northern Alabama. It could also potentially impact acorn production on both red and white oaks in the coming year. Acorn crop success is of interest not only for forest reproduction, but also because acorns are an important food source for much of Alabama's wildlife population including deer, turkey, waterfowl, and small mammals such as squirrels and rabbits.

Oaks flower in early spring between March and April. If the crop is a success,

white oak acorns mature in late summer, and then fall from the canopy beginning in September and October of the same year. Late freezes may affect current year white oak acorn production, but cause little damage to existing red oak crops that were pollinated last year. Low temperatures in the spring often do not adversely affect oak flowers and pollination. However, late spring freezes that damage new shoots and leaves, such as the one that occurred this year, may impact mast production. Landowners and forest managers should survey their trees in July and August for maturing acorns to better determine fall production.

The good news is that even wide-spread freezes do not affect all timber stands in the same way, potentially limiting losses across the state. Southern portions of the state may see less damage than northern counties. Even in areas that were hard hit by the freeze, small differences in slope position (ridge top vs. lower slope) and aspect (south vs. north facing slope) may greatly affect the crop.

Success of acorn crops can vary widely from year to year. Other factors that can cause acorn crop failure in oaks are tree age, stand density (overcrowding), insect damage, increased rainfall during the time of pollination, hail, and severe weather.

How do you care for freeze-damaged trees?

The best advice is to do nothing and wait to see how the trees respond. There

is not much you can do on a large scale for hardwood timber stands. With the trees using stored carbohydrates to leaf out a second time, any added stresses such as that caused by drought, wildfires, or insects and disease will add to the decline of the health of the stand and the health of individual trees.

For landscape trees, Dr. David Mercker, Extension Forester with the University of Tennessee, advises to “water, water, water, but not to the point of continual saturation.” Watering will help trees recover along with the increasing temperatures, but DO NOT fertilize until the end of the next winter, e.g. January and February of 2008. Quick release fertilizers will only encourage further depletion of carbohydrate reserves, causing more stress on the trees which could result in them dying.

Summary

Wildlife that depend on hard and soft mast crops are likely to be hungry this coming winter. Therefore, this will be an important year for food plots.

Monitor your timber stands closely for the next few years for signs of decline in the overall health. As trees foliate a second time due to the late freeze, they will deplete carbohydrate reserves and be more susceptible to the effects of drought as well as insect and disease infestations. These cumulative stresses could lead to diminished growth and possible mortality. ☹

TREE GRANTS Available

The time is now to apply for tree grants. The Alabama Power Foundation, in partnership with the Alabama Urban Forestry Association (AUFA), is accepting applications for the 2007 Community Forestry Program.

Over the past eight years, more than \$400,000 has been distributed in tree grants to nearly 400 cities, counties, schools, and community groups. Grants have been used to buy thousands of trees for planting in community parks, along roadways, and on school grounds, among other sites, facilitating a positive impact on our environment.

The Community Forestry Project is open to local governments; nonprofit groups; and public and private schools, colleges, and universities. Grants of up to \$2,000 are awarded. Applications must be postmarked by Aug. 31, 2007. Winners will be notified no later than November 15, 2007.

For more information about tree grant requirements or to obtain an application form, log on to one of the following web pages: www.AlabamaPowerFoundation.com or www.aufa.com.



**Mark
Your Calendar!
September 25-26, 2007**

Alabama Forest Health Conference

Four Points by Sheraton Tuscaloosa Capstone
320 Paul Bryant, Tuscaloosa, Alabama (205-752-3200)

Sharing the latest information on pests that impact forests and what we can do about it.



Topics include:
Alabama Forests
Forest Diseases
Forest Insects
Invasive Weeds

Sponsors:
Alabama Association of Conservation Districts
Alabama Forestry Commission
Alabama Forest Health Initiative
Alabama Invasive Plant Council
Alabama Soil & Water Conservation Committee
Auburn University,
School of Forestry & Wildlife Sciences
USDA Forest Service
USDA Natural Resources Conservation Service
Society of American Foresters,
Black Warrior Chapter
Tuscaloosa Conservation District



8.5 Hours of Forestry CFEs will be awarded to participants

Registration and Conference Information: Elizabeth Bowersock, Auburn University
Phone 334.844.1012 • E-mail bowerep@auburn.edu

Early fee is \$35 if postmarked by August 31, 2007
Late fee is \$50 after August 31, 2007

Impacts of Continued Drought on Alabama's Forestland

By *Walter E. Cartwright*, Registered Forester
Assistant Director, Forest Management Division

Almost 95% of the entire state of Alabama is under severe drought conditions with historically low stream flows and parched, dry soil. The atmosphere has been very dry with high wind, increasing the evaporation rate and further drying our soils and plant life. Of course, wildfires have been of great concern and are being suppressed on a case by case basis, but drought conditions are creating extreme stress on trees and wildlife.

The National Weather Service indicates that Alabama is in the worst 27-month rainfall totals since records have been kept in the late 1800s, and May 2007 had the lowest rainfall amounts in history. Many landowners and our staff have reported nearly 100% loss of tree seedlings across most areas of the state.

Early season drought has a devastating impact on first-year seedling survival. Young seedlings have not

developed an adequate root system to cope with the transpiration stress caused by lack of moisture. Almost 200,000 acres were planted in the 2006-07 planting season, and landowners will have to spend an estimated 20 to 30 million dollars (assuming 70-100% mortality) for replanting, including seedlings and site preparation. Most landowners had to replant trees after last year's record drought, so this will be the second time around for many of them.

This drought, coupled with the late freeze in central and north Alabama, will result in a reduction of net annual growth which corresponds to a loss of substantial timber growth value to the state of Alabama. The effects on long-term growth will not be apparent until next year or later in many areas. Our continuing Forest Inventory and Analysis (FIA) data will eventually show the effects on forest growth and health.

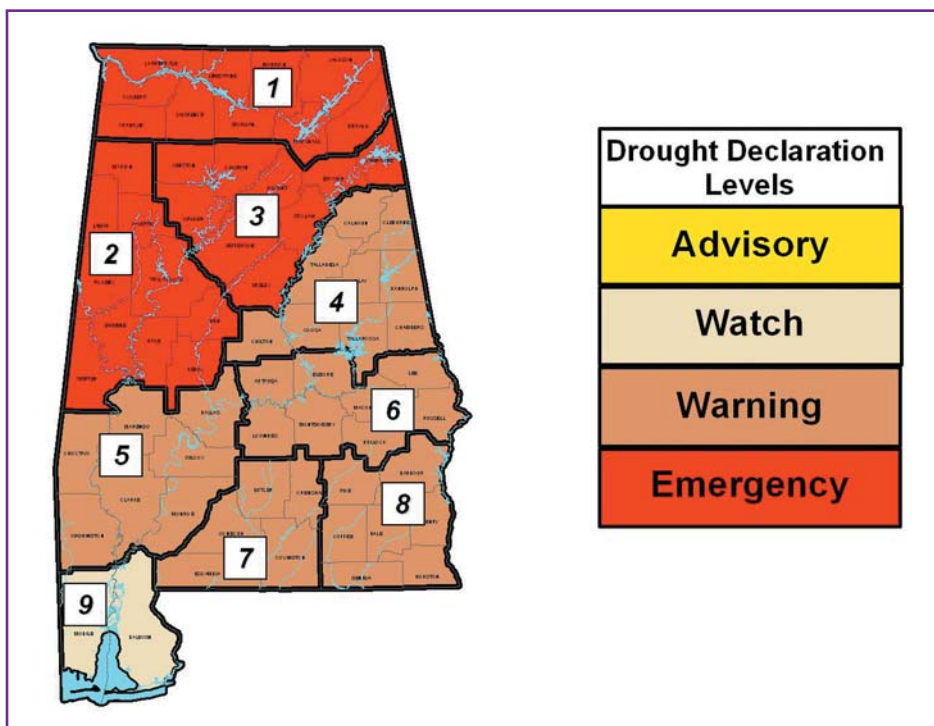
Pine decline is going to have a continuous effect on mature loblolly pines planted "off site" or on soils where they are not naturally adapted. These pines may also succumb to pine decline without any adverse conditions. The drought will exacerbate their mortality and will cause pine decline to occur in pine stands at a much younger age (less than 30 years) as susceptible pines are affected by this disease complex. This drought (with the combination of last year's drought) will increase the occurrence of pine decline and will continue this year and probably next year as well.

Drought conditions also reduce trees' natural ability to resist insect infestations and other forest pests. Alabama will see an increase in Southern Pine Beetle (SPB) infestation, as has already been indicated by the numbers from this spring's SPB traps. This increase in the SPB infestation will be apparent by the end of this summer.

There will also most likely be an increase in Ips engraver beetle (IPS) infestation, which is heavily influenced by adverse abiotic conditions. The IPS infestation will increase and cause significant mortality to pines statewide. Anticipated impact to forest owners due to insect activity is estimated from two to three million dollars.

Oak decline kills oaks more gradually than beetle infestation. After several months of growing under stressful conditions, the oak trees begin to die. Alabama will see an increase in mature, stressed red oaks dying from this disease complex. Mortality will be more evident in late summer or early fall. The wrath of this drought will be most evident next year or two years from now.

The accompanying drought map shows the severity and extent of the drought as measured by the US Geological Survey. Also shown is a fuels and fire behavior advisory issued by the USDA Forest Service for the Southern Area. Most of Alabama falls in the



This drought map shows the severity and extent of the drought as measured by the US Geological Survey.

region of strong potential for erratic wildfires with explosive natures. These type fires are very hard to suppress once they occur, and tend to burn large acreages and threaten urban communities where forests and homes are in close proximity.

Since the start of the state fiscal year, Alabama has had 3,887 fires burning almost 67,745 acres. This is approximately 28,000 acres more than our annual average of 40,000 acres. The advisory also lists concerns for firefighters and the public along with some mitigation measures to employ if confronted with wildfires under these conditions. Everyone is to be cautioned that these conditions will most certainly worsen if rainfall patterns do not return to seasonal normal patterns. Be aware of your local conditions and **DO NOT BURN** anything that might spark an uncontrollable wildfire. 🚒



Photo by Mike Kyser

Southern Area: Fuels and Fire Behavior Advisory

Extremely dry conditions in many portions of the Southern Region have created the potential for problematic fire behavior.

La Nina events and persistent high pressure systems throughout the course of the spring and early summer have combined to bring exceedingly dry conditions to the Southeast. Due to these patterns, rainfall deficit records are being set in many areas. New record levels for dryness indices are occurring throughout the Southeastern portion of the geographic area, and these trends are moving northward through the Appalachians.

All classes of dead fuels and most live herbaceous, shrub, and foliar fuels are available for rapid-fire spread due to this intense drying. All new ignitions and unburned islands of current fires in this area should be considered potentially explosive situations from a fire behavior perspective.

Deep drying at the surface and subsequent drops in water table moisture have allowed for the entire surface layer to become available for deep burning. This deep burning has affected the potential for hold-over fires and re-burns, as well as the ability of suppression forces to control the edges of going fires.

Concerns to Firefighters and the Public:

- Anticipate any ignition in all size classes of dead fuels to ignite easily and move rapidly.
- Anticipate short-to-long-range spotting from intense surface fires, torching trees, and areas of active crowning.

- Anticipate large acres to be consumed in a short period of time.
- Shrub and young stand components in some areas may under-burn pre-drying crowns, leaving them available for re-burn at a later time.
- As the live fuel moisture values fall with continued drying, fires will burn with more intensity and fire behavior will become more extreme.
- Due to current and forecasted fuel moisture values, extreme fire behavior will occur under lower wind speeds, higher humidity values, and lower temperature thresholds than normal.
- Traditional breaks and barriers in muck soils, wetlands, and roadways are not dependable to slow or stop fire spread.

Mitigation Measures:

- Indirect tactics including burnouts under favorable conditions will have to be used more frequently this year.
- Aerial support will be needed more often to slow the rate of spread and cool the edges of the fire and control spotting.
- Ensure firefighters have good anchor points, escape routes, and safety zones.
- Have adequate numbers of field observers who understand the effects of weather changes and the current fuel conditions with a view of the flaming front and spot fires of concern. 🚒

How Does GPS Know Where I Am?

By Sarah O'Sullivan, GIS Mapping Forester, Alabama Forestry Commission

You may have heard it on commercials or seen it in a car . . . or you may even have a device yourself, but still you wonder. What exactly is GPS? How does it know exactly where I am? Well, stay tuned because these questions and more will be answered in this article.

GPS (Global Positioning Systems) was originally formulated by the Department of Defense. Even though this service costs the government millions of dollars each year to continue, it is free of charge to the public. The GPS unit in your car or in your hand receives signals from a network of satellites that are constantly orbiting the earth. By receiving these signals, the GPS unit uses a process called triangulation to find its current location. The unit will measure the difference in time between when the satellite signal was sent and when it was received by the GPS receiver. This, along with knowing the speed the signal is sent, results in the calculation of distance from that satellite. Each satellite will calculate the GPS receiver in a certain range. Where the ranges overlap is the location of the GPS receiver. The more satellites used by the GPS receiver, the smaller the overlapping area.

Basically the GPS receiver measures the change in time between when the signal was sent and when it was received. If the clock inside the GPS receiver is slightly off, then error can occur.

The satellite signal carries three very important pieces of information that are needed by the GPS receiver. This information includes the satellite ID (pseudo-random code), the location of the satellite (ephemeris data), and the condition of the satellite (almanac data) such as operational or dysfunctional. If the satellite is inaccurate about its location, an orbital (also known as ephemeris) error could occur.

The satellite's signal travels by line-of-sight. If the sky can be seen *through* something, then a signal can be received. If the sky cannot be seen, then problems may arise in receiving a signal. In other words, satellite signals can move through clouds and glass (among other things),

but is obstructed by solid objects such as buildings, mountains, and walls. Since the signal cannot go through the solid objects, it bounces off the surface, resulting in a signal error called multipath. Also, if you are located indoors or in a dense forest, the ceiling may be so thick that it limits or even blocks your satellite reception. This could lead to position errors, or no signal.

So far in this article there have been several mentions of occasions for error, but the good news is that GPS receivers have built-in correctional systems to counteract those errors. WAAS (Wide Area Augmentation System) improves the accuracy of the GPS receiver to where there is only a 3-meter margin of error. The way that WAAS works is that it is made up of reference stations that are spread throughout the nation to form a network. The stations receive the satellites signals and determine if there are any errors. This information is then

passed on to the master station which gathers all of the corrections for that area. The corrections are then sent to another type of satellite called a geostationary communications (GEO) satellite. It is from the GEO satellite that your GPS receiver receives the correction. Just as with the GPS receiver, the WAAS signals travel by line-of-sight, meaning that if a solid object obstructs the path, the signal will not go through. Things such as mountains, canyons, or even a dense forest could block a WAAS signal.

One factor to consider when purchasing a GPS unit is its purpose. If it will be used for navigation in a car, then you would want one that can be mounted to leave your hands free for driving. If you plan to use the GPS unit to take points on your property, then possibly a rugged waterproof handheld unit would be more applicable. It is important to find a unit that will meet both the user's need and budget. 📍

We've Moved!

The Alabama
Forestry Commission
website is now
located at . . .

[www.forestry.
alabama.gov](http://www.forestry.alabama.gov)



Photo by Dr. Victor L. Ford

Stopping a Hidden Enemy from Robbing Alabama's Valuable Pine Stands

By *Dr. Victor L. Ford*, CF, RF, Senior Principal Researcher
and *Mark K. Meyers*, RF, Associate Researcher;
MeadWestvaco Corporation, Phenix City, Alabama

The thief comes when you least expect it, creeping in unseen and spreading its destruction everywhere. This stealthy adversary is not human or animal, but a fungus that robs loblolly pine trees of their value at their most productive

point. This fungus, *Heterobasidion annosum* (also known as *Fomes annosus*), saps the trees of their vigor by rotting away at the roots. Lack of water and nutrients places the tree under a great deal of stress, making it more vulnerable to other pests, such as bark beetles.

Occurring worldwide, the annosum fungus is a problem wherever conifers grow. (It can attack some hardwoods, but does not commonly do so.) It lives mostly as a saprophyte, or organism that

(Continued on page 16)

Stopping a Hidden Enemy from Robbing Alabama's Valuable Pine Stands

(Continued from page 15)

grows on dead material, but it can make the transition to parasite when conditions are right. Though the fungus can enter the tree through root injury, the most common route of entry is through cut stumps. After the fungus starts to grow on the stumps, it then proceeds down the roots, destroying them along the way. It can also infect other trees by crossing the intertwined roots

of trees of the same species. In the past, annosum was not considered a problem when loblolly pine fiber was the main crop. This is because stands grown for fiber were not thinned, which meant the fungus never had a chance to enter the stand.

(Thinning is the practice of removing some trees in a stand to reduce crowding and to allow the remaining trees to grow faster.) However, with today's emphasis on value-added products, pine stands are thinned in order

to produce quality logs for structural material, which is over five times more valuable than pulpwood. Thinning has introduced annosum into pine stands, and the fungus is killing clumps of trees. The result? Some very valuable timber is lost.

Because of its cryptic nature, annosum root rot presents a significant challenge to forest managers. While an infected tree may appear perfectly healthy above ground, the fungus may have already begun attacking the root system. When symptoms do become visible in three to five years after thinning,

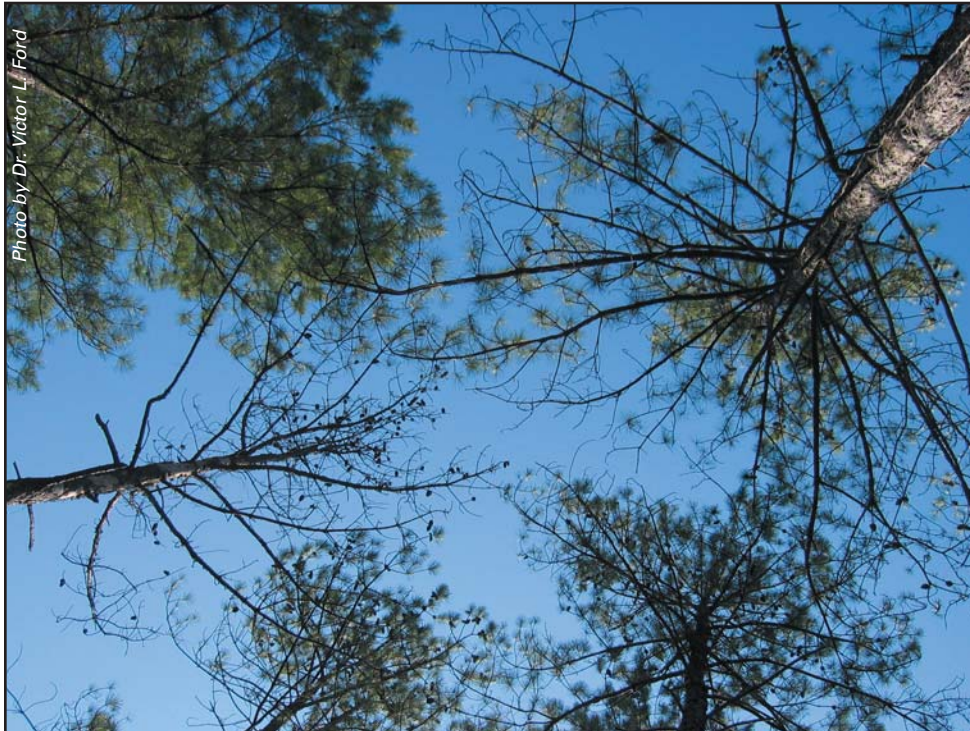
they usually include thinning and yellowing of the tree crown. However, by the time above-ground symptoms are apparent, the disease has already claimed a considerable portion of the root stock at a rate of spread of about ten feet per year, and the death of the tree may be imminent. The overall impact of annosum root rot is difficult to determine

with age, distinct white margin to the fruiting body when actively growing, lower surface is white becoming cream-colored with age, small white pads of mycelium are the first stage of fructification and resemble buttons (pustules), found on stumps of dead or dying trees at ground level covered with litter. Not finding the conk is no indication that the

fungus is not present since conks will occur on about half the trees. The rubbery conk is found in cooler months when cut stumps are most vulnerable to inoculation by the spores. The fungus can spread by asexual spores that are produced year round. In Alabama, fresh wood disks were placed in pine stands overnight to determine if spores were present. The amount of spores was considerably less during the summer months, but they were present.

What is the best way to prevent annosum? It's all a question of soil: the fungus cannot

colonize roots on soils with medium-to-high clay content, instead preferring well-drained, aerated soils. These are the sandy or silty soil textures which are the most likely to be thinned during the cool, wet periods. Susceptible soils contain low organic matter, and are generally old fields with less than three rotations of pine. The Natural Resources Conservation Service (NRCS) county soil survey can help determine if the soils are susceptible. The best way to prevent annosum is not to thin from October 1 to June 1 on susceptible soils.



This is an annosum pocket showing symptoms of the disease. Annosum means "ring," and the fungus spreads in a circular pattern around the infected stump through the roots. The tree on the left is already dead, and the tree on the top right has a fading crown and will die soon. Contrast the fading crown with healthy crowns surrounding it.

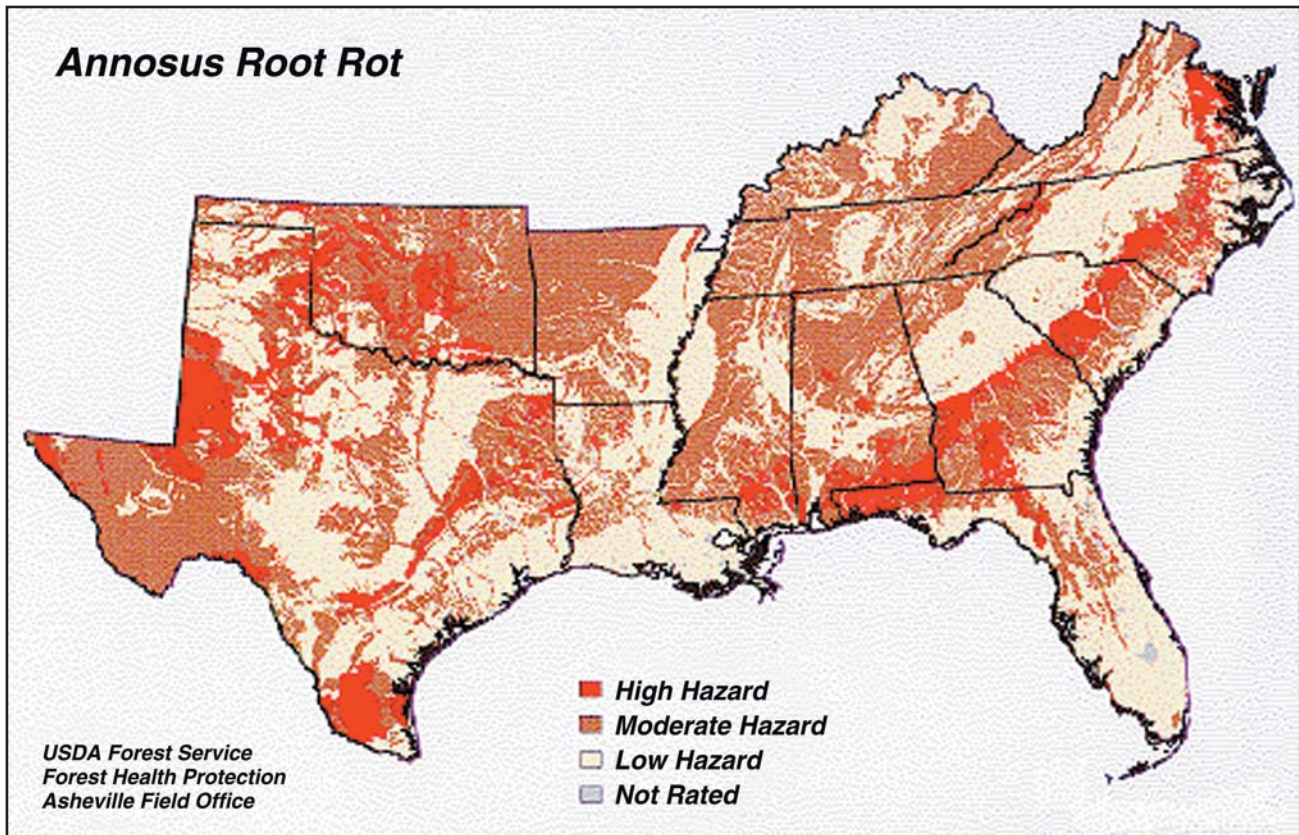
because the fungus is responsible not just for tree mortality, but also for an unsubstantiated amount of growth loss each year. Although tree deaths may continue for up to ten years, further losses may continue long afterwards due to an under-stocking of the stand.

The visible fruiting body of the fungus is called a conk, through which the air-borne spores are released and spread. The identifying characteristics are as follows: bracket forms (conk), rubbery and difficult to tear apart, color of top surface is reddish or dark brown becoming black



Annosum conk at the base of a loblolly pine tree. Notice the brown top and the white underside. The litter was raked away to find the conks. Only about half of the infected trees will have conks, and conks do not appear until the tree is dead or nearly so.

Lower density stands with shortened rotations should be considered in these situations. Longleaf pine has better resistance to annosum than loblolly, and is an alternative species to consider planting on these sites. In certain situations, it may be practical to cover the stumps completely with borax to prevent the disease. In Europe, a competitive fungus is applied to stumps as a biological control to prevent annosum from becoming established. It is applied to the stumps in clearcuts because annosum will also infect newly planted seedlings. (This situation does not appear to be a problem in Alabama because of our climate and decomposition rates.) Research is currently addressing the registration for this control agent in the United States, and it should be available in two or three years. Understanding the fungus and proper planning is the best way to keep this stealthy disease from robbing pine stands of their value. 🌲



Hazard map of the southeastern United States (developed by the USDA Forest Service) showing annosum risk of pines planted on these soils. The red denotes the highest risk and the purple represents moderate risk.

Common Hardwood Management Mistakes

By *David Mercker, Ph.D.*, Extension Forester, The University of Tennessee

Sometimes misguided by traditions of the past or the lack of adequate science-based information, forest landowners make mistakes with regard to their hardwood forest management. What seems logical at first, once implemented, could prove problematic, particularly if such mistakes are repeated through the generations. Based on observations made while assisting and advising private forest landowners, there are a number of common errors made repeatedly that are addressed here.

Maintaining a closed canopy through a selection harvest is always good forestry. Single tree selection is one silvicultural method of harvesting. It has application, particularly for those landowners who rank aesthetics and recreation high on their ownership objectives. It can be used in combination to thin younger stands or remove undesirable trees, particularly when overcoming mistakes of the past. However, most hardwood forests – if managed for quality timber production – at some point should undergo a heavier stand regenerating harvest (even if only applied in small patches). This allows adequate sunlight to reach the forest floor, stimulating new growth. By not periodically regenerating a forest, the composition and quality will change over time.

A stand marked with paint means responsible forestry is being practiced. This depends. Under what parameters were the trees chosen for harvest? If tree size, species, or value were the only considerations, then responsible forest management was likely not practiced. Harvesting only these types of trees will leave a residual stand, poor in quality or low in value. Instead, harvest consideration should also be given to include the “D” trees: dwarfed, dying, diseased, damaged, deformed, defective, and undesirable. This is the necessary part of

weeding the stand and eliminating unwanted seed sources.

The forest soil will take care of itself. Don’t be so sure. We tend to think of fallen and decomposing leaves and twigs as soil in the making, rather than the organic matter and nutrient recycling they are. True soil is derived from weathering of subsoil rocks, from wind-blown particles that escaped from distant places, or from alluvial sediment deposited after transport via water. All are processes that can take centuries to occur. Stresses that are placed on forest soils during logging are normally restricted to skidding lanes, hauling roads, log landing areas, and

stream crossings. Concerted effort should be made to protect soil in these areas and thereby assure protection of the water resources. Landowners should understand and follow accepted best management practices (BMPs).

Harvest timber only when you need the money. Saving timber as a security to hedge against off-years of other sources of income is not always advisable. Trees are a crop. Though somewhat unique in that they can be retained on the stump for years, doing so could sacrifice considerable production and income. Annual growth rate and return on forest investment peaks, then declines.

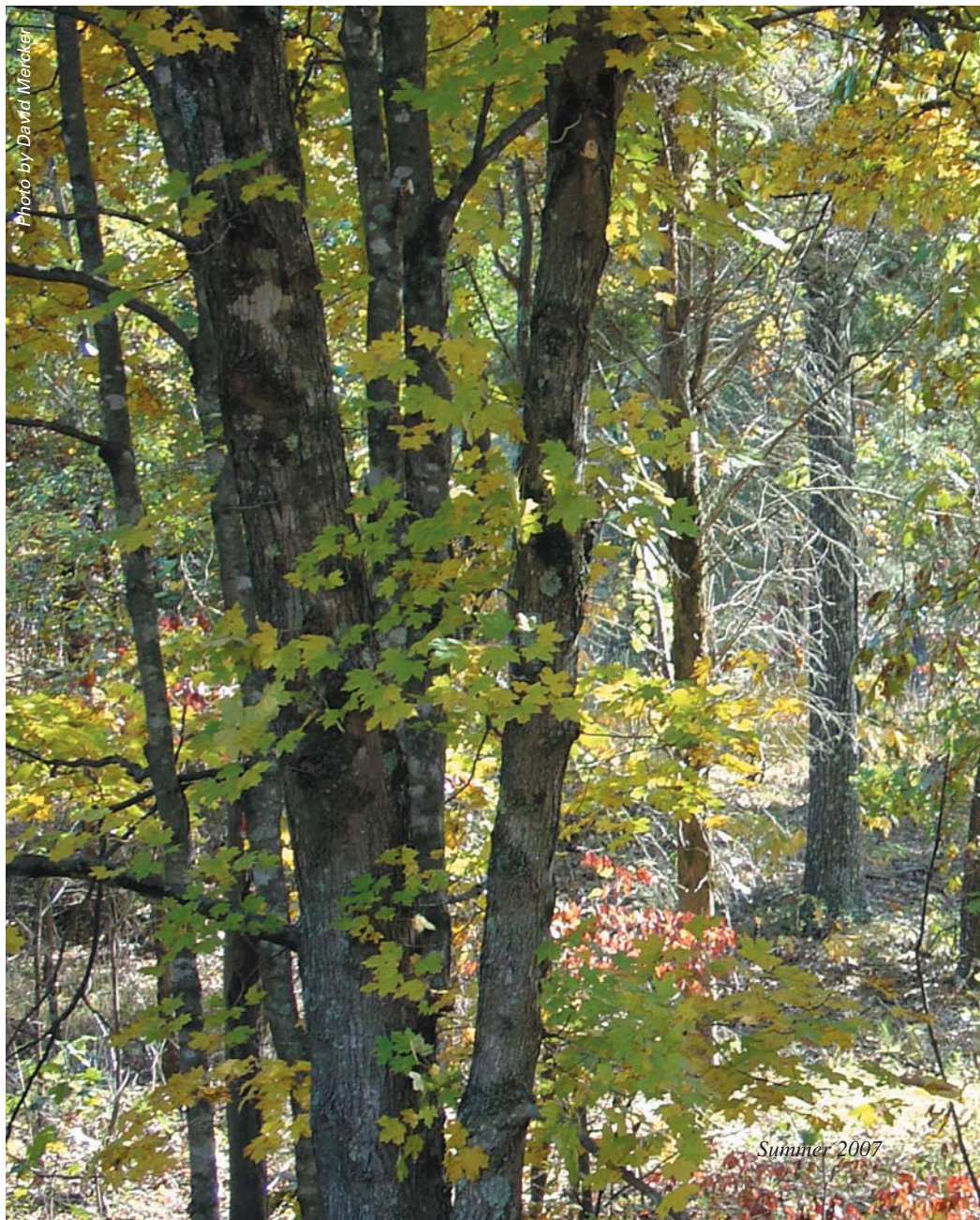


Photo by David Mercker

Private landowners should seek the assistance of professional foresters when considering their forest and wildlife management options in hardwood forests.

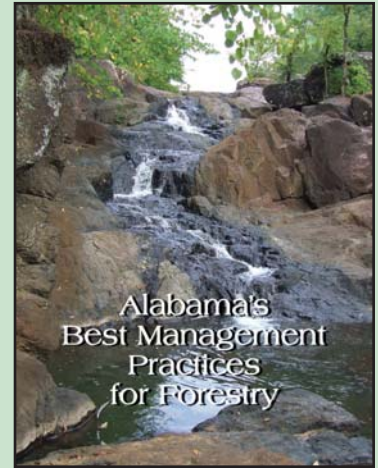
Harvesting timber crops at or near the peak, then converting those funds to a more favorable alternative investment is a more prudent decision. Also, it is wise to track timber markets. Waiting to sell timber when other sources of income are lower may miss the optimum market.

This has always been the “assumed” property boundary. Landowners beware! The penalty for timber trespass can be very high. Be certain of property boundaries. Study the deed, reach agreement with your neighbors, and seek assistance from a professional forester or surveyor.

Small trees will grow to become big trees. Some will, and some won't. If a tree has for too long been suppressed by growing in the understory of larger trees, it will not likely release and grow vigorously once the taller tree(s) are removed.

Knots on the trunk of a tree will cover up and make fine lumber. This depends. On younger, vigorously growing hardwood trees, knots often become concealed and produce quality lumber, particularly if the knots are small-sized. However, large knots or knots formed on slow growing, decadent trees may heal superficially, but never produce clear lumber.

I can handle this on my own. The opportunity to sell timber is infrequent for most landowners, and achieving proficiency is difficult (and usually forgotten between sales). Therefore, it is always advisable to first see a forester, and perhaps several. Not only is a forester's professional expertise needed, but foresters have knowledge of current cost-share programs, laws/regulations/taxes, etc. This expertise can save you money, make you money, or preserve your money. 🏠



HOT OFF THE PRESS!

Updated BMP Manuals are now available at your local Alabama Forestry Commission office or on the AFC website at www.forestry.alabama.gov

The Alabama Forestry Commission, with the approval of the Alabama Department of Environmental Management, has updated *Alabama's Best Management Practices for Forestry*. New illustrative photos and diagrams have replaced older ones in order to revitalize this document. However, the content of the document has not changed, in order to maintain the standard of environmental quality that has helped the Forestry Commission achieve and maintain its positive reputation in the environmental community.

Contact your local Alabama Forestry Commission office or call the AFC's state headquarters at (334) 240-9365.



Alabama TREASURE Forest Conference Wildlife/Forestry Festival November 2-3, 2007 Mobile, Alabama

“Celebrate Alabama’s Family Forests”

Friday, November 2, 2007

Conference

Riverview Hotel overlooking Mobile Bay- Mobile AL

9:00 am – 11:00 am Registration

11:45 am ATFA Luncheon

1:15 – 4:45 pm Sessions

Session Topics:

Creative Income Ideas for Your Family Forest

Who Is In Charge When Daddy’s Gone?

Legacy: Valuing Land for the Future

Watermelons are Worth More Than Timber

6:30 pm ATFA Banquet & Live Auction

Saturday, November 3, 2007

Wildlife/Forestry Festival

Heritage Homestead and TREASURE Forest

of James & Joan Malone

Chunchula, AL (North Mobile County)

10:00 am – 4:00 pm

Festival Activities:

Living Heritage Demonstrations

Educational Demonstrations

Wildlife/Forestry Equipment Displays

Family Activities (Pony Rides, Archery, Petting Zoo, Wagon Rides & more!)

Arts and Crafts

Live Music

Good Food

Alabama TREASURE Forest Conference and Wildlife/Forestry Festival

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Petting Zoo, Wagon Rides & more!)
Arts and Crafts
Live Music
Good Food

Hotel Information

Riverview Hotel Room Rate: \$109.00

Please specify you are attending the Alabama TREASURE Forest Association Conference when making your reservations.

Hotel cut-off date: October 2, 2007

* Riverview Hotel * 64 South Water Street * Mobile, AL 36602 *
* Riverviewmobile.com * 251-438-4000 * 1-800-HOTELS-1 *

Directions to the Hotel:

From I-65,
take the Water St Exit (26B)
to Downtown Mobile -
Stay straight to go onto S Water St
End at 64 S Water St
Hotel is on the right
at the corner of
Water and Government Streets

For more information, call ATFA @ 251-442-2425 or 1-888-240-4694.



Name(s) of Attendee(s):

1. _____

2. _____

Address: _____

City: _____ State: _____ Zip: _____

Company (if applicable): _____

Early Early Bird Rate: \$75.00 before August 6, 2007

Early Bird Rate: \$85.00 before October 2, 2007

After October 2, 2007: Rate: \$95.00

Registration includes: * Luncheon * Banquet * Sessions *
* Live Auction * Festival *

I am attending the Conference/Festival and enclosing:

Early Early Bird \$75.00 Registration: x _____ attendee(s) = _____

Early Bird \$85.00 Registration: x _____ attendee(s) = _____

After October 2, \$95.00 Registration: x _____ attendee(s) = _____

Sorry, no refunds made after October 2nd deadline.

Luncheon

Yes No

Yes No

Banquet

Yes No

Yes No

Festival

Yes No

Yes No

You may register on-line at
<http://www.atfa.net>
or
mail this portion of the form
and fee (*payable to ATFA*) to:
ATFA

*c/o University of Mobile
5735 College Parkway
Mobile, AL 36613*

or call

(251) 442-2425

(888) 240-4694



THE WETLAND RESERVE PROGRAM, AN OPPORTUNITY FOR WETLAND RESTORATION ON PRIVATE LANDS

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

The Wetland Reserve Program, commonly referred to as “WRP,” was created to restore wetlands that have been converted to agricultural uses. Most of these wetlands were cleared of trees many years ago and have been in cattle or row crop production ever since.

Landowners now have an opportunity to restore these wetlands to the native habitat with funding through WRP. Restoration consists of planting hardwood trees and creating wetland habitat by flooding some of the area with shallow water. Shallow water flooding is generally kept at a depth of less than 18 inches to 2 feet. According to Jeff Thurmond, the Natural Resources Conservation Service (NRCS) State Wildlife Biologist, the best waterfowl habitat is only 4 to 6 inches deep.

LAND ELIGIBILITY

To be eligible for WRP, the land must meet two specific requirements. First, it must be open: either in crop, pasture, or fallow ground. Second, there must be some wetland soils on the open land. These are commonly known as hydric soils. They occur in certain parts of river floodplains or in areas where water stands during the spring or summer.

CHOOSE FROM THREE OPTIONS

Landowners can choose from a 10-year cost-share agreement, a 30-year easement, or a permanent easement. The

10-year agreement covers 75% of the landowner’s costs of planting hardwood trees on the area and building a levee to flood some of the area with shallow water for wetland wildlife habitat. There is no easement with this agreement.

A second option is a 30-year easement. The landowner gets the same 75% cost-share rate for tree planting and levee building as with the standard cost-share agreement. However, the landowner will also receive a payment based on the value of a restrictive easement placed on the enrolled acres. This payment is paid based on 75% of the appraised value of the easement.

The next option is a permanent easement. The landowner gets 100% cost-share for tree planting and levee building, with a permanent easement. However, the landowner will also receive a payment based on the value of a restrictive easement placed on the enrolled acres. This payment is made based on 100% of the appraised value of the easement.

Let’s look at an example to clarify things. Let’s say the full fair market value of the property is determined to be \$2,600 per acre and the easement value is determined to be \$1,300. For WRP, these values would be determined by an appraiser paid for by the United States Department of Agriculture (USDA). For a permanent easement, the easement payment would be 100% of the appraised easement value, or \$1,300 per acre. For a 30-year easement, it would

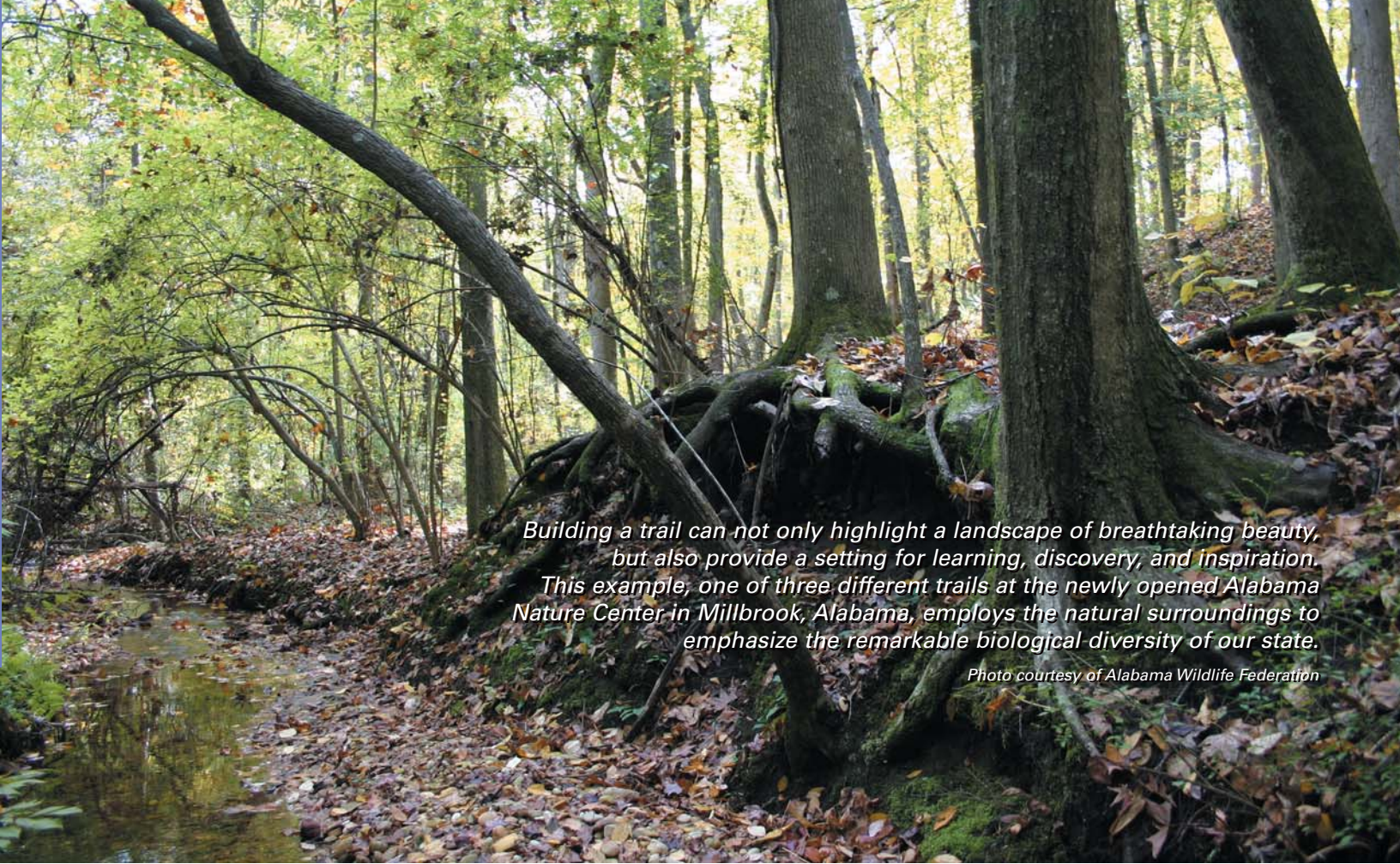
be 75% of the appraised easement, or \$975 per acre. Keep in mind, this is just an example. Your land could appraise higher or lower.

NOT FOR EVERYONE

If an easement option is chosen, a landowner is actually selling the USDA certain rights for the length of the easement. Such a decision should not be taken lightly. Consult with your tax advisor, your attorney, and perhaps most importantly, your family, before making a decision to apply.

Some rights are sold to the USDA for the easement payment and will not be allowed during the easement period. Some of these rights include, but are not limited to, the right to graze livestock, the right to plant and harvest crops, and the right to harvest timber. A warranty easement deed detailing rights purchased by the USDA and other rights to be retained by the landowner will be attached to the property deed and recorded at the courthouse.

Landowners that do not wish to sell property rights can still choose to apply for the 75% cost-share agreement. Landowners should contact their local USDANatural Resources Conservation Service (NRCS) field office to sign an application for any of the three options under WRP. You can also visit the Alabama USDA-NRCS website for more information: <http://www.al.nrcs.usda.gov/programs/wrp>. ☎



Building a trail can not only highlight a landscape of breathtaking beauty, but also provide a setting for learning, discovery, and inspiration. This example, one of three different trails at the newly opened Alabama Nature Center in Millbrook, Alabama, employs the natural surroundings to emphasize the remarkable biological diversity of our state.

Photo courtesy of Alabama Wildlife Federation

Building Trails to Treasure

By Michael Older, Registered Forester/Covington County Manager, Alabama Forestry Commission

Walking trails are most often thought of as being a recreational asset. With proper planning, a trail can be a beneficial component of the overall management practices on your property. In addition to the normal recreational benefits, trails may be used as fire breaks and access corridors to sensitive areas, as well as delineate stand boundaries and property lines.

Having easily-walked access through various stands provides an opportunity to evaluate the health and composition of the forests that a landowner may not routinely see. Trails may allow the landowner to find insect or disease infestations as well as unique plant, tree, or animal species or communities that he or she may not have known existed on the property.

Like any forestry operation, planning is critical to ensure an adequate outcome. The purpose of the trail should be the

first consideration. There are numerous questions you should ask when deciding the trail's purpose. Is it to be used for walking, horseback riding, ATVs (all-terrain vehicles), light vehicles, or a combination of traffic uses? Will the trail be used during all seasons or to gain access to wetlands or other sensitive areas? Does it need to be handicap accessible? Is the trail for private use by family members and guests, or will it be open to the public such as scout troops, picnickers, campers, and others? Having an objective for the trail and knowing how it will be used is the first stepping stone in locating where to place the trail.

Location is the second consideration. Generally, trails should follow the contour of the terrain with a gradual change in slope. The initial trail layout should be flagged before the clearing starts. Global positioning (GPS) devices can also be beneficial in laying out a trail. The trail route can be digitalized, as well as spe-

cific points along the trail that may need to be noted.

Heavy use of a trail can cause damage to the surrounding area. There are two primary processes that can cause trail and site degradation: erosion and saturation. Erosion is a natural process that occurs in degrees. As soils are walked on, they will lose the pore space between particles and the ability to absorb water. Compacted soils on a trail act as a gutter, and water will be channeled downhill. Run-off occurs when the soils can no longer absorb water, which is one of the primary trail-building problem areas. Locating trails on gentle slopes, providing adequate water bars and turnouts, designing proper crowning, and using other such techniques is vital.

Slope is measured by percentage. A simple way to determine slope is to divide the vertical distance by the hori-

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Building Trails to Treasure

(Continued from page 23)

zontal distance, then multiply by 100. There are various leveling tools such as clinometers and the Abney level that may be used to measure slope. GPS devices also measure elevation that can be helpful. To lessen erosion problems, trails should have less than 15% slope. In sandy soils, less than 10% slope is preferred. On steeper terrain, switchbacks may be necessary. Switchbacks are used to change the direction of travel in order to follow the contour with the required slope gradient. Normally, switchbacks take the shape of an “S” as the contour elevation changes.

Saturation is another trail and site degradation process of concern, generally occurring in low-lying terrain near streams, drainages, ponds, springheads, and bogs. Areas that have saturation problems should be avoided. *Alabama’s Best Management Practices for Forestry* (BMPs) should be referenced and the best management practices followed when wetland and streams are affected. There is also useful information on proper water diversion installation. However, if the purpose of the trail is to gain access to these areas, additional measures such as foot bridges, fords, and/or fill material may be needed to protect the surrounding landscape. When determining if a bridge is to be built, consider the flooding that may occur after a heavy rainfall. The guidelines in the BMP manual will be helpful. Another consideration for wet or saturated areas is to have an alternate route to be used during wet periods.

Other trail location factors may include locating and identifying timber stand types, sensitive areas, historic sites, scenic areas, springs, endangered plants and wildlife, property lines, and hazard areas such as cliffs, dumps, and others. Decisions should be made as to which areas to include along the trail and which to avoid.

Once the trail has been planned and flagged out, clearing may begin. The clearing process to be used hinges on the purpose of the trail, determined during the planning stage. Width and over hanging vegetation height should be factored into the clearing. If foot traffic is to be the main use, hand-clearing with weed

trimmers, axes, and chainsaws may be all that is needed. The minimum width for a walking trail is four feet wide, but it should be cleared to a height of eight feet. An overhead canopy is desirable to reduce the growth of grasses and shrubs that thrive in the sunlight. Width and height will need to be increased for horseback riding and vehicular traffic.

Trail clearing should be performed in stages as time allows. First, remove blown down trees that may block the trail. These trees may be disposed of, or in some cases, used to line the trail or restrict traffic from sensitive areas. Second, cut the small trees and brush to the appropriate width and height. Cut off stems as close to flush with the ground as possible. Prune branches as close to the main trunk or at forks to make their removal look more natural. Follow proper pruning techniques to encourage faster healing over. Toxic plants such as poison ivy and stinging nettle may need to be chemically controlled along the edge of the trail. Herbicides may be used to reduce vegetation re-growth, control encroaching aggressive shrubs and vines, and maintain an open walkway. Always follow the product label when applying herbicides.

Normally, trail maintenance should be performed twice a year. Spring and late fall are considered preferable times, when temperatures are moderate. Trail signage can range from none to excessive. Signage may be used to identify different trails, trail direction, and intersections, as well as indicate points of interest, hazards, and educational features. Signs should be kept to a minimum, as small as necessary, concisely worded, and placed where best to achieve the intent of the sign while minimizing its visual impact.

With the best of planning, there will be areas along the trail that can be improved upon. Continue to identify these areas and work them into the maintenance plan.

Finally, once the trail has been established, use it. Spend time with your family and friends, sharing your property and the TREASURE Forest concept. 🌲

A new trail of trees, located at Town Creek Park in Auburn, offers a walk through nature and history at the same time. The approximately one-quarter mile trail is lined with 34 trees connected to important people or events in American history. Each tree is accompanied by a plaque which gives a brief description of why the person or event is “historically significant,” as well as the tree’s Latin name, approximate life span, growth rate, and mature height and spread.

The idea for the project originated in 2003 with the Auburn Tree Commission. They developed a plan in collaboration with the City of Auburn Parks and Recreation Department, then Dyas Toyota offered considerable financial support to purchase the trees and plaques. James Jennings, Auburn’s urban forester and City Arborist, cared for the seedlings until they could be planted. On Arbor Day in 2005, a number of volunteers joined the Tree Commission for a tree planting party. Also, Auburn’s Forestry Club students planted 50 one-year-old longleaf pine seedlings all along the perimeter of the main trail that were donated by the Nursery Cooperative of Auburn University’s School of Forestry. Finally, in September of 2006 the community celebrated the ribbon cutting and grand opening of the new trail

These young trees are actually direct descendants of the original trees tied to some of our nation’s most memorable moments in history, such as the still-living honey locust near which President Abraham Lincoln delivered the Gettysburg Address in 1863. While some of the trees were donated by community members, the majority were purchased from the Historic Tree Nursery of American Forests, a national non-profit conservation organization that in 1917 began collecting, nurturing, and documenting seeds and cuttings from historical trees. A Certificate of Authenticity is issued for each specimen purchased from American Forests.

According to George Bengtson, project coordinator and Tree Commission member, the organizers were sensitive regarding issues of gender and race when selecting the trees for the trail. Plus, about one third of the trees are

AUBURN'S

New *Historic Tree Trail*

By *Elishia Ballentine*, Editor

Photos by Elishia Ballentine

linked to Alabama in some way. For instance, a beautiful Helen Keller southern magnolia, the first tree planted back in 2004, serves as the cornerstone of the trail. The rest highlight a cross-section of places and American heroes including presidents, military leaders, explorers, naturalists, inventors, authors, and others who contributed to the history of our nation. There's also the State Tree of Alabama, a southern longleaf pine; as well as a southern baldcypress, both important to early settlers of our state; and of course, a baby Live Oak from Toomer's Corner. 🌳



Students from Mrs. Williams' fourth grade class at the neighboring Wright's Mill Road Elementary School experience a "living classroom" while studying the origins of the historically significant trees along Auburn's new trail. "Venture" science teacher, Mrs. Susie Criswell, poses with students as she teaches them an appreciation of the southern longleaf pine, the State Tree of Alabama.

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American Black Bear

Where are They in Alabama?



By Ryan Prince, Wildlife Forester, Alabama Forestry Commission

American black bear (*Ursus americanus*) was once abundant throughout North America. Populations were once believed to exceed over two million animals. Recent populations have since been reduced to an estimate of approximately 600,000–700,000 animals. The drop in numbers was primarily accredited to habitat loss through extensive land clearing for agricultural use. Other factors leading to the decline were human disturbance and illegal kills. However, today's bear population is showing an upward swing in numbers.

Appearance

Black bears in Alabama are typically black in color with a brown muzzle. An occasional blaze of white may be seen on the chest. Body weights range from 150-350 pounds for adult males and 120-250 pounds for adult females, with body lengths from 3-6 feet. Body size is greatly influenced by the quality and quantity of the available food source.

Life History

Bears are a very adaptable species. They are classified as carnivores but exhibit a more omnivorous food habit, allowing them to adapt to the available food source. Bears are very intelligent and elusive, which also helps them to adapt to changes over time.

Female bears usually start having offspring at 3-5 years of age, and litters are only produced every other year. Mating normally occurs during the summer months, with cubs being born in winter dens during January and February. Litter sizes can vary from one to five cubs with twinning being common. Bear cubs are born in a helpless state weighing anywhere from 8-12 ounces and only measuring about 8 inches. They are the smallest young — in comparison to their mother — of any other mammal.

The home range for black bear varies among the sexes, with males exhibiting larger home ranges than do females. Estimates of home ranges for adult males

are approximately 40,000 acres, while estimates for adult females are approximately 18,000 acres. The home range is greatly influenced by food availability, sex, age, reproductive status, and population densities.

Habitat Requirements

Black bears can inhabit a wide diversity of habitat types. They are considered habitat generalists, meaning that a well-managed and productive forest can provide the necessary essentials for habitat. The ingredients for successful bear habitat consist of quality escape cover, abundant and diverse natural foods, dispersal corridors, water, and denning sites. Alabama's black bear population exists primarily in large contiguous areas of bottomland hardwood habitat.

Alabama's Black Bear

Located primarily in the Mobile River Basin, Alabama's resident black bear population is part of the Florida black bear subspecies (*Ursus americanus floridi-*

danus), found only in isolated populations in Florida, South Georgia, and South Alabama. In addition to Mobile and Baldwin counties, sightings of bears have also been reported in Choctaw, Clarke, and Washington counties. Current population estimates for this subspecies in Alabama are somewhere around 50 animals.

Sightings of another subspecies, American Black Bear (*Ursus americanus americanus*), are also on the increase in Northeast Alabama. They are thought to be transient bears from North Georgia and Tennessee. Sightings have been reported in DeKalb, Cherokee, Calhoun, and Cleburne counties.

Bear sightings or evidence of bear can be reported to the Alabama Wildlife Federation at 800-822-9453.

Conclusion

Black bear were once common across the diverse landscape of Alabama. Thanks to conservation groups such as the Alabama Black Bear Alliance, we are starting to learn more about the black bear population in our state. As bear populations increase, so will interactions between bears and humans. If you live in an area where a bear has been seen, educate yourself on how to live with this magnificent animal as a neighbor. 🐾

References

Yarrow, G. K. and D. T. Yarrow. 1999. *Managing Wildlife*. Sweetwater Press. 12: 265-279

(<http://www.outdooralabama.com/hunting/articles/truthbears.cfm>)

(<http://www.outdooralabama.com/watchable-wildlife/what/Mammals/Carnivors/bb.cfm>)

Terry Spivey, USDA Forest Service, www.forestryimages.org



Forest Inventory and Analysis (FIA) Program in Alabama

By *Brian Hendricks*, FIA Coordinator, Alabama Forestry Commission

Forest Inventory and Analysis (FIA) is a nationwide timber and forest resource inventory that has been ongoing for nearly 70 years in Alabama. Prior to 1997, the USDA Forest Service conducted a periodic survey approximately every ten years. However, the Forest Service and the states agreed that a ten-year interval between surveys was too long due to increases in demand of forest products and changes in land use. In 1997 the Forest Service and the Alabama Forestry Commission (AFC) agreed for the AFC to take over the data collection aspect of the survey. Beginning with the 1997 survey, the plot design changed from a 10-prism-point layout to a 4-fixed-radius plot layout. Initially, the AFC had ten crews with assigned work zones. With the help of Forest Service crews in 2000, the state survey was completed in January of 2001. Beginning in 2001 a continuous annual survey was implemented in which 20% of the total number of FIA plots were surveyed each year, so that after five years a full FIA cycle would be completed. (A cycle consists of all FIA plots distributed throughout the state; the yearly allocation of plots to be surveyed is referred to as a panel.) In late 2005, the last panel of plots was completed for the cycle that began in 2001.

In early 2006, the FIA crew began surveying plots in the first panel of a new cycle. A decision was made to go to a seven-year cycle beginning in 2006, which meant that crews would be surveying a 15% panel each year. Today, crews are surveying plots in the second panel of the current cycle.

At present, there are eight full-time employees assigned to FIA: six crew leaders, one full-time assistant, and the FIA Coordinator. Each crew leader is accompanied by a county employee as an assistant when surveying plots.

There are 5,572 survey plots distributed throughout the state, at an approximate 3X3 mile spacing for the most part. The majority of the plots were established in the 1930s; however, for various reasons a few new plots are established each year. The plots exist on all types of ownership (private, industry, and public). The crews collect a wide variety of timber and other forest resource data from each plot. Some of the more important data collected includes forest type, stand size, type of regeneration, and treatments and/or disturbances since the last survey.

Four different subplots make up one entire plot. At each subplot, all trees 5 inches diameter at breast height (DBH) and greater are tallied within 24.0 feet of the subplot center. For each tallied tree,

a DBH is collected and a height is measured, with each tree given a tree class, crown class, and crown ratio. If any rot is found in the tree, then a percentage of cubic foot cull is recorded up to a 4-inch top. For sawtimber-sized trees, additional measurements are taken including log grade and amount of board foot cull. Each subplot has a microplot associated with it. The microplot is located 12 feet and 90 degrees from subplot center. At the microplot, saplings and seedlings are tallied within 6.8 feet of microplot center.

IMPORTANCE OF FIA SURVEY

Economic Development: Most of the information pertaining to forest resources and their availability for new and expanding forest industries is obtained from the FIA survey data.

Forest Management Decision-Making: To make good forest management decisions, competent professionals must have good and timely information about the current conditions of our forests. FIA data is a primary source of those current forest conditions.

Environmental Policy: Environmental policy makers and regulators are using the FIA information as the basis upon which public environmental policy on forest use is developed and results monitored over time. 🐾

Seedling Sources for Alabama Landowners

Reforestation activities ended early this year as warm weather arrived sooner than expected. Now that summer is here, it is the time to prepare your site for planting. Part of that site preparation plan is finding the right tree seedlings to plant this coming winter. Seeing a new forest established is a rewarding experience and since many landowners do not know where to find quality tree seedlings, the Alabama Forestry Commission has been busy updating the current list of seedling sources. In the Summer 2006 issue of *Alabama's TREASURED Forests*, a list was presented of private vendors that supply tree seedlings to the public. That list has been updated and is re-issued here. The list is in alphabetical order, and is in no way an endorsement of any particular company or product.

If you are a company that provides tree seedlings to the public but are not listed here and would like to be, please contact the Alabama Forestry Commission Forest Management Division at (334) 240-9332.

Alabama SuperTree Nursery

264 County Road 888
Selma, AL 36703
Toll Free: (800) 222-1280
Phone: (334) 872-5452
Fax: (334) 872-2358

American Tree Seedling, Inc.

401 Industrial Blvd
P.O. Box 1306
Bainbridge, GA 39818
Phone: (229) 246-2662
Chuck's cell: (229) 416-6282
Fax: (229) 246-4787
Email: Cwhittakerjr@yahoo.com

Andrew's Nursery Florida Division of Forestry

Contact: Steve Gilley
P. O. Drawer 849
Chiefland, FL 32644-0849
Phone: (352) 493-6096
Fax: (352) 493-6084

Augusta Forestry Center Virginia Department of Forestry

P. O. Box 160
Crimora, VA 24431
Phone: (703) 363-7000
Fax: (703) 363-5055

Baucum Nursery Arkansas Forestry Commission

1402 Hwy 391 N
North Little Rock, AR 72117
Phone: (501) 945-1755

Beauregard Nursery Louisiana Dept of Agriculture & Forestry

P. O. Box 935
DeRidder, LA 70634
Phone: (318) 462-2711

Bellville Tree Nursery Union Camp Corporation

P. O. Box 56
Bellville, GA 30414
Phone: (912) 739-4721
Fax: (912) 739-1861

Blanton's Longleaf Container Nursery

1091 NE Daylily Avenue
Madison, FL 32340
Nursery at Madison, FL
Outside sales office at Brewton, AL
Phone: (850) 973-2967
Email: blantonsnursery@earthlink.net

Buckeye Nursery, Inc.

P. O. Box 450
Perry, FL 32348
Phone: (850) 838-2680
Toll Free: (800) 838-2218
Fax: (850) 838-2681

Carolina Forest Tree Nursery International Paper

2341 Redmond Mill Road
Swansea, SC 29160
Phone: (803) 568-2436
Fax: (803) 568-2718

Central Florida Lands and Timber

Route 1 Box 889
Mayo, FL 32066
Phone: (904) 294-1211
Fax: (904) 294-3416

Chestnut Hill Nursery, Inc (fruit and nut trees)

Route 1 Box 341
Alachua, FL 32615
Toll Free (800) 669-2067
Phone: (904) 462-2820
Fax: (904) 462-4330

Chiappini Farm

P. O. Box 436
 Melrose, FL 32666
 Toll Free: (800) 293-5413
 Phone: (904) 475-5413

Clairidge Nursery

762 Clairidge Nursery Road
 Goldsboro, NC 27530
 Phone: (919) 731-7988
 Fax: (919) 731-7993

Columbia Nursery**Louisiana Dept of Agriculture & Forestry**

P. O. Box 1388
 Columbia, LA 71418
 Phone: (318) 649-7463

Comfort Seed Orchard

Weyerhaeuser Co.
 250 Weyerhaeuser Lane
 Trenton, NC 28585
 Phone: (910) 324-1116
 Fax: (910) 324-2038

Container Corp of America

Archer, FL
 Phone: (904) 495-2660

DeepSouth Pine Nursery, Inc

5500 Boomerang Road
 Bascom, FL 32423
 Toll Free: (888) 839-2488
 Phone: (850) 569-2488
 Email: dpssofar@surfsouth.com

Delta View Nursery

(hardwood seedlings)
 Route 1 Box 28
 Leland, MS 38759
 Toll Free: (800) 748-9018
 Email: hardwoods@tecinfo.com

Dixie Green

P. O. Box 262
 Centre, AL 35960
 Toll Free (800) 526-6121
 Phone: (256) 927-5185
 Fax: (256) 927-8546
 Email: dginc@dixiegreen.com

Dwight Stansel Farm and Nursery

5553 164th Street
 Wellborn, FL 32094
 Phone: (904) 963-2827

**Fred C. Gragg SuperTree Nursery
International Paper Company**

Route 2 Box 23
 Bluff City, AR 71722
 Phone: (501) 685-2562
 Fax: (501) 685-2825

**Flint River Nursery
Georgia Forestry Commission**

9850 River Road
 Byromville, GA 31007
 Phone: (229) 268-7308

**Forestry Division
Riverwood International USA**

P.O. Box 35800
 West Monroe, LA 71294
 Phone: (318) 362-2824
 Fax: (318) 362-2272

Fratesi Nursery

(hardwood seedlings)
 122 Plantation Drive
 Leland, MS 38756
 Phone: (662) 379-3129

Future Forest Seedlings

(hardwood seedlings)
 7361 Browning Road 520
 Greenwood, MS
 Phone: (662) 453-8589

**Garland Gray Forestry Center
Virginia Department of Forestry**

19127 Sandy Hill Road
 Courtland, VA 23837
 Phone: (804) 834-2855
 Fax: (804) 834-3141

Georgia SuperTree Nursery

Route 1 Box 1097
 County Road 3
 Shellman, GA 39886
 Toll Free: (800) 554-6550
 Phone: (229) 679-5640
 Fax: (229) 679-5628

**Glennville Regeneration Center
Rayonier, Inc.**

Route 2 Box 1975
 Glennville, GA 30427
 Phone: (912) 654-4065
 Fax: (912) 654-4071

**Indian Mound Nursery
Texas Forest Service**

P. O. Box 617
 Alto, TX 75925-0617
 Phone: (409) 858-4202
 Fax: (409) 858-4303

International Forest Company

Contact: Adam Howard
 1550 Simpson Road
 Odenville, AL 35120
 Phone: (205) 629-6463

International Forest Company

Contact: Wayne Bell
 1265 GA Hwy 133 N
 Moultrie, GA 31768
 Toll Free: (800) 633-4506
 Phone: (229) 985-0321
 Fax: (229) 985-0567

Inverness Tree Nursery

International Paper
 Route 1 Box 244
 Union Springs, AL 36089
 Phone: (334) 474-3228
 Fax: (334) 474-3247

**Joshua Timberlands (Elberta Nursery)
(MTM) Molpus Timber Management**

29650 Comstock Road
 Elberta, AL 36530
 Phone: (251) 986-5210
 Fax: (251) 986-5211

Keen Forest Management

Route 1 Box 782
 Mayo, FL 32066
 Phone (386) 294-2234

The Liner Tree Farm, Inc.

P. O. Box 1369
 St Cloud, FL 34770
 Toll Free: (800) 330-1484
 Fax: (407) 892-3593

Livingston SuperTree Nursery

Contact: Lux Davis or Shannon Stewart
 3535 Nursery Road
 Livingston, TX 77351
 Phone: (936) 563-2302
 Fax: (936) 563-2027

(Continued on page 30)

Seedling Sources

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Louisiana Forestry

P .O. Box 1628
Baton Rouge, LA 70821
Phone: (225) 925-4500
Fax: (225) 922-1356

Magnolia Nursery

Weyerhaeuser Company

2960 Columbia 11 E
Magnolia, AR 71753
Phone: (501) 234-3537
Fax: (501) 234-7918

MeadWestvaco Tree Nursery

P. O. Box 1950
Summerville, SC 29484
Phone: (803) 556-8391
Fax: (803) 556-8391

Meeks' Farms & Nursery

187 Flanders Road
Kite, GA
Phone: (877) 809-1737
www.meeksfarms-nurserys.com
Contact for Alabama: Peter Frankowski
in Demopolis - Phone: (888) 397-0166

Meeks' Farms & Nursery, Inc.

Mickey Parker, Seedling Sales
4145 Montalvo Drive
Pensacola, FL 32504
Phone: (850) 476-4815 or (850) 438-2619
Mobile: (850) 572-3932
Fax: (850) 476-4831

Mississippi Forestry Commission Waynesboro Nursery

Phillip Wilson, Nursery Manager
1063 Buckatunna-Mt. Zion Road
Waynesboro, MS 39367
Toll Free: (866) 295-6279
Phone: (601) 735-9512
Fax: (601) 735-3163
Email: pwilson@mfc.state.ms.us

The Natives

2929 Carter Road
Davenport, FL 33837
Phone: (941) 422-6664

Oberlin Nursery

Louisiana Dept of Agriculture & Forestry

P. O. Box N
Oberlin, LA 70655
Phone: (318) 639-2911
Fax: (912) 427-0816

OK Forest Regeneration Center

830 NE 12th Avenue
Goldsby, OK 73093
Phone: (405) 288-2385
Fax: (405) 288-6326

Plum Creek Choctaw Seed Orchard

9292 Pine Grove Road
Ward, AL 36922
Phone: (205) 654-2625
Fax: (205) 654-4324
Email: Bobby.Catrett@plumcreek.com

The Plum Creek Timber Company Jesup Nursery & Seed Orchard

1689 Nursery Road
Jesup, GA 31545
Phone: (912) 427-4871
Fax: (912) 427-0816

The Plum Creek Timber Company

1444 Shubuta-Eucutta Road
Shubuta, MS 39360
Phone: (601) 687-5766
Fax: (601) 687-5765
Email: Tom.Anderson@plumcreek.com

The Plum Creek Timber Company Pearl River Nursery

1032 Camp Lane
Hazlehurst, MS 39083
Phone: (601) 894-1072
Fax: (601) 894-3477

Procter and Gamble Cellulose

Perry, FL
Phone: (850) 584-0231

Quail Ridge Nursery

Weyerhaeuser Company

169 Weyerhaeuser Rd
Aiken, SC 29801
Phone: (803) 649-0489
Fax: (803) 649-0997

R. E. Mitchell Nursery

MacMillian Bloedel, Inc.

P .O. Box 336
Pine Hill, AL 36769
Phone: (334) 682-9882
Fax: (334) 682-4481

Simmons Tree Farm
Terrell Simmons, Owner
545 Snipesville Road
Denton, GA 31532
Phone: (912) 375-7520
Fax: (912) 375-0926

**Smurfit-Stone Container Corporation
Rock Creek Nursery**
Doug Shelburne
4346 Parker Springs Road
Brewton, AL 36426
Toll Free: (866) 407-9556
Phone: (251) 867-9480

**South Carolina SuperTree Nursery
International Paper Company**
5594 Hwy 38 S
Blenheim, SC 29516
Phone: (803) 528-3203
Fax: (803) 528-3943

**Superior Trees, Inc.
Lee Nursery**
P. O. Box 9325
U. S. 90 East
Lee, FL 32059
Phone: (850) 971-5416

**Taylor Nursery
South Carolina Forestry Commission**
Box 116
Trenton, SC 29847
Phone: (803) 275-3578
Fax: (803) 275-5227

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Black Locust

(*Robinia pseudoacacia*)

By Fred Nation, Educator, Baldwin County

Black locust is a medium-sized deciduous tree, often to about 40 feet in height, typically with an irregular, open crown, and a short, forked or twisted bole.

Rarely it can attain about 100 feet, with a trunk diameter of 3 feet. The leaves are alternate, odd pinnately compound, with 7 to 21 oval leaflets to about 2 inches long. The leaflets fold together at night and in the daytime during stormy weather. The bark is gray and somewhat scaly, becoming nearly black and deeply furrowed in older trees. Twigs are stout, zigzag, with sharp paired spines at each node. Flowers are white, "pea-shaped," in fragrant, drooping racemes 4 or 5 inches long, in May or June. Fruits are flat pods (legumes) about 4 inches long, with hard bean-like seeds that are reported to be poisonous. The attractive flower clusters and feathery compound leaves of Robinia share a distinct family resemblance to white forms of Wisteria, which, like black locust, are in the pea family.

The original range is somewhat uncertain, but black locust appears to be native to the Appalachian highlands, from Pennsylvania to northeastern Alabama, with a separate indigenous area in the Ozark plateau of Missouri and Arkansas. Since colonial times black locust has been widely planted, and it has often escaped cultivation. Today it has natural-



ized from Maine to California, and throughout Alabama. It is very fast growing, and it spreads aggressively by means of root sprouts. Dense colonial thickets are often seen in disturbed sites, such as abandoned fields, spoil sites, burned-over areas, and clear-cuts. Like other members of the pea family, black locust is a nitrogen fixer, a characteristic that has made it useful for erosion control, to stabilize poor soils in hilly or mountainous areas.

The heartwood is hard, heavy, and very resistant to decay. The colonists at Jamestown, Virginia discovered black locust trees. They soon learned, perhaps

from the local Indians, of its durability, because it was selected for the corner posts in their first homes in 1607. The Virginia Indians used black locust for their bows, and they may have planted it along the Atlantic coast. Since those early days, it has been used for fence posts, railroad ties and trestles, and for boat construction. The wood has one of the lowest shrinkage values of any American tree. This makes it especially useful for wagon wheels and hubs, shoe lasts, construction dowels, and an historic use that a few of us can still remember: support pins for the glass insulators on utility poles.

Black locust trees are usually short-lived, due at least in part to infestations by locust borers which mine through the twigs and branches, weakening them and eventually causing them to die before they become large trees suitable for lumber. Because of its short lifespan and weedy habits, black locust is seldom used as an ornamental. But in the right setting, with proper care, our historic native black locust tree could be an interesting and beautiful addition to a naturalized landscape.

The Alabama State Champion *Robinia pseudoacacia*, in Madison County, is 91.3 inches in circumference, 105 feet tall, with an average crownspread of 37.1 feet. 🌳



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