

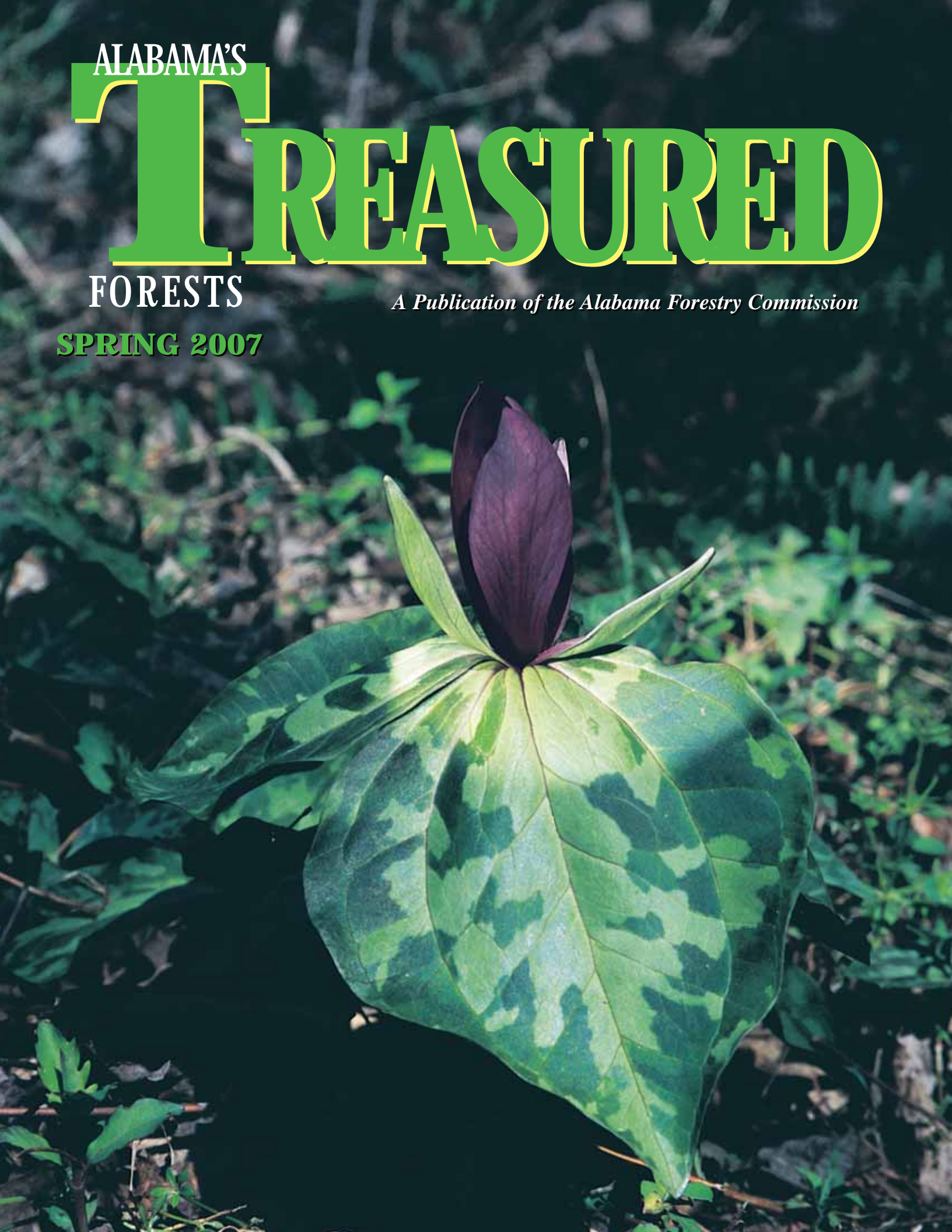
ALABAMA'S

# TREASURED

FORESTS

*A Publication of the Alabama Forestry Commission*

**SPRING 2007**



## A MESSAGE FROM THE STATE FORESTER



**LINDA S. CASEY**  
State Forester

**S**ince coming on board February 1st of this year, I've had the opportunity to visit some of our county and regional offices, getting acquainted with Alabama Forestry Commission associates across the state. Those foresters and rangers in the field are the backbone of this agency – the ones who fight the wildfires, plow the firelanes, and work one-on-one with our landowners.

I've also had the privilege of meeting several of our forest landowners face to face. Two of these that I met recently were very inspiring to me. Each unique in their own way, there is a common denominator that they both share: they love their land. (Please read their stories on pages 24 and 25.)

I want to assure you that we, the Alabama Forestry Commission, will remain strong in our mission to protect our forests from fire and pests, to sustain our forest resources by assisting landowners, and to educate all citizens of the value and benefits of our renewable forest resources.

Challenges and opportunities are before us as we experience dramatic changes in our forests such as fragmentation from industry-owned forestland to small-acreage private ownership; expanding urban growth into forested areas resulting in increased exposure to potentially devastating wildfires; health issues unheard of a few years ago such as the IPS Engraver Beetle; population growth impacting quality and availability of clean water; and the new issue of carbon sequestration.

Our associates accept and will strive to use the challenges that confront us, as well as opportunities that arise, to benefit and educate landowners, stakeholders, and the public to ensure that our forests are healthy and productive for all citizens.

The time ahead will indeed be challenging, but I have confidence that our AFC team can achieve great things in the future. I am thrilled to be the new State Forester of Alabama . . . proud to be a part of this Alabama Forestry Commission family.

*Linda S. Casey*

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**On the Cover:** Each spring, the brave little whippoorwill trillium (*Trillium cuneatum*) pops up all along the forest floor.

*Photo by Mark Burkett*

**Background this page:** Another harbinger of early spring, bright daffodils add a splash of color to the forest edge at Dr. Robert Parker’s TREASURE Forest (see story on page 4).

*Photo by Elishia Ballentine*

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# Visions of TREASURE

By *Elishia Ballentine*, Editor

**Scenic overlook:** From the highest point on the Parker property where the piedmont meets the coastal plain, you can see for miles. Perched atop one of the southernmost outcroppings of the Appalachians, the northern third of this Elmore County tract is rough terrain and sheer bluff.

**W**hy would anyone who already owned a certified TREASURE Forest want to trade it for a piece of barren land on the opposite side of the county? Surely not just for the sake of hard work and starting over . . . could it be the challenge of turning it into something beautiful, perhaps another TREASURE? That's exactly what Dr. Robert Parker did in 1989 when he obtained 360 acres through a "land swap."

Such an undertaking requires vision. Dr. Parker had that vision. He had faith that he could also transform this new property into a TREASURE Forest.

Originally he owned a TREASURE Forest in the Holtville/Slapout vicinity

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more commonly known as Beat 14 in Elmore County. He concedes that it was good land, but it just didn't have the "character" of this place situated along the banks of the Tallapoosa River between Wetumpka and Tallassee.

This ground is unique: located on the river, it was inhabited by Creek Indians and their predecessors for thousand of years. During the era of Andrew Jackson, the old Indian boundary ran right through the middle of the property. Dr. Parker has found arrowheads and relics as a reminder of those historical times, as well as a piece of railroad track from a narrow gauge that hauled logs, probably around the turn of the 20th century.

Typical of much of Elmore County, the piedmont meets the coastal plain here, lending to diverse topography. Being at the very southern tip of the Appalachians, the northern third of the tract is rough terrain and sheer bluff. There are two creeks that run on either side of the property, and approximately one-half mile fronts the river. In the bottomland nearest the river on the south, there were roughly 200 acres of flat cotton fields with just a few scrubby trees when he first purchased it. Four years later he added 60 acres; then in 2003 he bought 120 more.

Immediately beginning a timber management program, he planted the first trees in 1991. Since there were already

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so many wide open spaces, he started with wildlife corridors. The wildlife had no where to go for cover in all the cotton fields, so he planted strips of trees to make it “wildlife friendlier.” Today there are 40 acres in wildlife openings which include 25 food plots and dove fields. There are also about 10 acres in native grasses.

He didn’t want just a pine plantation, he desired diversity. Dr. Parker says he reckons he has planted at least 100,000 trees since those early days, and has had good luck with everything except pecan and chestnut. Now he estimates that there are 40-50 acres in hardwoods (mostly oaks and ash) and approximately 80 acres in pines. Although there are only 10 acres of longleaf in a particularly sandy area – with mostly loblolly and a few slash everywhere else – he says if he had it to do over again, he’d plant all of it in longleaf. He has also planted roughly 4,000 cypress trees which do extremely well in this soil.

The primary objective of this TREASURE Forest is wildlife, with the secondary objective being timber. Aesthetics become more important as the years go by. According to Dr. Parker, “There is no joy found in the dollars made from timber . . . real joy comes from seeing turkeys or deer standing in a field of wildflowers . . . enjoying the beauty of the land with family and friends . . . riding around . . . planting things and watching them grow. You cannot put a price on a wildflower . . . you can’t sell ‘em or put an amount of money on the pleasure they give.”

If you’ve ever talked to Dr. Parker or spent any time with him, you’ve heard him explain that it’s the force that drives him: “Most people die with the music still in them.” It’s his life philosophy and he hopes to inspire others to action by it . . . “Quit being a spectator. Get up off the couch, do something with your life . . . quit watching television . . . get out and do something!”

It seems to be a common premise among many TREASURE Forest owners, and it’s no different for this 2005 Helene Mosley Memorial Award winner for the Southeast Region: trees are worth more if you plant them yourself. Dr. Parker continued, “Sure, you can pay someone to plant trees or build a house for you, but if you do it yourself or with your family, it takes on a whole new significance. Anyone with enough money can create a TREASURE Forest, but it means so much more if you do it yourself. The main thing is ‘doing’ it – building a cabin with your own hands gives it more value.”

In fact, build it himself is exactly what Dr. Parker has done. He started the cabin six years ago, and it is still a work in progress. Inside the cabin there’s a nice wood-burning stove and a gorgeous corner hearth, made of Tennessee field stone which he laid himself. He lovingly built the stairs and banisters from trees right there on the property, remembering where each one actually stood before he cut it. The four bedrooms on the bottom



Photo by Elishia Ballentine

*The Tallapoosa River flows alongside the southern boundary of this Elmore County property.*

floor are each finished in a different wood: cherry, red oak, cypress, and cedar.

As a result of his retirement, he’s able to stay “focused” on the jobs at hand. At the time of this interview, he was getting ready to conduct a prescribed burn, which he carries out every two or three years in all the pine stands. Although his sons help occasionally, he actually does most of the work: bush hogging, planting trees, and building fences. He doesn’t hire anyone, although he credits and appreciates the willingness to help of agencies such as the Alabama Forestry Commission, the Alabama Cooperative Extension System, and the USDA Natural Resources Conservation Service.

There’s no electricity on the farm . . . they use a solar system for power. There’s only well water; he declares that there is no better water anywhere in Alabama. Located a couple miles off the main highway, at the end of the road and two locked gates, he calls it the “hide-out.” That’s actually part of the attraction – although he goes there to get away from everything, he doesn’t want to live there full-time. A retired veterinarian, Dr. Parker receives satisfaction in “just piddlin’ around.” In addition to all his chores on the farm, he takes pleasure –

*(Continued on page 6)*



*Diversity at the farm is illustrated in the variety of this photo: Longleaf pines planted in 1997, a row of autumn olive, a wildlife corridor, sawtooth oaks planted in 1996, and loblolly pines planted in 2002.*



Photo by Elishia Ballentine

*Once upon a time, all the land was cotton fields . . . now pines trees and sawtooth oaks create wildlife corridors that look like grand avenues.*

and is very talented – in woodworking. Using an adz, he creates or “chops” wooden bowls with his hands. This hobby keeps him busy, and has taken him on many journeys to woodworking workshops. As a result, he states that when he looks at a tree, he not only admires its beauty, but also wonders, “How many bowls are in that tree???”

Although Mrs. Betsy Parker likes coming out to the farm as well, she admits that her main delight comes from watching her husband pour his life into it. “It’s fun to watch him enjoy it. He puts a lot of hours and love into this place, and it gives him a sense of accomplishment.”

The Parkers have five children (four boys and a girl) with ten grandchildren. The whole family enjoys the farm, but only a couple of them actually hunt. When they first bought the property, there were no deer. There were no bedding areas, no edge. Since it was mostly cotton fields, there were no turkeys either. Things have changed considerably over the last decade. Today there is an abundance of deer and turkey with plenty of squirrels, rabbits, and doves as well.

In addition to the acorns from 2000 oak trees and chestnuts for deer, he plants green fields, clover, corn, soybeans, and chufa. There are also autumn olives and berries for turkeys and quail.

Dr. Parker participates in a deer management program, mostly to support the program, but also to get input. When family and friends hunt, they are selective on the size of deer taken. Not only have they seen an improvement in the quantity of deer, but also the quality; size of the bucks has increased dramatically.

The newest addition to the wildlife menagerie is ducks that have just arrived in the last year or so. He experimented with bees for a while, so there are still a few beehives here and there. With the close proximity to the Tallapoosa, he occasionally sees beavers and even alligators.

While traveling to Ireland and Scotland in 1993, Dr. Parker observed a forest management tool that no one here at home was using at the time: tree shelters. He was sold on the idea and over the next couple years began employing them (mostly with sawtooth oak), estimating that he has used over 2,000 since then with tremendous success. Claiming that he is the biggest danger to the forest, one of the personal benefits he’s discovered

is that tree shelters save the trees from him and his bush hog! He noted that the main disadvantages of the technique are the ants and wasps that inhabit them.

When the Parkers hosted the landowner tour during the state-wide Landowner/TREASURE Forest Conference in 2000, he provided a demonstration of the advantages of tree shelters. He planted some trees using them and a few without, and stated that people could definitely see the difference in the growth of the trees.

Additionally, the Parker farm has been the site for several other educational tours, as well as Outdoor Women events. Wildlife and diversity are evident across the property, but no where better than in the Tree Identification Area with over 100 species of trees planted on 4-5 acres, including 25 different varieties of oaks. Both archaeology and abundant wildflowers provide interest as well.

Believing that the greatest value of the TREASURE Forest program is that it gives one a goal or vision to improve the land, an ideal he hopes to instill in his grandchildren. Just as some people buy an old run-down house, fix it up, sell it, then move on to another one . . . Dr. Parker says if he were younger, he would love to buy up neglected land and plant trees. He believes he could make a TREASURE Forest out of any land!

He definitely has the vision for TREASURE. ♣



Photo by Elishia Ballentine

*Dr. Robert Parker stands beside a couple of live oaks he planted in 1996, which are more often seen in coastal areas of Alabama.*

# The Evolution of Forest Certification and “Sustainable Forestry”

By *Bill Jones*, Alabama Forestry Association

**T**he oldest forestry certification program in the United States began in 1941 out of public concern for management of private forests. That year, wood-using industries were approached by the USDA to commit themselves to grow repeated crops of timber on that land.

The Tree Farm System was started under that same initiative, and in 1942 Alabama became the first state to recognize private landowners. Several of the 1942 Tree Farms are still current in the program today. The American Forest Foundation has recruited 46 state committees and 4,400 inspecting foresters to support the Tree Farm System that includes 73,000 family forest owners and 29 million acres of certified sustainable forests. Certified Tree Farms must have a written management plan, meet the guidelines of the program and legal requirements of the state, be inspected by a Tree Farm trained forester, and maintain that inspection every five years.

## **Where Did the Forest Sustainability Issue Begin?**

In 1987 the United Nations Food and Agricultural Organization issued a global concern for the significant loss of timberland. Using satellite technology, their assessment showed the loss of forests at 27 million acres a year, of which the changes in forest type and land use can

be debated, depending on international need for wood fiber, agricultural and energy needs, and financial demands on growing populations. The global picture of sustainable forestry is complex, depending on the social, economic, and

ed a series of subsequent meetings to quantify and qualify acceptable forest practices of “sustainability,” first known as the Helsinki Process. In 1993 the governments of 12 non-European countries met in Montreal, Canada for the purpose of establishing for the management of land conservation of Temperate and Boreal Forests.

Soon after these events, the Forest Stewardship Council (FSC) was formed by environmental organizations to protect and conserve tropical forest products. FSC has grown to include participation in 72 countries and over 170 million acres of forest lands providing an ‘eco-label’ for timber products and a stakeholder system for forest management.

The American Forest and Paper Association also rolled out the Sustainable Forestry

Initiative program in 1994 to provide certification access to forest product companies. The Sustainable Forestry Initiative (SFI) now includes 200 companies and 150 million acres of certified timberland. The Society of American Foresters report, “Forest Management Certification,” defined criteria and indicators and provided context for setting evaluation and standards for forest certification in 1995.

Green Tag was developed by consulting foresters in northeastern states by the National Forestry Association, solely for use by private landowners and involves third party certification on a five-year

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*Alabama's 2006 Tree Farmer of the Year winners:  
Felicia and Lamar Dewberry*

environmental constraints between developed and developing countries. In 1992 the issue of forest sustainability was pushed to the front page of the UN Conference on the Environment at the Earth Summit in Rio de Janeiro.

Following the Summit many methods were rolled out to address the framework of sustainable forestry. Meanwhile, environmental organizations were strongly protesting the use of tropical hardwoods and forest products worldwide. The International Tropical Timber Organization adopted 5 criteria and 27 indicators to guide member governments on the management of long-term forest estates. The European Community start-

# The Evolution of Forest Certification and “Sustainable Forestry”

Continued from page 7)

basis. Green Tag requires sustainable forestry to be practiced by the landowner through forest management planning that utilizes forest health, inventory, and natural diversity concepts.

During this development period of forest sustainability certification programs, the Pan European community rolled out the Program for the Endorsement of Forest Certification (PEFC) covering 85% of the world’s forests in 149 countries. The PEFC’s mission is to provide a framework for the recognition of forest certification schemes that have been developed on a local scale to meet the intent of internationally recognized management measures.

## Twenty Years in the Making, Still Some Curves Ahead

After years of wrangling with regulatory restrictions and the politics of the Endangered Species Act and the Clean Water Act, environmental interests have taken concerns directly to the marketplace to influence “environmental performance,” not just on public lands but also private land. Time Warner, Staples, and Home Depot are just a few that are implementing procurement policies that reflect environmental responsibility. Interestingly enough, some of these procurement policies are beginning to identify products with certification labels. Does certification or labeling actually add value to the product? Not necessarily, as once expected, but in some cases

certification is required for market access.

Another late comer to the certification arena is Leadership in Energy and Environmental Design (LEED), introduced by the US Green Building Council. LEED is aimed at improving the environmental performance and economic returns for buildings. Architectural design requirements prefer recyclable materials, those produced locally, and only those certified by FSC. LEED requirements are showing up now in the bid requirements for public buildings, indicating that certification specifications to architects are important. Green Globes is an alternative certification program being launched by building associations which offers some additional options to architects and builders, and may be friendlier to wood.

Also the American Loggers Council developed their own brand of certification to meet similar management measures of certification programs. Now the Master Logger is specific to the harvesting process and is being implemented in seven states, mainly in the northwest and border states with Canada. Logging associations in seven additional states have made a move to develop a template to meet international standards for certification, simply to allow loggers to carry the certification responsibility for timber harvesting.

Quite an investment has been made by industry to clearly define the objectives of forest sustainability and establish

indicators of performance. Under the SFI program, participants have identified seven key measures to indicate compliance on company-controlled lands. Objective 8 identifies the partnership between an SFI company and compliance with their business partners such as loggers and landowners. Additional objectives provide measures for evaluating standards for research, training, legal compliance, public and landowner involvement, and continual improvement.

## So What Does Forest Certification Mean to the Alabama Landowner?

Number one on the list would be to continue to manage forest resources wisely and to use professional assistance where needed. Second, would be to request that forest operations be carried out by contractors that have completed and are current with training standards. Number three, you pay the ad valorem tax so you should make the decision on what programs are right for you and the management of your land. Private landowners make up the highest percentage of ownership in Alabama’s forest landscape and at last tally, our forest inventory showed that timber volume was at the highest level in fifty years. So with over 200,000 Alabama private landowners making good decisions on “Forest Sustainability,” it should be noted that private landowners in Alabama are already doing a good job.

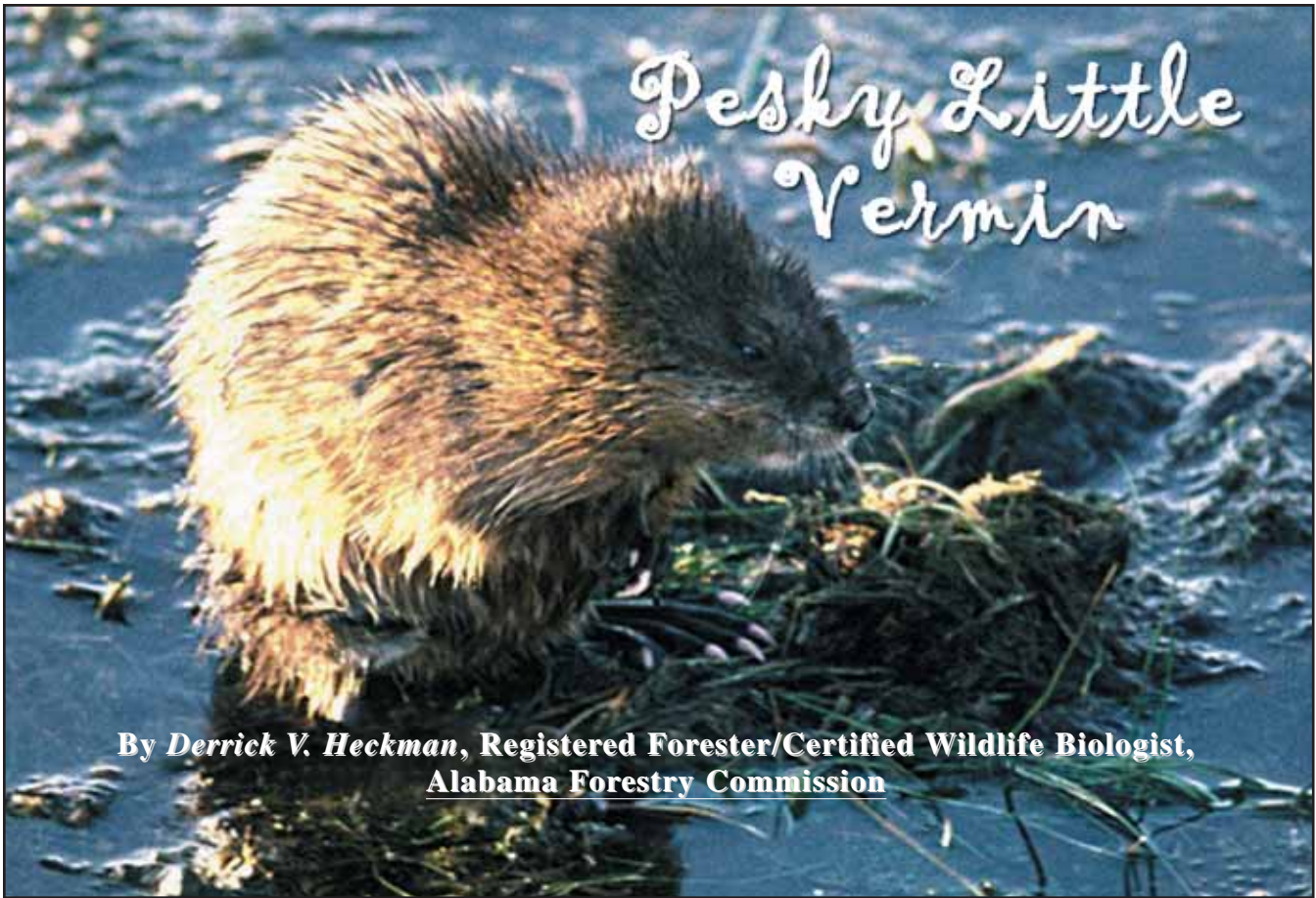
However, as market pressures dictate that a seal of good housekeeping is needed, there will be increased interest from manufacturers for meeting certification standards. Each system will require auditing to assure that forest management objectives can effectively be measured and evaluated. That process is well underway for subscribers to the Sustainable Forestry Initiative. Third-party auditing measures each management practice for water quality, endangered species, special site protection, harvesting utilization, and performance. Tree Farm also is evaluating how well its participating landowners meet similar management objectives. Also, Tree Farm is beginning guidance for

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### Certification Groups

<i>American Forest Foundation</i>	<i>Green Globes</i>
<i>American Forest &amp; Paper Association</i>	<i>Green Tag</i>
<i>American Loggers Council</i>	<i>Leadership in Energy &amp; Environmental Design (LEED)</i>
<i>Architectural &amp; Building Materials Building Associations</i>	<i>Master Logger</i>
<i>Ecolabelling</i>	<i>National Forestry Association</i>
<i>Forest Stewardship Council</i>	<i>Program for the Endorsement of Forest Certification (PEFC)</i>
<i>Forest Sustainability Certification</i>	<i>Sustainable Forestry Initiative</i>
	<i>Tree Farm System</i>





**By Derrick V. Heckman, Registered Forester/Certified Wildlife Biologist,  
Alabama Forestry Commission**

**W**ildlife management is often viewed as the enhancement or conservation of habitat to nurture wildlife populations and generally increase their numbers or health.

However, some species at one time or another require quite the opposite to actually eliminate the species or reduce their population to an acceptable level. This “acceptable level” could be determined by conflicts with human populations or other wildlife populations. Examples include removing predators for bobwhite introduction in unfamiliar habitat; fire ant eradication to improve turkey nesting success; or biologists introducing contraceptive inhibitors into urban deer populations to prevent herd increases, thereby decreasing the number of “vehicle vs. deer” insurance claims.

In this article we will identify only a few common mammalian species and their somewhat effective control methods. These control methods are most commonly referred to as wildlife damage control programs and they must be based on sound economic, ecological, and sociological principals to present a positive component of your wildlife management plan.

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First, we must identify the species causing the damage. Since most wild animals are secretive, nocturnal, and not easily observed, we often find evidence of their destructive habits instead of the actual vermin themselves. Characteristics of this damage are the clues to identification of the species, followed by positive identification of specific signs such as tracks, droppings, photos, or actually capturing one of the individuals.

The three species discussed in this article are found almost everywhere in the state of Alabama and across the Southeast, frequently prompting phone calls and on-site discussions with forest landowners. The most prevalent and destructive is the rat, more generally commensal rats (those that live or cohabit with human populations) which include wood rats, hispid cotton rats, and even the ordinary house mouse. Next, and most worrisome to forest landowners, is the beaver. (We will also discuss muskrats and the identification differences.) Last on our list of pesky little vermin is the common tree squirrel.

### **Rats!**

Sometimes we find ourselves putting things back – for storage, hard times, or

even precious mementoes from our past – only later to return and find them destroyed by little pesky vermin. Chances are you have been in contact with the most famous of all vermin in the Southeast, the Eastern wood rat (*Neotoma floridana*). Sometimes referred to as the pack rat, these rodents are about the size of the common chipmunk or flying squirrel, distinguishable by their hairy tail rather than the scaly tail of most rats, along with their soft fine fur, large ears, and white feet. Because of their relative size, they can do major damage in a short amount of time. Wood rats generally breed more than once a year and produce one to four young per litter.

Economic damage here in the Southeast is concentrated on agricultural crops and equipment. Feeding in barns, cabins, or other infrequently-used buildings, wood rats find food and nesting items that they usually take back outside to a more secluded nesting area. For nesting material, they shred expensive antique furniture and seats from seldom-used farm equipment, and gnaw the wiring harnesses from parked vehicles where they have taken winter refuge. As their

*(Continued on page 10)*

## Pesky Little Vermin

(Continued from page 9)

nickname implies, they take jewelry, small shiny objects, or pieces as large as silverware and “pack” them with the rest of their nesting materials in tree bases, brush piles, or even rock outcroppings. Wood rats are responsible for the transmission of the bubonic plague where it still exists. For this reason, dead or dying rats should not be handled.

Hispid cotton rats and house mice are also classified as commensal rodents and are found living in farm and residential areas throughout the Southeast. Cotton rats are normally found living outside, while house mice live inside. Cotton rats are notorious for their direct competition with bobwhite quail, and are considered one of the major threats to ground bird nest populations. However, these rodents are easily contained through controlled burning since their nests are usually found on the ground or small brush piles made of grass and dried vegetation. Burning should be done during the winter months while quail are busy foraging and not nesting.

House mice were brought over with the European settlers many years ago and are considered the highest mammal species population in the Southeast. Very prolific, they are capable of producing 30-50 young per female, and high concentrations have been found with as many as 200 mice per acre. These rodents are very versatile in their feeding habits, able to survive without water for long periods of time. They cannot see well and are color-blind, relying on their sense of smell, taste, and touch to find their food sources. Curious by nature, they will “sample” anything new in their environment. They are responsible for burrowing around barns and feedlot operations. The majority of the damage they cause is from urine and feces left in food sources, rendering such unfit for human consumption.

Control methods for wood rats, cotton rats, and house mice are simple. Toxicants in the form of anticoagulants are available commercially in the form of baits. These baits are specially formulated to be used around the home or farm, and are a low hazard to pets and children if ingested. Finely-ground or cornmeal-consistency bait is recommended, since it

must be eaten to be effective. Pellet baits are generally not effective on wood rats because they will simply “pack” them away, essentially wasting them. By contrast, if house mice are your problem, pellet baits are well received as they will readily “nibble” on them until they have ingested a lethal dosage. In serious agricultural situations, zinc phosphide applied to grain is very effective on all three rats, but most chemical rodenticides are limited to a certified applicators license. Trapping is also effective using the standard rat snap trap, baited with peanut butter or bacon rind. In seldom-used areas, glue boards may provide effective control around roof vents and openings to the outside. Remember, all methods of control should be placed so that children, pets, and non-target species are protected.

### Beaver

Our second pesky little vermin is *Castor canadensis* or the North American beaver, historically one of the most important mammals to inhabit our country. The beaver is the largest rodent found in North America reaching weights in the wild of almost 75 pounds. Most adult beaver commonly weigh around 50-60 pounds and have very dense fur, constituting their importance to early settlers during the cold winter months. The distinctive flattened tail is used as a warning device and counter-lever for the beaver while he carves away timber along his aquatic waterway. Wherever water is found, so is the beaver; from borders of

Mexico through Canada and Alaska, they are everywhere.

Evidence of beaver is usually the first indication that they have moved onto your property. The distinctive cone-shaped stump or stabs left from their feeding and dam building activities are conclusive of beaver habitation. Once they move in, they will feed on trees and woody species that grow near the water. If the waters they inhabit are acceptable to their needs, they will generally live in the soft banks and dams that provide warmth and security. However, if this habitat does not suit their needs, they will begin what many refer to as one of the modern wonders of the world: dam building. To contain water sources, dams can range from a hutch or lodge to length spans of 1,000 feet. The dams usually range from 2-5 feet high, depending on the fluctuation of the water. Beaver are very versatile and will use whatever resources are available, although they do prefer certain trees over others. Most particularly enjoy the storax (gum) found in sweetgum, blackgum, willow, and pines. These tree species are sought out by the beaver for both building materials and food. Crops less than



**“Busy as a beaver,”** the saying goes . . . the photos opposite illustrate just how industrious, yet destructive, they can be.



Gerald J. Lenhard, www.forestryimages.org



NC Forest Svc Archives, www.forestryimages.org



James Solomon, USDA Forest Service, www.forestryimages.org

500 feet from water also fall prey to the industrious beaver families.

Beaver work and feed throughout the nocturnal hours, usually for 12-14 hours. Monogamous mammals, they normally live in colonies of about eight to ten, and their young are born in the spring. They normally have three or four young per year which mature in one year. Territorial by nature, when the young ones become sexually active they are driven from the colony to start another colony elsewhere. In the wild, their lifespan is about ten years. Man is the only effective predator of the beaver in the water. On land, young beaver are often preyed on by coyotes, bobcats, and river otters.

Beaver pose particular problems for landowners. Even those humans upstream and downstream are affected by their engineering marvels. Timberland

flooding, dam failures, and burrowing have caused serious economic and biological losses throughout the southeastern U.S., with beaver damage estimates placed in the millions annually.

Controlling beaver activity has been controversial for years, and at best, continues to be hit and miss. It is virtually impossible, not to mention financially prohibitive, to exclude them from a water source. Because of the beaver's large size, toxicants have never been approved for fear they may come in contact with children or pets. If there is a valuable tree in the yard or along the waterway that should be protected, heavy hardware cloth can be wrapped around the base of the tree to a height of three feet to safeguard it from the beaver's powerful incisors. The cloth should be adjusted periodically to allow free growth and not girdle the tree unintentionally.

Different drain pipe systems have been developed. However, most have failed as soon as the beaver locate the sound or "feel" the water escaping, and they work through the night to stop the leak!

Many farmers and landowners have resorted to using shotguns and buckshot. Although perhaps self-satisfying to eliminate the source of frustration, most colonies contain numerous beaver. Night hunting is outlawed in much of the Southeast, even for nuisance animals. Trapping is by far the most effective, time conserving, and environmentally-

safe method to remove destructive beaver from your water source. The Conibear type #330 trap is humane and easily mastered by most anyone with woodsman skills. Traps should be used with caution in urban areas or where neighboring dogs roam free. When possible in these settings, place them underwater to prevent contact with non-target species. More information on beaver and the use of Conibear traps is available from the Animal and Plant Health Inspection Service at [www.aphis.usda.gov](http://www.aphis.usda.gov).

As mentioned earlier, muskrats are sometimes mistaken for beaver. Their habitat, lodge building, and burrows in pond dams are similar, but on a smaller scale. Generally, muskrats do not get over three pounds in size and the round tail is the key to identification in the water. Very prolific creatures, muskrats will cycle on a boom/crash axis where their population will grow exponentially until they overpopulate, and then disease or lack of food will cause them to die off in great numbers. Before they crash however, their feeding habits on grains and leafy vegetation along creeks, rivers, ponds, and lakes is phenomenal. In a given year, a pair of muskrats can produce up to 40 offspring. Those offspring will reach sexual maturity by the next breeding season, with the males leaving to find other females and new breeding territories. Again, trapping is the most effective method of control using the Conibear 110 or even leg-hold traps. Quick attention is necessary in control of muskrat activity.

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# Pesky Little Vermin

(Continued from page 11)



Squirrels cause damage to pines by tearing away the cones.

## Squirrels

Last on our list of pesky little vermin is the common tree squirrel found throughout the Southeast and especially in Alabama. This includes the Eastern gray squirrel (*Sciurus carolinensis*), the larger fox squirrel (*Sciurus niger*), and the elusive and mostly nocturnal Southern flying squirrel (*Glaucomys volans*). Each of these species fills a different niche in the canopy of woodland forest they inhabit. Depending on their location, each species varies in color and texture: from all black in the Deep South, to reddish brown with a black face in the coastal plains, to almost silver above the Mason-Dixon Line. Variations are found in the Eastern gray squirrel from reddish gray coats to silver, even in the same geographic location. The Southern flying squirrel varies from a dark shade of brown to a light tan coat with a lighter whitish underside.

All Southern squirrel species inhabit the forest overstory but usually occur in different basal area densities. In other words, the Eastern gray squirrel is more abundant in thick forests of hardwood and pine, whereas the fox squirrel will be found in lower density, often in open-grown stands of pine and hickory. In Alabama, fox squirrels may be found around old farm sites, overgrown fields, and on estate-size yards where the limbs of each individual tree do not touch. Usually a basal area of 30 or less will contain fox squirrels, as was common during the open burning days of bobwhite quail and longleaf pine.

Squirrels have a wide variety of food habits and sources; the obvious diet being mast (hard and soft) which is eaten in the fall and stored through the winter. In the spring, their diet changes to flower buds, tree buds, bushes – anything with a soft emerging bud is



fair game. They have been known to destroy ornamentals, fruit trees, and flowering plants while foraging on early buds. In the summer their diet changes again to fruits, berries, fungi, and available grain/corn sources found in gardens and cultivated farming operations. Flying squirrels are the only carnivores of the species, eating bird eggs, young fledglings, and flying insects when readily available.

Squirrels mate twice a year, once in winter and again in summer, typically having two to three young per litter. Their lifespan usually does not exceed four years. Squirrels are vulnerable to a number of diseases, and normally are not hunted until after the first frost because of “wolves,” botfly larvae that burrow into their skin during the summer months. Although the larvae do not affect the quality of the meat, many old-timers refuse to hunt until the winter frosts have killed the larvae.

A common complaint is, “I think I have squirrels nesting in my attic.” Frequently in residential areas, they seek refuge in attics, barns, or any dry area that will afford them protection from snakes, owls, and hawks. The power

company is sometimes called out on transformer outages caused by squirrels using the power lines to cross roads and travel from tree to tree. Their destructive ability is often discovered where they have gnawed siding, eaves, and construction material so they can enter and exit their nesting area in your home. Squirrels are frequently responsible for expanding the holes on bluebird, woodpecker, and other cavity nesting bird houses so that it will accommodate their larger size. Once inside they will destroy the bird nest, build their own nest, and continue to use the cavity for years.

To prevent squirrels from entering your home, close openings once the squirrel has left the building, and place wire mesh over openings that cannot be closed. Trim limbs and trees away from your house. If the animals are getting into your home via a power line, cut a 3-foot section of 2” pipe and split lengthwise. Call the power company and ask them to place the pipe around the power line that enters your home; squirrels cannot cross the pipe without falling off. Do not attempt to place the pipe yourself, because you may be electrocuted. Squirrels are considered game animals in much of the Southeast. It is not advised to kill or trap them outside legal season without first notifying your local Game and Fish office and asking their advice.

Most wildlife management plans are general and allow for flexibility to incorporate damage control activities. The key to implementing damage control activities is to alter or change the habitat to increase the desired species and decrease the non-desired species. Although some species will remain regardless of your efforts, controlling their population numbers is possible. There are many online and on-site resources available to landowners, homeowners, and interested parties. It is your responsibility to find your problem, identify the source of the problem, then apply the control methods in a safe and effective method to protect yourself and the non-target wildlife you are attempting to conserve, and lastly, evaluate your success. As a landowner, biologist, or forester, it is your responsibility to leave the forest in better shape than you found it. ♣

# Farm Service Agency Introduces New Initiative to Restore Longleaf Pine Forests



*CP36 is a federally subsidized conservation practice designed to provide numerous conservation and environmental benefits.*

By *Claude Jenkins*, Land Stewardship Biologist

(In partnership with the Alabama Forestry Commission, the Alabama TREASURE Forest Association, the Alabama Wildlife Federation, and the USDA Forest Service)

**I**n October 2006, the United States Department of Agriculture's Farm Service Agency (FSA) introduced a new longleaf pine initiative designed to reforest up to 250,000 acres of longleaf pine in nine Southern states. Conservation Practice 36 (CP36) under the continuous Conservation Reserve Program (CRP) will be the vehicle for achieving this initiative. Landowners in Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, and Virginia – states that include the natural range of longleaf pine forests – may be eligible to participate in the new initiative if CRP CP36 eligibility requirements are met.

Historically, the longleaf pine was the dominant tree species on an estimated 60 million acres and occurred in mixed for-

est stands on another 30 million acres along the coastal plain from east Texas to the Piedmont of Virginia and extending into the mountains of Alabama and northwest Georgia. However, natural stands of longleaf pines have rapidly declined and currently occupy less than three million acres of its original range. Much of the residual forest is severely degraded, and thus, does not function as a viable ecological system or provide the values for which the historical forest is known.

Eligible land includes cropland that is located within the historical range of the longleaf pine in the nine states and is suitable for the establishment of longleaf pine. In addition, cropland must meet the basic CRP requirements and have been cropped four out of six years between

1996 and 2001. Eligible acres are automatically accepted instead of being competitively ranked as in the general CRP. While enrollment is automatic, it must not exceed a state's allocation. Therefore, CP36 will be allocated on a first-come/first-serve basis.

CP36 indeed provides landowners tremendous incentive to restore and manage longleaf pine stands. With CP36, it is possible to provide critical habitat for many wildlife species while supplying landowners with a valuable timber resource. The key is proper management; just simply planting longleaf pines will not accomplish the conservation and environmental goals of the initiative. Sign-up began December 1, 2006, and will run continuously (i.e. eligible land

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# Farm Service Agency Introduces New Initiative to Restore Longleaf Pine Forests

(Continued from page 13)

may be enrolled any time) until the 250,000 acres are enrolled or December 31, 2007, whichever comes first. For more information on the longleaf pine

initiative contact your county Alabama Forestry Commission office, your local FSA office, or see the FSA website at [www.fsa.usda.gov](http://www.fsa.usda.gov).

The following table provides acres allocated for CP36 for each state.

## MONETARY PAYMENT AND COST-SHARE

FSA will provide landowners with monetary incentives and cost-share to offset the high cost associated with planting longleaf seedlings. The following types of payments will be offered:

- A one-time, up-front Signing Incentive Payment of \$100 per acre which will be paid after eligibility criteria are met and the CRP contract is approved;
- Annual rental payments for the length of the contract (10 to 15 years). Payments are based on the agriculture rental value of the land;
- A one-time Practice Incentive Payment equal to 40% of the eligible installation costs. The payment will be made after CP36 is installed and eligible costs are verified;
- Cost-share assistance up to 50% of the eligible reimbursable practice costs.

## ACRE ALLOCATION

STATE	ACRES
Alabama	37,000
Florida	42,750
Georgia	44,750
Louisiana	36,250
Mississippi	21,500
North Carolina	32,250
South Carolina	21,000
Texas	10,750
Virginia	3,750
Total	250,000

## Land Stewardship Biologist Assistance Program



Three Land Stewardship Biologists (Claude Jenkins, Ryan Prince, and Randall Seal) personally visit with Alabama's landowners to provide free wildlife management assistance and advice through the Land Stewardship Biologist program—an innovative partnership between the Alabama Wildlife Federation, Alabama Forestry Commission, Alabama TREASURE Forest Association, and the U.S. Forest Service.

Since the inception of the program in August of 1999, the land stewardship biologists have provided technical assistance to over 983 landowners and evaluated over 531,635 acres across Alabama.

For more information about this free program, contact your local Land Stewardship Biologist or visit the AWF's website at [www.alabamawildlife.org](http://www.alabamawildlife.org).

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# Managing Shallow Water Areas for Waterfowl

By Tim Albritton, Forester, USDA Natural Resources Conservation Service

*A shallow water area that has been flooded.*

**S**hallow water areas and mud flats occur naturally in river bottoms around open sloughs and oxbow lakes. These areas are scoured and replenished by flood waters each year. This habitat is used by many creatures, including ducks and several non-game species. Most of these species feed in water that is less than a foot deep, while some even use mud flats.

This type of habitat can be created on your property by building a levee and installing some type of water control structure. The best site will be relatively flat pasture land or cropland with few or no trees.

The most common type of control structure is the flash board riser. This structure uses wooden or plastic “boards” to hold water. It allows the land manager to slowly flood or drain the area by adding or removing boards.

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Timing of water drawdown in the spring can impact the amount and type of food grown within the shallow water area. Early drawdowns tend to produce more total seed production, while mid and late drawdowns produce different plant communities.

One good option is to use a slow drawdown. This works best when using narrow boards in the riser. In other words, using 2x2” or 2x4” boards allows a slower drawdown than 2x6” boards because less water is being removed with each board that is pulled. Pull one board around the first of April, and then pull another every 10 to 14 days after that until all boards have been removed. It is often best to leave the last board in so that natural evaporation will very slowly draw down the remaining water. This leaves a shallow pool of water that is utilized by many types of wildlife.

Timing of reflooding is as important as timing of water drawdown. Slowly reflooding in stages is best. This allows access to all foods over time without flooding the lowest areas too deep too quickly. It also allows time for ducks to access the area in stages, so that foods do not all deteriorate at the same time.

A reliable supply of water for reflooding is best. This is particularly true in dry years such as occurred in 2006. A creek or lake can be used to pump water into the shallow water area. This is expensive, but worthwhile to provide at least a little bit of water for ducks to land and feed. Some ducks can feed in water that is only a few inches deep.

Naturally grown or “wild” duck foods are very beneficial, so planting corn or other crops is not necessary. Wild plants

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*Low intensity fire moving through a longleaf pine forest degraded by decades of fire-suppression.*

*Image by John Kush*



# The Legacy of Smokey's Message: Problems in Fire-Starved Longleaf Pine Forests

By *John P. McGuire*, Outreach Coordinator, the Longleaf Alliance

**T**he sun casts a reddish hue through a column of smoke that curls above the gnarled, flattened tops of ancient longleaf pine trees. The forest below hisses and crackles as a fire inches its way along a carpet of golden grasses. Somewhere among the grasses, a gopher tortoise lazily bites down upon and plucks a ripe blackberry from a low hanging bush. With seeming indifference to the approaching fire, the tortoise leisurely makes its way to a burrow opening in the sandy ground and slides down into the darkness and safety below. As the fire continues its march through the web of grasses, a myriad of insects

flush to find shelter high along the rough bark of the surrounding longleaf pine trees. With the white flash of its belly, a phoebe flies in from seemingly empty space, grabs a fleeing grasshopper and quickly melts back into the refuge of the forest and out of the sight of prowling Cooper's hawks.

This drama (albeit contrived for this story) has unfolded in the longleaf pine woods for thousands of years and stretched across thousands of acres. In the past several decades, however, the precipitous decline of beneficial fires from Alabama's landscape has caused considerable harm to many of our forests. Of those ailing forest types,

longleaf pine forests in Alabama have declined significantly. In response to this decline a growing interest in reviving longleaf pine forests has developed. The largest obstacle in retelling the longleaf pine story appears to be problems that originate from the legacy of a well-intentioned fire prevention program that has resulted in many unintended consequences. This article will explore the fire suppression legacy and provide suggestions for the successful reintroduction of fire to longleaf pine forests that have not seen fire in decades.

In 1935, I.F. Eldredge, Regional Director of the Forest Survey of the South, acknowledged that there is "evi-

# The Legacy of Smokey's Message: Problems in Fire-Starved Longleaf Pine Forests

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dence on the ground and in the history of the region to prove that this great (longleaf) pine forest was ushered into this world and has grown into its present development constantly subjected to the influence of wholesale periodic burning.” In the unbroken, primal landscape of Alabama, fires once frequently moved through these longleaf pine woods like a gentle swell on the ocean’s surface. In forests kept open by frequent fire, streams of light radiated through a cathedral of majestic longleaf pine trees to a congregation of grasses, flowers, ground sparrows, tortoises and the like. Without burning, vines and hardwood sprouts clawed their way out of the ground and tried to gain an advantageous position in the forest. Slowly, a longleaf pine forest starved of fire closes in around itself. Without fire, the grasses and sun-loving flowers of the longleaf pine forest languish and slowly die. Without fire, ground sparrows, tortoises, and countless fire-dependent animals move elsewhere in search of suitable habitat. Without fire, the longleaf forest eventually pines away.

In the early 20th century, the emerging field of forestry, whose roots were planted firmly in the tamed forests of Europe, refused to grant its support to the perpetuation of fire in the longleaf pine woods. Despite Gifford Pinchot’s acknowledgment that longleaf pine should be placed “at the head of all the trees of my acquaintance in its capacity to resist fire,” fire was widely viewed as a destructive force by this newly formed forestry community. In 1928, the American Forestry Association would lead the first organized crusade to stamp out fire with the Southern Forestry Educational Project. Next, the torch was passed to the U.S. Forest Service and their spokesman, Smokey Bear, in 1944. From there, state forestry and wildlife agencies picked up the mantra that preventing fires was necessary to protect the forest and its inhabitants. As one of the most successful ad campaigns in North America, the anti-fire message moved beyond suppressing malicious burning by arsonists to suppressing all forest fires. Further, the fight to gain control of malicious burning morphed from an attempt

to suppress fires to a suppression of scientific evidence in support of fire. The crescendo of the argument is best summed up by a discussion in a 1940s *Journal of Forestry* article which stated: “the present need is that all agencies, scientists and laymen alike put forth every bit of energy in fighting the forest fire menace and do nothing to give encouragement to wood burners in any section of the United States.”

The recent increase in wildfire size and activity across western forests is testimony that Smokey Bear’s message of fire suppression has, in fact, unintentionally made the wildfire threat more serious. Many agree today that a policy which attempted to remove all fires from forests has merely replaced frequent, beneficial fires with infrequent,

catastrophic fires. Perhaps in recognition of flaws in its campaign, Smokey’s message was quietly updated in 2001 to reflect the distinction between wildfires and forest fires. Likewise, the Alabama Forestry Commission has shifted from an earlier position of absolute fire suppression



Image by USDA Forest Service, Southern Research Station



Image by John Kush

Top: Longleaf pine forest in the early 20th century near Flomaton, Alabama, maintained by frequent, low-intensity fire. Bottom: As it looked in 1995 having gone through several decades of fire-suppression.



Post smolder.

Image by Bill Garland US F&W

Although large conflagrations are devastating to longleaf pine forests that have gone without fire for multiple decades, low-intensity fires that burn under dry conditions in degraded longleaf pine forests can smolder in the organic duff layer and result in upwards to 60% of the old longleaf pine dying.

sion to being among one of the most progressive states in promoting prescribed burning through training and cost-share assistance. However, for many landowners in Alabama, the legacy of Smokey's message has become reality. Regretfully, many Alabama landowners have discovered that catastrophic fires are not limited to forests of the Western United States.

On a warm Alabama spring evening in the waning years of the 20th century, a small, innocuous ember floated from a smoldering pile of garbage and gently settled on a soft pedestal of pine needles in a nearby forest stand. Nobody could say for sure when it happened, but at some point later in the afternoon, a wisp of smoke began to twist up out of the ground where the ember had landed. Minutes, or perhaps hours later, from where the smoke had appeared, a small flame stood up out of the pine needles and began a slow dance through the woods. As the temperatures cooled in the evening, the fire slowed and eventually bedded down next to ancient longleaf pine trees for the night. It would not be until the next morning that fire was discovered. The forest, called the Flomaton Natural Area, was a 50-acre impenetrable

jungle of briars and brush with many old, scattered longleaf pines. However, when the local volunteer fire department arrived, they were probably relieved to find that the fire that had slowly fingered its way into the woods was contained on all sides by dirt roads. Likewise,

since the flame had moved into the humus layer and was obviously running low on strength, there was little need to call dispatch and tell them it was going to be a late evening. The last puffs of smoke were expelled later that day with little human intervention. By all accounts that afternoon, an angry conflagration

had been avoided and the patriarchal longleaf pines were saved.

For weeks after the fire, the forest seemed to take on a new life. In places, the fire opened up the otherwise impassable thicket of briars and brush, allowing several varieties of flowers to sprout from the ashes. Although the last fire that these longleaf pines had seen was several decades prior, they were veterans of countless fires in the past and stood seemingly unaffected by the disturbance.

Though it wasn't immediately evident from the fire at the Flomaton Natural Area, the lifeline of these longleaf pine trees had been severed. The result of a

*(Continued on page 20)*



Image by John Kush

Dead longleaf pine trees resulting from a smoldering fire.

# The Legacy of Smokey's Message: Problems in Fire-Starved Longleaf Pine Forests

(Continued from page 19)

seemingly unimpressive, smoldering fire had been the consumption of most of the trees' fine roots. Although by all outward appearances, the longleaf pines looked verdant and healthy; with most of their fine roots gone, the pines struggled to survive on diminishing resources and still fend off insects and pathogens. Two years after the fire, the contest for life was lost to unremitting attacks by small, wood-boring beetles. Longleaf pines that were alive well before Alabama was a state, longleaf pines that had survived incalculable natural and manmade disturbances, were now dead.

When the last of the trees dropped its needles, two years after the spring wild-fire, it was determined that no longleaf pine greater than 18" diameter survived the fire and no longleaf pine greater than 80 years old survived (including one tree more than 360 years old). For several years, the ghostly masts that were once trees stood as indicators to a problem that many other land managers across the range of longleaf pine were about to realize. The problem revealed by the wildfire at the Flomaton Natural Area was that a fire-deprived longleaf forest responds differently to fire than it did historically, when fire was a frequent visitor.

In 1889, a Florida resident made a far-sighted prediction: "the total abolition of

forest fires in the South would mean the annihilation of her grand (longleaf) lumbering pineries." As a consequence of an over-zealously applied policy of total fire suppression, many of the mature, remnant longleaf pine stands seen today are unhealthy, decadent, and at risk of catastrophic fire. Although these mature longleaf trees have been able to persist on the landscape, decades of fire suppression has created a forest unable to repopulate itself. Today, most natural resource professionals recognize the necessity of fire to restore degraded longleaf pine forests. However, what is not as well recognized is that the biggest threat to the restoration of these stands is the inappropriate reapplication of fire. Regardless of the land ownership, there are numerous instances where fire (either prescribed or wild) set under the wrong conditions has resulted in longleaf pine stands with many dead, mature trees.

The first step in restoration of degraded longleaf pine stands must be the recognition that fire set under the wrong conditions will put these forests at risk. As the risk is understood today, longleaf pine stands as young as 50 years old that have gone through a few decades of fire suppression are vulnerable. The telltale sign of a potential problem is longleaf pine trees that have accumulated spongy

mounds of pine straw and humus (also called duff) around their base. Often this mound of duff is several inches deep and contains many of the trees' fine roots. Duff that is dry enough to allow fires to smolder for hours will result in the slow death of longleaf pine trees (as witnessed at Flomaton Natural Area). In fact, under the aforementioned conditions, small

## Prescription to the Successful Re-introduction of Fire to Longleaf Pine Forests

- Recognize the potential problem before burning.
- Burn under conservative conditions.
- Give priority to the controlled reduction of humus layer through a series of burns.
- Burn when the lower duff layer is wet, within two days of approximately 1" of rain.
- Avoid the use of a slow-moving backing fire; use a strip fire or grid-ignition fire.
- Avoid or minimize crown scorch on longleaf pine.
- Conduct a mop-up operation by putting water on smoldering hot spots around trees.
- If in doubt, ask a professional.

*Several inches of accumulated and spongy organic debris (duff) mounded around this 50-year-old longleaf pine's base is a telltale warning that smoldering fires can result under dry conditions. Great care must be taken under this situation to slowly remove this mounded debris over several burns.*



Image by John McGuire



*With great patience exercised, nine conservative prescribed burns slowly reduced the duff buildup and helped to restore this 60-year-old, south Georgia longleaf pine forest from its fire-suppressed condition seen twelve years ago (above) to its open and park-like longleaf woods today (below).*



fires that smolder can be as catastrophic as large fires that reach up into the trees' crowns.

The second step in restoration of degraded longleaf pine stands needs to be a rethinking of the short-term goals of prescribed burning. In most fire reintroduction situations, managers implement burning prescriptions that emphasize thinning out hardwood stems that have encroached into the forest midstory. Under nearly all of these prescriptions, appreciable mortality of overstory longleaf pine has occurred. Instead of attempting to control midstory hardwoods, the focus of the first several burns in fire reintroduction must be to ensure the controlled, slow reduction of duff around the base of the older trees. Burning under conservative conditions

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(i.e., cool, saturated duff conditions) where only the litter layer is dry enough to ignite, prevents smoldering and allows the slow reduction of duff to occur over time. When the accumulated duff material is eventually brought down to bare mineral soil after multiple burns, then the burn prescription window can be widened to satisfy other needs such as hardwood control, wiregrass flowering, etc.

Finally, forest practitioners must exercise patience. Far too often, managers feel compelled to show immediate results in restoration. Some have advocated raking to bare mineral soil around the base of remnant, old longleaf pine trees to reduce the threat of smoldering fires. If fine root loss is the

chief culprit in mortality (which many scientists believe), then raking will only expedite the destruction of fine roots. Likewise, the removal of small diameter and un-merchantable "woody biomass" will create an open-forest vista almost instantly. However, removal of midstory biomass will not eliminate the threat of catastrophic, smoldering fires. Additionally, observations suggest that disruption of the humus layer around old longleaf pine by mechanical equipment creates mortality in a similar fashion as smoldering fires.

The message of Smokey Bear has created many paradoxes in the longleaf pine woods of Alabama. There will always be a need to control wildfires. In today's litigious society, we can no longer allow

fires to burn unchecked as they did for thousands of years. Likewise, the legacy of Smokey's message has changed the relationship of longleaf pine forests and fire. In the fire-starved landscape, fires set under a range of conditions that were once beneficial to longleaf pine forests are now catastrophic. At the same time, there is no substitute for frequent burning that is able to create the environment required by many plants and animals found in healthy longleaf pine forests. The key to bridging these contradictions appears to be a redefining of how fire is used in fire-starved longleaf pine stands. Success is achieved by redefining short-term goals, slowing down, and burning conservatively. It is vital to remember that it takes decades to grow an old forest. However, if that forest is degraded through fire suppression, it can take only one afternoon to destroy it through a fire set under the wrong conditions. ☹️

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# Using Handheld Weather Monitors to Estimate Prescribed Burning Parameters

By *L. Louis Hyman*, Assistant Director, Fire Division, Alabama Forestry Commission

**P**rescribed burning is one of the most cost effective forest management tools available to landowners. Prescribed burning reduces hazardous fuels, enhances wildlife habitat, opens up the woods, and improves aesthetics. To be done safely and effectively, the burn manager needs accurate local weather information before, during, and after the burn.

During the planning stage (the “prescribed” part of prescribed burn), the burner needs to “select” what weather conditions will be best for the planned burn. How dry should the fuel be? What wind direction and speed is needed to blow the smoke away from sensitive areas, such as highways, schools, and hospitals? Fuel dryness is critical to the success of the burn. If the understory fuels are too dry, the fire will be too “hot,” resulting in scorching and damage to the overstory trees. If the fuels are too damp, the fire will not burn. For a site preparation or windrow burn, the drier the fuel, the more complete the burn, with less residual smoldering and smoke.

The two key parameters for how well a fire behaves are how hot or intense the fire will be and how fast the fire will spread across the stand. Intensity is directly related to fuel type and dryness. Fuel moisture, especially “fine fuels” such as dead grass and pine straw, is closely tied to relative humidity. Fire spread is directly related to wind speed.

When planning a prescribed burn, the burner must forecast the relative humidity as well wind speed and direction. The USDA Forest Service and other large landowners monitor permanent weather stations to track weather trends and develop forecasts. In recent years, television weather forecasts have become more accurate. The Weather Channel gives up-to-the minute weather conditions and forecasts on a continuous basis. There are also internet sites that give localized weather forecasts for any specific latitude and longitude. Many of these sites are sponsored by local TV stations and rely on detailed National



Weather Service computer models and reports.

While broadcast reports and forecasts are good for planning, they may not be useful for a burner on the ground with a specific fire. The burner needs a method to monitor relative humidity and wind speed at the ground level in real time. There are several instruments available to help with these measurements.

The traditional instrument is a belt weather kit which includes, among other things, a wind gauge and sling psychrometer. A psychrometer uses two thermometers to measure a dry bulb temperature and a wet bulb temperature. These readings are compared using a slide rule or a look-up table to estimate relative humidity. While the technique can give a precise reading, the equipment is sensitive, time-consuming to use, and requires careful regular maintenance to ensure accuracy.

With computer chip technology, there are now on the market electronic weather monitors that are extremely useful to prescribed burn managers. These are readily available through forestry and environmental supply catalogs at prices ranging from about \$90 to \$150, depending on their features.

All handheld monitors measure several basic parameters. They all have a propeller anemometer to measure wind speed. They all measure temperature and have a moisture sensor, which is used to calculate relative humidity and dewpoint. From these measurements, other values such as wind chill and heat index are calculated. The units are all simple to use with a push button to scroll through measurements and LED display screens.

A comparison between the electronic monitors and belt weather kit instruments show that the monitors are relatively accurate, especially for wind speeds. The relative humidity calculations vary slightly between units, but all are within 2 to 5% of the psychrometer readings during normal Alabama weather. It has been reported that they are less accurate in drier conditions, such as occurs out West during summer droughts. In Alabama during normal prescribed burning season, the electronic monitors produce relative humidity readings with acceptable accuracy for a prescribed burn manager.

## Estimating Fire Behavior from Weather Readings

Once a burn manager has a relative humidity reading, he or she can estimate fine fuel moisture levels. There are several ‘rules of thumb’ for doing this, but



the most accurate uses formulas based on research by Fosberg and Deeming. The formula uses relative humidity (Rh) and temperature (T) to estimate fine fuel moisture, as follows:

**If RH < 50%,**  
**FFM = 2.21819 + 0.16491(Rh) – 0.01522(T)**

**If RH > 50%,**  
**FFM = 21.69242 + 0.00573(Rh)(Rh) – 0.00036(Rh)(T) – 0.4995(Rh)**

These formulas are shown graphically in Figure 1. If the relative humidity is 40% and the temperature is 50°F, then the estimated fine fuel moisture would be roughly 8%. If the relative humidity is 80% and the temperature is 50°F, the fuel moisture would be 17%. In Alabama, fuels need to be in the 8 to 15% range for a good understory burn. Moistures higher than 15% will not allow enough fire spread, while fuel moistures below 8% may cause residual tree damage.

Once a prescribed burn manager has an estimated fuel moisture and ground level wind speed, he or she can estimate the rate of spread for the fire. Rate of spread is how fast the fire will move across the stand. This calculation tells the burner how long it will take to burn the targeted stand, so that the burn can be done within the allotted time. Rate of spread is very complex, however the Forest Service has published a series of tables that can be used to estimate spread rates. Figure 2 shows such a table for closed pine plantation or mature hardwood stands with little underbrush and little slopes (less than 45%). The table shows that with 12% fuel moisture and 4 mph surface wind, an understory head fire should travel at about 4 feet per minute.

Using another set of formulas, the burner can estimate the flame height, which is a measure of fire intensity and can be used to predict residual tree scorch or damage. A Forest Service table for pine hardwood litter is shown in Figure 3. It shows that with a 12% fuel moisture and 4 mph wind speed, an understory litter fire would have flames about 2 feet high.

These estimates are for a closed stand with no understory, just pine straw and hardwood leaves. Stands with understory brush will have a different rate of spread and flame length. The method used to

**Figure 1**

**Fine Fuel Moisture**  
Pine and Hardwood Understory (Fuel Model 9)

Relative Humidity	Temperature (degrees F)						
	20	30	40	50	60	70	80
10%	4	3	3	3	3	3	3
20%	5	5	5	5	5	4	4
30%	7	7	7	6	6	6	6
40%	9	8	8	8	8	8	8
50%	10	10	10	10	10	9	9
60%	12	12	12	11	11	11	11
70%	14	14	14	14	13	13	13
80%	18	18	17	17	17	16	16
90%	23	22	2	22	21	21	21

**Figure 2**

**Estimated Rate of Spread**  
Pine and Hardwood Understory (Fuel Model 9)

Fine Fuel Moisture	Midflame Wind (mph)						
	0	2	4	6	8	10	12
	Spread in Feet per Minute						
3%	1	3	9	18	28	40	54
6%	1	2	7	13	21	30	41
9%	1	2	6	11	17	24	33
12%	1	2	4	9	14	21	29
15%	1	2	4	8	13	19	25
18%	0	1	3	7	11	15	21
21%	0	1	2	4	8	11	14

Source: Fireline Handbook, Appendix B-Fire Behavior, Table 54, converted from chains/hour

**Figure 3**

**Estimated Flame Length**  
Pine and Hardwood Understory (Fuel Model 9)

Fine Fuel Moisture	Midflame Wind (mph)						
	0	2	4	6	8	10	12
	Flame Length in Feet						
3%	1.3	2.1	3.2	4.2	5.2	6.2	7.1
6%	1.0	1.6	2.5	3.4	4.2	4.9	5.7
9%	0.9	1.4	2.2	2.9	3.6	4.3	5.0
12%	0.8	1.3	2.0	2.7	3.4	4.0	4.6
15%	0.8	1.2	1.9	2.5	3.1	3.7	4.3
18%	0.7	1.1	1.7	2.2	2.7	3.3	3.7
21%	0.5	0.8	1.2	1.6	2.0	2.4	2.7

Source: Fireline Handbook, Appendix B-Fire Behavior, Table 54

estimate rate of spread and flame length is the same, but it uses different tables and factors.

These tables and formulas only give estimates on how the fire will behave, all things being equal (which they never are). Your fire will vary some from these values. But determining the fuel moisture, rate of spread, and flame length will give you a benchmark for your burn. Experience in managing prescribed burns

will help you adapt these estimates to fit your forest situation.

Weather is a critical element in prescribed burning. Modern technology in weather forecasting and handheld electronic weather monitors make getting accurate weather information easily available. This small investment will pay out many benefits on your TREASURE Forest. 🌲

## Profiles in Courage:

# Small Landowners in Alabama

By *Elishia Ballentine*, Editor

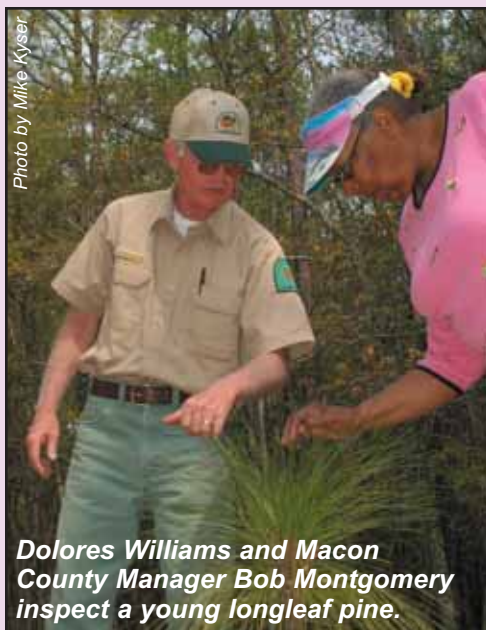
Once in a great while, you meet someone so strong and courageous, it makes you say, “I wish I could be more like that”. . . someone with a vibrant attitude about life who has overcome the odds. They make such a positive impression, that when you part company, you feel that somehow your life is better for having met them. Dolores Williams is such a person. She has an indomitable yet sweet spirit about her. She’s worked hard all her life and doesn’t have any plans of slowing down.

Born and raised in the Franklin community of Macon County, her property adjoins the land where she lived as a child. She recalls many wonderful memories from those early years in the country. She always had a love of the outdoors, and especially enjoyed learning about nature as a young girl in the Girl Scouts. Her family had the good fortune of a natural spring, and everybody in the area would come there to get water when their wells went dry. She fondly remembers that her grandfather kept a dipper hanging on a tree beside the spring, and how delicious the cool water tasted.

After finishing high school, she earned a nursing degree at Tuskegee Institute (University), married, and started a family. It was around this time in the late ‘50s that she and her husband purchased the house and land. When a divorce a few years later left her to raise three young children alone, she sometimes juggled three jobs to make ends meet. While working at the Veterans Administration Hospital, she joined the military. After ten years in the reserve forces, she went into active duty. As an Army nurse, she traveled the world and was stationed at various posts across the U.S. However, through it all, she held on to her home and property back in Alabama. Finally in 1999, after 25 years of service, she retired.

Her children, now grown and successful, live in other regions of the country, with children of their own. She has one sister that lives in Los Angeles and

another in Boston. Occasionally, these family members try to persuade her to leave the country and move near them, but she has no intention of leaving her beloved home and forest. She said that when she was in the military, no matter where she was, she always wanted to come home . . . back to Macon County. “There’s nothing like the peace and quiet of the country, and there’s no where like Alabama in the whole world.”



**Dolores Williams and Macon County Manager Bob Montgomery inspect a young longleaf pine.**

Ever a “hands-on” landowner, she loves getting involved in all facets of the work to be done around her place. In fact, she helped build the pond 40 years ago, operating a D7 bulldozer. (She says she can also ride a Harley and drive an 18-wheeler. And alas, it was her age – not her lack of determination – that denied her of her desire to learn to fly a helicopter!) Nowadays, she still mows her own grass, and thinks nothing of throwing her little pickup truck into four-wheel drive, taking off to the far corners of her property. She recently “rescued” and transplanted a few young longleaf pines that were inadvertently uprooted when fire lanes were installed.

Totaling approximately 70-80 acres in two different sections, she has a large stand of natural longleaf as well as an

assortment of pear and other fruit trees, pecans, and walnuts. Striving toward turning her small farm into a TREASURE Forest, she has initiated a prescribed burn program in addition to the fire lanes. The Alabama Forestry Commission’s (AFC) Macon County staff (County Manager Bob Montgomery, Forestry Specialists Jesse Fitzpatrick and Charles Baldwin) conducted a burn on her land in early spring of this year. As usual, she was right out there with them in the middle of it (as much as they allowed her to be). She laughingly says that when she started asking Bob for her own uniform and hard hat, he politely asked her to go inside out of the smoke. She states that she learns something new about forestry every time she works with the AFC crew, and she’s very appreciative of the assistance she’s received from all of the agencies. A few years back, Michele Cole (formerly with the AFC and now with the Alabama Cooperative Extension System) drew up her forest management plan, and Gwen Lewis with the Natural Resources Conservation Service directed her toward cost-share programs to help with both fire lanes and prescribed burns.

Dolores also says she’s learned a good bit about forest management since being appointed to the AFC’s Outreach Advisory Council in July of 2001. She has attended meetings and traveled around the state and Southeast, viewing forestry practices. She particularly enjoyed observing logging operations carried out with horses at St. Helena Island, South Carolina, at a meeting of the National Network of Forest Practitioners.

It’s that energetic attitude and willingness to keep learning that illustrates her heart and character. Never one to sit around with idle hands – Dolores is constantly industrious. She works outside every evening until darkness falls, then goes in the house and gets busy with needlepoint or baking. She’s always entertaining family and friends from other parts of the country, sharing her



love of the country life, making her guests comfortable almost to the point of not wanting to leave. But that probably has something to do with her Southern hospitality and home cooking. It is no surprise to learn that she still keeps in touch with the friends she made back in Basic Training.

Dolores Williams has had her share of ups and downs in life, but she never gave up. A self-proclaimed “fighter,” she firmly believes that there’s nothing she cannot accomplish, with the Good Lord’s help and guidance.

**A**nother courageous landowner who is not afraid to take a chance is Rosalind Peoples, retired English professor. She also lives, as she put it, “not a stone’s throw” from where she was born and raised, inheriting approximately 100 acres that had been passed down through the generations. As an only child – *and* only grandchild – she spent most of her formative years in the company of adults. Fortunately for her, much of this time was spent out of doors with her father and grandfather. She was allowed to tag along where ever they went: walking in the woods, exploring the hills and valleys of the Fayette County farm, listening to their stories of hard work and sacrifice. This upbringing not only nurtured her love of the outdoors, but also gave her a connection with the land itself.

Rosalind is indeed a landowner that truly LOVES the land, feeling that the land is a part of her, and she is a part of it. After she and husband, Grady, raised three children here on the farm, she now enjoys wandering these woods and hills with her four grandchildren – the same ones she walked with *her* granddad years ago – hoping to instill a similar love of and connection to the land in them.

Because of her deep-rooted personal convictions, she shares her story with other people as well. An extremely articulate speaker, she attempts to convince them of the intrinsic value of land, relating the empowerment and freedom that land ownership can afford. Working part time with Dr. Rory Frazier at Alabama A&M, she also enjoys being active with the AFC’s Outreach Council – the goal of which is to motivate small landowners in forestry practices. Because rural folks

with small acreage cannot always afford to travel and attend big conferences, they take the programs out to them, along with 17 demonstrations sites across the state. She applauds this group which she says is full of unselfish folks, willing to share their time and knowledge with others. Rosalind herself is a prime example of this “mentoring” experience: a demonstration at the Federation of Southern Cooperatives first interested her in raising goats, and Doris Smith, another small landowner from Marengo County was her mentor in this venture.

Rosalind smiled as she related how she and her husband arrived at where they are now. About six years ago, she had just retired when shortly thereafter, the company closed where Grady had



worked for years. They found themselves at one of life’s crossroads . . . what would they do? Would he start over and look for another job? It was at that time that they decided to take a gamble. They would see if they could live off the land, the way folks used to do . . . try to make the farm be self-sustaining. It was a little scary she admits, but, “The Good Lord has a plan for all of us, and we just have to live it out.”

Nowadays, they both pour their time and love into their small farm. In addition to a variety of fruit trees on the property, they produce fresh vegetables in the garden. They raise and sell Boer goats, Cornish hens, turkey, quail, and a variety of chickens and guineas. An interesting spin-off from the goats led them into the livestock guard dog business. The couple now sells both pure-bred Great Pyrenees and Anatolian Shepherd dogs. These two breeds are relatively rare in the South-

east, so they get calls from people in several surrounding states. They also raise beagles and rat terriers. Their most recent project, which she confesses took a good deal of persuasion on her part to convince Grady to try: raising pigs.

The good news is, their enterprise is growing and they have plans to add more kennels. There are always chores to be done, fences to build. The hours are long and the work is hard, but Rosalind says they are happier than they have ever been. Highly recommending country living, she thinks she and her husband are healthier than before – they both get plenty of exercise and fresh air. Out in the countryside as they are, she says that when she gets lonely for someone to talk to, she does what’s only natural after teaching English for 26 years . . . she quotes Shakespeare to the goats and dogs!

Rosalind’s mission is to pass on her love of the land using multiple-use management, “A forest is more than just trees, it is the land itself. It offers a marketable resource to the landowner with small acreage as well as the large landowner. Additionally, as small landowners we are blessed with the availability of assistance from a number of state and federal agencies. Although it takes years to grow trees, there is a variety of other things one can do with a small forest to supplement income in the mean time, whether

it’s raising goats, poultry, rabbits, or something else. You just have to be willing to diversify.”

She went on to say, “It’s tragic that over the last 75 to 100 years, there has been a massive loss of land ownership among black landowners. Perhaps being a small landowner was historically not always a positive experience. Consequently, many sold family land and found other ways to make a living. Here in America, we take much for granted, including the opportunity to own land. That privilege is often appreciated more by people in other countries, where it may be difficult or perhaps impossible to own even an acre. I simply want folks to understand that too much time and sacrifice have been invested to allow it to slip away.”

Rosalind Peoples not only teaches this lesson, she lives it. 🙏

# Bringing Beauty Inside:

## Collection Captures the Essence of Outdoor Alabama

Even Alabama's biggest outdoor enthusiasts haven't seen all this great state has to offer, so this year the Department of Conservation and Natural Resources is bringing some of that beauty inside, in hopes of inspiring more residents to get outside.

This spring, summer, and fall, a collection of winning images from the 2007 Outdoor Alabama Photo Contest will travel the state, highlighting the best in Alabama's natural beauty. The 21 winning color photographs were all taken in Alabama, by Alabamian amateur photographers, within the last two years. Plants and animals in the photos are all native to the state. The winners represent seven categories, including: scenic/pictorial, birds, mammals, reptiles/amphibians/fish, other wildlife, nature-based recreation, and flora.

The collection will make its debut at Birmingham Botanical Gardens in April. It will then move to the Montgomery Visitor Center for May, and beginning early in June, the winning photos can be seen in the new Delta Hall at Five Rivers in Mobile. From there, the exhibit will go to Lakepoint State Park in Eufaula, then on to Tuscaloosa, Huntsville, Joe Wheeler



State Park, and finally, Lake Guntersville State Park in January. In addition to traveling as part of this special display, the winning photos can be seen in the February 2007 issue of Outdoor Alabama Magazine, and are displayed on the ADCNR Web site at <http://www.outdoor-alabama.com/photos/oaphotos/07winners>.

The 2007 Outdoor Alabama Photo Contest and the traveling collection of the winning photographs are designed to draw attention to the spectacular scenery

Alabama has to offer. From water and wildlife, flora and fauna, breathtaking views and nature-based fun, these snapshots showcase the land and life Alabamians love. The goal of the exhibit is to raise awareness of and appreciation for Alabama's natural beauty – that it's always here and always available to everyone, even in the hearts of our cities.

Dates and locations of the exhibit are listed below. Hours vary; call to verify. ☎

### Montgomery

Friday, May 4 – Monday, June 4

Montgomery Visitor Center

(Downtown in historic Union Station)

300 Water Street, Montgomery

334-262-0013 or toll-free 1-800-240-9452

### Mobile

Friday, June 8 – Monday, July 9

Delta Hall at Five Rivers – Alabama's Delta Resource Center

30945 Five Rivers Boulevard, Spanish Fort

251-625-0814

### Eufaula

Thursday, July 12 – Tuesday, July 31

Lakepoint State Park - Park Office/Info Center

104 Lakepoint Drive, Eufaula

334-687-8011 or toll-free 1-800-544-5253

### Tuscaloosa

Wednesday, August 1 – Tuesday, August 28

Junior League Gallery of the Bama Theatre

600 Greensboro Avenue, Tuscaloosa

205-758-5195

### Huntsville

Saturday, September 1 – Monday, October 1

Linda Smith Visitors Center, Boeing Education Classroom & Anderson Education Center,

Huntsville Botanical Gardens

4747 Bob Wallace Avenue, Huntsville

256-430-3572

### Rogersville

Thursday, October 4 – Thursday, November 1

Joe Wheeler State Park - Park Resort

4401 McLean Drive, Rogersville

256-247-5461 or toll-free 1-800-544-5639

### Guntersville

Friday, January 4 – Thurs., January 31, 2008

Lake Guntersville State Park - Park Lodge

1155 Lodge Drive, Guntersville

256-571-5440 or toll-free 1-800-548-4553

## ATFA Forest Landowners' Conference and Wildlife/Forestry Festival is to be held in the Mobile area, November 2-3, 2007



Mark your calendars for November 2nd & 3rd, 2007. You do not want to miss this event!





*By Joe Copeland*

The Forever Wild Land Trust was created by a constitutional amendment in 1992 with the approval of 83% of Alabama voters. It is administered by the State Lands Division, part of the Alabama Department of Conservation and Natural Resources. The creation of the Trust was due to the recognition by legislators and citizens that the state is losing much of its wild lands to development and population-related pressures, and that the best of these needed to be preserved. Since its inception, Forever Wild has purchased 55 tracts that total over 120,000 acres, with several tracts currently under consideration. Land is purchased for (1) wildlife management areas, (2) additions to state parks, (3) nature preserves, and (4) natural recreation areas.

All properties purchased are public lands and are open to the public for use within the guidelines of the management plan for each tract. Any citizen of the state can nominate a tract of land for purchase, whether they or someone else owns that tract. Once a tract is nominated, the landowner is contacted and asked if they are a willing seller. If the landowner is not interested in selling, no further action is taken. If the landowner is willing to sell the tract, that tract is "scored" by the Natural Heritage Section of the Lands Division and a decision is made whether to present the tract to the Forever Wild Board for further consideration. The Forever Wild Board has four public meetings each year in various locations throughout the state to conduct business including tract acquisitions. For more information concerning the nomination and purchase process you may contact the Natural Heritage Section at

Alabama Department of Conservation and Natural Resources - State Lands Division  
64 North Union Street, Suite 468  
Montgomery, AL 36130  
Telephone: (334) 242-3484

Forever Wild is funded through a portion of the interest earned from monies received from the offshore gas and oil leases on state lands. The Natural Heritage Section has done a great job of leveraging these funds through federal grants that match state funding to purchase land for conservation. Also, the city or county where a tract is located, as well as conservation organizations are often willing to help fund a purchase.

Two of the largest tracts purchased to date are the 12,510-acre "Walls of Jericho" tract in north Jackson County and the 35,975-acre "Mobile-Tensaw Delta" tract in Mobile and Baldwin Counties. Three recent purchases of note are the 2,310-acre "Perdido River Longleaf Hills" tract in Baldwin County, the 2,433-acre "Post Oak Flat" tract addition to the Walls of Jericho and a 1,533-acre addition to the Mobile-Tensaw Delta Tract. For more information on Forever Wild tracts or any other information concerning the program, log onto <http://www.outdooralabama.com/public-lands/stateLands/foreverWild/>.

You can assist Forever Wild in furthering its goals by purchasing a Forever Wild license plate for your vehicle(s). The license plates are available at all county courthouses and annexes, and you can personalize your tag with up to six letters or letter/number combinations at no additional cost. For more information concerning the Forever Wild tag, contact Joe Copeland at 256-287-1652 or [joec@powernet.org](mailto:joec@powernet.org).

## Forever Wild Adds 20 Acres to Coldwater Mountain Tract in Calhoun County

Twenty additional acres of mountain longleaf pine habitat are now part of Forever Wild's Coldwater Mountain Tract in Calhoun County. The Rowan Tract will eventually contain an extensive mountain bike trail system.

The 20-acre parcel is an addition to the original 4,000-acre Coldwater Mountain Tract purchased by Forever Wild in 1998. That property was dedicated as the Doug Ghee Nature Preserve and Recreation Area, named after the former state senator who is a strong supporter of the Forever Wild Program. The Coldwater Mountain Tract secures a large portion of the local watershed for Coldwater Spring, a unique ecological environment and source of drinking water for local municipalities. The additional 20 acres secures a ridge route for future trail development.

The State Lands Division of the Alabama Department of Conservation and Natural Resources is managing the forested property. Assistant Division Director Greg Lein says that although this acreage is small, its potential for recreational use makes it a key part of the Coldwater Mountain Tract. "The purpose of Forever Wild is to make sure that lands are put aside for public use, and the Rowan Tract will specifically be used for mountain biking and hiking opportunities," he said.



# Partnerships for Conserving Open Spaces

*By Walter E. Cartwright, Assistant Forest Management Division Director, Alabama Forestry Commission*

**A** recent USDA Forest Service Report (FS-861) indicates that we are losing 6,000 acres of open space (forests) in the United States each day, or about 4 acres per minute! More people are selling their land for development, and homeowners want more acreage and fewer neighbors, which further fragments our forests. One local ad in Montgomery for a new development claims that buyers will have abundant woods, water, and wildlife with lots starting at \$64,000 for one acre, to who-knows-how-much for 2.5 acres. What they do not say is that in a few years, you will have a whole subdivision of new neighbors and all that “open space” will be a distant memory. All they will see is more houses, more noise, more traffic, and construction for years.

Another way to lose open space is by way of fragmentation, which occurs through land divisions to heirs and sales to pay inheritance taxes, thus making the average ownership even smaller. In Alabama, we have over 440,000 non-industrial landowners, who own an average of 55 acres or less. We expect to see even more land division and develop-

ment as the major forest industries have divested their land holdings in the state. Those lands are being managed by Real Estate Investment Trusts (REITs) and Timber Investment & Management Groups (TIMOs) for a profit to shareholders. Hopefully, they will apply good stewardship principles in their management plans for several million acres of productive forests in Alabama.

In 2003, USDA Forest Service Chief Dale Bosworth identified the loss of open space as one of four great threats to our nation’s forests and grasslands. That loss affects the sustainability of both public and private forests which provide a multitude of benefits, including wood products, fiber, wildlife,

recreation, clean air, clean water, and other “ecosystem services” that are being discussed and traded worldwide today. To find solutions from all shareholders, the Forest Service is developing an Open Space Conservation Strategy and Implementation Plan which will help develop the agency’s role in conserving open space nationally. Notice was published in the federal register, and public comments were accepted through December 13, 2006. For more information, email [openspace@fs.fed.us](mailto:openspace@fs.fed.us).

## INTERESTING STATISTICS

- Increase in bird watching participation in U.S. from 1982 to 2001: 236%
- Amount spent by birdwatchers to further their interest in 2001: \$32 billion
- Miles of road in the U.S.: 4 million
- Number of vertebrates run over by cars each day: 1 million
- Number of invasive plant species in the U.S.: 2,000
- Cost to the public of invasive species per year: \$120 billion
- Percent of endangered species at further risk from invasive species: 46%
- Number of off-highway vehicle users in 1972: 5 million
- Number of off-highway vehicle users in 2000: 36 million
- Largest single source of water in the U.S.: National Forests

*-- from the USDA Forest Service’s “Cooperating Across Boundaries - Partnerships to Conserve Open Space in Rural America”*

Recognizing that it is not the only entity that actively conserves open space, the Forest Service cannot regulate development or land use, but *can* provide expertise, resources, and programs to assist landowner and other partners in conserving more open spaces. The Conservation Fund was asked to set up three regional Roundtable Dialogue Listening Sessions in Chapel Hill, North Carolina; Denver, Colorado; and Washington, DC to bring together a diverse group of partners and record feedback on how the Forest Service can most effectively contribute to a national effort for conserving open spaces.

In my Economic Development role in the Management Division of the Alabama Forestry Commission, I attended the session in Chapel Hill. Other groups represented included The Conservation Fund, National Wild Turkey Foundation, USDA Forest Service, Cierra Publishing Company, Georgia Forestry Commission, Southern Environmental Law Center, Mississippi Forestry Commission, Land Loss Prevention Project, Handmade In America, Virginia Department of Forestry, North Carolina Forestry Association, North Carolina League of Municipalities, North Carolina Division of Forestry, Meridian Institute, Sandhills Area Land Trust, Conservation Trust for North Carolina, and two local community development groups.

Discussions at the session were very open with all participants providing good comments, recognizing that all are concerned about the same issues and are willing to work together as partners to conserve rapidly declining open space. Deliberations focused on three key areas of concern:

- Private forest lands and surrounding landscapes
- National forests, grasslands, and surrounding landscapes
- Urban forests and surrounding landscapes

Topics included tools currently being employed (Stewardship, Legacy, Cooperative Forest Health, Southern Pine Beetle Prevention & Restoration, Forest Land Enhancement Program, and Rural Economic Action Programs), most effective tools now or past (economic action and forestry incentives programs),

and new tools or techniques that could be employed or developed to conserve open spaces.

Recommendations from the listening session in Chapel Hill included:

- Funding for old programs that worked to create new forest land (Forestry Incentive Program and Stewardship Incentive Program)
- Timber crop insurance (federal insurance) for natural threats to forests (weather, insects, disease)
- Funding to continue programs already in place through state forestry agencies, Natural Resources Conservation Service, and Farm Service Agency
- Research and development of technologies to convert woody biomass to energy
- Alternative incomes from forests (recreation, carbon credits, and other “ecosystem services”) to offset landowners’ management expenses
- Redirect funding for ALL federal forestry-related programs through USDA Forest Service to state forestry agencies
- Landowners need to be more involved in their local communities’ development process
- More active management on national forests, using income to fund stewardship programs on adjoining private forests
- More aggressive tax incentive programs for private landowners
- Environmental Protection Agency subsidy to private landowners to maintain healthy forests for land conservation, air quality, water quality, habitat for wildlife, and threatened & endangered species
- Manage “pockets” of urban forests and expand urban forests programs
- Utilize the state forests to educate the public with handouts, publications, and promotional items
- “Get Involved” with task forces, committees, boards, and associations that deal with environmental issues that impact forest resources, because “If you are not part of the process, you may be processed!” ☛

**For current  
information on the  
Southern Pine Beetle  
situation in Alabama,  
visit our web page at:  
[www.forestry.state.al.us](http://www.forestry.state.al.us)**

## The Evolution of Forest Certification and “Sustainable Forestry”

*(Continued from page 8)*

group certification to landowners that are already under management provided by a group manager.

Number four, landowners need to look at each of these programs carefully. The Alabama Forestry Association will post to its [www.alaforestry.org](http://www.alaforestry.org) website, under the members section, an in-depth continuing education program specific to the details of each of these certification systems. The Association website will also provide links to other sites that provide insight to forest certification.

Number five, consider the familiar green and white sign of good forestry. Tree Farm has been around since 1942 and has gone through significant changes. Over 1,600 Alabama landowners are already involved, managing over six million private acres of “certified forests.” Some recent changes include meeting the standards for international certification and providing guidance for administering group certification through the American Forest Foundation. ☛

### **Find Out More:**

[www.alaforestry.org](http://www.alaforestry.org)  
[www.af&pa.org](http://www.af&pa.org)  
[www.treefarmssystem.org](http://www.treefarmssystem.org)

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Forest Certification Auditing: A Guide for Practitioners. *Society of American Foresters*, 2005c.

Task Force on Forest Management Certification Programs, 1999 Report. *Society of American Foresters*.

# Blackberry

(Continued from page 32)

of tasty and nutritious fruit from spring through late summer. Juicy berries are preferred, but even dried berries left on the canes into fall and winter are eaten. Both game and non-game birds enjoy the fruit including dove, turkey, cardinals, robins, orioles, brown thrashers, red-headed woodpeckers, thrushes, and the towhee. Other animals that like the fruit are opossums, raccoons, squirrels, foxes, chipmunks, coyotes, mice, and black bears. Deer and rabbit browse the stems and tender leaves. Butterflies, bees, moths, and other insects feed on the nectar of the flowers in spring.

As evident in the popular children's tale, "Brer Rabbit," the dense thickets of blackberry canes also provide home and cover for many small animals including rabbits, birds, foxes, and small birds.

Blackberries have long been known for their healing properties. For thousands of years, Europeans have been

gathering them from the wild for food and medicinal purposes. The ancient Greeks called the plant "goutberry" as it was used to lessen gout-related joint pain. It is also able to sooth the symptoms of diarrhea. It was believed that crawling through the brambles would cure boils, rheumatism, and whooping cough. Native Americans used the plant to make teas to treat dysentery, cholera, and upset stomach.

Almost all parts of the blackberry plant are edible and can be used for food or medicinal purposes. Rich in vitamin C and other vitamins and anti-oxidants, along with minerals such as potassium, phosphorus, iron, and calcium, the fruit is also a good source of dietary fiber. The berries make excellent jelly, pies, wine, and vinegar. Blackberry jelly and wine were considered fine cordials, especially with the addition of a little brandy.

Young stems can be peeled and eaten raw or cooked and even put into salads. Blackberry tea can help prevent dehydration by replenishing lost fluids, and it can be gargled for sore throats. The leaves can be chewed to cure bleeding gums, as well as for treating inflammation of the mouth and throat. It is also recommended as an astringent.

American Indians made a strong rope out of blackberry stems. The berries, leaves, and roots can dye fabrics any color from yellow to gray, purple, or green. You can even make a writing ink out of the berry juice.

Whether you want to encourage blackberries on your property for your own use or for the local wildlife, there are management practices that you can implement to encourage them on your land. Contact your local Alabama Forestry Commission office or a wildlife biologist for more information. ♣

## Managing Shallow Water Areas for Waterfowl

(Continued from page 15)

sprout from seeds in place naturally. Some of these natural foods include smartweed, sedges, barnyard grass, ragweed, and beggar ticks. Japanese millet – closely related to wild barnyard grass – is a cultivated plant that needs no disking. It can be planted to supplement natural foods simply by overseeding mud flats that are created soon after the water has been drawn off.

Common rushes, shrubs, and trees will begin to invade a shallow water area within a few years. For this reason, it will be necessary to disk or herbicide the area to keep these unwanted plants from taking over. This should be done at least once every three years.

Agricultural seed can be planted by those that have the time and money. While corn is popular for ducks, milo tends to be a better choice in many situations. It has nearly the same food value as corn. Milo is also more drought tolerant and less likely than corn to suffer damage from deer, raccoons, and other critters. Chufa, known as an excellent turkey planting, is another good food source for ducks. All three of these

choices provide high energy fare for many species. Soybeans, on the other hand, are a poor choice for ducks. They provide comparatively low energy value and also deteriorate very quickly after being flooded. As with any supplemental food source, fertilizer and lime should be applied at planting per soil test results.

Of course, the flatter the land, the better the results when it comes to a cost effective duck management flooding unit. Technical assistance is available by contacting your local USDA Natural Resources Conservation Service field office. They can provide assistance with soil maps and soil cores that can help you determine whether your particular spot will hold water without seepage. They can also run a simple waterline to show you exactly how

much area your levee will flood. Remember, the average depth will only need to be 18 inches for best waterfowl use.

In the next issue of *Alabama's TREASURED Forests* magazine we will discuss cost-share and easement options available for waterfowl habitat under the Wetland Reserve Program. ♣



This photo shows a flashboard riser water control structure that has been placed in a newly-constructed levee.

# Alabama Forestry Camp 2007

By *LaKedra Byrd*, Outreach Forester, Alabama Forestry Commission

**T**he 2007 session of Alabama Forestry Camp, in its tenth year, is coming up soon. Held at the Federation of Southern Cooperatives facility near Epes, Alabama, in Sumter County, the camp will run from Sunday, June 3 through Thursday, June 7.

This five-day camp for high school students interested in forestry, conservation, and/or natural resources is designed to introduce basic forestry concepts through classroom instructions and outdoor activities. However, the week is not "all work and no play." There are also fun evening activities and recreation. The purpose of Alabama Forestry Camp is to have a positive learning experience.

At this year's camp, students will participate in sessions covering tree identification, forest management, forest products, wildlife, water quality, urban forestry, and forest history. There are also off-campus visits to recreational parks, a private landowner's property, and forest industry facilities. During Career Night, students will have the opportunity to talk to college recruiters about careers in forestry and natural resources. The final day of the camp includes a graduation

ceremony and luncheon for students, instructors, counselors, and family members. All students will receive a certificate of completion of the camp.

Open to both boys and girls, students must be 15-18 years old and completed the 9th grade, but not graduated from high school. Camp participants will be housed in dormitories with 24-hour adult supervision. Each attendee is responsible for providing his or her own transportation to and from camp. All other transportation, meals, and snacks will be provided. The application should be completed and signed by both student and parent. All applications must be postmarked by April 15, 2007. Space is limited. Applicants selected to attend Alabama Forestry Camp will be required to pay a \$25.00 non-refundable application fee.

If you know of someone interested in attending Alabama Forestry Camp, have them call any county office of the Alabama Forestry Commission for



Photo by Kelvin Daniels

an application or for more information. Applications are also available on the AFC website at [www.forestry.state.al.us](http://www.forestry.state.al.us).

## Primary and Secondary Forest Industry Information

The Alabama Forestry Commission collects information on primary and secondary wood-using industries and maintains a current database under the "Market Resources" tab on our website at [www.forestry.state.al.us](http://www.forestry.state.al.us). This information is available to the public, free of charge. It is a valuable resource for landowners seeking timber markets, consultants seeking clients for sales, economic developers assessing the market for forest products in their areas, new and existing forest industries seeking new market areas for expansion, and other natural resource professionals for research into ecosystem services provided by Alabama's 23 million forested acres. Industries can be searched by county, industry type, products produced, or company name. ♻️

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# Blackberry

*Rubus spp.*

(Bramble, goutberry, dewberry)

By Coleen Vansant, Public Information Manager, Alabama Forestry Commission

There's one thing you can never hide...the fact that you've been in a blackberry patch. Whether it's purple stained fingers from picking them or purple teeth from eating them, there is always undeniable evidence of where you've been. For most people raised in the country, blackberries are just a part of growing up. The deep purple berries are irresistible and more than worth the trouble you go through to get them: fighting briars, bugs, and summer heat for just a handful. Humans are not the only species that enjoy the juicy sweet berries; many species of wildlife and birds also enjoy and depend on them.

Blackberry vines and bushes are native to every continent except Australia and Antarctica. One of the most diverse flowering plants in the world, the genus *Rubus* is very difficult to identify into an individual species because the old natives have intercrossed themselves in the natural state. In the Eastern U.S. there are about 26 different species. Both blackberry and raspberry are in the *Rosaceae* or rose family.

This perennial, sprawling woody shrub produces long arching canes covered with thorns. These canes form dense thickets, as they root when they come in contact with the ground. Above-ground growth begins in two stages. The first year growth (primocane) grows as an un-

branched large stem with leaves, but does not bear flowers. The second year growth (floricane) produces a different set of leaves with flowers and fruit. Because it is so prolific, it can become highly invasive. The thorns on the native blackberry plants protect the plant from animals and birds eating the vines before the berry bushes flower and produce fruit.



The blackberry leaves are arranged alternately along the stem with each leaf having three to five leaflets. The compound leaves are heavily toothed on the edges, somewhat prickly and bright green in color. Blackberry and raspberry plants may be difficult to tell apart; however, blackberry leaves are light green on the underside, while raspberries have silvery undersides.

Flowers, appearing in late spring to early summer, are white to pale pink with

five petals and many stamens, strongly resembling a wild rose. Blackberry flowers generally have larger petals than raspberries.

Fruit first turns green, and then red, then purple or black as it matures. It is an aggregate of drupelets, elongated and round, sweet and edible. Blackberries retain the receptacle within the fruit at harvest. Fruiting begins in the second year of the plant and continues for ten or more years. Fruit development takes 40-70 days for blackberries and 30-50 for most raspberries.

Blackberry is not really particular about where it grows, tolerating dried conditions and a variety of soil types. It does not like dense shade and will generally occupy old fields and woodland clearings, gradually disappearing as the forest returns. It is also found in gullies, along creek banks, roadsides, fencerows, and forest margins. Blackberries adapt better to the south's hot, arid summers than raspberries.

Some wildlife biologists believe blackberry to be one of the most important naturalized growing plants for wildlife food. It is one of the most abundant soft mast foods due to its succulence, high sugar, and vitamin content. The fruiting cycles of native blackberries and dewberries provide wildlife a supply

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