A photograph of a dirt road winding through a forest. The road is covered in fallen leaves and is flanked by trees with vibrant autumn foliage in shades of red, orange, and yellow. The sky is visible through the canopy, appearing overcast. The overall scene is serene and captures the beauty of a forest in fall.

Alabama's TREASURED Forests

A Publication of the Alabama Forestry Commission

Fall/Winter 2011

Message from the STATE FORESTER

As I reflect on the year just ending, I can say with certainty that 2011 has been one of the most challenging years in the history of the Alabama Forestry Commission. In April, our employees played a major role in the state's response to the devastating tornados that struck Alabama. During the early summer, we battled and eventually controlled massive wildfires in Baldwin and Jefferson counties...fires that threatened to destroy entire communities and could have resulted in deaths, injuries, and extreme property losses.

Throughout the remainder of the year, we fought thousands of other wildfires, assisted thousands of landowners, and continued to fulfill all aspects of the Commission's mission. We did this in spite of inadequate revenue, horribly outdated equipment, and a work force that has continued to decline steadily in numbers. Our employees have worked night and day for weeks at a time with few or no breaks, and I have never been prouder to be associated with any group of people more than I am with my co-workers in the Forestry Commission. Their efforts in the areas of disaster response and wildfire suppression alone have saved lives, property, and hundreds of thousands of acres of Alabama's forestland.

Now we turn our attention to the challenges that lie ahead in 2012. Unfortunately, there is no relief in sight when it comes to the Commission's financial condition. Revenue sources such as severance taxes are flat or declining. Money we have been receiving from federal stimulus programs will dry up this year, and other federal funding is uncertain at best. Worst of all, the state general fund, which is the largest single source of funding for AFC, faces a shortfall of hundreds of millions of dollars. We have been instructed to prepare for the loss of up to a quarter of our general fund revenue in the FY2013 budget, which the Legislature will consider in the regular session beginning in February.

The Forestry Commission simply cannot continue absorbing annual budget reductions if we are to keep doing the job we are required to perform under state law. Our people have been through years without merit raises, increasing workloads, less time off, and all the other stresses that result from a drastically reduced work force. Our equipment continues to deteriorate because we cannot designate money for replacements unless we are willing to make more sacrifices in the area of personnel. I cannot in good conscience make that trade-off when we

are so critically understaffed already.

In the weeks and months ahead, we will be using all of the communication tools at our disposal to provide all of our partners, and all who benefit from our services, with information about the Forestry Commission's budget crisis. We are asking all who realize the value of AFC as a public safety and landowner assistance agency to communicate with lawmakers as the Legislature works on the FY13 budget. Located on pages 8 and 9 of this publication is an AFC fact sheet that explains what we are facing. Contact information for your representatives can be found at www.legislature.state.al.us/house/house.html and senators at www.legislature.state.al.us/senate/senate.html.

We fully realize that all state agencies supported by the general fund can make a strong case for the importance of their work. What we must do is make the strongest possible case for an adequate appropriation for the Forestry Commission, and we need all the support we can muster to do this.

All of us watched with deep concern as firefighters in Texas spent much of 2011 trying to suppress 30,000 wildfires, including the single most catastrophic fire in that state's history. Those fires resulted in several deaths, the destruction of thousands of homes and farms, and the burning of four million acres. I do not exaggerate when I say that there is a risk of a similar catastrophe in Alabama if the Forestry Commission continues losing personnel and operating with antiquated equipment due to a lack of funding. We cannot fulfill our role as a public safety agency without adequate revenue.

Contacts with legislators from our partners and landowners are crucial in helping us avoid an even greater reduction in funding than the one we received during the 2011 legislative session. Once again, your help is needed during the upcoming legislative session as the state attempts to deal with a massive revenue shortfall.

I hope you will join us in this effort as you did in 2011. We need your support more than ever as we continue to do our best to protect lives and property and provide the other services that the people of Alabama expect from the Alabama Forestry Commission. ♣

Linda Casey



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"Autumn in the Forest"
Bankhead National Forest
North Alabama

Photo by
Anthony R. Poston



Good**FIRES**

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"He Restoreth My Soul"

*By Elishia Ballentine, Editor
and Michael Older, Forester/Covington County Manager, Alabama Forestry Commission*

At an early age growing up in Troy, Paul Langford realized the importance of forests and trees . . . from living on the corner of Willow and Maple Streets, to walking up and down Pine Hill everyday to and from elementary school. As a child, he played in the woods and spent many weekends and summers at his grandparents' homeplace in Covington County. He learned that his grandfather had grown up on one farm, and his grandmother was born and raised on another, just a short distance away. When they married, they built their home on land that was situated right between the two families' properties. Some of his favorite memories are of listening to his grandfather talk about the past . . . while he didn't always understand the meaning at the time, he knew there was something special about those "Piney Woods."

Probably the most influential occasions happened when he was walking in the woods with his father. A typical boy, Paul was more interested in the creeks, rabbits, and other critters, while his dad (an assistant County Agent for Pike County at the time) looked at the trees. These walkabouts together on his father's property in Covington County continued many Saturdays well into his teen years, even when the family moved to Tallassee where his father became superintendent at Auburn University's Agricultural Experiment Station. It was there that Paul chose to work in the fields for small pay during summers while in high school, to avoid the *real* hard work of picking and freezing fruits and vegetables with his mother!

The lesson that Paul took away from all these combined experiences was simply this: trees are good. It's a lesson he obviously

learned well. In 2002, he achieved TREASURE Forest certification on his property and it became a Certified Tree Farm. In addition to being selected as the Covington County Outstanding TREASURE Forest Landowner of the Year in 2005, Paul was also the recipient of the Helene Mosley Memorial TREASURE Forest Award for the Southeast Region in 2007. Yet he still attends forestry education programs regularly in order to learn even more about the day-to-day management of his forestland. Langford is an avid supporter of the Longleaf Alliance, and an active member of the Covington County Forestry Committee.

But How Did He Get Here?

Following graduation from Auburn in 1970 with Bachelors and Masters Degrees in Mechanical Engineering, Langford moved to Tampa, Florida to pursue his career. Twelve years later, he and wife Jan, an attorney, moved to Pensacola where they have lived ever since.

During the 1990s, a series of life-changing events took place: serious health issues, closure of the Westinghouse plant where he had worked as an engineer, and the death of his father. After much soul searching, reassessment, and planning, he took early retirement. It was a move that required a great deal of courage, but he had to not only care for his elderly mother who had Alzheimer's disease, but also be personal representative for his father's estate which encompassed approximately 2,000 acres of land. It was about this time that Langford said he fully realized the significance of two scriptures, "Proverbs 3:5-6 and Romans 8:28 are real for me."

When his mother died in 2003, the family property was distributed between Paul, his sister, Sue, and brother, Bill. He and his brother later traded land partials so that all of Paul's property was in a contiguous block, and a couple years later he purchased 25 more acres from a cousin.

Management Accomplishments

Good stewardship is the overall factor in managing his 650-acre TREASURE Forest. Although he is an "absentee" landowner, he is extremely involved. Each acre has been examined to determine the most beneficial management practices that can be applied that consider wildlife habitat enhancement, environmental protection, and aesthetics, as well as timber production.



Langford hired Sizemore and Sizemore of Tallassee to develop a management plan on the portion of the land he had inherited. This plan has been followed and amended as needed. He purchased quarterly aerial photographs and used the ArcView mapping program to stand-map the property in much greater detail (related to history, soils, burning, plantations, wildlife, sales, etc.). He obtains technical assistance from consultant foresters, qualified forestry vendors, and agency representatives in managing the property. Timber sales are handled through a consultant.

Much of the prescribed burning is performed by Paul and other family members. Not only has he been through prescribed burn training to become a certified burn manager, he also served three years on the first Alabama Prescribed Fire Council steering committee. According to Langford, "Pines are happier and breathe easier after burning!" He has now added a pesticide applicator permit to his skills.

Timber is the primary objective on the property and is very aggressively managed. The poor-quality stands were identified and harvested, then replanted in either containerized longleaf or loblolly pine following chemical site preparation and burning. Most of the pines (33 plantations) were hand-planted, and Paul says he has only one regret . . . "If I had it to do over, I would plant it ALL in longleaf."



The stands are thinned on a timely basis. Each sale is marked to ensure the best trees are retained. Streamside Management Zone (SMZ) boundaries are marked to limit the sale boundary, as well as prevent the accidental encroachment of logging equipment. Langford also established over six miles of permanent firelanes.

Wildlife is the secondary objective, with native species encouraged on the property. The SMZ provides more than adequate mast, nesting sites, cover, and water resources for wildlife. Prescribed burning is used to promote browse, provide bugging and nesting sites for turkey, as well as hardwood control. Most stands have maximum edge due to irregular shapes and various sizes.

Food plots and openings are used for wildlife enhancement as well. A two-acre kudzu patch that was chemically eradicated and spot-treated over a couple

years is now utilized as a food plot. Two other openings have been planted in oak, dogwood, and other hard and soft mast trees. Winter and summer cover crops are maintained annually, and openings are mowed to provide bugging opportunities for turkey.

Aesthetics are important also. Trash along the county roads and Poley Creek is cleaned up on a routine basis. Although gates and fencing is used to control access, Paul has hauled out several washing machines, refrigerators, and other appliances that have been dumped into the creek on a public road on his property. Dogwood and almost 200 acres in other bottomland hardwood trees (50 years old and older) are retained for their aesthetic value as well as wildlife benefit.

While the most important recreational benefits are working and managing the property, hunting is also utilized. Culverts, fords, water bars, and turnouts were installed to facilitate vehicular access as a form of recreation. The forest roads are maintained annually, with culverts checked and cleaned out to prevent blockage.

Preaching What He Practices

Passionate about educating the public and other landowners about the benefits of prescribed fire, Paul promotes the practice at every opportunity. In 2006, approximately 30 landowners and foresters attended a Vegetation Management Tour, hosted by Langford, to look at a mechanical mulching demonstration, herbicide application on longleaf pine, and a prescribed burning program. He hosted 50 landowners for the Southeast Region tour during the 2008 Alabama Natural Resources Council Forestry Field Day. Forestry students from Lurleen B. Wallace Community College have visited the property a couple times to look at various management challenges including Ips beetle outbreak, aerial chemical application drift, and other aspects.

Past, Present, and Future

Langford credits his father as “The Source” . . . “He not only passed down this land to us, but also his love of the land, and so much more.” Now he looks to his uncle as his “indefatigable Mentor” . . . Dr. John Langford, also a Covington County Tree Farmer and Helene Mosley Memorial TREASURE Forest Award winner (featured in the Spring 2002 issue of *Alabama’s TREASURED Forests* magazine). However, as is the case with many TREASURE Forest landowners, Paul can’t help but worry a little and wonder what the future holds for this land he has carefully nurtured over the past few years.


He wishes to leave his property as productive timberland providing multiple uses for the benefit of his wife and daughters. He stated, “I’ve made sure that Jan knows AFC forester Mike Older and consulting forester Jack Fillingham well enough, so that if something happens to me, she would feel completely comfortable working with them.”

Even with his four daughters scattered across the U.S., Paul has tried to instill a love of the land in them, just as his father did for him. Of the two oldest, Tara lives in Georgia and Amy in Colorado, with families and concerns of their own. Of the two youngest, Catherine lives in Chicago . . . she loves the woods and the land, has helped him take inventory, kill privet, plant and take care of mast trees . . . but she doesn’t like the Alabama summertime heat! Sarah, who lives far away in Sacramento, also loves the woods and has assisted her dad with several projects on the property. She has always wanted to help with prescribed burning, but opportunities have been limited because there’s never enough time when she’s home or the weather has not cooperated.

He can only hope that his and his father’s Covington County legacy will continue into future generations. “There are always problems to deal with in life,” says Langford, “but the land never fails to restore my soul.” ☪



Photo by Albert (Bud) Mayfield, USDA Forest Service, Bugwood.org



First Cases of Laurel Wilt Disease Confirmed in Alabama

Partial canopy wilt due to a vascular infection by a fungus introduced by redbay ambrosia beetle

By Dana McReynolds Stone, Forest Health Coordinator, Alabama Forestry Commission

In September, officials with the Alabama Forestry Commission were concerned but not surprised by the news that laurel wilt disease has now been found in two counties in Alabama. The U.S. Department of Agriculture (USDA) and Iowa State University laboratories confirmed that tree stem samples collected in Marengo and Mobile counties were positive for the fungus, *Raffaelea lauricola*.

This non-native invasive insect-disease complex primarily affects trees in the laurel family, with redbay, swampbay, camphor, and sassafras being especially susceptible. Other potential hosts in the laurel species include pondberry, pondspice, spicebush, and avocado. A host tree becomes infected with the disease when a redbay ambrosia beetle transmits the fungus into the walls of the sapwood. Quite virulent, the fungus then clogs the vascular system of the tree, preventing the flow of water. As a result, black streaks appear in the sapwood. Soon, the entire crown presents wilted reddish-brown foliage and within weeks, the tree will succumb to the disease.

Laurel wilt disease was introduced into the United States in 2002 on untreated wood packing material from Asia, first attacking redbay and sassafras trees in Georgia, then spreading into South Carolina, Florida, Mississippi, and most recently North Carolina. When two redbay ambrosia beetles were captured in traps near Grand Bay, Alabama back in October of 2010, the dis-

ease was predicted to spread into Mobile County within the next few years.

One probable cause for spread of the disease is the long-distance movement of untreated wood products. Infested firewood, wood chips, and even yard debris can become possible carriers of the redbay ambrosia beetle. Avoiding the movement of infested wood and proper disposal can dramatically reduce the threat.

Unfortunately, very little success has been achieved in containing redbay ambrosia beetle and the associated laurel wilt disease through current control methods. There are, however, some actions that can be implemented to reduce and possibly prevent the further spread of this devastating exotic pest. Any host tree confirmed of having laurel wilt disease should immediately be salvaged. If possible, burn the wood debris of the affected tree on the site, of course, following all state and local regulations. If burning is not an option, at least leave the cut tree at that location. Do not haul cut wood debris killed by laurel wilt disease to other sites. Always buy "local" firewood if travelling to another destination for recreational activities.

For additional information on the redbay ambrosia beetle and laurel wilt disease, please visit: www.forestry.alabama.gov – **Insect, Disease & Invasive Species – Insects – Insect Advisory**; www.fs.fed.us/r8/foresthealth/laurelwilt/index.shtml; or www.aces.edu/ucf/RedbayWiltStory.php. 📍



Requesting 2013 State General Fund Appropriation Increase of \$2.4 Million to Maintain Current Firefighting Capacity

Where We Are:

- Workforce has been reduced 21%
 - Wildfire response capabilities severely impacted creating larger fires
 - Area of responsibility for each firefighting crew increased 39% to 521 square miles
 - Increased wildland firefighting burden on volunteer fire departments due to reduction of AFC firefighting resources
 - Citizens are left vulnerable due to response requirements for large or numerous wildfires
 - Emergency response reduced by 50% (fire, tornado, hurricane, flood, haz-mat, terrorism, etc.)
 - Acres lost due to catastrophic wildfire increased 182%
 - Homes threatened due to large fires increased 173%

AFC RESPONSE TO APRIL 2011 TORNADOS



AFC Responders: 167
Man Hours: 20,240

Responsibilities: Search & Rescue, Humanitarian Aid (food, water, supplies), Public Health (poultry disposal), Road and Debris Clearing, Law Enforcement

What We Are Facing:

- Number of large fires increasing 26%
- At the FY12 State General Fund (SGF) level, 25 wildland firefighter positions - retained through ARRA - will have to be eliminated
- The proposed cut of 25% to FY13 SGF will result in a reduction of 25 additional employees
- Burden on Volunteer Fire Departments intensifying due to reduction of AFC firefighting resources
- Tipping point reached where decision to maintain personnel is weighed against replacement of equipment that has exceeded its recommended lifespan by 66%
- Increased risk of uncontrollable wildfires related to natural disasters
- 93% (12 million tons) of downed tornado timber remains on the ground, increasing fuel load for future catastrophic wildfires
- Containment of wildfires in tornado/hurricane damaged areas necessitates commitment of firefighting resources that leave other areas vulnerable
- Limited ability to perform management activities for private landowners which help reduce the threat and potential losses due to catastrophic wildfires

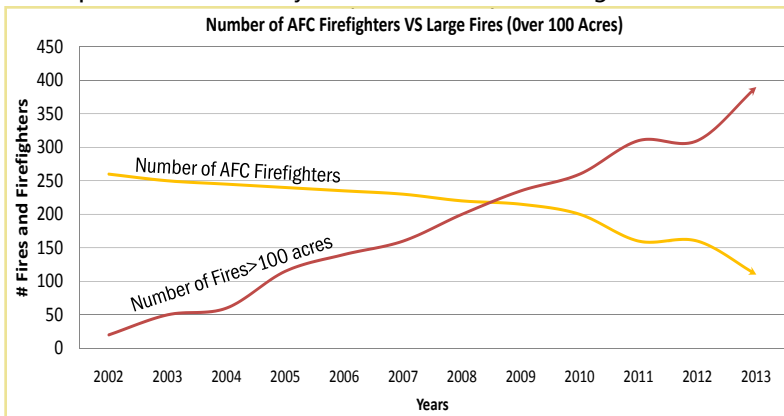
Last year the AFC responded to 3,656 wildfires totalling 69,700 acres

Tornado-Debris Fire in Jefferson County (June)
Burned 3,000 Acres in 6 days



Due to the twisted nature of the tornado debris, AFC equipment has limited capacity to control wildfires in tornado-damaged areas.

Impact to Public Safety with Additional 25% Budget Reduction



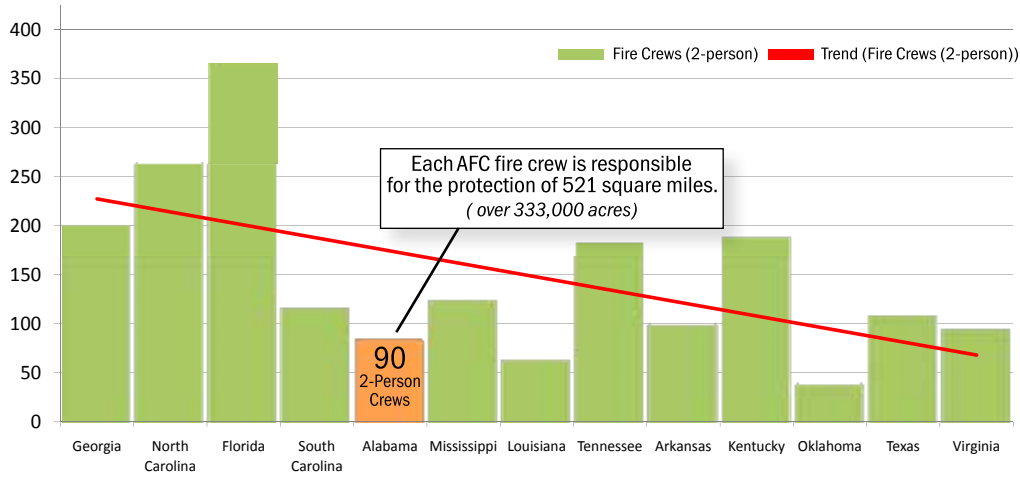
Due to past budget reductions, the number of AFC firefighters continues to decrease, while fires larger than 100 acres continues to increase.

2011 Gulf State Park Fire (June 25 - July 1)
Burned 900 Acres



AFC fire crews continue to battle catastrophic wildfires in areas impacted by timber damage from the 2004 hurricanes (examples: 2011 Gulf State Park Fire and Seminole Fire).

Number of Fire Crews by State (2010)



Based on the trend line of what other states support for the number of wildfires they must control, Alabama should have 170 two-person fire crews. The AFC currently has 90 fire crews.

APRIL TORNADOS



93% (12 million tons) of timber damaged during the April 2011 tornados is still on the ground, increasing fuel load for future catastrophic wildfires.

To place it into context, this volume of timber would create a convoy of 440,000 log trucks that would stretch 5,500 miles. It could reach any point on the red circle from Montgomery, Alabama.



GULF STATE PARK FIRE (JUNE 25 -JULY 1)



900 ACRES

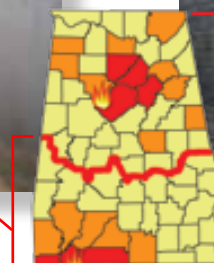


AFC County Resources
 ■ Counties Left Unprotected
 ■ Resources Deployed to Assist
 ■ Repositioned Resources

SEMINOLE FIRE (JUNE)



1,300 ACRES



AFC County Resources
 ■ Counties Left Unprotected
 ■ Resources Deployed to Assist
 ■ Repositioned Resources

TORNADO-DEBRIS FIRE IN JEFFERSON Co. (JUNE)



3,000 ACRES

Changing Timberland Ownership Bringing Unknowns to Industry, State Economies

By Charles Martin

Office of Communications & Marketing, Auburn University

Timberland across the South is an economic fixture that supplies wood for houses, furniture, paper and the like and now is possibly generating funds for your retirement or favorite school.

The forests have become an attractive option for institutional investors – pension funds, retirement systems and even university endowments – far removed from the everyday planting, harvesting and replanting, says Auburn University forest economics professor Daowei Zhang.

The good part is that any investment in timberland contributes toward a thriving forest-products industry. Yet Zhang says the long-term effect of these short-term investments, typically lasting eight to ten years, is unknown and is creating questions for industry analysts.

"Who owns the forestland with such a limited term and how are they managing their forests?" Zhang asks. "After they harvest the timber, will they change the use of the land? Do they practice reforestation so forest-product manufacturers will have adequate timber supply?"

Zhang says industrial timberland owners in recent years have sold more than 30 million acres of commercial timberland across the country and more than 3 million acres in Alabama, mostly to institutional investors.

In the past, industrial timberland owners - such as Georgia Pacific, International Paper, and Weyerhaeuser - would own the land, equipment, and mill and run the entire operation, from planting the seedlings to the sale of construction-ready lumber and tissue paper. They also buy timber from independent landowners.

Facing tough competition and difficult economic conditions over the past 20 years, many of these companies have sold tracts of land to generate capital. Most of the sales were made to institutional investors, which hire timberland investment management organizations, or TIMOs, to manage the property for a short-term return on investment.

"It's a very attractive investment because the institutional investors pay only a 15 percent capital gains tax, whereas the timberland companies pay a 35 percent tax," Zhang said.

"The institutional investor also benefits from the generally accepted accounting rules that list land and timber value at the time of purchases and thus ignore the value of timber growth, which can rise dramatically each year."

Zhang and his collaborator, Brett Butler of the U.S. Forest Service, are using a new three-year, \$263,000 grant from the USDA's Agriculture and Food Research Institute to study institutional investors' forest management and land-use practices to help the forest-products industry predict future timber supply, attract capital investment to the industry, and shape governmental policy making.

The research seeks to: identify all institutional investors that have bought timberland in Alabama and the South; describe and map their timberland holdings; study their forest management and land-use behavior such as timber harvesting, reforestation and conservation; and assess their economic impacts to rural communities.

Approximately 20 percent of the timber used in forest-products manufacturing is from institution-owned timberland in the South, according to Zhang.

"If institutional timberland owners reduce timber harvesting after their initial short-term investment period, it will cost the state economy and reduce jobs," he said, "and will increase the cost of timber and all wood products. If the reduction of timber harvesting from all forest owners in the state of Alabama is 10 percent, the state economy could lose \$250 million a year."

Zhang and three graduate students are gathering and analyzing forest-landowner information from U.S. Forest Service surveys conducted each year, looking at data on timber-harvesting, erosion, reforestation, and land-use changes. The Auburn researchers are observing specifically five- and ten-year increments to note the changes taking place in those time periods.

At the end of the project in 2014, Zhang will publish the results in forestry and economic journals and provide information to timberland owners, policymakers, and the public through brochures and other forms of communication.

"We hope the results will help the forestry-products industry and governments deal with the changing market dynamics and avoid possible negative economic impacts," he said. ♣

Recommendations for Ice-Damaged Trees

By David Mercker, University of Tennessee Extension Forester

Ice storms can cause wide-spread and, in some cases, irreparable damage to woodland trees. The loss of healthy limbs, particularly when excessive, is never desirable. This is especially the case with large, old, and/or weak trees because their ability to replenish food supply can be diminished beyond the point of recovery. In such cases, trees normally begin a gradual starvation that ends in death. The process of dying can occur in a few short seasons, or the trees can languish for several years.

Professionals often place distressed trees into a “triage” – those that can be saved, those that might be saved, and those that cannot be saved. Knowing which category your tree(s) are in can be challenging and may require professional input.

Completely removing a tree is a difficult decision, but if mortality is unavoidable, removal is a much better option than spending time and money on attempts to revive it. As a general guideline, the criteria for deciding whether or not to remove a damaged tree include: a) when 40 percent of the crown has been lost or severely damaged (crown refers to live branches), b) if the tree was already declining, or c) in cases when the tree has become a hazard as a result of the damage. If in doubt as to whether a tree will or will not make it, allow it to stand and assess progress over the next few years. Younger trees, those 40 years old or less, are more likely to recover from damage than are older ones.

Damage always appears worse immediately after the storm. Greening of the trees will occur again, and many will make full recovery. For additional information on treatment for storm damaged trees, see the following publications: *Evaluating Storm-Damaged Landscape Trees* (http://www.forestry.alabama.gov/PDFs/ResourceSheets/Storm_Recovery/Evaluating_storm-damaged_landscape_trees.pdf) or *Storm-Damaged Residential Trees: Assessment, Care, and Prevention* (<http://www.utextension.utk.edu/publications/spfiles/sp575.pdf>).

When it is time to replant, go with those species that are time-tested as being resistant to ice damage. The University of New Hampshire has a concise publication addressing tree features that influence ice storm resistance. Included is a list of species that are recommended for yard settings. It can be found at: <http://www.extension.unh.edu/forestry/Docs/iceresis.PDF>

Woodland landowners having experienced financial loss from ice damage may be eligible to recover a portion by claiming a casualty loss on their taxes. The amount recoverable, however, is limited to the tax basis. ☹



Check Stephens’ “Christmas TREASURE”



By Elishia Ballentine, Editor

Did you know there were “Blue Pyramids” in Alabama? That’s the name given to one selection of a variety of Christmas trees grown at the oldest Christmas Tree farm in Alabama. Originally grafted from an Arizona cypress, this particular tree maintains a natural beautiful shape throughout its growing season and retains a vibrant look throughout the Christmas season if watered consistently.

Chester “Check” Stephens had actually started experimenting with trees when he was an ag student at Auburn in 1941. “Not long thereafter, I spent some time in Europe where an issue had arisen that demanded my assistance. However,” he said with a wink, “We took care of it.”

Eventually settling back down in Autauga County after the war, he established the Christmas tree farm around 1950, the first of such in the state. Located on 553 acres in the southeast section of the county, this legacy property had passed from generation to generation in his wife’s family since they had obtained it in a land grant back in the 1820s or 30s. The first Mrs. Stephens passed away several years ago, and some of the original land has been divided between the children.

Certified as a TREASURE Forest in 1997, Mr. Check’s primary objective was timber and his secondary objective was wildlife. In addition to Christmas trees, other multiple-use management practices on the property at one time included catfish ponds, beef cattle, cotton, and hunting. He conducted prescribed burns, maintained food plots, and carried out stand management plans.

Now retired and in his 90s, Mr. Stephens still lives on the farm, along with his new bride, Miss Margaret. While most of the multiple-use practices have ceased, he remains active in managing his timber interests and continues to enjoy growing Christmas trees. He understands the joy these trees bring children, as well as the TREASURED Christmas memories made by families finding that perfect tree, then cutting it, taking it home and decorating it . . . there’s just nothing like the fragrance of a “real” Christmas tree! 🌲

HOGS GONE WILD

Controlling Feral Hogs

By Chris Jaworowski, Wildlife Biologist

Division of Wildlife and Freshwater Fisheries, Alabama Department of Conservation and Natural Resources

Many Alabama landowners and wildlife managers are fighting a war. The enemy damages crops and pastures, competes directly with native wildlife for food and habitat, and seems to multiply exponentially. It is quite simply the most destructive nuisance animal ever brought to Alabama. This war is against the feral hog.

A non-native species in Alabama, the feral hog (*Sus scrofa*) was first introduced by Spanish explorers centuries ago. Isolated populations of hogs have inhabited the Tombigbee river drainage in southwest Alabama since these first introductions. Until the early 1980s, distribution of feral hog populations was limited to only a few counties in Alabama. Thirty years later, the animals are found in almost every county in the state.

Able to adapt to almost any habitat type, feral hog populations are growing at alarming rates – not only in Alabama, but across the United States – with agricultural damage estimates nationwide reaching \$1.5 billion annually. Control of this nuisance species is difficult, can be quite expensive, and often entails countless man-hours. Due to their extremely high reproductive rates and lack of natural predators, using a single method will not decrease hog populations; only a multi-faceted program utilizing several control techniques, combined with cooperation from neighboring landowners, can affect these populations. Studies suggest that 80 percent of a population must be removed just to keep the populations from continuing to grow. Control methods include hunting/opportunistic shooting, hunting with dogs, hunting over bait, hunting at night, trapping, and advanced control techniques.

Control Methods

Hog hunting popularity is at an all-time high across the nation. While many hunters are willing to pay for the chance at harvesting a trophy hog with big tusks or even meat hogs for table fare, landowners can use this opportunity to add to hog removal totals. Some landowners are even setting up commercial hunting operations to make up for funding spent on other control methods. Considered a game animal in Alabama with no closed season and no bag limits, hunters can harvest hogs year round. Hogs can be stalk-hunted by moving slowly through areas with

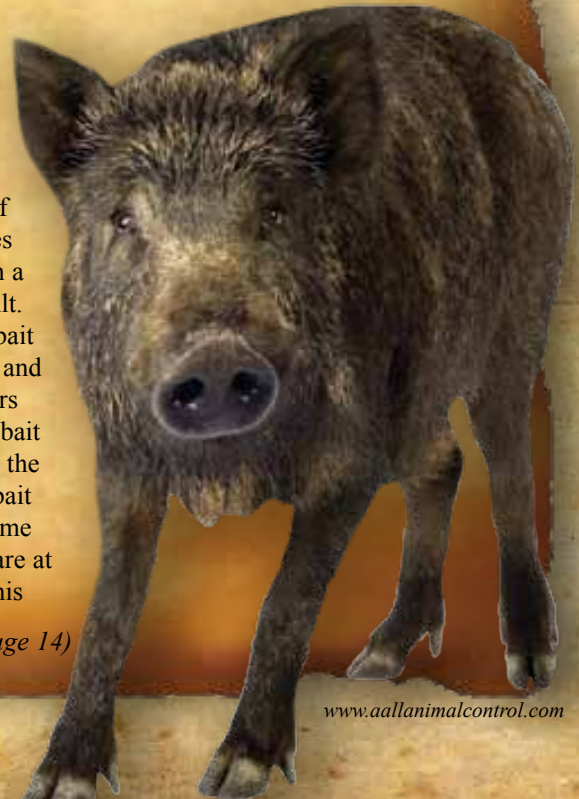
choice foods like acorns or agricultural crops, or stand-hunted along trails leading to food sources or bedding areas. Feral hogs have a great sense of smell, but relatively poor eyesight, which can help hunters get within shooting range.

Hunting with dogs is another important part of a hog control program when used properly. Hog dogs and handlers can quickly catch hogs that have become trap-shy or wary of other control methods such as hunting. All hogs bayed by dog hunters should be euthanized at the catch site to avoid any accidental escapes, and to ensure the hogs will not be transported off the property where they were caught and illegally released elsewhere in the state. Hunting with dogs can be a beneficial tool for the land manager, but should only be attempted with trained dogs and handlers due to the aggressive nature of bayed hogs.

Two control techniques that require a Wildlife Damage Permit from your local Conservation enforcement officer or wildlife biologist are hunting over bait and hunting at night with a rifle and spotlight. Both methods can be effective, depending on the habitat types in your area. Hog hunting at night is more effective in row crops or pastures where damage is occurring. Remember that a hog's eyes do not glow at night like those of a deer. This makes finding them with a light more difficult.

Hunting over bait can be expensive and lead to many hours spent watching a bait pile, only to have the hogs devour the bait during the nighttime hours while you are at home asleep. If this

(Continued on page 14)



www.aallanimalcontrol.com

HOGS GONE WILD

(Continued from page 13)



Dan Clark, USDI National Park Service, Bugwood.org

technique is going to be successful, you need to sit on the bait piles regularly. Also, baiting can increase food intake by hogs which can possibly increase reproduction in sows. Do not continue to feed these animals if you are not going to have time to hunt them.

Combining these two methods has proven more successful, but be aware that neither is legal without first obtaining the Wildlife Damage Permit, and a copy of this permit must be in possession when utilizing these techniques.

Though hunting can be effective, especially during seasons with choice agricultural crops, hogs have the uncanny ability to detect hunting pressure and retreat to the most impenetrable thickets or swamps where few hunters care to venture. Hunting feral hogs can affect populations, but will not eliminate this growing problem alone.

Opportunistic shooting of hogs requires always carrying a firearm on your property. If you want to see hogs, just leave the house without a weapon!

Advanced control methods include the use of night vision, thermal imagery, helicopters, and radio telemetry equipment. These high-cost techniques are utilized by state and federal agencies conducting hog control or eradication programs, but some landowners have realized spending a few thousand dollars for high-tech gear may be worth their added effectiveness at removing hogs from their property.

Building a Hog Trap

Live trapping is perhaps the most cost-effective method available for eliminating large numbers of feral hogs from a given property, without spending hundreds of man-hours. Once constructed, traps allow hogs to be caught while you are not in the field.

Feral hog traps come in all shapes and sizes, from box-type traps that have angle iron frames and cattle or horse panels for sides, to corral-type portable traps built with T-posts wired to cattle or horse panels. However, research has shown that corral traps have

On private land, hunters can legally hunt hogs every day of the year with no harvest restrictions.

the ability to catch and hold more hogs than box-type traps. Construction costs vary, depending on current steel prices and size.

The first step in building a corral hog trap is determining the type of door to use. Three types of door designs are commonly used in hog trapping: falling doors, swinging doors, and root doors. Though all three designs will catch hogs, there is an important difference in the designs. Falling doors, usually the cheapest to build and easiest to set up in remote areas, are similar to a guillotine and are considered single-catch traps. With this design, once the door falls, trapping is over for the night. Swinging door (with heavy-duty springs attached) and “root door” designs (hinged at the top and built out of a single sheet of ¼-inch aluminum or similar material) are considered multiple-catch doors because they allow more hogs to push their way into the trap, even after the door has closed. Both types of doors will allow landowners to catch hogs; however, utilizing multiple-catch doors increases opportunities to catch hogs after your trigger has been tripped. Hog trap door designs are available via the Internet by searching for “hog trap door plans,” or landowners can purchase a ready-to-use door to install in their corral traps. Many local farm stores and co-ops have ready-to-use corral trap doors in stock.

Constructing a feral hog corral trap is an easy task that can be completed by one or two people in about an hour. To build a corral trap large enough to catch 15 to 20 hogs, the following supplies are needed: three 5-ft. x 16-ft. horse panels, 14 6 ½-ft. T-posts, a T-post slammer, one roll of trapper’s tie wire (utility wire), and one pair of lineman’s pliers.

After building or purchasing a door, the next step is to find a suitable location for the trap. To keep hogs from rooting under the trap or bending your panels and escaping, you will need to find a flat and level area about 42 feet in diameter, in the shade, and near a water source.

Begin constructing the trap by setting the door facing a roadway, trail, or fire lane that is accessible by truck, ATV, UTV, or tractor. Traps accessible to trails or roads make removal of euth-



Photo courtesy of ADCNR

anized hogs much easier. Drive a T-post into the ground on each side of the door, and tie the door to the T-post using the trapper's tie wire and the lineman's pliers. Next, attach one of the three horse panels to the T-post supporting the door. Be sure to start at ground level and tie the panel to the post about every foot. After tying the wire to the post, use the lineman's pliers to twist the tie wire tight. Next, move that panel and adjust to begin the formation of a circle. Install a T-post about 4 feet from the last post on the outside of the panel. Keep adding T-posts about every 4 feet until another horse panel is necessary. When needed, overlap the next panel about 2 feet and tie both panels together with the tie wire. Be sure to install a T-post at the junction of the two overlapping panels. When the end of the second panel is reached, overlap the third panel and tie the panels together using the tie wire. Pull the panel around to the door and complete the circle by attaching the third panel to the T-post supporting the door. Remember to start at ground level when tying the panel to the post and install a tie about every foot. After tying the third panel to the door, complete the trap by installing T-posts every 4 feet along the third panel.

Trigger selection for the new trap depends on the door type used, but most often a trip wire made of 50- to 60-pound test fishing line and some type of root stick will be used.

Pre-Baiting Traps Increases Success Rates

Enticing hogs to enter a trap is relatively easy; however, one common mistake that first-time hog trappers make is buying or building a trap, throwing bait in it, and setting the trigger. This technique can catch a few hogs; however, trappers that strategically pre-bait their trap and practice a little patience will be far more successful.

Pre-baiting of hog traps is a simple task. Once the trap is erected, tie the door open so it will not close or fall, to allow free access by hogs both into and out of the trap. Bait the trap heavily, and you can experiment with baits, as hogs will eat relatively anything. Probably the most common bait used is whole kernel corn, which can be sweetened with pure molasses or syrup to add a sweet attractive scent; soured corn also works well. Several commercial baits are also available at local co-ops or online.

After baiting the trap, leave the area and inspect the trap every two or three days. Add additional bait as needed and inspect the trap for hog tracks, droppings, and rooting. Leave the door on the trap tied open

until evidence of multiple hogs entering the trap is observed. After determining that multiple hogs are entering the trap, untie the door and set the trigger. By pre-baiting, the trap shyness of the hogs is decreased and the likelihood is increased of catching multiple hogs the first night the trap is set.

Adult sows and boars are intelligent and cautious. They usually are the last hogs to enter a new trap for the first time. Hog trappers who fail to pre-bait their traps usually catch juvenile hogs and fail to catch the adults. Since the adult sows drop piglets twice a year, it is very important to catch these adults for trapping to have any chance of reducing the population.

The use of motion-activated trail cameras to monitor the inside of the trap while pre-baiting can also increase success rates. Check the camera every time the trap is checked during the pre-baiting period and inspect the pictures carefully. Identify specific feral hogs by color, color patterns, and size. Document the number of feral hogs in each sounder (a family group of hogs) visiting the trap. The goal should be to remove the entire sounder. Monitoring the pictures at each trap site gives a trapper the ability to identify when all the hogs in a sounder are entering a trap, and helps determine when trapping efforts will be the most successful.

State and federal laws and regulations govern the movement of feral swine in the United States. In Alabama, it is unlawful to transport feral hogs alive beyond the boundaries of the property from which they are taken without a permit from the local Conservation officer, and it is also unlawful to release them into

any area of the state, except that they may be released onto the property from which they were originally taken. For more information regarding laws and regulations pertaining to feral hogs, contact your local Wildlife and Freshwater Fisheries district office.

Control of feral hogs is a time consuming and sometimes expensive proposition. A multi-faceted approach must be utilized to win the war against this nuisance animal and protect Alabama's natural resources. By employing another technique when one method slows down, Alabama landowners and wildlife managers can assist in decreasing the negative impacts of the feral hog on native wildlife species, wildlife habitats, and agricultural operations across this state.

For more information on feral hog control methods, contact Wildlife Biologist Chris Jaworowski at 154 Battlefield Road, Lowndesboro, AL 36752 or your local Wildlife and Freshwater Fisheries district office. Information is also available at www.outdooralabama.com/hunting/feral_hogs.cfm.



Once the traps are pre-baited and set, check frequently, re-bait as necessary, and plan a BBQ.

Quick Guide to Firewise Shrubs

- Select the “right plant for the right place” by choosing plants that are well adapted to the conditions where they are to be planted and by considering their flammability characteristics.
- Conduct routine landscape maintenance, such as pruning shrubs, to maintain vertical and horizontal separation from other plants.
- Periodically remove dead or diseased plant material from plants within your home landscape.
- Remember, there are no “fireproof” plants. All plants and organic mulches burn in extreme weather or fire conditions.
- The 34 shrubs shown here were selected for testing based on responses to a survey from fire professionals across the southern United States.
- To estimate the flammability of shrub and other plant species not shown here, see “Preparing a Firewise Plant List for WUI Residents” at www.interfacesouth.org/products/fact_sheets/Preparing_Firewise_Plant_List.pdf or www.interfacesouth.org/products/flammability_key.html.

Did you know you can select shrubs based on their flammability?

Researchers at the U.S. Forest Service, University of Florida, and the National Institute of Standards and Technology used three flammability categories to indicate how easily and intensely a shrub will burn: high, moderate, and low.

Moderate Flammability

Use cautiously in isolated landscape beds within the defensible space, 15 feet or more from the house.

High Flammability

Plant these shrubs 30 feet or more away from the house. Maintain them regularly.



Chinese juniper
Juniperus chinensis



Dwarf yaupon
Ilex vomitoria



Gallberry/Inkberry
Ilex glabra



Mountain laurel
Kalmia latifolia



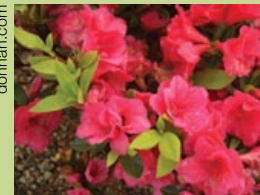
Ashe juniper
Juniperus ashei



Boxwood
Buxus microphylla
var. *koreana*



Pipestem
Agarista populifolia



Hershey's Red Azalea
Rhododendron obtusum



Glossy abelia
Abelia x grandiflora



Rhododendron
Rhododendron
x chionoides



Blue holly
Ilex x meservea



Leyland cypress
Cupressocyparis leylandii

Low Flammability

Shrubs suitable for planting within the defensible space; plant 6 feet or more from the house.



Adam's needle
Yucca filamentosa



Anisetree
Illicium floridanum



Arrowwood
Viburnum dentatum



Bayberry
Myrica pennsylvanica



Beautyberry
Callicarpa dichotoma



Bigleaf hydrangea
Hydrangea macrophylla



Butterfly bush
Buddleia davidi



Camellia
Camellia japonica



Coontie
Zamia pumila



Foster holly
Ilex x attenuata



Gardenia
Gardenia jasminoides



Klein's forsythia
Forsythia x intermedia



Oakleaf hydrangea
Hydrangea quercifolia



Oleander
Nerium oleander



Pittosporum
Pittosporum tobira



Rosebay
Rhododendron maximum



Scarlet firethorn
Pyracantha coccinea
var. *mohave*



Shrubby cinquefoil
Potentilla fruticosa



Sweet pepperbush
Clethra alnifolia



Walter's viburnum
Viburnum obovatum



Weigela
Weigela florida



Winterberry
Ilex verticillata

For more information, contact Annie Hermansen-Báez of the U.S. Forest Service, Southern Research Station at ahermansen@fs.fed.us, (352) 376-3271.

To view this fact sheet online, visit http://www.interfacesouth.org/products/pdf/Shrub_Flammability.pdf. For the Spanish version, visit www.interfacesouth.org/products/pdf/Shrub_Flammability_es.pdf

Additional Resources

- For Firewise landscaping tips, see www.interfacesouth.org/products/fact_sheets/Selecting_Maintaining_Firewise_Plants_Landscaping.pdf and www.interfacesouth.org/products/fact_sheets/Reducing_Wildfire_Risk.pdf
- Also visit: www.interfacesouth.org/research.html
- For information about the Firewise program visit: www.firewise.org

The photographs in this fact sheet were gathered from various sources. All copyrighted photographs in this publication were used with the permission of the photographers. Shrubs are listed in alphabetical order and not by their intensity of flammability within each category. Published September 2009.



HACK & SQUIRT

A Poor Man's Way to Improve His Forest



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

When times are tough – and most people would agree they are tough right now – many non-essentials get put on the back burner. As a forester, I consider forest management as an important item to keep on the “To Do” list. However, I am wise enough to realize that most landowners do not consider forest stand improvement practices critically important, and quite often they get left by the wayside.

Allow me to share some information about a practice you might consider doing. Hopefully, you will agree that even a poor man can apply this technique in the toughest times. “Hack and Squirt” or frill treatment, as it is sometimes called, is a simple method of applying chemicals to kill unwanted or undesirable trees.

Most forest stands could be improved by removing or deadening non-commercial trees, or those that provide no benefit to the landowner’s management objectives. If no undesirable species come to mind, let me help: Chinese privet, Chinaberry, tall-oh tree, mimosa, and paulownia are just a few.

If left unchecked, many of these non-native invasive species can quickly take over your forest – regardless of the current economic times. However, with the cost of this practice being so affordable, there really is no excuse for putting it off.

What is involved? Well, all you need is a hatchet, some gloves, a spray bottle full of herbicide, and an eye for identifying unwanted or low-value trees. That’s it! A nice fall afternoon and your son, daughter, or spouse helping work the land is an added bonus. Passing along good stewardship values to your

Instructions for the Hack-and-Squirt Method



Make a series of downward cuts, leaving the chip. Immediately apply herbicide into cuts. Best control of the hatchet is at waist level.



Apply the herbicide into the cuts, avoiding excessive runoff.

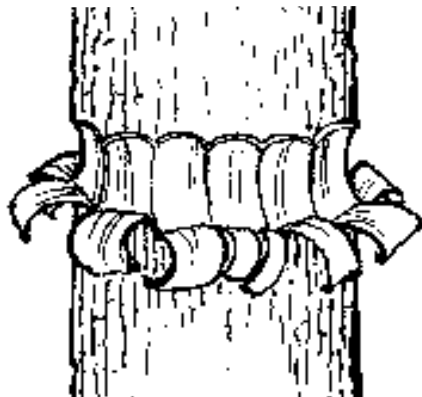
children/grandchildren is invaluable. It really is important to work the land, enjoy getting out, and practice good stewardship.

The Alabama Cooperative Extension System (ACES) provides an extensive list of publications with detailed information about forestry herbicides and their proper uses. This information is found on the ACES website at <http://www.aces.edu/pubs/>

The description below was found in ACES publication ANR-1058:

It is best suited to trees at least 4 to 5 inches in diameter. Bark on larger trees is often too thick for most water soluble sprays to penetrate, so it is necessary to provide a direct pathway for herbicide entry into the plant's vascular system.

Use a hatchet to make a series of downward cuts in the bark around the entire circumference of the tree trunk. For most species, it takes about one cut for every 2 inches of trunk diameter. Frill cuts are overlapping cuts in the tree bark around the stem. Immediately apply the



selected herbicide into the cuts. Avoid application during heavy upward sap flow in the spring, when sap flowing out of the wound will prevent good absorption.

Apply herbicides registered for this purpose undiluted or in dilution ratios from one-half to one-quarter strength. Read the product label to determine the appropriate dilution. Amine formulations of Garlon, Grazon, and 2,4-D are generally more effective than esters. Roundup undiluted or half-strength is excellent for hack and squirt applications.

Product Availability and Cost

My web search found several products labeled for the hack-and-squirt method. The majority of the directions call for 1 milliliter of product per each 2 - 3 inches of trunk diameter at breast height (dbh). The price varies depending on the product you choose. A suitable glyphosate (a.i.) product can be found for as low as \$50-60 per 2½-gallon jug. The larger size is recommended because of economy of scale.

A 2½-gallon container can treat approximately 4,700 4-inch diameter trees. The cost for 2½ gallons at \$85 is less than 2¢ per tree.

Always read the label and the Personal Protective Equipment (PPE) precautionary statement. Wear the recommended clothing and use the recommended equipment.

Landowner Assistance

The Environmental Quality Incentives Program (EQIP) is a USDA program that provides payments to participants to address significant natural resource concerns on agricultural and forest lands.

EQIP funds are awarded to landowners/users who agree to implement conservation/environmental practices through a contracting process. Practices and plans for EQIP are to treat the land to a sustainable level to address the primary national, state, and county resource concerns. One of these resource concerns, Forest Health and Wildlife, contains the forest stand improvement practice that includes the hack-and-squirt method.

You can apply for an EQIP contract at your local USDA Service Center. Applications are ranked and selected for funding in order to optimize environmental benefits. Batching dates will be announced as needed to rank and prioritize new or unfunded applications. Contact the local Service Center for further guidelines and details of the program.

Summary

The hack-and-squirt or frill treatment method is used to:

- Concentrate the growth on your land of the best possible trees,
- Reduce negative impact from invasive species,
- Improve wildlife habitat.

Financial assistance is a possibility under EQIP. With all the positives surrounding this practice, it makes sense to seriously consider using it on your land. So, enjoy the beautiful land you are blessed to own, and improve your forest stand by using the hack-and-squirt method. ♣

MEMORIAL

to a TREASURE Forest Landowner

Bobby Allen Bearden

March 17, 1949 - October 10, 2011

*“Each of us, someday,
will go home again.”*

By Bruce Springer

Regional Forester, Alabama Forestry Commission



Bobby Allen Bearden, an active TREASURE Forest landowner from Plantersville (Chilton County), Alabama passed away on October 10, 2011.

Bobby became an entrepreneur at a very young age. With encouragement from his father and the Dallas County 4-H Club mentors, and the aid of a big white draft horse named Caldonia, he won the National Corn Growing Championship. Year after year, his interest in the cattle industry brought him many ribbons and awards for producing and showing grand and reserve champion stock. As a leader for FFA and 4-H clubs, he served and represented Dallas County in numerous local and state activities. He was awarded the American Farmers Degree for his production of livestock and greenhouse operations.

Following his graduation from school, he entered business with his father in building and expanding the family nursery and greenhouses. Shortly thereafter, he served his country as an aircraft electrician on active duty in the 107th Transportation Company of the Army National Guard and Reserve. Upon his return to Plantersville, he purchased the greenhouse business, and through the years expanded it to one of the largest such operations in the Southeast.

Bobby's diversification of interests led him into forestry and conservation. His strong belief that **“One generation plants the trees, and the next one sits in the shade”** has been proven by growing and planting millions of pine seedlings. A pioneer

among the state's private landowners to study and plant longleaf pine, he was willing to share his exceptional knowledge of the subject with countless other landowners and people throughout the area. Along with his love of the forest, wildlife conservation was always included in every management plan of his forest development. One of his parcels was designated as a BMP Demonstration Site.

Honors in forestry received by Bobby included TREASURE Forest certification, Alabama Tree Farmer of the Year in 1992, runner-up for district Helene Mosley Memorial Award in 1993, “One in a Million” recognition, and Outstanding Soil and Water Conservation District, plus awards for providing educational programs as well as tours in forestry and conservation on his timberlands – not only for Chilton County, but also for Autauga, Bibb, Dallas, and Perry counties. He held memberships in the Chilton County Forestry Planning Committee (serving as president for several years), the Alabama TREASURE Forest Association, the Longleaf Alliance, the American Tree Farm System, and the Alabama Forest Owners' Association. Bobby was a contributor to Auburn University School of Forestry and the “Log a Load for Kids” program for Children's Hospital in Birmingham, Alabama.

At his request, pallbearers at Mr. Bearden's funeral were current and past associates of the Alabama Forestry Commission. 🌲

One Picture at a Time



Portraits from a Storm:
Rebuilding the South One Picture at a Time

The story of the Facebook page
Pictures and Documents found
after the April 27, 2011 tornadoes
by Patty Bullion

By Elishia Ballentine, Editor

Often in the aftermath of a devastating event, something new is born . . . as in the legend of the phoenix rising from the ashes. Such is the case here. After the storms ravaged the state of Alabama in April of this year, Patty Bullion, wife of AFC Hazard Mitigation Specialist David Bullion in Limestone County, had a brainstorm of her own. She took on a tremendous endeavor . . . she created a Facebook page that would provide a central location to list personal possessions found scattered far and wide after the devastating tornados – a cyberspace lost and found. She named the

page simply, “Pictures and documents found after the April 27, 2011 tornados.”

Through the use of this social networking site, the storm survivors were given a chance to recover a few of their cherished items. People who found items could post them – people who had lost absolutely everything could then be reunited with those irreplaceable precious memories and keepsakes that were blown away, often as far away as another state. The site also afforded the opportunity for some of the item owners to post their thanks to those returning the documents and photos.

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One Picture at a Time

(Continued from page 21)

Patty and the family had watched the storms go over; the majority of the damage was to the south of them. Feeling very blessed, she said they never even lost power. Husband David went out on search and rescue; she and the kids were at their home near Athens, Alabama when a friend called and said, "It's raining pictures. Go look!" Sure enough, they went outside and started finding photographs in the yard. All total, they found eight items around their own house, but it was one piece in particular that really touched Patty's heart: an infant's ultrasound. She said she couldn't imagine keeping a baby's picture and not at least trying to find the owner. Scanning and uploading the pictures to Facebook, the idea was launched and she began to tell her friends and neighbors.

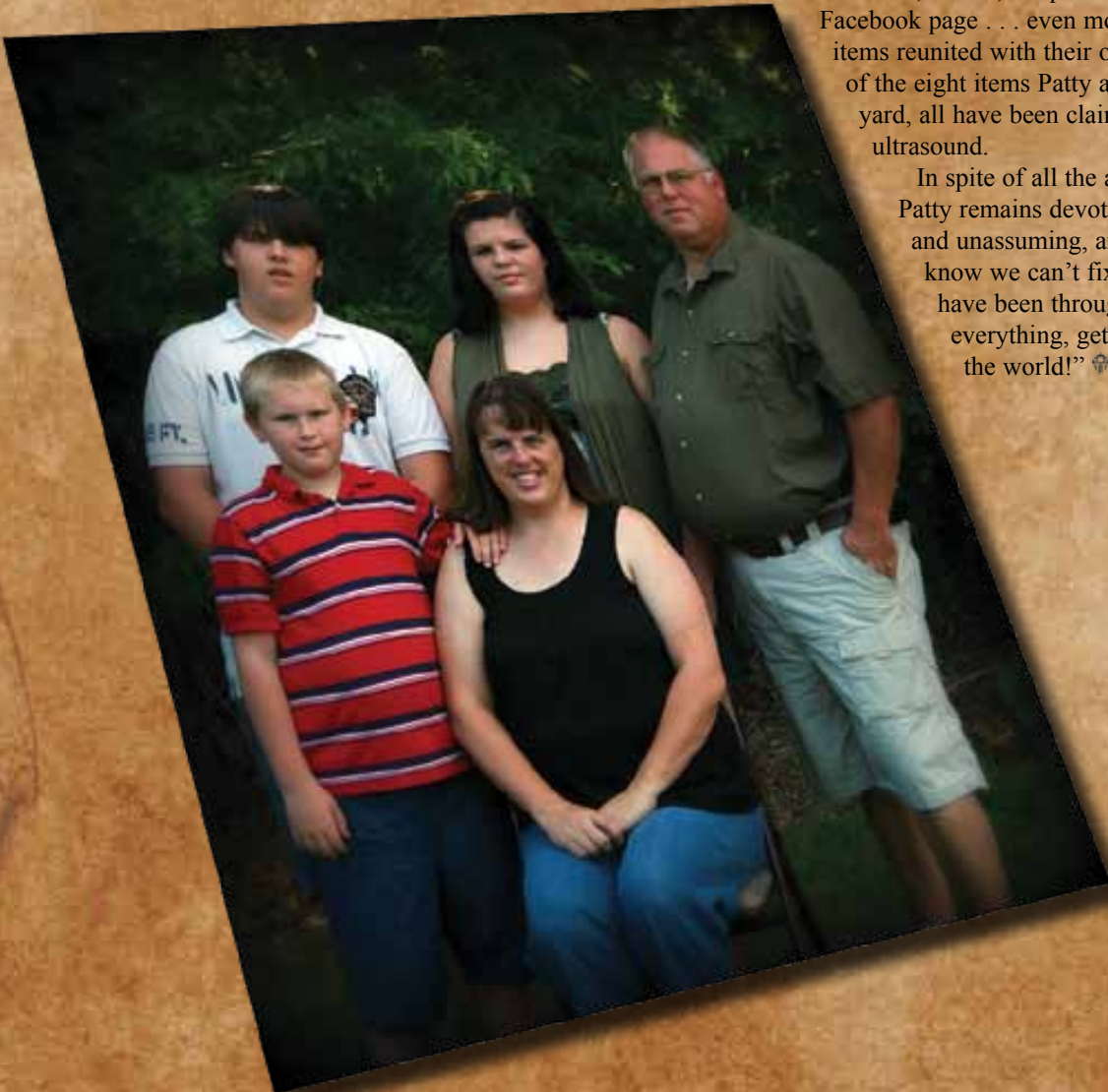
Even with all the chaos at that time, 40 pictures were posted overnight. Within just a few hours, she was amazed at the number of hits on the site. The word spread quickly, but Patty said she never dreamed the concept would take off as it did. The items started pouring in – not only from Alabama, but also from Tennessee, Georgia, Mississippi, and North Carolina as well – and they're still coming!

Giving comes natural to this full-time mom and wife/freelance photographer, so donating her time, energy, and personal resources to the cause was no different. However, since this project sprang from the goodness of her heart, she's been a bit shocked by the media craze that ensued. In fact, Patty has become a celebrity of sorts, all because of her selfless venture to help her state's storm victims. Not only was the story covered by local television channels 19 and 31, but she has also been interviewed by national media outlets such as CNN, "Good Morning America," both US and Canadian radio stations, the *New York Times*, and *People* magazine. A film crew came all the way from Facebook headquarters in California for an interview that was posted on "YouTube." Internationally, she was even interviewed by a journalist with a French photography magazine.

Patty says that through this experience, she has made many new friends. Also, as a result of the events of the past few months, she has written a book entitled *Portraits from a Storm: Rebuilding the South One Picture at a Time*. It details her emotional journey of creating the Facebook page and meeting some of the amazing people behind the photographs, as well as their inspiring stories.

To date, over 4,000 pictures have been posted on the Facebook page . . . even more astounding, the number of items reunited with their owners is over 2,000! Ironically, of the eight items Patty and the kids found in their own yard, all have been claimed except one . . . the ultrasound.

In spite of all the acclaim that has come her way, Patty remains devoted to her mission, very humble and unassuming, and still trying to help others. "I know we can't fix everything that these people have been through; however, when you have lost everything, getting one picture back can mean the world!" ☺





Forest Roads

By Robert A. Tufts

Associate Professor, Auburn University School of Forestry & Wildlife Sciences

A forest cannot be managed without the access provided by a road network. However, this access system also causes most of the water quality problems from road surface material washing into streams. Therefore, the road network should be planned to minimize both water quality and road maintenance issues.

The primary cause of road maintenance issues and erosion is water, either water running across the road and eroding the road surface, or water soaking into the road and weakening the load-bearing capacity of the road. So, water needs to be shed from

the road so it will not soak in, but not allowed to run off so fast that it erodes the road surface. If the water does soak into the road, then traffic needs to be eliminated until the road dries out.

The Wetter the Road the Weaker the Road

Sun and wind are the agents that dry out a road. Therefore, as much as possible, roads should be located on south- or west-facing slopes. Obviously a southern exposure will receive more

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Forest Roads

(Continued from page 23)

direct sunlight than a northern exposure. The east side of a hill will receive morning sun which must heat the air before any moisture can be evaporated from the ground; so, afternoon exposure is more effective at drying the road surface than morning. Wind will remove moisture in the air above the road so that more moisture can be evaporated from the road surface.

A common technique to increase the effect of the sun and wind is “daylighting” or clearing trees near the road to allow more light and wind to reach the road surface. Since the sun is seldom north of Alabama’s latitude, it is not as effective to clear on the north side of an east-west road; and since afternoon sun is better than morning, it may be more effective to clear on the west side of a north-south road. Remember that clearing on the inside of the road in a curve is a safety precaution to allow a longer sight distance.

Putting rock on a road surface will also improve the load-bearing capacity of the road; however, rocking a road will at least double the cost of the road. There are three classifications of material that are applied to forest roads: large rock (#1 or #2), crusher-run (a variety of rock sizes from 3/4-inch and smaller that compact well) and pit-run (a mixture of sand, clay, and gravel from old streambeds).

Large rock is usually applied in a thinner layer (3 inches or less) with the intent that the rock will be incorporated into the road subgrade. A thick layer of larger rock makes a poor running surface (rough with no compaction, the rock tends to roll under the rotational force of the truck tires), and the rock can become lodged between the tandem tires on a truck causing excessive wear. A thin layer of larger rock that becomes incor-

porated into the road subgrade is the best application for sloping sections of forest roads.

Crusher-run compacts well and provides a better application for flat sections of road that may lose strength due to moisture. Crusher-run is applied in layers of 6 inches or more. The compacted rock acts more like a bridge to reduce the load on the weaker soil layer. Because the internal angle of friction of rock is approximately 45 degrees, a 100 psi load at the rock surface will translate to only 25 psi on the road subgrade below 8 inches of rock. (40,000 lb axle load or 20,000 lbs per set of tandems, then divide by 100 psi of pressure in the tires for a footprint of 200 in². Assuming a circle, 200 in² would equal a radius of 7.98 inches. If the internal angle of friction were 45 degrees, then at 8 inches of depth the circle radius would be 15.98 inches for an area of 802 in². 20,000 lbs spread over 802 in² equals 24.9 psi.) Remember that soil strength decreases as moisture content increases. In low, wet areas it may be better to use a geotextile between the native soil and the rock. Rock generates its strength from rock-on-rock friction. If mud is pumped up into the rock, it will lubricate the rock and the rock will sink into the subgrade. The purpose of the geotextile is to serve as a barrier to prevent the silts and most of the clays from pumping up into the rock. A layer of sand may be used instead of the geotextile. Because crusher-run has a lot of fines, it is not appropriate for slopes where the fines will be washed out of the rock surface.

Pit-run does not have the strength of rock because of the clay; however, the clay binds the sand and rock, creating the smoothest running surface. The clay also swells with the addition of some moisture and makes a more impervious surface causing most of the rainfall to run off instead of soaking into the road subgrade. The sand reduces the slickness of the clay, and the rock gives the material some strength. Pit-run is an ideal surface for sandy material that needs to be confined.

Water Volume and Velocity Equals Erosion

The formula for kinetic energy, k , equals one-half the mass times the velocity squared, $k = 1/2 * m * v^2$. The more energy a moving mass has, in this case water, the greater the number and larger the size of particles it will move. This formula gives us the key to minimizing erosion: reduce the volume (mass) and velocity of water, with velocity being more important than volume. However, without volume there is no velocity; this



A well-designed road with a gentle grade; crowned, rock surface; drainage; daylighting; and vegetation for stabilization.



A broad-based dip used to divert water from the road surface.

is why one of the keys to minimizing erosion is to spread the water into shallow, sheet flow instead of deep, channelized flow.

Slope is the most important factor affecting velocity – the steeper the road, the greater the velocity and the greater the erosion. Ideally, the road network will be planned from a topographic map and consist of roads with the flattest grade possible. (If the soil type will be stable at slopes of 4 percent or less, the worst thing you can do is plan a whole road network of 6 percent grade roads. You should plan for some 4 percent grade roads and some 8 percent grade roads that are stabilized.) If the road surface is eroding or showing signs of rills and gullies, then the road is too steep for that soil type. If the road is too steep, then the surface must be stabilized or the volume of water reduced. In many cases the landowner inherits the road network, along with all its problems, from the previous owner. Seldom is it practical to relocate the roads to a flatter slope; so, the road must be stabilized with large rock or possibly pit-run surfacing, and the amount of water on the road must be minimized.

Side-sloping a road either with a crown (higher in the middle and lower on the edges) or a 3 percent slope across the road is commonly used to remove water from the road. Since water tends to soak in instead of run off at slopes less than 2 percent, a side-slope of 3 percent or more is recommended. If velocity is a problem, then the road grade is probably steeper than 3 percent and the water will tend to run across the road at a diagonal. There are two problems with side-sloping. First, if traffic is allowed on the road when it is wet, ruts will be created in the road surface and no amount of side-sloping will dump the water out of a rut going down a hill at say 8 percent. Second, a downhill slope on a curve with a slick surface is a potential safety haz-

ard. Side-sloping works best with rock-surfaced roads and poorest with roads constructed from the native soil.

Broad-based dips are the best method of removing water from a road surface on moderately steep slopes. The broad-based dip consists of a section of reverse grade (e.g. on an -8 percent downhill grade, there will be a segment of +3 percent or more grade at an angle to the road). The reverse grade stops the water from continuing down the road, forcing it to the side of the road into a wing ditch which then carries it onto the surrounding terrain. The broad base on the dip allows normal pickup-truck traffic to drive over the dip without losing much speed. The angle of the dip may cause a twisting of longer truck frames, and loggers are not big fans of broad-based dips. However, they are easily constructed with a dozer, and can be flattened out during harvesting, then reconstructed to maintain the long-term stability of the road. Since there is a section of reverse grade, broad-based dips are not practical on steep roads. If the road grade was 10 percent, the section of reverse grade may create a short section of 15 percent grade. This steeper grade may lift the drive wheels from contact with the road as the tractor goes over the hump, preventing the truck from being able to ascend the hill when loaded. For steeper grades, the road should be stabilized with larger rock incorporated into the subgrade with a crowned center and no broad-based dips.

The key to road maintenance is controlling water. There are more solutions than those few presented here, but these concepts should give the reader enough information to develop their own road maintenance strategies. 🌲



U.S. Naval Cryptologic Veterans Association (NCVA) Members

Veterans Take a “Walk in the Forest” at a Clay County TREASURE Forest

By Don East, TREASURE Forest and Tree Farm Landowner,
Clay County Forestry Planning Committee Member

A group of 43 visitors – many from other states – participated in a “Walk in the Forest” tour in Clay County, Alabama on Saturday, October 8, 2011. This educational event was hosted by “The Creeks Tree Farms,” the certified Tree Farm and TREASURE Forest of Don C. East, situated along Fox Creek in east-central Alabama. The Clay County Forestry Planning Committee/Clay County Chapter of the Alabama TREASURE Forest Association conducted the environmental tour, which was also sponsored by the American Forest Foundation (AFF), and supported by the American Tree Farm System (ATFS). The “Walk in the Forest” program is designed to help people develop an appreciation for nature, and an understanding of why caring for American forests is so important to all its citizens.

The diverse group of forest landowners, educators, administrators, and businessmen/women on the tour shared one thing in common . . . all were former U.S. Navy cryptologists who spent a career working with highly classified military codes and ciphers during the Korean, Vietnam, Cold War, and Gulf Wars. They hailed from Alabama, Georgia, Kentucky, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia. For the most part, this was their initial exposure to the TREASURE Forest program and the Tree Farm system.

Participants on the tour were provided six educational stops where certified foresters and other professionals presented the benefits of proper forest land management. Topics included both longleaf and loblolly pine plantation management, streamside management zones, wildlife habitat enhancement, “patchwork” management, prescribed burns, wildlife food plots and plantings, forest road construction and maintenance, as well as the importance of historical and other special sites located on Tree Farms. Providing presentations at the various stops were

W.N. McCollum, Earl Smith, Lamar Dewberry, Alabama Forestry Commission’s Nick Jordan, and host, Don East.

Transportation was handled by John Decourcey and Alabama Forestry Commission’s Josh Benefield. Recording the event with her photography was Kacie Smith. The cooks for the day were Marie and Jim Gasser. At the end of the tour, they provided a great hamburger and hot dog meal for the hungry participants. The picnic site was at a set of rapids on scenic Fox Creek where the remains of an 1840s water-powered mill, an ancient Indian grinding mortar, and a placer gold mining site provided the setting for a presentation on the need for protection of historical and special sites on forestland.

The Creeks Tree Farms is a past winner of several environmental, forestry, and wildlife management awards, including the ATFS Alabama Tree Farmer of the Year, runner-up for the ATFS Southern Region (16 states) Tree Farmer of the Year, the Helene Mosley Memorial TREASURE Forest Award, and the National Forest Landowner of the Year from the Forest Landowner Association.

The group concluded the tour with a greatly enhanced appreciation for sound forest management and all the benefits that flow from such practices. They were especially impressed with the intense forestry and wildlife management taking place in Alabama. 🌲



Seedling Sources for Landowners

Tree planting season is soon on us. By now, landowners should have their planting plans in place and be ready to go. Successful tree planting requires good planning, skillful site preparation, correct handling, and proper planting. It also depends on having a reputable and reliable tree seedling source.

The list below identifies tree seedling nurseries that serve Alabama landowners. Listed alphabetically, this is in no way an endorsement of any particular company or product. The Alabama Forestry Commission maintains a list of tree seedling nurseries on a continual basis at the agency website address: www.forestry.alabama.gov/seedling_search.aspx.

Qualified tree seedling vendors that market to Alabama landowners can request being added to this list by calling (334) 240-9332.

Advantage Forestry

Peter Frankowski
302 South Main Avenue
Demopolis, AL 36732
(334) 287-0106
www.advantageforestry.net

American Tree Seedling, Inc.

401 Industrial Blvd
Bainbridge, GA 31717
(229) 246-2662
Email: Customerservice@Americantreeseedling.com

ArborGen

Alabama SuperTree Nursery
Larry Foster
264 County Road 888
Selma, AL 36703
(800) 222-1280

Bellville SuperTree Nursery
George Lowerts
P. O. Box 56
Bellville, GA 30414
(877) 833-4760

Georgia Supertree Nursery
Robert Cross, Jr.
78 Supertree Lane
Shellman, GA 39886
(800) 554-6550

South Carolina Supertree Nursery
Gary Nelson
5594 Hwy 38 S
Blenheim, SC 29516
(843) 528-3203

Baucum Nursery

3821 W. Roosevelt Road
Little Rock, AR 72204
(501) 296-1940

Bell Brothers, Inc.

Danny or Gary Bell
5619 Highway 169
Claxton, GA 30417
(912) 739-2273

Blanton's Longleaf

Container Nursery
C.J., Jay, or Jason Blanton
1091 NE Day Lily Avenue
Madison, FL 32340
(850) 973-2967
Email: blantonsnursery@earthlink.net

Robert Dismukes
302 Pecan Drive
Brewton, AL 36426
(251) 867-7629
Email: dismukesr@bellsouth.net

Buckeye Nursery, Inc.

Johnny Brown
1490 Buckeye Nursery Road
Perry, FL 32347
(800) 838-2218

Chestnut Hill Nursery, Inc.

15105 NW 94th Avenue
Alachua, FL 32615
(800) 669-2067

Chiappini Farm

P. O. Box 436
Melrose, FL 32666
(800) 293-5413

Deep South Growers

Rick Reed / Candi Reed
1535 Harvey Vickers Road
Douglas, GA 31535
(912) 384-5450
Email: careed@hotmail.com

Delta View Nursery

659 Burdette Road
Leland, MS 38759
(800) 748-9018
Email: Hardwoods@Tecinfo.com

Florida Division of Forestry

Andrews Nursery
9850 NW 42nd Court
Chiefland, FL 32644
(352) 493-6096

Georgia Forestry Commission

Flint River Nursery
Jeff Fields
9850 River Road
Byromville, GA 31007
(229) 268-7308
Email: www.gatrees.org/Seedlings/OrderingInfo.cfm

Hains Nursery

Mark Hains
5457 Harts Bridge Road
Andalusia, AL 36420
(334) 427-1029
Email: Hains@alaweb.com

International Forest Company

Wayne Bell
1265 Georgia Highway 133 N
Moultrie, GA 31768
(800) 633-4506
www.interforestry.com

Joshua Timberlands, LLC

Elberta Nursery
Sam Campbell
29650 Comstock Road
Elberta, AL 36530
(251) 986-5210

(Continued on page 28)

Seedling Sources for Landowners

(Continued from page 27)

K & L Forest Nursery, Inc.

Ken Singleton
3782 Hwy 41 South
Buena Vista, GA 31803
(229) 649-3572
Email: singleton@windstream.net

Louisiana Department of Ag and Forestry

Beauregard Nursery
Randy Rentz
PO Box 1628
Baton Rouge, LA 70821
(225) 925-4515
Email: ForestReforestation@
ldaf.state.la.us

LTF Greenhouses

Neal Kicklighter
195 Ty Ty Omega Road
Tifton, GA 31793
(229) 382-4454

Meeks Farms & Nursery

Peter Frankowski
187 Flanders Road
Kite, GA 31049
(888) 397-0166
www.Meeksfarms-Nurserys.com

Native Forest Nursery

Paul Ensminger
11306 Highway 411 South
Chattsworth, GA 30705
(706) 483-3397
Email: Paul@
NativeForestNursery.com

Rayonier, Inc.

Glennville Regeneration Center
Kelly Dougherty
11704 Baxter Durrence Road
Glennville, GA 30427
(912) 654-4065

Rutland Forest Nursery

Terrell Rutland
502 Owen Medford Road
Lenox, GA 31637
(229) 382-5504

Smurfit-Stone Container Corporation

Rock Creek Nursery
Doug Shelburne
4346 Parker Springs Road
Brewton, AL 36426
(251) 867-9480

South Carolina Forestry Commission

Box 219
Trenton, SC 29847
(803) 275-3578

Superior Trees, Inc.

Alan Webb
12493 E. U. S. Highway 90
Lee, FL 32059
(850) 971-5159

Tennessee Department of Agriculture

9063 Highway 411 South
Delano, TN 37325
(877) 868-7337
Email: Nursery@state.tn.us

The Liner Tree Farm, Inc.

4020 Packard Avenue
St. Cloud, FL 34772
(800) 330-1484

The Plum Creek Timber Company

Hazelhurst Nursery
1032 Camp Lane Road
Hazlehurst, MS 39083
(601) 894-1072
Email: Tom.Anderson@
Plumcreek.com

Jessup Nursery
1689 Nursery Rd
Jesup, GA 31546
(912) 427-4871

Shubuta Nursery
1444 Shubuta Eucutta Road
Shubuta, MS 39360
(601) 687-5766

The Wildlife Group

Allen Deese
2858 County Road 53
Tuskegee, AL 36083
(800) 221-9703
www.wildlifegroup.com

Wadsworth

Christmas Tree Farm

3071 Dexter Road
Wetumpka, AL 36092
(334) 567-6308
Email: frank@
wadsworthchristmastrees.com

Warren County Nursery

Richard Hobbs
6492 Beersheba Hwy
McMinnville, TN 37110
(931) 668-8941
Email: wcnursery@blomand.net

Weyerhaeuser

Pine Hill Nursery
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3890 Highway 28 West
Camden, AL 36726
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weyerhaeuser.com

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Verbena, AL 36091
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Zellner Farms

Bob Zellner
385 Zellner Road
Culloden, GA 31016
(770) 283-7187
Email: bzellner@zellnerfarms.com



Why Do Some Bare-root Seedlings Die?

By David Mercker, University of Tennessee Extension Forester

Millions of seedlings are planted each year in the U.S. – some as part of large scale forest management projects - others in urban or yard settings. Typically, the easiest and therefore least expensive seedlings to plant are those that are “bare root.” Bare-root seedlings are devoid of any attached soil. Once planted, landowners and homeowners sometimes are discouraged over the less-than-favorable survival. Below is a brief summary of why bare-root seedlings might perish. These reasons apply regardless of the intended purpose of planting or the location of planting.

Care – Seedlings are living, growing organisms, even if they are dormant at the time of arrival. If not properly protected during transport from the nursery to the planting site, and during the planting operation, they can die. The most common problems are over-heating and desiccation [lack of moisture]. In some cases, without proper care, they may already be dead by the time of planting.

Inadequate Planting Depth – Young seedlings should be planted equal to or slightly deeper than the depth previously planted at the nursery (note, this is not the case with larger balled and burlap trees). Normally the original planting depth will be apparent by the appearance of a root collar, a slight swelling where the above-ground portion previously met the soil line.

Planted Too Late – Early planting allows time for the soil to settle as well as the initiation of root development prior to

warmer temperatures. It is well documented that survival declines as planting date is delayed.

Precipitation Throughout the Growing Season – Moisture is vital for all vegetative life, but it is critical for new plantings. Unlike established trees, newly-planted seedlings will not have developed expansive root systems capable of seeking and finding scarce sources of water.

Excessive Root Damage – In the lifting, processing, and planting of seedlings, roots can be accidentally torn or intentionally pruned (to make planting easier). Neither is desirable. Before a seedling can grow, it must have a functioning root system to supply moisture and nutrients to the top. Damaging roots hinders this process.

Wildlife and Insect Damage – The energy stored in trees is a potential source of nourishment for wildlife and insects. Sometimes damage is minimal, such as removal of a few leaves or buds; other times it can be substantial. Feeding occurs in three regions: the growing (expanding) points, the cambium (located just beneath the bark), and below ground in the roots.

The death of tree seedlings occurs from a variety of reasons, and those reasons are not always apparent. Yet in most cases, with a little detective work, the cause of mortality can become evident. And more often than not, the leading cause of mortality is water-related. For additional information on the proper tree planting procedure, see: http://www.forestry.alabama.gov/PDFs/Seedling_Care_&_Reforestation_standards.pdf or <http://www.utextension.utk.edu/publications/spfiles/SP663.pdf>. ☎

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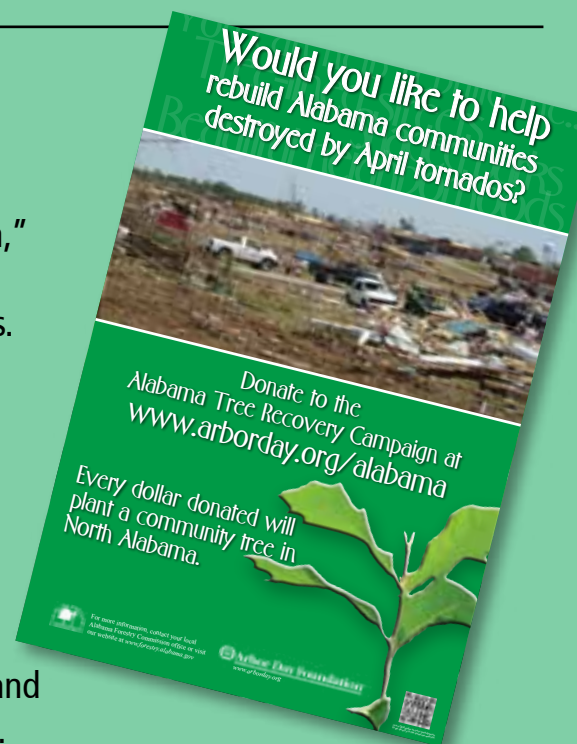
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Red Bay

(*Persea borbonia*)

By Fred Nation, Environmental Services, Baldwin County

Red bay is a handsome evergreen, multi-stemmed shrub, potentially becoming a medium-sized tree to about 60 feet tall. The leaves are alternate, to about 8 inches

long, tapered at both ends, leathery, dark green above; paler, with prominent veins below. Some of the leaves are nearly always deformed by unsightly galls, caused by chewing insects called red bay psyllids. The bark on twigs is dull green, becoming gray-brown, with deep, irregular furrows on trunks and large branches.

Red bay is native to the Southeastern coastal plain, from Maryland to Texas. In Alabama it is found in the southern half of the state on well-drained, sandy sites, but it is sometimes seen in moist places. A similar, closely related Southeastern species is swamp bay, *Persea palustris*, which differs from *Persea borbonia* by growing on wetter sites and having dense brownish hairs on the leaves and young twigs, longer fruit stalks (pedicels), and rust-colored leaf veins.

Both of our native red bays have been used historically in Southern cooking as excellent replacements for the related Mediterranean laurel bay, *Lauris nobilis*, the bay leaves of commerce. In fact, many Cajun cooks prefer the native red bays to season their red beans and rice and jambalaya. Traditionally, a small leafy branch is collected and hung in the kitchen to dry. Then, when bay leaves are needed for a recipe such as red beans, they are simply picked and dropped into the pot. Those branches look very attractive and “culinary” hanging in the kitchen, and they are a great indicator that you have found the lair of a good

cook! The *Perseas* belong to the distinguished laurel family, which also includes sassafras, cinnamon, avocados, and the invasive exotic camphortree, *Cinnamomum camphora*.

Red bay seldom grows large enough to be of much importance as a timber species, but the brownish red wood is hard, dense, and takes a high polish. It has been historically used in ship construction as trim and cabinetry for captains' cabins.

Both *Perseas* are host plants for the beautiful spicebush and palamedes swallowtail butterflies. Red bay trees provide forage for turkeys, quail, and many songbirds. White-tailed deer and black bears browse on the foliage and the small, oval, blue-black fruits that ripen in the fall.

An environmental disaster looms on the near horizon for our red bays. Laurel wilt, a new disease, is causing widespread, quickly expanding mortality of red bays and other species in the family *Lauraceae* in the Southeastern United States. This catastrophic, fatal disease is caused by an exotic fungus that is introduced into trees by an Asian ambrosia beetle which was discovered near Savannah, Georgia in 2002. No effective treatment or control has been developed, and it seems likely that our beautiful red bays, sassafras, and other members of the laurel family are destined to join the American chestnut as treasured native species that have been decimated by exotic diseases.

The Alabama Forestry Commission does not currently recognize a state champion red bay. The national champion *Persea borbonia* is 146 inches in circumference, 94 feet tall, with an average crown spread of 45 feet, in Hamilton, Florida. 🌳



Photo by Fred Nation