



DON SIEGELMANGovernor, State of Alabama

NE OF Alabama's greatest assets is her unique natural heritage. We have made great progress in attracting to our state the finest businesses from around the world, and this continued economic growth depends upon ensuring Alabama's quality of life. We must preserve and protect Alabama's beauty, natural resources and natural heritage to ensure our state's future.

To that end, I recently signed an executive order creating the Alabama Commission on Environmental Initiatives. This commission is charged with the research and development of quality options and alternatives conducive to the long-term preservation of Alabama's natural environment. In addition to creating the commission, this executive order encourages the coordination of public and private efforts that help to relieve the environmental, physical and financial losses already experienced by many Alabama counties.

Among goals the commission will work to achieve are the improvement of water and air quality standards and the removal of Alabama's top-10 ranking among states for air emissions and toxic water discharges estimated for the year ending 2004.

The commission will meet quarterly and conduct public hearings through which Alabamians may offer ways to improve the state's quality of life. Its findings are due by Jan. 15, 2001.

I have named State Forester Timothy C. Boyce, along with other natural resources officials, to serve on the commission, and I am eager for the Forestry Commission's assistance in helping the Commission on Environmental Initiatives reach its goals.



TIMOTHY C. BOYCE State Forester

RECENTLY I was named by Governor Siegelman to the Alabama Commission on Environmental Initiatives. I welcome the opportunity to work with other environmental and community leaders to help encourage the long-term preservation of Alabama's natural environment. Here are some of the issues we will be addressing:

- Development, implementation and improvement of water quality and air quality standards;
- ☐ Identification of environmentally sensitive areas and the development of strategies to protect these areas;
- ☐ Examination and recommendations regarding the adoption of laws creating a vehicle emissions inspection program particularly in non-attainment counties in Alabama;
- ☐ Strategies for the restoration and renovation of Alabama's State Parks;
- Development of projects to clean up Alabama's roadsides, rivers, streams and lakes;
- ☐ Development of the necessary authority to enable the Alabama Department of Environmental Management to stop damaging runoff into Alabama's lakes and rivers;
- Possible reform or restructuring of the Alabama Department of Environmental Management to increase the department's accountability to the people of Alabama;
- Development of strategies to promote and preserve Alabama's biodiversity; and
- ☐ Development of strategies to remove Alabama from the list of top 10 states in toxic air emissions and toxic water discharges by the end of 2004.

The Commission will meet quarterly and hold public meetings to involve the citizens of Alabama and receive their input. I commend the governor for taking the initiative to help protect Alabama's natural resources.



Vol. IX, No.3

Summer 2000

Governor

Don Siegelman

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James D. Spears

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Alabama Forestry Planning Committee

- School of Agricultural and Environmental Sciences, Alabama A&M University
- Alabama Cooperative Extension System
- Alabama Department of Conservation and Natural Resources
- Alabama Department of Education, Vocational Division, Agribusiness Education
- Alabama Farmers Federation
- Alabama Forest Resources Center
- Alabama Forestry Association
- Alabama Forestry Commission
- Alabama Soil and Water Conservation Committee
- Alabama TREASURE Forest Association
- Alabama Wildlife Federation
- Association of Consulting Foresters, Inc., Alabama Chapter
- Alabama Agricultural Experiment Station, Auburn University
- College of Agriculture, Auburn University
- School of Forestry and Wildlife Sciences, Auburn University
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- USDA-Farm Service Agency
- USDA-Rural Development
- USDA-Forest Service,
 National Forests in Alabama
- USDA-Forest Service, Southern Region, State and Private Forestry
- USDA-Natural Resources Conservation Service

The Alabama Forestry Commission supports the Alabama Forestry Planning Committee's TREASURE Forest program. This magazine is intended to further encourage participation in and acceptance of this program by landowners in the state. Any of the agencies listed above may be contacted for further information about the TREASURE Forest program.

Editorial Board

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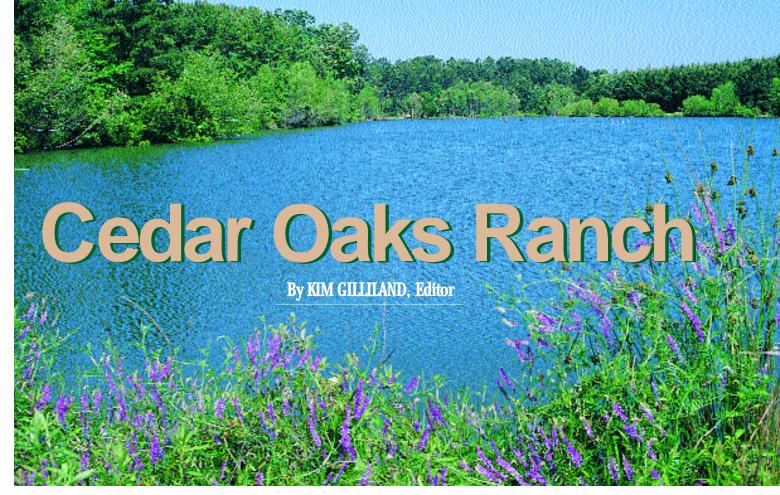
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COVER: The passionflower vine (*Pasiflora incarnata*) contains large, fringy flowers that bloom in Alabama's forests June through September. The fruit of this perennial plant is a berry 2-3 inches long that makes a loud popping sound when stomped upon; hence, the plant's other common name, the maypop. Photo by Kim Gilliland.

Alabama's TREASURED Forests (ISSN 0894-9654) is published quarterly by the Alabama Forestry Commission, 513 Madison Avenue, Montgomery, AL 36130. Telephone (334) 240-9355. Bulk rate postage paid at Montgomery, Alabama. POSTMASTER: Send address changes to: Alabama's TREASURED Forests, P.O. Box 302550, Montgomery, AL 36130-2550.

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"Forestry for Youth 2000" brought local seventh graders to the property. Among other topics, they learned about pond management and the food chain.

S THE bidding began on the steps of the Bullock County
Courthouse, Jane James and Maurite Scanlan nervously sized up
their competition. They were the only women there to bid on a
piece of property that was up for auction. Weeks earlier, they
had tried to buy the parcel from the group of seven owners, but
could not come to a mutual agreement with them. Some time
later, the owners had the land taken away from them because of delinquent
payments. That meant the property would go up for auction.

After months of scouring for land within a 100-mile radius, Jane and Maurite had their hearts set on this particular piece of property. But would



Jane James and Maurite Scanlan



One hundred acres of pines were planted on former cattle grazing fields.

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it be financially within their reach?

Maurite held a note pad where they had figured up the cost per acre at different prices. Jane would act on their behalf as bidder, while Maurite kept an eye on the numbers. They had agreed on a top price, and as the bidding edged ever closer to that figure, their hearts began to sink. One by one, others quit bidding, until it was just the two women and another bidder. Finally the bidding stopped at their top price, only it was the other bidder who had the advantage. They looked at each other and knew if they were to get that land, it would take a little more money than they had originally planned. Maurite elbowed Jane and gave her the okay to go a little higher. Jane made one more bid and they came out on top. The 360 acres was theirs!

The Work Begins

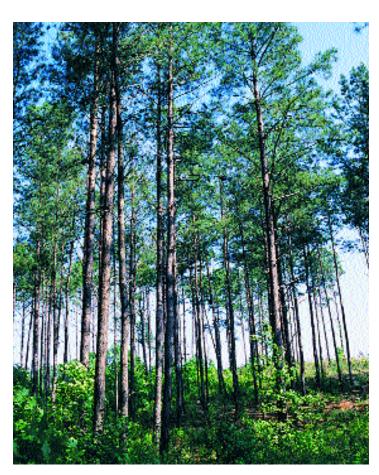
Now that they owned the property, they began to manage it. Since that day in 1989 when they became partners, they've come a long way. First on the agenda was to selectively cut some of the timber to gain income and increase productivity of the timber stands already present. They also began planting both pine and hardwood seedlings.

Jane and Maurite say they prefer to select cut instead of clearcutting, but had to clearcut a small parcel when Southern pine beetles were discovered a couple of years ago. They feel lucky to have escaped invasion of the bark beetle for so long, and attribute part of the reason to the fact that they break up their pine plantations with hardwood plantings. The hardwoods serve as both buffer zones and wildlife corridors and add to the diversity of their TREASURE Forest.

Several acres of the property had been leased for cattle grazing before they bought the land, and they continued this practice for several years. In time, this land has been converted to trees as well. In 1991, they contracted with Frank Brabham to plant 100 acres of improved

loblolly pines. Uncooperative weather would not allow burning the land for site preparation, so they decided to bushhog the area instead. Before the planting began, Jane and Maurite rode over the area on horseback to scout out rough terrain and large potholes. Then each took turns on the tractor, bushhogging directly in front of the tree-planting machine. After the initial planting they continued to bushhog in between the rows three times a year for two years instead of using herbicides for grass control. The survival rate for the seedlings was "incredible," says Jane. "No one can believe they're nine years old." When finished planting the 100 acres, they still had seedlings left over. Always innovative, the ladies had the leftover seedlings planted in the shape of a C and an O as an abbreviation for Cedar Oaks Ranch.

Much of the 360 acres was without roads, so that, too, became a priority. They hired someone to construct firelanes and roads both around the perimeter and



Mature pines were selectively cut to increase productivity of the stand.



Trees such as this shagbark hickory have been identified along the dendrology trail.

internally. "You can't have enough firelanes as far as we're concerned," says Jane. In addition to roadwork, trails for horseback riding and walking were also developed. "All along, Jane and I were making trails," says Maurite. "We maintain all our firelanes," she adds. Each firelane is numbered with an easy-to-read sign. This way, explains Jane, they are able to keep track of where family members are or where to send workers.

Learning and Working

When it came time to do their first prescribed burning, Jane and Maurite were eager to help and learn all they could. Former Forestry Commission ranger Wayne Roberts conducted their first prescribed burn. Three years later, Bullock County Manager Bill Clem supervised a burn and since then they've done some burning on their own.

To improve forage for wildlife, Jane and Maurite decided to plant 1,000 bicolor lespedeza seedlings. They gathered three other family members and planted them all by hand, a much bigger job than anyone had anticipated. That experience led to purchasing a seeder, and they found it to be just as effective in establishing lespedeza plants. Luckily, many plants beneficial to wildlife were already on the property. An abundance of crab apple and wild plum trees provide soft mast for wildlife.

Another project was to plant 11 acres of hardwood seedlings four years ago. Sawtooth oak, overcup oak, cherrybark oak, Shumard oak and yellow poplar were the main species planted.

It took several years to get the property ready for TREASURE Forest status, and they reached that goal in June 1993. Continued management and improvements led to Cedar Oaks Ranch being named the Helene Mosley Memorial TREASURE Forest Award winner for the southeast region in 1999.

County Manager Bill Clem praises the two women for all they've accomplished. "They've learned by experience and by sharing with and helping others," he said. "They pretty much started from ground zero. They've done things in stages and it's just now sort of jelled. You can see their love and appreciation for the property."

"We never dreamt we'd be where we are," said Jane. Both agree that all the



Native foods like wild plums are abundant at Cedar Oaks Ranch.

work has been a lot of pleasure as well. "You're constantly learning new things," adds Maurite. "You're building memories."

Environmental Education

Maurite and Jane both became active members of the Bullock County Forestry Planning Committee and were instrumental in helping form a county chapter of the Alabama TREASURE Forest Association. Their involvement with the two groups inspired them to use their property to educate local youth about the importance of forestry.

They started on a small scale about three years ago and began giving tours to different age groups. On May 4 of this year, two busloads of seventh graders visited the property. They had a walking tour of the property where stops were made on wildlife, tree identification, the history of forestry and how trees work, pond management, and an enviroscape model. In addition, they watched as logs were sawed by a portable sawmill and saw a birds of prey program put on by the Montgomery Zoo. Members of the planning committee and local agency personnel acted as group leaders and cooked lunch for the students.

The dendrology trail is an impressive part of Cedar Oaks Ranch. Approximately 40 trees have been identified along the trail, which is situated in an area of mature trees, mostly hardwoods. For each

tree identified, a laminated information sheet has been mounted on a cross-section of a tree that is attached to a post. The signage is durable and attractive. In addition to tours, the tree identification trail is used by local 4-H teams to train for forestry competitions.

"We enjoy it just as much as they do," says Maurite of the student tours. One of their goals is to spark an interest in young people to possibly go into the field of forestry.

Recreation

Jane and Maurite both enjoy horseback riding, as do other members of their family. Cedar Oaks is used for many different recreational activities including fishing, hiking, hunting, picnicking and camping.

There were several small ponds on the property when Maurite and Jane purchased it, but they wanted something bigger. A large gully near the middle of the property provided a natural area to construct a 12-acre pond. The large, irregularly shaped pond is the centerpiece of the property. An island was left at one end for waterfowl to use. Recycled materials were used to build a dock, and a small amphitheater provides seating for about 25 near the water's edge. Once a year they have a "fishing rodeo" where family and invited friends can catch and keep all the fish they want.

Their families enjoy working and playing on the property. "All of our adult children have pitched in and enjoy it as much as we do," said Jane. She and husband Tom have two children. Son Morgan, who is married to Ashley, is a forester. His exposure to forest management at Cedar Oaks helped him choose forestry as a profession. Daughter Tiffany is married to Bill and they have one child and are expecting another. Maurite and husband Joe have three children: Jeanine and husband David have two children; Greg and wife Nan have one child; and John and wife Sharon have one child.

Managing Cedar Oaks according to the TREASURE Forest management plan is a lot of work, both Jane and Maurite will attest. But they love every minute of the effort. That dedication to making it better is what makes Cedar Oaks Ranch one of Alabama's premier TREASURE Forests.



LEGISLATIVE • ALERT

By JAY JENSENWashington Office
National Association of State Foresters

OME READERS may not be aware that Alabama's TREASURE Forest Program, started in 1974, served as the blueprint for the nation's forest landowner technical assistance program, the Forest Stewardship Program. Where the TREASURE Forest Program is sponsored by the Alabama Forestry Planning Committee with administrative responsibilities carried out by the Alabama Forestry Commission, the Forest Stewardship program is carried out by the state forestry agencies with financial and technical assistance from the USDA-Forest Service.

The Forest Stewardship Program (FSP), brought to life through the 1990 Farm Bill, helps private forest landowners to develop long-term plans for their forests at little to no cost that take into account water quality, wildlife habitat, and wood production goals. And when available, cost-share assistance can be provided through the Stewardship Incentives Program (SIP) or the Forest Incentives Program (FIP) to help implement those goals. Over 130,000 plans are currently in place, covering 16.5 million acres of forestlands.

Forest Landowner Assistance in Context

A recent study has shed light on the value and effectiveness of the FSP and puts the TREASURE Forest Program in similar context. The Northern Illinois University's Center for Governmental Studies released a study in February of this year showing that the FSP is reaching new forest landowners who are implementing their forest management plans and investing in their forests as a result of the program.

The study, conducted by Dr. J. Dixon Esseks from Northern Illinois University

and Robert J. Moulton, an economist with the USDA-Forest Service, showed that 92 percent of those surveyed who enrolled in the FSP said they were still actively involved in implementing their Forest Stewardship Plans. Two thirds said that prior to their involvement with the FSP, they had had no previous professional land management assistance. Results such as this prove the value and importance of forest landowner assistance programs in encouraging good forest stewardship.

"This study confirms what we've seen in the field," said Stan Adams, North Carolina state forester and president of the National Association of State Foresters. "The FSP is reaching out to a large segment of the forest landowning public and getting them to take an active interest in managing their forests. With thousands of people acquiring forestland every day, this outreach effort must be redoubled to ensure that these private forests are managed well for their current owners and for future generations."

Survey participants also indicated that getting involved in the Forest Stewardship program had prompted them to make investments in forest management. Nationwide, survey respondents said they had invested an average of \$2,764 to implement their Stewardship plans. Ninety-four percent of those surveyed said they would recommend the FSP to friends or family.

"This study shows that once landowners get some professional help in managing their lands, they come to understand the value of that assistance and they understand the value of forest management," Adams said. "We also found that landowners sometimes need financial help to implement needed practices. We're looking at options at both the state

and national level to provide those financial incentives."

The study further revealed that landowners were nearly three times as likely to start implementing their forest management plan and twice as likely to implement more than one plan objective when cost-share assistance money is available.

Over 9 million non-industrial private forest landowners own almost two thirds of the nation's forestlands. These lands produce more than half the wood fiber harvested in the United States annually.

There are more forest landowners than farmers in the United States, and the value of the timber crop alone delivered to mills is higher than the value of any single row crop like wheat, corn, or barley.

Stewardship Appropriations

The National Association of State Foresters (NASF) has been utilizing the FSP study as justification and rationale to show the effectiveness and value of programs that help forest landowners accomplish their management goals. The implementation of management plans produce public goods beyond the goals of each individual landowner such as clean air, clean water, scenic vistas and improved wildlife habitat. Assisting the private landowner with proper forest stewardship more than justifies the expenditure of federal dollars on private lands and the study helps show this.

It appears that members of Congress agree that the FSP is a valuable tool to assist the private landowner and the general public. Preliminary numbers for fiscal year 2001 show a \$2 million increase for the nationwide program, bringing the funding total to \$31.454 million.

Unfortunately, the value of forest costshare programs does not appear to have sunk in as much. Initial indications show that the Stewardship Incentives Program and the Forest Incentives Program will both be funded at last year's level, a disappointing goose egg for SIP and a flat \$6.325 million for FIP.

The state foresters have been supporting the FSP and FIP at levels of \$36.5 million and \$25 million respectively and are currently in the process of developing a new cost-share program that will hopefully garner new support and replace the

Continued on page 27

Travelog Worldwide Destinations for Alabama Forest Products

By BRIAN DAVIS, Alabama International Trade Center, The University of Alabama

T'S NOT the kind of story that makes for big headlines. It doesn't involve a ribbon-cutting ceremony with officials breaking ground at Alabama's newest auto manufacturer. Most people don't even see it. But it's growing right in your forest. And it's a big part of this state's economic development scene—the exporting of forest products.

Last year, wood product firms located in Alabama sold just under \$1 billion worth of forest products overseas, all crafted from locally grown trees. That made forest products the leading export industry, behind the state's burgeoning auto sector. Forest product exports accounted for over 15 percent of the state's total exports of \$6.1 billion in 1999. To top it off, forest product exports have grown steadily over the last 10 years, almost doubling from \$485 million in 1990 to \$953 million in 1999 (see Figure 1).

Exports Create Jobs

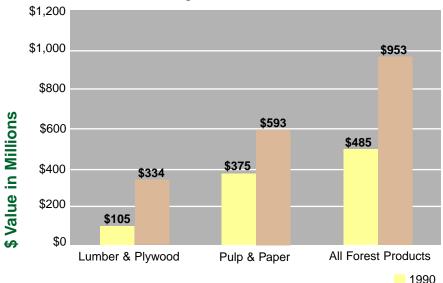
The forest products sector is a true statewide industry. Global demand for Alabama timber touches forest landowners and wood processors in all 67 counties. According to U.S. Department of Commerce estimates, approximately 19,000 jobs in Alabama are dependent on the manufacturing and exporting of forest products. Since Alabama's primary and secondary wood processors are located throughout the state, more often than not in rural areas, the state's rural economic development gets a boost from steady export related jobs and local procurement of logs.

With global demand on the upswing and the depletion of forest resources continuing in other countries, more Alabama wood product companies are getting into the export act—selling wood products overseas, competing, and winning orders.



Brian Davis (right) visits with east-central Alabama landowner Bob Drake, a partner in Prime Pine International, Inc., a producer and exporter of Southern yellow pine lumber located in Weogufka, Alabama.





1999

This not only secures additional markets for the local forest landowner, but helps to guard against downturns in domestic markets.

All those export sales from individual companies add up. In terms of export performance measured by the dollar value of export shipments in 1999, Alabama's forest industry stacks up great against its competitor suppliers in other states.

In fact, Alabama's forest product exports are higher than reported. Due to the way export statistics are collected by the U.S. government, shipments of "Alabama" lumber, pulp, and paper are understated. For example, shipments that originated from an Alabama mill using locally grown forest resources frequently get tallied as part of another state's export figures. This is particularly true of the larger exporters with production facilities in Alabama, but with an export sales office in another state.

It's also true of a number of smaller mills that sell export grade lumber and finished products to a broker. In this scenario, the shipment is sent to a broker's concentration yard or location near a port of exit for eventual transport abroad. The wholesale broker is the shipper of record and another state gets credit for the export.

From logs to lumber to paper to furniture, and all types of wood products in between, Alabama-made forest products are in high demand by overseas buyers. Thanks to a growing number of hardworking people—the logging operator, the mill owner, the machine operator, and many others—that small seedling on your land may one day end up as a newly transformed product shipped to destinations around the world.

Foreign markets are as diverse as the products themselves. The state's hardwood lumber enjoys a solid worldwide reputation with most sales concentrated in Europe. Europe has long been a traditional white oak market, but buyers are starting to wake up to Alabama's diversity of lesser-known species such as basswood, sycamore, and willow. In 1998, these and other lesser-known species outsold red oak in Europe by volume in terms of total U.S. hardwood shipments.

Alabama softwood exports account for the lion's share of the market in

Southern Europe, especially in Spain and Italy, where saps and primes make their way into joinery, molding, and other building materials. The Caribbean Islands are also a traditional destination for Alabama Southern yellow pine lumber and plywood, accounting for more than 50 percent of total softwood shipments to customers in the Dominican Republic, Jamaica, Trinidad and Tobago, and Barbados.

Demand for finished paper and intermediate pulp stocks tapered off greatly in 1998 and 1999, due to the financial crisis in Asia. Nevertheless, shipments have picked up in the first quarter of 2000. The major markets for pulp in Asia are Japan and Korea and in the European countries of Italy and the United Kingdom; the major markets for the state's finished paper and paperboard stocks are in Canada and the Netherlands, U.K., France, and Germany in Europe.

Alabama does not usually come to mind as a center for furniture manufacturing. Yet the northwest corner of Alabama is home to over 100 furniture producers, and other major furniture employers are located in central and south Alabama. Many of these firms ship furniture to the duty-free NAFTA countries of Canada and Mexico. And Alabama is a major supplier of hardwood, pine, and upholstered furniture to

Scorecard 1999 Alabama Forest Products Ranked:

- 5th in the U.S. in lumber and plywood exports
- 5th in the U.S. in wood pulp exports
- 4th in the U.S. Southeast in paper exports
- 8th in the U.S. Southeast in furniture exports

Puerto Rico and the Caribbean, where value and quality are prime factors for local consumers.

Location, Location

The state's export shippers are scattered across the state, employing thousands in rural areas. Located in the wood basket of the South, many of Alabama's best exporters are family owned operations that base their living on a great

Top Export Destinations for Alabama s Forest Products, 1999 (\$ Value millions)

•	
Hardwood Lumber Spain Egypt Netherlands Norway Hong Kong Total all countries	\$ 15.48 \$ 1.28 \$ 1.05 \$ 1.05 \$ 1.02 \$ 34.90
Softwood Lumber Dominican Republic Spain Jamaica Trinidad and Tobago Barbados Total all countries	\$ 31.03 \$ 16.54 \$ 13.54 \$ 5.11 \$ 4.61 \$ 93.35
Wood Pulp Japan Italy Korea Mexico United Kingdom Total all countries	\$ 100.95 \$ 44.05 \$ 41.89 \$ 26.80 \$ 11.63 \$ 260.00
Paper and Paperboar Canada Netherlands United Kingdom France Germany Total all countries	\$ 95.02 \$ 40.43 \$ 31.09 \$ 28.58 \$ 27.49 \$ 312.0
Furniture Canada Mexico United Kingdom Jamaica Germany Total all countries	\$ 35.96 \$ 1.86 \$ 1.52 \$ 1.44 \$ 1.27 \$ 46.93

source of local, raw material close to home. Buchanan, Linden, Miller, Lewis Brothers, Swift, and many others are well-known names in the wood products trade around the globe.

Exports from large corporations with operations in Alabama also account for a large portion of the state's total export figures in lumber, pulp, and paper.

Travelog Continued on page 27

FOREST MASTERS

An Education, Motivation and Recognition Program for Forest Landowners and Stakeholders in Alabama

By GLENN R. GLOVER

Extension Specialist and Associate Professor School of Forestry and Wildlife Sciences, Auburn University

OW would you like to earn Bronze, Silver and Gold medals for learning how to better manage forests resources and for sharing your time and love for Alabama's forests? Forest Masters is a new program that rewards you for your education and service efforts. There has been interest for several years in an Alabama "Master Woodland Owners" program. States such as Oregon and Pennsylvania have programs that require participation in a fixed series of courses as well as service activities. This approach works well but has some shortcomings, particularly for Alabama. A large commitment of coordinated manpower is required to teach these courses. Manpower and time are in relatively short supply for most forestry organizations in the state. Participants must also dedicate several days or weekends to attend the courses, usually taught on a rigid schedule. These two situations can limit the number of sessions offered and may limit the number of participants willing to commit to a specific time schedule.

Forest Masters was designed to take advantage of the many educational opportunities that already exist in Alabama, Presentations, workshops and field trips are offered by many organizations in the state, such as the Alabama Cooperative Extension System, the Alabama Forestry Commission, county forestry planning committees, the Alabama TREASURE Forest Association (state level and county chapters), the Alabama Forest Owners Association, the Wildlife and Freshwater Fisheries Division of the Department of Conservation and Natural Resources, the Alabama Wildlife Federation, the Longleaf Alliance, the Center for Forestry, Paper and Chemical Technology, companies such as American Cyanamid, and others. All of these programs may be certified for Forest Masters credits.

Topic Groups

Six defined topic groups cover the wide range of forest-related subjects (see Table 1 or the Forest Masters web site at www.pfmt.org/fm for details). Any program that includes a technical forest resource-related presentation (lecture or field trip) can be submitted for evaluation. Program organizers send the agenda, with an explanation of program content, to the Forest Masters coordinator. Programs can also be submitted via the

Forest Masters web site. Forest Masters "credits" (FMC) are assigned by topic group to each presentation or portion of a field trip in a similar procedure to continuing forest education credits used by the Society of American Foresters. One FMC is earned for each 15 minutes in a certified lecture or presentation (to nearest 1.0 FMC) and one FMC is earned for each 30 minutes on a certified field trip, not including travel time (to nearest 0.5 FMC). Programs and field trips must be certified before they occur by the meeting organizers (allow a two-week lead time). Individuals attending a meeting cannot request certification.

Table 1. Forest Masters Topic Groups

Topic Groups	Example Subjects
1. Forest Stand Management	Planning Harvesting and roads Stand establishment Stand management Inventory, growth and yield
2. Education/Public and Private Programs	General forestry Forest tree and plant identification Public and private programs Educational and leadership training
3. Wildlife Habitat Management	Game management Non-game management Animal damage control
4. Recreation and Aesthetics	Forest trails Fishing Hunting Management for aesthetics
5. Environment and Water Quality	Wetlands and water quality Best Management Practices (BMPs) Wildflowers and native plants
6. Forest Policy and Economics	Economics of forestry Legislative issues Legal aspects of forestry Forest industry and mills

(not an exhaustive list)

Table 2. Credits required to achieve each recognition level				
Recognition Level	Education	Service		
Bronze Forest Master	20 FMC in each of four Topic Groups	None		
Silver Forest Master	40 FMC in each of four Topic Groups	20 hours of applicable service		
Gold Forest Master	60 FMC in each of four Topic Groups	40 hours of applicable service		

Landowners, stakeholders and forest resource professionals who apply to Forest Masters are added to a credit-accumulation database. Registered participants attending a certified meeting or field trip sign a verification form giving their name, identification number and portions of the program attended. Sponsors of the program send the completed forms to the Forest Masters coordinator for credit. When a specified number of credits are earned in a given topic group, the participant is awarded a certificate and medallion signifying their level of accomplishment. Each topic group has a Bronze (20 FMC minimum), Silver (40 FMC minimum) and Gold (60 FMC minimum) achievement level.

Recognition Levels

When a participant achieves a given recognition level (Bronze, Silver or Gold) in four of the six topic groups, they receive the designation of Bronze, Silver, or Gold Forest Master (see Table 2 for specific requirements). The Bronze level can be achieved with education alone. Silver and Gold levels require service activities as well. Forest Masters is a recognition program only in that no exams are administered to evaluate competency.

Example opportunities that can fulfill the service requirement of the Silver and Gold levels of Forest Masters include, but are not limited to:

- Mentoring other forest landowners to help them better manage their forest.
- Serving as an officer in a forest landowner organization.
- Participation in FAWN program, Project Learning Tree, Alabama TREASURE Forest Association's Classroom in the Forest, 4-H or FFA forestry and wildlife judging programs, or other school and student related programs.

- Hosting a forest landowner field trip.
- Directly assisting in or planning a regional or statewide forest landowner meeting.

A form is available to record service activities. Credit is given for the time actually spent in the activity, not including preparation time. Contact the Private Forest Management Team coordinator or see the Forest Masters web site for service forms.

In addition to recognition by certificate, participants receive a sign in the appropriate color (bronze, silver or gold) that can be mounted below or above their existing TREASURE Forest sign, Tree Farm sign, or elsewhere that designates their level of Forest Masters accomplishment. Recognition, certificates and signs can be given at Alabama TREASURE Forest Association county chapter meetings, Alabama Forest Owner Association meetings, county forestry planning committee meetings at or other appropriate venues. Photographs and suitable local publicity should accompany the Forest Masters presentation. Participants

achieving each Forest Masters level may be recognized at the Alabama Landowner and TREASURE Forest Conference.

Summary

Forest Masters is flexible and provides recognition for a wide range of forest resource-related interests and service activities, yet ensures a broad forest resource education. Forest Masters will collaborate with traditional and non-traditional forest-related groups to provide educational opportunities and a structure for identifying and rewarding educational and service programs. As the database of programs grows, analysis will identify topics that are being well represented and those that are not being sufficiently offered. This information can help the education and service providers in the state plan their activities better.

Sign up today! An application form is included with this article or you can apply on-line at the Forest Masters web site (www.pfmt.org/fm). There is no cost for participating in Forest Masters, but some programs may have associated fees. For more information, applications, certification and service forms contact:

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Clean Water and Forestry: A Perfect Match

By TIM ALBRITTON

Forest Operations Specialist, Alabama Forestry Commission

ITH 22 MILLION ACRES of forestland, Alabama has the second largest commercial forest in the country. Only Georgia has more commercial forestland. Ninety-five percent of Alabama's forestland is owned by private landowners. Our state is blessed with a warm climate and an annual rainfall that is ideal for forest growth.

There are many benefits derived from Alabama's forests, such as abundant wildlife, recreational opportunities, wood products, jobs provided by the forest industry, and natural beauty. Alabama's forests also help protect our waterways by filtering the abundant rainfall we receive. The land area that collects and discharges its surface streamflow through one outlet is termed a **watershed**. Alabama has 14 river basins containing over 250 watersheds. The forest vegetation in these watersheds helps to control erosion, improve water quality, and reduce flooding.

Forestry is definitely an asset to the water quality of the state. However, during some phases of managing a forest, a forested watershed can become a source of pollutants. Sediment is the most widespread and important pollutant com-

ing from the forest. Sediment is the loose soil particles that are detached and transported, usually by the force of rain. Sediment becomes a problem when it is deposited into a streambed and upsets the delicate balance needed for aquatic life. Other pollutants coming from forestry activities are nutrients, organics, temperature, and pesticides.

To help guide forest landowners, Alabama's Best Management Practices for Forestry (BMPs) was developed. The Alabama Forestry Commission (AFC) produced the first publication in 1983 with the assistance of Auburn University. The BMP manual underwent a significant revision in 1993, again with the assistance of Auburn University and other members of the forestry community. The BMPs in the booklet lay out a framework of sound stewardship practices that, when consistently applied, will contribute positively to maintaining a high degree of water quality flowing from a forest. Recently, there has been a significant amount of attention given to cleaning up Alabama's water. The Environmental Protection Agency and many other state and federal agencies and groups are raising the awareness of the public to the need to improve the quality of our water.

The EPA and others have analyzed Alabama's streams and listed the various pollutants or causes. They have also listed the source of the pollutants. Although only a small contributor to the overall problem, forestry is being scrutinized by many people these days.

As Forest Operations Specialist with the Alabama Forestry Commission, I have the responsibility of coordinating our BMP program. Since assuming this position a little over a year ago, I have been amazed at the high level of interest that exists from people wanting to know what the AFC is doing in regards to BMPs. The time seems right to report the Forestry Commission's responsibilities and actions regarding BMPs.

The Forestry Commission's BMP Program has three main focus areas:

- Education
- Random Monitoring
- Responding to Complaints

BMP Education

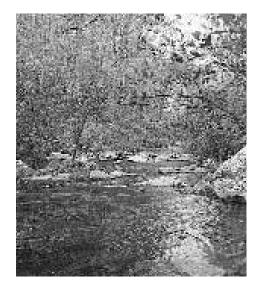
Since the revision of *Alabama's Best Management Practices for Forestry* in 1993, over 35,000 copies of the manual have been printed and distributed to landowners, foresters, loggers, universities, and industries. BMP demonstration projects have been developed so that loggers, landowners, and others can get a firsthand look at BMPs being used on the ground.

Countywide forestry tours are given that highlight BMPs. The AFC provides free pre-harvest consultations for landowners and loggers for the purpose of advising them on proper usage of BMPs on a particular harvesting site. Numerous articles have been written and published encouraging the use of BMPs.

The AFC has produced an educational video on BMPs and distributed hundreds of copies. This video has been and remains a vital part of the logger training program given by the Alabama Loggers

Table 1
Summary of BMP Complaints Received from ADEM
Fiscal Years 1994 - 99

	Fiscal Years 1994 - 99				
FY	Not Related to Silviculture	BMPs Properly Implemented	Problems Corrected	Problems Not Corrected	Totals
94	2	6	18	3	29
95	4	8	17	2	31
96	4	8	12	0	24
97	2	3	7	1	13
98	3	8	6	0	17
99	0	19	9	1	29
Total	15	52	69	7	143



The forest vegetation in Alabama's watersheds helps to control erosion, improve water quality, and reduce flooding.

Council to thousands of loggers across the state.

Random Monitoring

Statistically sound random sampling methods have been used since 1994 to sample logging operations across the state to determine if BMPs are being used and if they are used appropriately (see Figure 1 for recent results). Forestry Commission pilots aerially survey all 67 counties each quarter and record the location of all forestry operations. The AFC's four regional management specialists (who also serve as BMP coordinators for their part of the state) select sites at random, which are then inspected by AFC county personnel. One county site is inspected every two months, or six sites per county per year, a total of 200 inspections per year. This is done in the southern half of the state one year and rotated to the northern half of the state the next year.

Review of Silvicultural Related Water Quality Complaints

A cooperative agreement is in effect that allows the Alabama Department of Environmental Management (ADEM) to refer water quality complaints that appear to be related to silviculture to the AFC for review (see Table 1). After reviewing the complaint, if the AFC determines that BMPs have not been correctly utilized and that a water quality problem does exist, the AFC then advis-



Forestry tours that highlight BMPs are part of the educational effort for loggers, landowners and agency personnel.

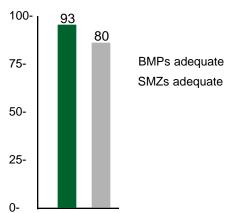
es the responsible party on how to correct the problem. This process has proven effective for correcting most of the problems; however, a better solution is for landowners to call the AFC for a pre-harvest consultation. Many of the AFC's field personnel have told me that the preharvest consultations are rarely requested.

Summary

In 1993, Don Burdette, then the water quality forester with the AFC, wrote an article for *Alabama's TREASURED*

Figure 1

BMP Random Sampling
Fiscal Year 1998-99



Overall, BMPs were adequate on 93% of the sites inspected.

Of the sites with streams, 80% had adequate streamside management zones.

Forests magazine about BMPs. In his concluding remarks, Don predicted that if we continue to harvest timber without taking water quality into consideration, the government could pass regulations enforcing BMPs. His prediction is close to becoming true.

I believe regulations and restrictions are soon to come when people in authority perceive that voluntary guidelines are not working. It is up to Alabama's private forest owners to ensure that BMPs are followed, and by doing so, prove to everyone that voluntary compliance is working and regulations are not needed.

If you are a landowner and have plans to sell timber, the best way to make sure that BMPs are followed is to include them in your timber sale contract.

Require the logger to follow BMPs in every phase of the harvesting operation.

If you are not familiar with Alabama's Best Management Practices for Forestry, contact your local Forestry Commission office for a copy or call me at (334) 240-9348. You may also write to: Tim Albritton, Alabama Forestry

Commission, P.O. Box 302550,

Montgomery, AL 36130-2550; or send e-mail to AlbrittonT@forestry.state.al.us.

References

Alabama's Best Management
Practices for Forestry. Alabama
Forestry Commission, 1993.
Hewlett, John D. Principles of Forest
Hydrology. 1982.

Branching Out:

Auburn University's School of Forestry and Wildlife Sciences

By Dr. RICHARD BRINKER, Dean, Dr. GRAEME LOCKABY, Professor, Dr. LARRY TEETER, Associate Professor and Dr. MARK DUBOIS, Assistant Professor and Extension Forester, School of Forestry and Wildlife Sciences, Auburn University

he last year of the 20th century was an eventful one for Auburn University's forestry program. In 1999, the School of Forestry and the wildlife program merged to form the School of Forestry and Wildlife Sciences. You can learn more about the new School of Forestry and Wildlife Sciences, and three new programs associated with the School, by visiting the School's web site at www.forestry.auburn.edu/.

School of Forestry and Wildlife Sciences

The merger of the School of Forestry and the wildlife program occurred on October 1, 1999. We are now a School that has 33 tenure-track faculty and 18 non-tenured faculty, resulting from the addition of five tenure-track faculty and three non-tenure-track wildlife faculty. The School's student population also increased. We have 220 undergraduates and 43 graduate students enrolled in forestry, and 158 undergraduates and 10 graduate students enrolled in wildlife.

The new School of Forestry and Wildlife Sciences provides an opportunity for our students to develop an integrated natural resource education. There is increased interaction among student organizations. Working collaboratively, the Forestry Club and the Wildlife Society benefits our students' professional perspectives and increases networking opportunities. In addition, the merger has resulted in a more efficient use of educational facilities.

There are major research benefits from the merger, such as integrated natural resource research that will better serve the needs of the state. Most forest owners in the state have multiple management objectives including timber, wildlife, recreation, and aesthetics. Integrated forestry and wildlife research projects will more efficiently meet the needs of Alabama's citizens.

The merger of the two programs is providing Extension program efficiencies. A collaborative forestry-wildlife program facilitates the development of relevant and cost-effective Extension programs. Extension program delivery is enhanced by the development of technology transfer packages that present wildlife and timber management as interconnected disciplines, thus increasing the opportunity for specialists to present joint programs and eliminate redundancy in program content.

Leaders from the Alabama Forestry Association, the Alabama Forest Resources Council and the Alabama Wildlife Federation enthusiastically supported the forestry and wildlife merger. Additionally, our students desired the interaction with other students who will be managing closely related resources. Also, there was strong support by the faculty of both programs who developed the logic and benefits of a unified program.

More information on the SFWS may be obtained by contacting Dr. Richard Brinker, Dean, SFWS at (334)-844-1007 or brinker@forestry.auburn.edu or by visiting the School's web site at www.forestry.auburn.edu/.

Center for Forest Sustainability

Human populations are clearly rising in Alabama and the South at a faster rate than in many parts of the nation. Increased populations and shifting demands for timber have created a softwood sawtimber deficit in Alabama whereby timber extraction rates exceed growth. In addition, population pressures on forests in Alabama jeopardize the availability of other forest-derived attributes upon which society depends (e.g. wildlife habitat, water quality maintenance). Consequently, the rising demands made on Alabama forests and streams represent a profound threat to the long-term quality of human life in Alabama and the Southeast.

The economic importance of Alabama forests is well documented. In short, forest products and forest-derived values represent the leading contributor to the state's economy. There is great value associated with other forest-derived attributes such as water quality maintenance, but these values are more difficult to quantify. In summary, the risk to Alabama's welfare by possible depletion of forest and aquatic resources is immeasurable.

In response to these concerns, many efforts are underway in the state, region, and nation to intensify forest production. However, intensification raises questions in regard to soil sustainability as well as other non-timber values. A concerted effort is required to ensure that wood/fiber production, wildlife habitat, and environmental quality are all maintained in conjunction with active forest management so that the flow of goods and services from Alabama forests and streams can be sustained for future generations.

Recently, Auburn University underwent a program review that resulted in reallocation of resources into six key programs on campus. One of these is the Center for Forest Sustainability (CFS), a multidisciplinary program currently initi-

ating research on the following issues: productivity and carbon sequestration in plantation forests, seedling pathology and quality, wildlife habitat in plantations, natural forests, and associated streams, water quality, and socioeconomic considerations associated with sustainability. Students (both undergraduate and graduate) and faculty from the School of Forestry and Wildlife Sciences, College of Science and Math, College of Agriculture, and College of Business are involved. Research will emphasize integration between biological and socioeconomic focuses in order to develop comprehensive input toward resolution of the complex issues surrounding forest sustainability. More information on CFS activities may be obtained by contacting Dr. Graeme Lockaby, Director, CFS at (334)-844-1054 or lockaby@forestry.auburn.edu.

Forest Policy Center

For the last several decades, forest policy debate has centered on the management of public forests. In the early 1990s Mr. Vaughn Stough and Dr. Emmett Thompson envisioned a program of forest policy research that would focus on the unique circumstances facing private timberland owners. Through the generous contributions of alumni and others to the Endowment for Excellence in Forest Policy, the Forest Policy Center (FPC) was established in 1999. Resources from the endowment are used to support graduate student research and sponsor a variety of education/outreach activities of the Center.

Economic globalization and global environmental quality concerns present constraints and opportunities to local, regional, and national forest economies. The Forest Policy Center's mission is to assist policy makers, business people, non-governmental organizations, the media and the public in evaluating policy options by providing objective analysis of forestry issues. The Center will examine, document, and debate forest policy issues, especially those related to the linkages between private forest management and society.

Any faculty member in the SFWS interested in forest policy research is encouraged to participate in the FPC. Currently, there are eight faculty mem-

bers participating within the School and one adjunct member from the U.S. Forest Service. Research activities include projects on forest certification, forest products trade, timber supply, economic development, tax policy and environmental issues/legislation among others. By using the Center's resources as "seed money" to get research project ideas rolling quickly, members are in a better position to be competitive with researchers across the country for extramural support of their research programs.

The Forest Policy Center is also involved in outreach activities and recently co-sponsored a Congressional Staffers' Tax Seminar on non-industrial, private forest taxation. Other sponsors included the Association of Consulting Foresters of America, Inc. and the Forest Landowners Tax Council. Presenters included Roger A. Sedjo (Resources for the Future), William C. Siegel (USFS retired, timber tax analyst), and Charles C. Raper (Forest Policy Center). On April 20, 2000, David Laband (FPC) was involved in a different type of outreach activity when he delivered the keynote address at the 13th Maastricht University (Netherlands) Workshop on Law and Economics. The address was titled "The Impact of Unfunded **Environmental Mandates When** Environmental Quality and Timber are Produced Jointly" and will soon be published in the European Journal of Law and Economics. Finally, FPC members routinely make presentations of their work at national and regional professional meetings. Copies of many of the papers and presentations produced by Forest Policy Center members are available on the FPC web site.

Upcoming activities of the Center include an international conference planned for spring 2001 in Atlanta, Georgia. The conference title is "Global Initiatives and Public Policies: First International Conference on Private Forestry in the 21st Century." The conference will bring forestry professionals together from around the world and give them an opportunity to address key issues currently shaping the future of forest management on private lands.

If you would like more information on the Forest Policy Center contact Dr. Larry Teeter, Director, at (334) 8441045, fpc@auburn.edu or visit the Forest Policy Center web site at www.forestry.auburn.edu/forestpolicycenter.

The Sustainable Forestry Partnership

The Sustainable Forestry Partnership began in 1995 as a partnership among a group of Oregon State University faculty. The Sustainable Forestry Partnership's mission is to document and promote innovation in sustainable forestry and integrate this innovation broadly into both policy and practice. The John D. and Catherine T. MacArthur Foundation provided start-up monies for Partnership activities. Since 1995 the Sustainable Forestry Partnership has grown into a networking organization of partners involving faculty of Oregon State University, Pennsylvania State University (1997), Auburn University (1999), and personnel from the USDA Cooperative State Research, Education, and Extension Service (1999).

The Partnership's operations are largely funded from private foundations and government agencies. The Partnership, having a diverse set of participants, is able to address the breadth of sustainable forestry issues and activities including:

- Identifying key sustainable forestry issues and trends.
- Designing and conducting sustainable forestry research.
- Developing education and training materials and events.
- Providing assistance services to organizations and individuals interested in sustainable forestry issues.

Because of its diverse geographic and subject matter membership, the Partnership is effective in addressing sustainable forestry issues. The long-term goal of the Partnership is to have staff housed at several academic institutions, reflecting regional and disciplinary diversity. If you would like more information on the Sustainable Forestry Partnership contact Dr. Mark Dubois, Associate Director, SFP, at (334) 844-1037, dubois@forestry.auburn.edu or visit the Sustainable Forestry Partnership web site at sfp.cas.psu.edu/.

THREATENED SPECIES

The American Burying Beetle

By MICHAEL ROEDEL

Wildlife Biologist, Alabama Natural Heritage Program

HE American burying beetle (Nicrophorus americanus) is an endangered member of the carrion beetle family. Carrion beetles are an important group of scavengers that help to recycle decaying materials back into the ecosystem. Although many of us may shudder with disgust at the very thought of insects feeding on decaying flesh, these animals are very good at tidying up the environment and returning nutrients to the soil.

The American burying beetle is the largest carrion-frequenting insect in North America. It may reach 1 1/2 inches in length. The beetle is shiny black with bright orange patches on its wing covers and on its head. The large shield-like area behind its head (the pronotum) is redorange, which immediately distinguishes it from the 30 or so other North American species. The adult beetles are

nocturnal, searching for carrion only at night.

Adult burying beetles have special organs located on their antennae that are very sensitive to the smell of decaying flesh. From a distance of well over a mile, they can find a dead sparrow within an hour after it has died. They follow the scent, landing on the ground near the carcass, then make their way along the ground to the body. Arriving at the carcass, they crawl beneath it to test if they will be able to move it. If both a male and female arrive they may cooperatively begin to bury the remains under several inches of soil. They will aggressively defend their prize away from other beetles. Burying helps protect their find from other predators or scavengers as well as from flies that would lay eggs on it.

Once underground, the body is stripped of its fur or feathers and pre-

served with special secretions. The pair mates and then the female constructs a special chamber above the body in which she lays as many as 30 eggs. In a few days the young hatch and then are fed and cared for by the parents. This is an extremely rare behavior among insects, usually found only in ants, bees, wasps, and termites. The adults regurgitate food in response to the begging of the young larvae. The parents also tend the carcass, keeping it free of bacteria and fungi. After the carcass is consumed, the adults fly away leaving the young to their next task. The young will pupate in the nearby soil, emerging as adults a few weeks later. They will winter-over in the soil as an adult. The lifespan of the American burying beetle is one year. The adults die in the fall.

American burying beetles are known to have been widespread across the eastern half of the United States, including

> Alabama, at one time. During the last century, scientists noted that they were disappearing nearly everywhere. Although the species was collected by scientists in Alabama, the last date of observation in the state is not known. After 1960, they were no longer found except on the edges of their previously vast range. In 1989, the American burying beetle was placed on the federal endangered species list where it remains today.

American burying beetles seem to be restricted now to areas that are mostly undisturbed by human influence. Research scientists who



study this beetle believe that this species lives in many types of habitat, with some preference for grasslands and open understory oak-hickory forests. Appropriate habitats exist within the state today, but few areas in Alabama have been surveyed for this species. Although the American burying beetle is currently receiving attention from a number of researchers, the cause for the decline of the American burying beetle has not vet been determined. It may be a result of habitat fragmentation, habitat loss, carcass limitation, pesticides, disease, light pollution, or a combination of these factors. Since carrion availability determines success at raising the young, carrion may be the greatest factor determining where the species can survive.

During the 1990s, small populations were located at isolated sites in five states along the westernmost boundary of the

former range: Arkansas, Oklahoma, Kansas, Nebraska, and South Dakota. A population was also located on an island off the coast of Rhode Island. Surveys are taking place in other areas as well and reestablishment efforts are taking place in Massachusetts and Ohio. Although there are no recent records from Alabama, it is hoped that one day the American burying beetle may again be found in Alabama's forests.

References

Creighton, J.C., and G.D. Schnell. 1998. "Short-term movement patterns of the endangered American burying beetle Nicrophorus americanus." Biological Conservation 86:281-287.

Lomolino, M.V., and J.C. Creighton. 1996. "Habitat selection and breeding success of the endangered American burying beetle *Nicrophorus ameri*-

- canus." Biological Conservation 77:235-241.
- Lomolino, M. V., J. C. Creighton, G. D. Schnell, and D. L. Certain. 1995. "Ecology and Conservation of the Endangered American Burying Beetle, *Nicrophorus americanus."*Conservation Biology 9:605614.
- Ratcliffe, B., Nebraska's Threatened and Endangered Species: American Burying Beetle. Nebraska Game and Parks Commission. Available: http://www.museum.unl.edu/research/entomolgy/endanger.htm [27 April 2000].
- U.S. Fish and Wildlife Service, Division of Endangered Species, Region 3. The American Burying Beetle Fact Sheet. Available:
 - http://www.fws.gov/r3pao/eco_serv/endangrd/insects/abb_fact.html [27 April 2000].

Landowner Sees Benefit of Planting Genetically Improved Seedlings

By TILDA MIMS, Education Specialist, Alabama Forestry Commission

HEN it comes to ordering pine seedlings, the menu of choices can be overwhelming. The terms "1st Generation," "2nd Generation" and "Genetically Enhanced" may be confusing, and when you toss in the difference in their prices, the decision can become even harder.

Like many TREASURE Forest landowners, Dr. John Mims of Colbert County likes to experiment with forest management to see what he can learn. His experiment with the Forestry Commission's genetically improved seedlings taught him that, in some cases, the extra expense of these seedlings, sometimes called "super trees," is easily worthwhile.

In 1989, Dr. Mims planted 100 acres of AFC Second Generation loblolly pine in marginal cropland on Hawk Pride Mountain in the middle of Colbert County. At the same time, he tried regular seedlings on better soil.

The seedlings went through an ice storm in 1993 and a second severe storm in 1998. By the last storm, the trees were large enough to salvage by thinning for pulpwood. At 8 to 10 inches in diameter,

the trees brought \$312 per acre when cutting every fifth row and the storm-damaged trees. Regular seedlings planted on better soil had not grown as well in the same length of time.

Dr. Mims believes the difference was in the genetics of the improved seedlings. "We also had about 5 acres of 15-year-old pines harvested at the same time. They were taller and heavier but no bigger around. We got just about the same amount of money for each," he said. "We got in 10 years what you normally get in 15." Champion Paper Company did the thinning and, according to Dr. Mims, they think it will be ready to thin again in 5 to 6 years.

He warns other landowners to look at each individual tract and consult with a forestry expert about thinning early. For most landowners, thinning at 10 years would be premature. "This was a special situation when all the trees were growing like mad, and in the areas with genetically enhanced trees, the growth was amazing."

Many of forestry's success stories have been the result of one person's desire to push the limits of the routine and to do just a little bit more than expected. As Dr. Mims starts a new project to test planting methods to protect trees from severe ice storms, we can all be grateful that this TREASURE Forest is taking the education aspect of multiple-use forest management to the next level.

Terms to Understand

1st Generation (cycle)-These seedlings are grown from seed collected from grafted orchards. These orchards are established using selected high performance parent trees from variable natural stands. These seedlings are often referred to as "improved" pine seedlings.

1.5 Generation (cycle)-These seedlings are grown from seed collected from grafted orchards which have been established using the best performing parents from 1st cycle orchards.

2nd Generation (cycle)-These seedlings are grown from seed collected from grafted orchards using the best performing crosses and/or parents from first cycle orchards based on progeny test data.

Protecting Your Wildland Home from Wildfire

By TILDA MIMS

Education Specialist, Alabama Forestry Commission

ISTORICALLY, Alabama wildfires threaten tracts of land, destroying trees and wildlife habitat, and impacting water quality. Lives and personal property have always been top priority with firefighters, but were seldom victim to the unpredictability of wildfires.

Wildfires in the 1990s, however, were a serious menace to personal property. The difference may be the increasing number of homes and vacation houses springing up in what used to be rural land. In the fall of 1999, a significant number of barns, automobiles, mobile homes and other structures were destroyed by wildfire statewide.

As cities expand into wildland areas and urban workers escape city life as a commuter or by way of a vacation retreat, the risk of careless actions by homeowners increases the risk of wildfires. Moreover, the scenic beauty that attracted homeowners to the area is in jeopardy of being changed forever. House fires are traditionally controlled by municipal firefighters using hoses and

water from fire mains and hydrants.

Wildland firefighters, on the other hand, are usually funded by agencies charged with the protection of woodlands and their valuable natural resources. These firefighters are equipped and trained to attack the fronts of fires indirectly, usually by establishing a defensible perimeter in front of the fire and clearing out all fuel along the line of the perimeter.

The term "wildland/urban interface" refers to the geographical areas where urban structures—mainly residences—are built in close proximity to flammable fuels found naturally in wildland areas, including forests, prairies, hillsides and valleys. The result can be aesthetically desirable or disastrous.

Fires in the interface present problems for both sides. Interface areas typically do not have water systems capable of providing the large volumes of water needed for structural firefighting. Meanwhile, the number of homes in the area sometimes makes it difficult to use the perimeter control method.

As urban areas expand into wildland areas, the conflicts are becoming more commonplace. Just as wildland fires threaten people and property, fires caused by human behavior threaten Alabama's forests.

Although Alabama agencies are learning to work together effectively to control fires, individual homeowners must do their part to minimize risks.

Fire Behavior

- To better understand how you can protect your home from wildfire, it is important to know how fire behaves.
- Fire needs fuel and oxygen. Your home is a form of fuel and the wind provides plenty of oxygen.
- A fire moving up slope moves faster and has longer flames than one on level ground because hot gases rise in front of it, pre-heating the path.
- Burning embers can be carried more than a mile by the wind, landing on roofs, decks and vents.
- When the fire gets closer, its heat and flames directly threaten the home, causing combustible materials to ignite, plastic to melt and glass windows to shatter.

Action You Can Take

The first priority of firefighters is protecting people's lives. Protecting property and resources is secondary. You can help improve their firefighting efforts by making your property a place to effectively battle a blaze and making it more likely that your structure will be saved.

- Make sure firefighters can find your home by marking your driveway clearly with your family name and address.
- Make sure that emergency vehicles



Prune all trees up to 6-10 feet from the ground and remove overhanging branches.



Store firewood away from your home.

can reach your home. A narrow, winding drive can be charming but it may prevent firefighting equipment from reaching your home if it is too narrow for two-way traffic, too steep for large equipment or has turns that are too sharp for big trucks. Drives should be at least 12 feet wide with a vertical clearance of 15 feet. Provide a turnaround at the house large enough for heavy trucks.

- Construct your home away from any land features that might channel the flow of the wind. Locate your home at least 30 feet from a ridge or cliff.
- A major cause of home loss during wildfires is the flammability of roofing materials. Consider non-combustible or fire-resistant materials, such as Class-A asphalt, metal or cement.
- Cover exterior attic and underfloor vents with wire mesh no larger than 1/8 inch to prevent sparks from being drawn into your home.
- Install spark arresters on small engines and equipment. Cover chimney with a half-inch screen sparkarrester.

Your home can make its first and best stand against a wildfire through firewise landscaping and maintenance. By creating a safety zone or firebreak around your wildland home, you can keep a fire from getting near.

- Stack firewood 30-100 feet upslope.
- Remove things that burn easily from at least 30 feet around the house and at least 100 feet away on the down hill side.
- Evergreen trees burn easily. Prune their lower limbs, and thin the trees or remove them from around your home.
- Space yard trees and shrubs at least 15-20 feet apart.
- Prune limbs 15 feet from the ground to prevent fire from spreading to the tops of the trees.
- Clean gutters and roof of leaves and limbs
- Remove tree limbs that hang over your roof and power lines.
- Remove combustible materials and

Attend the Firewise Communities Workshop

Wildfires in the fall of 1999 and the spring and summer of 2000 have brought the issue of wildland/urban interface fire to the door in Alabama. Now is the time to do a better job of community planning in this region. The Firewise Communities Workshop deals with factoring wildland fire protection into homes and communities before they are built. This workshop will give you the opportunity to learn how to apply firewise principles in Alabama.

The 2 1/2-day event focuses on a state-of-the-art fire protection planning exercise. You will be placed on a team that determines which firewise characteristics will be integrated into the design and infrastructure of a hypothetical community. You will hear from both wildland fire researchers about their current findings on home ignitability and communities that have adopted fire protection programs—and how they did it.

Learn to recognize fire hazards that threaten wildland living and to incorporate firewise planning into existing and developing areas of your community. This workshop is a networking opportunity for both concerned professionals and individuals who deal with the important issue of wildland fire protection.

For \$250, which includes meals and lodging, you will receive:

- Instruction in a new, state-of-the-art community planning program
- A participant's workbook and a CD which teaches you to plan, and build, a Firewise community
- Access to continued training in planning and GIS via the Internet after the workshop

Full scholarships are available for active volunteer members of volunteer fire departments, community planning boards and the American Red Cross.

The Firewise Community Workshop will be held in Atlanta, Georgia on October 18-20, 2000, at the Emory Conference Center. Attendance is limited to 100 participants.

For more information, contact Roger Browning of the Georgia Forestry Commission at 912-751-3504; e-mail FirewiseHP@aol.com; or visit www.firewise.org/communities.

debris that accumulate under decks and terraces.

 Don't attach wooden fences to your home. Consider adding a stone or concrete pillar at the end closest to the house.

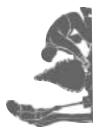
Though you can never fully protect your home and adjacent woodlands against wildfires, you can take steps to reduce the risk. After all, it is a small price to pay for the many benefits of rural life. For more information on Alabama's wildland/urban interface program contact Harry Kepler at 1-800-452-5923.

References

National Wildland/Urban Interface Fire
Protection Program
www.firewise.org
www.nps.gov
www.fire.nifc.gov
Teacher's Lesson Guide for "Fire in My
Backyard"

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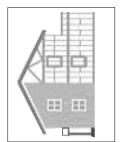


Firewise Landscaping Checklist

When designing and installing a firewise landscape, consider the following:

 □ Local area fire history. □ Site location and overall terrain. □ Prevailing winds and seasonal weather. □ Property contours and boundaries. □ Native vegetation. □ Plant characteristics and placement (duffage, water and salt retention ability, aromatic oils, fuel load per area, and size). □ Irrigation requirements.
To create a firewise landscape, remember that the primary goal is fuel reduction. To this end, initiate the zone concept. Zone 1 is closest to the structure; Zones 2-4 move progressively further away.
Zone 1. This well-irrigated area encircles the structure for at least 30' on all sides, providing space for fire suppression equipment in the event of an emergency. Plantings should be limited to carefully spaced fire resistant species.
☐ Zone 2. Fire resistant plant materials should be used here. Plants should be low-growing, and the irrigation system should extend into this section.
☐ Zone 3. Place low-growing plants and well-spaced trees in this area, remembering to keep the volume of vegetation (fuel) low.
Zone 4. This furthest zone from the structure is a natural area. Thin selectively here, and remove highly flammable vegetation.
Also remember to:
☐ Be sure to leave a minimum of 30' around the house to accommodate fire equipment, if necessary.
☐ Carefully space the trees you plant.
Take out the "ladder fuels"—vegetation that serves as a link between grass and tree tops. It can carry fire to a structure or from a structure to vegetation.
Give yourself added protection with "fuel breaks" like driveways, gravel walkways, and lawns.
When maintaining a landscape:
 Keep trees and shrubs pruned. Prune all trees up to 6' to 10' from the ground. Remove leaf clutter and dead and overhanging branches. Mow your lawn regularly.
Dispose of cuttings and debris promptly, according to local regulations.Store firewood away from the house.
☐ Be sure the irrigation system is well maintained.
☐ Use care when refueling garden equipment and maintain it regularly.
☐ Store and use flammable liquids properly.
☐ Dispose of smoking materials carefully.
□ Become familiar with local regulations regarding vegetative clearances, disposal of debris, and fire safety requirements for equipment.
Follow manufacturers' instructions when using fertilizers and pesticides.
Checklist courtesy of the Firewise home page: www.firewise.org





Firewise Construction Checklist

When constructing, renovating, or adding to a firewise home, consider the following: ☐ Choose a firewise location. ☐ Design and build a flrewise structure. ■ Employ firewise landscaping and maintenance. To select a firewise location, observe the following: ☐ Slope of terrain; be sure to build on the most level portion of the land, since fire spreads rapidly, even on minor slopes. ☐ Set your single-story structure at least 30 feet back from any ridge or cliff; increase distance if your home will be higher than one story. In designing and building your firewise structure, remember that the primary goals are fuel and exposure reduction. To this end: Use construction materials that are fire-resistant or non-combustible whenever possible. For roof construction, consider using materials such as Class-A asphalt shingles, slate or clay tile, metal, cement and concrete products, or terra-cotta tiles. ☐ Constructing a fire-resistant sub-roof can add protection, as well. On exterior wall cladding, fire resistive materials such as stucco or masonry are much better than vinyl, which can soften and melt. ☐ Consider both size and materials for windows; smaller panes hold up better in their frames than larger ones; double pane glass and tempered glass are more effective than single pane glass; plastic skylights can melt. ☐ Cover windows and skylights with non-flammable screening shutters. ☐ To prevent sparks from entering your home through vents, cover exterior attic and underfloor vents with wire mesh no larger than 1/8 of an inch; make sure undereave and soffit vents are closer to the roof line than the wall; and box in eaves, but provide adequate ventilation to prevent condensation. ☐ Include a driveway that is wide enough—12 feet wide with a vertical clearance of 15 feet and a slope that is less than 12 percent—to provide easy access for fire engines. The driveway and access roads should be well maintained, clearly marked, and include ample turnaround space near the house. Also consider access to water supply, if possible. ☐ Provide at least two ground level doors for safety exits and at least two means of escape either a door or window—in each room, so that everyone has a way out. ☐ Keep gutters, eaves, and roof clear of leaves and other debris. ☐ Make an occasional inspection of your home, looking for deterioration such as breaks and spaces between roof tiles, warping wood, or cracks and crevices in the structure. Also, inspect your property, clearing dead wood and dense vegetation from at least 30 feet from your house, and moving firewood away from the house or attachments, like fences or decks. Any structures attached to the house, such as decks, porches, fences, and outbuildings should be considered part of the house. These structures can act as fuses or fuel bridges, particularly If constructed from flammable materials. Therefore, consider the following: ☐ If you wish to attach an all-wood fence to your home, use masonry or metal as a protective barrier between the fence and house. Use non-flammable metal when constructing a trellis and cover with high-moisture, nonflammable vegetation. ☐ Prevent combustible materials and debris from accumulating beneath patio deck or elevated porches; screen under or box in areas below ground line with wire mesh no larger than 1/8

Checklist courtesy of the Firewise home page: www.firewise.org

direct line of a fire moving up slope; consider a terrace instead.

☐ Make sure an elevated wooden deck is not located at the top of a hill where it will be in

Improving Your Certification IQ:

Choices for Woodland Owners

By RICK FLETCHER

Associate Director, Sustainable Forestry Partnership, Oregon State University

RINGING up the topic of green certification of forests or forest products at your local woodland meeting will likely ignite a firestorm. Some say certification is just one more form of outside regulation. Just one more person telling landowners what they "should" be doing with their lands. Some landowners notice the environmentalist links to certain certification schemes and are suspicious of the motives involved. On a more positive note, others see certification as an opportunity to get credit in the marketplace for doing an excellent job of forest stewardship. Whatever your perspective, this article will increase your certification vocabulary, help you see how forest certification schemes are continuing to evolve, and point out which schemes are currently available to you.

Whatever the perspective, the discussion over certification is growing. Companies, landowner groups and others are lining up behind their favorite systems. Time will tell which systems survive and what form they will take. Certification, with all its new words and terminology, seems to be with us for some time to come.

Evolution of Forest Certification Schemes

The idea of certification has been around woodland circles for some time. In 1941, the American Tree Farm System was set up with the certification of Tree Farm #1 on Weyerhaeuser Company lands in Washington State. Although the Tree Farm System was not set up in response to pressures from the market-place like some current schemes, membership has always been limited to properties that have been inspected by a forester and verified actively managed.

Since the early 1990s, there has been an influx of new certification and certification-like systems. The Forest Stewardship Council (FSC), Canadian Standards Association, American Forest and Paper Association, International 22 / Alabama's TREASURED Forests

Standards Organization, and National Forestry Association have all have systems designed for use in North America. Worldwide, many more organizations are designing their own systems, including a very large scale one called Pan-European Forest Certification being developed for woodland owners in Europe.

As schemes have matured, many of them have begun to modify their system to include woodland owners. The FSC network, through its certifiers, currently offers landowners the option of sharing participation costs with other landowners through a consulting forester that has become certified. Both SmartWood and Scientific Certification Systems offer this option. In addition, the AF&PA is currently developing a version of their Sustainable Forestry Initiative that will include small landowner participation. The American Tree Farm System is also retooling their program to offer landowners a more rigorous certification option than in the past. Finally, the Green Tag certification system designed specifically for small private forest owners is being refined by the National Forestry Association.

Schemes Available to Woodland Owners

While it is good to know about forest certification schemes around the world, the most important ones to you are the ones that are available locally. Woodland owners in the United States currently have the opportunity to participate in three, possibly four different certification systems. Table 1 lists the key features of the various systems in a comparative format based on current rules for each system. For specifics on each of the criteria and systems, contact the sponsoring organization. Some criteria are easy to compare, while others are very different, or not addressed by all of the systems.

Why Certify?

Ultimately, this is the question that

you will find yourself asking. Unlike large corporations that are subject to attack by environmental groups, woodland owners generally have a fairly good image with the public. It is unlikely that environmental groups will attack the small owner. Of course this could change, but there is a certain nostalgic attraction to the family owned forest. It is probably a sacred cow that the environmental advocates will leave alone.

Markets may be the best reason for considering certification. If you want to sell products, you will likely do so by selling logs to a mill. If mills are being pressured into certified markets, then you will have to follow suit, or chance losing markets. While this is not a reality at present in the United States, it is becoming an issue in parts of Europe, particularly Scandinavia. Some large American forest product retailers such as Home Depot have also announced their intention to sell certified forest products within the next couple of years. If they follow through on their promises, it will cause forest products companies to certify, and to buy logs from certified properties. Watch what your local companies are doing with certification; it could have a big impact on your future log sales.

Another reason to certify is the professional advice that comes with it. The process of certification includes a review of your operation by a forester or a team of forestry professionals. The insights you receive will be valuable information to confirm what you are doing well and point out opportunities to improve management. Don't underestimate the value of the process.

Choosing a Certification System

If you decide to certify, you will need to select the system or systems that best fit your needs. If you want to gain market access or advantage, then find out what systems are being recognized by your log purchasers. To date, the only systems that

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can provide chain-of-custody and ecolabels for the ultimate customers are the FSC and Green Tag, although Green Tag has yet to prove its system in the marketplace. SFI may be important for you if you sell logs to an SFI-certified company because of provisions that require knowledge of forest practices on lands of purchased timber. Check with your log buyer to see if SFI will be important for this service. If you pass the inspection, you will receive a Tree Farm sign and another free inspection every five years thereafter. The TREASURE Forest program is similar.

On the other end of the cost and detail spectrum is the FSC assessment, which will include a team (usually three) of forestry professionals. The team will do some data collecting ahead of a one- to woodland property, depending upon size of your ownership. You will also be assessed an annual audit fee. Another option under this system that is growing in popularity is the certified resource manager program, where consultant foresters become certified, and spread the certification costs over a number of small woodland owners, greatly reducing this assessment cost.

For information on specific Certification Systems contact:

- 1. Sustainable Forestry Initiative, American Forest & Paper Association, Washington, DC; Phone: 202-463-2700.
- **2.** American Tree Farm System, American Forest Foundation, 1111 19th Street, Washington, DC; Phone: 202-463-2462.
- **3.** Green Tag Forestry, National Forestry Association, Washington, DC; Phone: 888-503-6737.
- **4.** Forest Stewardship Council (FSC), Washington DC; Phone: 877-372-5646.

U.S.-based FSC Verifiers:

- 1. Scientific Certification System (SCS) Oakland, CA, Phone: 510-832-1415.
- 2. SmartWood Network; check for your local affiliate on the Internet at www.smartwood@ra.org; Phone: 212-677-1900.

Table 1: Majo Available to Woo		_		
Program	Tree Farm	FSC	Green Tag	SFI
Sponsor	American	Forest	National	American
	Forest	Stewardship	Forestry	Forest &
	Foundation	Council	Association	Paper
				Association
Scope	National	International	National	National
Year Established	1941	1994	1998	1995
Region specific rules	Somewhat	Yes	Somewhat	No
Type of certification system	Performance	Performance	Performance	Performance
System rules development	2nd party	3rd party	2nd party	2nd party
Third-party verification	Yes	Yes	Yes	Optional
Direct costs for 3rd party verification	Minimal	Expensive	Moderate	Expensive
Eco-label and Chain-of-custody	No	Yes	Yes	No
General Performance Measures				
Compliance with existing laws	Yes	Yes	Yes	Yes
Requires written forest management plan	Yes	Yes	Yes	Yes
Public availability of certification summary	/ No	Yes	No	Yes

future log sales to their company. The Tree Farm Program still provides the opportunity to get a free inspection from a professional forester, a quarterly magazine and the ability to publicly advertise your active management by displaying the Tree Farm sign, but is not generally connected to the marketplace. The TREA-SURE Forest program in Alabama has similar benefits to landowners, but again, the program is not connected to the marketplace.

What to Expect During the Certification Process

If you sign up for the Tree Farm program, your certification process will consist of a field visit from a professional forester. Usually a walk around the property will generate productive discussion and a short written report of ideas from the forester. You will not be charged for

two-day field visit. They will also interview consulting foresters, neighbors, log buyers, state forestry officials and others that can tell them about your management. Eventually, you will get a detailed report on how your management compares with the FSC certifier's set of detailed performance standards. Their report will identify management practices you "must" and/or "should" change to become certified. If you agree to their conditions, then you can sign a five-year certification contract. You will then be contacted each year to ensure you are following the certification contract. You are then free to market your wood as certified under the FSC system, and the particular certifier (SmartWood and Scientific Certification Systems are the two U.S.-based FSC certifiers). For this initial assessment, you will probably pay about \$4,000-\$6,000 for a single small

Green Tag and SFI systems are still too new to know the exact procedures and costs that may be associated with their use. To find out more about how they would be applied to your property, contact the sponsoring organization.

Current Certification Issues and Debate

At the heart of the current debate about the various systems is what constitutes "good" management. Although sustainability is purported to be a central issue in most certification schemes, no one seems willing or able to find consensus on what forest management strategies will lead to long-term sustainability from economic, ecological and social perspectives. The FSC currently has 14 regional guideline groups engaging a broad array of stakeholders throughout North

Certification Continued on page 24 Alabama's TREASURED Forests / 23 America. Much work remains, as they have yet produced many rules that have local consensus and FSC approval.

Equity has also been a major concern, particularly for the non-industrial private forest owners that hold about 60 percent of all the forestland in the United States, and up to 90 percent of the forest in some European countries. A certification scheme that requires setting aside streamside areas for fish habitat, biodiversity or

other non-timber uses can have a devastating economic impact on a 40-acre forest owner.

Globalization of the forest industry and mergers creating multi-national forestry corporations are pushing the certification industry away from parochial schemes, based within individual countries, and toward regional and international schemes. Many governments, wary of trade implications, are concerned about the development of schemes that may create non-tariff trade barriers.

The recent entry of large, multinational accounting firms into the certification arena is also a noteworthy development. In some respects, there is little difference between auditing business records and auditing environmental performance. Look for these large players to add credibility, professionalism and cost to the current certification schemes.

So, how is your certification IQ? Hopefully this article has helped you see the options more clearly. As certification schemes mature, they will continue to play a role in forestry. Whether you decide to participate now, or watch from the sidelines, the future should bring ample opportunities to reevaluate your options.

Rick Fletcher is currently associate director of the Sustainable Forestry Partnership and professor in Forest Resource, College of Forestry, Oregon State University, Corvallis. He wishes to recognize Mark Rickenbach, University of Wisconsin, Madison, for work on a joint article that this was adapted from.

Certification Terminology

Assessment: The process of determining if a forest operation meets the criteria for a particular certification scheme.

Chain-of-Custody: The process of tracking wood from the time it leaves the forest, along the processing and marketing channels, to the final consumer.

Eco-label: Proprietary symbol used to identify a product that has been produced with a given environmental standard.

First-, Second- and Third-party Certification: Refers to who sets the standards and administers the certification system. If done by self, it is considered first party. If done by a trade organization it is generally considered second party. If done by an independent organization, it is third party.

Performance-based: Qualification for certification is determined by assessing applicant performance against a set of performance measures set by the certifier. Systems-based: Qualification for certification is determined by examining the environmental management system that an applicant is using to manage their forest, and determining its compliance with the certification scheme.

Verification: Process of verifying compliance with a set of certification criteria. Note that verifications can be done by a first, second or third party. This is also sometimes called an audit.

Promote and Support the TREASURE Forest Program Join the Alabama TREASURE Forest Association The Alabama TREASURE Forest Association is composed of people who practice TREASURE Forest management, people who encourage others to practice it, and people who believe that management of Alabama's forestlands according to the TREASURE Forest concept is good for both present and future generations.

	npanies, corporations, or organizations that do r of our forest resource for present and future	owners (Full Members), any forest landowner who is not own forestland (Associate Member), but want to generations. Date:
Name:		
Address:		
City:	County:	
State:	_ Zip: Telephone:(_)
Check each category and fill in the blanks as appro	ppriate:	
Associate Member	☐ Enclosed is \$20 annual membership fee	
Growing Member	☐ Enclosed is \$25 annual membership fee	
Full Member	☐ Enclosed is \$30 annual membership fee	
Primary objective:		
Secondary objective:		
Mail to: Alabama TREASURE Forest Association, P.O		
For more information about the Alabama TREASURE		cutive Director, at (334) 442-2424.

HIDDEN



TREASURES

Landowner Manages for Future with His Heart

By COLEEN VANSANT, Information Specialist Alabama Forestry Commission, Northeast Region, Cullman

VER the last 14 years I have met, talked to, and visited with many TREASURE Forest landowners. I have come to realize that these landowners are unique individuals and all possess qualities and attitudes that make them special. These are things that make them members of a very elite group: TREASURE Forest owners.

Recently I had the opportunity to visit with Danny Baker on his 268-acre farm near Hackneyville in Tallapoosa County. It didn't take me long to realize that Danny is indeed a special TREASURE Forest owner. Within minutes I was able to identify several characteristics that put Danny Baker in the spotlight.

TREASURE Forest is in his heart.

Danny manages his farm the way he does because of the love he has for it. It's a love that runs deep and brings out in him an undying sense of caretaker. Danny takes his responsibility to his land seriously, and everything he does is with the attitude of doing something for the land and not something to it. Like a parent for a child, he nurtures it with love, and gently guides his land to be the best that it can be.

He has an inborn sense of steward-ship. Danny didn't learn to be a steward of his land—he was born to be a steward of his land. Even before he heard about the TREASURE Forest program he was managing his family farm with a TREASURE Forest ethic. According to Danny, it was nearby TREASURE Forest owner Bobby Jennings who got him "interested and working more diligently" in the TREASURE Forest program.

He's proud. Like most TREASURE Forest owners, Danny Baker has pride. Not a selfish, destructive pride, but the same chest-swelling pride a father or mother has watching their child in his first T-ball game. Danny's father bought



Danny Baker of Tallapoosa County

the land in the late 1940s, and when he purchased it most of the topsoil had been removed. His dad planted pines in the 1950s that are still there today. Danny acquired the property from his mother in 1974 and since then has made his own mark on the land.

As you talk with Danny you can tell that he is not only proud of his accomplishments, but proud of the way the land has responded to his efforts. He knows every tree, bush, and animal trail and can readily notice any change that Mother Nature has made. Like most TREASURE Forest landowners, he can rattle off dates of when land was cleared and planted, how many seedlings were planted, and what kind of day it was when they were planted. He knows his land almost intimately and you sense that he probably feels its heartbeat. He's also proud of his two sons, Jonathan and Jamison, who have also taken an interest in the land.

He loves to share. You'll never meet a TREASURE Forest owner who doesn't love to talk about their farm and show it to everyone they can. According to Danny, "sharing it with other people that don't have a place to go and enjoy," is one of the most wonderful things a landowner can do. A troop of Boy Scouts

regularly visits Danny's cabin on his farm, along with church groups and family. One of the greatest highlights was a group of nine Belarussian children who suffer long-term effects from the 1986 Chernobyl nuclear reactor meltdown. The children came to Alabama to be in a clean environment for a long period of time in order to give their immune systems the chance to strengthen. Danny was proud to share his farm with these children and hopes that the visit to his place might help them in even some small way.

He builds things to last. "Everything I do I have in mind that it will last for my boys," says Danny. You can look around at the quality of his work and tell that it probably will. Danny doesn't just build something or repair something; he does the best possible job he can with the intention that it will be here for a very long time. Many of his fence posts and gates are welded steel, his barns are built and repaired with treated lumber, and even the outhouse he built hear the pond and picnic area of his farm will endure anything short of a tornado.

He has become involved. Whether it's his land ethic, his pride in his place or his love of talking about his property, Danny, like many TREASURE Forest landowners, has become involved in spreading the word of good land management and the TREASURE Forest program. According to Danny, "It's something I believe in and enjoy." In recent months, Tallapoosa County has become the home of a very enthusiastic and active TREASURE Forest Association. Danny has taken on the responsibilities of membership chairman.

It's TREASURE Forest landowners like Danny Baker who are making the world a better place for the rest of us.



Elmore County Landowner Uses Computer Technology to Manage Forestland

WETERINARIAN Robert Parker of Millbrook owns property in east Elmore County on which he is planting a wide variety of timber, flowers and legumes as part of the Alabama TREA-SURE Forest program. With help from his family and a student-employee from the Private Forest Management Team at Auburn University, Dr. Parker has transformed fallow cotton fields into a quilt-like landscape of wildlife, timber, crops and wildflower stands.

The result is a complex ecosystem that he diligently maintains and will unveil to landowners across Alabama during the 2000 Alabama Landowner and TREA-SURE Forest Conference via a specialized computer software program called FARMS Manage-It![©].

Dr. Parker inherited a tract of land on the west side of Elmore county from his father. In the early 1970s, the Alabama Forestry Commission approached him to become one of the first members of what was to become the Alabama TREASURE Forest Association. "They had approached several local landowners," recalls Dr. Parker. "They talked about responsible land stewardship and preservation; I thought it was a worthwhile cause and joined the program."

Later, Dr. Parker traded that parcel of land for most of his 500-acre site just south of Wetumpka, Alabama, in the community of Ware. Dr. Parker says, "It was a good trade. The land had timber on it which brought the value up, but I did not initially think of it in terms of timber production." He simply enjoyed working on the property and planned to develop it for hunting, family recreation, and maybe later, timber.

Computer Used as Management Tool

TREASURE Forest landowners are required to identify one primary and at least one secondary management objective for their property. Dr. Parker selected wildlife and timber production initially, but has since informally worked the goals of recreation, aesthetics, and environmen-

tal education into his overall plan.

His property originally consisted of a series of cotton fields along the Tallapoosa River, divided by stands of pine trees. "As the cotton fields were picked, I would replant them with food plots and green fields," says Dr. Parker. Although his efforts to reclaim the land began gradually, he now manages 50 to 60 acres of pine, 55 acres of oaks, a tree identification area that includes a mix of more than 25 species of trees, over 20 varieties of oak trees, plus 10 acres of corn planted in five separate patches, tree stands, wildflower tracts, tall grass green fields, 25 wildlife food plots for deer and quail, a series of beehives, a catfish pond, and much more.

Translating this much diversity into a written management plan was an overwhelming task. "I enjoy keeping detailed records of what I have planted, where and when, so that 10 years from now I or anyone can identify what has been done," says Dr. Parker. Increasingly, his property was becoming more complex and the task

Dr. Robert Parker will host the 2000 Landowner and TREASURE Forest Conference tour on his property in Elmore County.

of maintaining records more daunting.

At a meeting of the Elmore County Chapter of the Alabama TREASURE Forest Association in the late summer of 1999, Dr. Parker was introduced to FARMS Manage-It!® software, developed by George Barker, a registered forester, and his wife Karen Barker, a computer programmer.

FARMS® was developed by Natural Resource Technologies, L.L.C. (NRT), for private landowners, hunters, conservationists and anyone with the need to manage one or several tracts of land.
FARMS® allows landowners to build custom maps and reports on their property. Using scanned images of plat maps, aerial photographs, etc., they can "see" every inch of their property and add features right on the computer screen. As the maps are built, FARMS® automatically creates a database of correlated information for reports and trend analysis.

For instance, Dr. Parker and his sons can track the feeding movements of deer and plot tree stands in key locations for better harvesting. Timberland can be categorized by type and age to forecast thinning as well as planting schedules. Records can also be kept of the species of wildlife living in the area, or the flora and fauna native to the land.

Dr. Parker remembers, "I had never seen a product like that before. It would allow me to map all of my small fields, plots and stands, and keep detailed records on each." Land management programs for private landowners are rare and once Dr. Parker saw the capabilities, he was sold.

Starting with an aerial photograph of his property, the Barkers scanned it into Dr. Parker's copy of the FARMS® software. They also installed FARMS® onto a laptop computer so that Dr. Parker could work with it at his office, his home or on location at his property.

Once the map was on the computer screen, Dr. Parker began segmenting his property. He explains, "I outlined the different stands and assigned each a name,

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such as the 'Pond Loblollies,' 'Pond Sunflower Field,' and 'Pond Hardwoods.' Then I went back and entered the details on each stand. For example, I recorded when I planted the pines along the road to the cabin when it was just a path." Placing features on a map is easy with FARMS[®] because users can either approximate the locations of boundaries, groves, roads, etc., or import exact coordinates from a Global Positioning System (GPS).

Dr. Parker doesn't consider himself computer savvy, but he found the FARMS® software easy to use and caught on quickly. "With the hectic schedule of a veterinary practice, I don't have a lot of time, and it probably took me a total of three weeks to enter all the basic information on my property."

As the diversity of his TREASURE Forest increased, FARMS® enabled him to keep up with everything that was going on. Dr. Parker says, "With all of the little fields to keep up with, it's perfect. I know when, where, and what I planted so that I can track growth rates. For example, this year I planted 300 chestnut trees and intend to plant a California white oak later. Every note is documented. I even used FARMS® to locate sandy sites where I planted longleaf pines."

In addition to managing timber, Dr. Parker uses his computer to monitor wildlife on his property. A participant in the Department of Conservation's Deer Management Program, Dr. Parker monitors food plots and harvesting. "I record my tree stands and the animals harvested each season. I've mapped where I've planted Alfa Graze and Alfa Rack feeding plots for deer, chufas for turkey, and lespedeza for quail." FARMS© allows Dr. Parker to see these areas and determine where the deer are feeding. Comparing harvesting information from one season to another shows Dr. Parker how his deer population is prospering in terms of body weight, age class and buck-to-doe ratios.

Property Used to Educate Others

Dr. Parker's property is such a diverse landscape that it is often used for educational purposes. "Adults and students in grade school should have a place where they can learn about trees, see differences in growth rates and generally enjoy the outdoors," says Dr. Parker. One of his long-term goals for the property is filling the educational needs of future generations.

Alabama TREASURE Forest Association members have toured his property in the past. Currently, Dr. Parker is preparing to host his largest tour ever, 400 to 500 statewide visitors participating in the October Landowner and TREA-SURE Forest Conference. The visitors will see first hand the TREASURE Forest Dr. Parker has created. Using FARMS®, Dr. Parker plans to provide each visitor with a map of his property that identifies the important features along the tour route.

As a member of the Alabama TREA-SURE Forest Association and president of the Elmore County chapter, Dr. Parker is among the private forest landowners who own 95 percent of Alabama's forests. "I could sit down and spend my time watching television," recognizes Dr. Parker, "but I would rather spend that time working out here and at the end of the day I will have all this to show for it."

The Elmore County Chapter of the Alabama TREASURE Forest Association can be reached at (334) 567-6301. More information or a free demonstration copy of the FARMS® software can be acquired by: calling NRT at (334) 252-0744 or toll free at 888-848-2146; by writing to NRT at P.O. Box 780603, Tallassee, Alabama 36078-0603; or by visiting the NRT web site at www.nrtech.com.

Landowners Continued from page 7

zero-funded SIP. As of publication date, Congress is still deliberating the final numbers.

The NASF represents the directors of the state forestry agencies from all 50 states, eight U.S. territories, and the District of Columbia. The member agencies help deliver the Forest Stewardship Program and provide other management and technical assistance to private landowners as well. Further information about the state foresters and the landowner assistance programs that they support can be found on the web (www.stateforesters.org). The Forest Stewardship Program study can also be found in its entirety on the web (www.rtp.srs.fs.fed.us/econ/pubs/jde001.

htm). 📦

Forestry Commission Web Page: www.forestry.state.al.us

Travelog Continued from page 9

Alabama's Seaport

Another leading player in the movement of forest products abroad is the Alabama State Docks. In 1999, this state-owned operation led all other U.S. ports in the shipment of forest products and it handled more forest products than any other type of cargo through its terminals. Significant investments in forest product terminals, warehouse facilities, and the location of key shippers in the U.S. Southeast led to the dominant position of the state docks in this sector.

Outlook

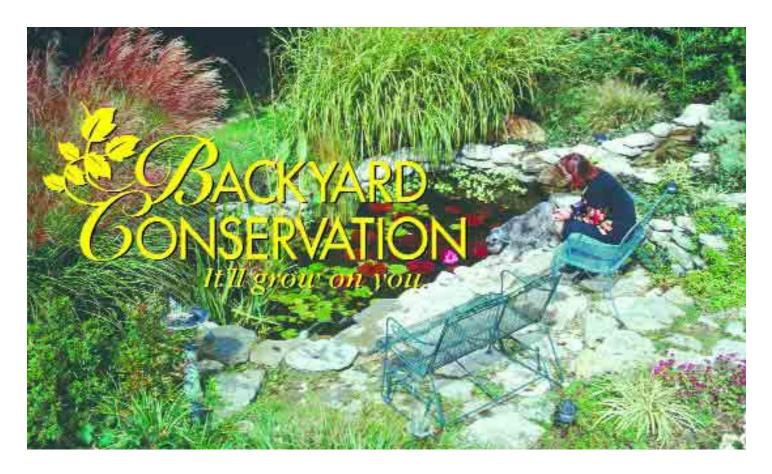
Expect exports to make an even bigger impact on Alabama's forest product industry and our state docks. The reasons are simple. Over 95 percent of the world's population is outside of the United States. Consumers worldwide pre-

fer products made from natural wood for the home and office. Increasingly, they want to know that the products originate from renewable forests.

There's no better place to shop than Alabama. It's in the middle of one of the great wood baskets of the world, where foreign buyers continue to discover one of our best kept secrets—ownership of Alabama's timberlands is in private hands.

Alabama's forest landowners are a critical, first link to these worldwide consumers. As foreign markets for Alabamamade wood products grow, so will the trees. For the foreign buyer and the Alabama supplier, having a long term, reliable source of supply is the foundation for export success.

The next time a newspaper article touts the volume of autos exported from Alabama, remember that you may have a piece of one of the biggest export industries growing right in your own forest.



HETHER you live in the city or the country, a moment of tranquility could be as close as your own backyard. A backyard is the perfect

escape- a private place where you can relax after a hectic day and let nature compose a soothing lullaby that calms your nerves. Imagine walking out your back door and into a tranquil garden where flowers bloom, butterflies hover, birds sing, and water softly trickles. As the sun goes down, you can illuminate your favorite corner with a soft spotlight and continue to unwind as night approaches. Sound too good to be true? Not if you learn about backyard conservation. Your back yard can easily be transformed into a natural haven for birds, blooms, and beauty—a place of tranquility.

The USDA's Natural Resources Conservation Service, which has traditionally worked closely with farmers, ranchers and other rural land users, is now providing advice for homeowners and urban residents through a program called "Backyard Conservation." This program showcases 10 simple conservation practices for the backyard—terracing, tree planting, composting, mulching, wildlife habitat, wetlands, ponds, water conservation, nutrient management, and pest management.

You don't have to do a lot or spend a lot to make your yard a more inviting place for birds, nature, and your family. The right plants or trees and a few simple conservation practices can make a huge difference.

Whether your back yard is measured in flower pots, feet, or even acres—no matter how vast or cozy—there's room for backyard conservation. You can beautify and protect your own back yard using the very same conservation practices that our nation's farmers and ranchers have used to beautify and protect the American countryside for decades.

On the Farm

Farmers have always known the benefits of tree plantings. They use them for windbreaks and to provide shelter for food and wildlife. Trees can shelter livestock and crops; they are used as barriers to slow winds that blow across large cropped fields and through farmsteads. Windbreaks can be beneficial in reduc-

ing blowing and drifting snow along roadways. Farmstead and field windbreaks and tree plantings are key components of a conservation system. They also help prevent dust particles from adding to smog over urban areas.

In Urban Areas

One of the most popular Backyard Conservation practices is tree planting. Trees add beauty and so much more. Trees in your back yard can be home to many different types of wildlife. Trees can also reduce your heating and cooling costs, help clean the air, add beauty and color, provide shelter from the wind and the sun, and add value to your home.

Choosing a Tree

Choosing a tree should be a well thought-out decision. Tree planting can be a significant investment in money and time. Proper selection can provide you with years of enjoyment and can significantly increase the value of your property. However, an inappropriate tree for your property can be a constant maintenance problem or even a hazard. Before you buy, take advantage of the abundant references on gardening at local libraries,





universities, arboretums, parks where trees are identified, native plant and gardening clubs, and nurseries. Some questions to consider in selecting a tree include:

- What purpose will this tree serve?
- Is the species appropriate for my area?
- How big will it get?
- What is the average life expectancy of the tree?
- Does the tree have any particular ornamental value such as leaf color or flowers and fruits?
- Does the tree have any particular insect, disease, or other problem that may reduce its usefulness?
- How common is this species in my neighborhood or town?
- Is the tree evergreen or deciduous?

After you answer all these questions and go out and purchase your trees, you have to decide exactly where to plant them. Proper placement of trees is critical for your enjoyment and their long-term survival. Check with local authorities about regulations pertaining to placement of trees. Some communities have ordinances restricting placement of trees within a specified distance of a street, sidewalk, streetlight or other utilities.

Before planting your tree, consider the tree's ultimate size. When the tree nears maturity, will it be too near your house or other structures? Be considerate of your neighbors. An evergreen tree planted on your north side may block the winter sun from your next door neighbor. Will it provide too much shade for your vegetable and flower gardens? Most vegetables and many flowers require considerable amounts of sun. If you intend to grow plants that require a great deal of sunlight, consider how the placement of trees will affect them. Will the placement obstruct driveways or sidewalks? Will it cause problems for buried or overhead utilities? It is much easier to consider these things before you plant your trees than it is to remove the trees five or 10 years later.

Planting a Tree

A properly planted and maintained tree will grow faster and live longer than one that is incorrectly planted. Trees can be planted almost any time of the year as long as the ground is not frozen. Early fall through winter is the optimum time to plant trees in Alabama. This gives the tree a chance to establish new roots before new foliage emerges in the spring. When spring arrives, the tree is ready to grow. Planting in hot summer weather should be avoided.

Maintenance

For the first year or two, especially after a week or so of extremely hot or dry weather, watch your trees closely for signs of moisture stress. If you see leaf wilting or hard, caked soil, water the trees well and slowly enough to allow the water to soak in. This will encourage deep root growth. Keep the area under the trees mulched. Fertilization is usually not needed for newly planted trees. Depending on soil and growing conditions, fertilizer may be beneficial at a later time.

Pruning

Usually pruning is not needed on newly planted trees. As the tree grows, lower branches may be pruned to provide clearance above the ground, or to remove dead or damaged limbs or suckers that sprout from the trunk. Sometimes larger trees need pruning to allow more light to enter the canopy. Small branches can be removed easily with pruners. Large branches should be removed with a pruning saw. This will allow the tree to grow over the wound quickly without the use of sealants. Major pruning should be done in late winter or early spring. So, whether you live on a farm or in an urban neighborhood, think about planting trees-not only for the aesthetics but also for the tremendous conservation benefits they provide.

Source: Natural Resources Conservation Service. To receive a free, 28-page color booklet and 10 tip sheets on adapting conservation practices to your own back yard, call (toll free) 1-888-LANDCARE or your local office of the Natural Resources Conservation Service.

2000 Conference

Otters Educational Opportunity for Landounters

HE Seventeenth Annual
Alabama Landowner and
TREASURE Forest Conference
will be held in Montgomery on
October 5-6, 2000, at the

Governors House Hotel and Conference Center. The conference is an educational opportunity for forest landowners. In addition to indoor technical sessions, a tour of the Robert Parker TREASURE Forest in Elmore County will be a highlight of conference activities.

A \$55 registration fee will include all events: the landowner tour, banquet, indoor sessions and luncheon.

Registration will start at 10 a.m. on October 5 in the lobby the conference center.

The first event will be a forest landowner tour on the afternoon of Thursday, October 5. Buses will begin leaving from the parking area of

from the parking area of the Governors House Hotel at 12 noon. Participants should eat lunch beforehand or bring a sack lunch to eat on the bus. The walking tour will include stops on wildflowers, tree shelters and wildlife. There will also be equipment displays and a demonstration of forest and wildlife management computer software.



A banquet on Thursday night will honor some outstanding TREASURE Forest landowners and county forestry planning committees. It will begin at 6:45 p.m. in Constitution Hall at

the Governors House Hotel. A dessert social will be held after the banquet so attendees can have an opportunity to congratulate the award winners.

Indoor technical sessions will take place on Friday morning. Participants will be able to choose four of six sessions, which include the following:

- Wildflower Photography
- Discovering Historical Sites on Your Property
- Squirrels and Rabbits: Habits and Habitats
- Forest Certification
- Diseases and Insects of Southern Forests
- How to Select a Logger for Your Timber Harvest

Landowners may earn credits for the Forest Masters program by attending the indoor sessions and the tour.

A luncheon hosted by the Alabama TREASURE Forest Association in Constitution Hall will end the conference on Friday. Larry Payne, director of Cooperative Forestry with the U.S. Forest Service in Washington, D.C. will be the guest speaker at the luncheon.

The ATFA will also be conducting its annual silent auction during the confer-



ence. Bids will be received all day Thursday and up until the luncheon on Friday. Items to be auctioned will include handmade crafts and

forestry-related items. If you have an item you would like to donate for the auction, contact Joan Malone at 334-442-2424.

Some exhibit space is also available. Call Tom Counts at 205-489-5111 for more information.

Please register early by using the form on page 31. Registration after the cutoff date of September 22 is \$65, and no refunds will be given after September 30. For more information call Fran Whitaker at 334-265-8733.

Coming This Fall: A Woodland Owner's Guide to Certification Systems

The Sustainable Forestry Partnership at Oregon State University is producing a guide to help landowners determine readiness for the various certification systems. By using it, the forest landowner should be able to get an idea of what will be required of them under the various certification systems. The guide should be available by late fall through the USDA-Cooperative Extension system. For more information, contact the Sustainable Forestry Partnership at Auburn University at 334-844-1037.

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Seventeenth Annual Alabama Landowner and TREASURE Forest Conference

Governors House Hotel and Conference Center Montgomery, Alabama • October 5-6, 2000 REGISTRATION FORM

Name(s) of Attendee(s):	Will Attend Tour on Thurs	:.:
#1#2		
#3 #4		
Company:		
Address:		
City: State: Zip:		
CATEGORY(IES) OF ATTENDEES (Check one category only) Total # att	tending Thursday's tour	_
TREASURE Forest Landowner		
Government Agency/TREASURE Forest Landowner Landowner		
Government Agency/Landowner		
Government Agency		
Private Forest Industry/Consultant		
I am attending the conference and enclosing:		
\$55 preregistration x attendee(s) =	¢	
		-
NOTE: Registration includes tour and banquet on Thursday; indoor session	ons and luncheon on Friday. · — — — — — — — — — — — — — — — — — — —	
CONFERENCE INFORMATION	_ _	
 Thursday, Oct. 5: Registration will begin at 10 a.m. in the lobby of the Confer Thursday, Oct. 5: Buses will depart for the tour at 12 p.m. from the parking lot Lunch is on your own, or you may bring a sack lunch to eat on the bus. This is Please dress appropriately and wear comfortable shoes. Buses will return clothes for the banquet that evening. Thursday, Oct. 5: Banquet begins at 6:45 p.m. in Constitution Hall. Following 	ot of the Governors House Hotel. is a walking tour held outdoors. In to the hotel in time to change	r+
social honoring award winners in the Alabama Rooms. • Friday, Oct. 6: Indoor sessions begin at 8 a.m.; a separate agenda will list me • Friday, Oct. 6: Luncheon begins at 11:45 a.m. in Constitution Hall.		ı
 Preregistration fee for the conference per person if postmarked by Septe Registration fee for the conference after September 22 is \$65. No refunds will be made after September 30. Mail upper portion of form and fee payable to Alabama Forestry Conference to 		
Fran Whitaker, Alabama Forestry Association, 555 Alabama St., Montg		
World	Joinery, AL 30104, 334-205-6733.	
HOTEL INFORMATION		
 The Governors House Hotel is offering a special room rate of \$60. Please specify that you are attending the TREASURE Forest Conference who Blocks of rooms will be held until the cutoff date of Sept. 15, 2000. 	en you make reservations.	
Governors House Hotel and Conference Co 2705 E. South Blvd., Montgomery, AL 361 334-288-2800 or 1-800-334-8459		



Winged Elm

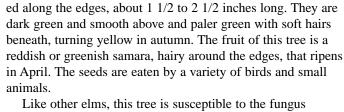
By KIM GILLILAND, Editor

HE winged elm (*Ulmus alata* Michx.) is a small to medium-sized tree common over most of Alabama except the southernmost counties. The tree gets its common name from the "wings" that grow on either side of the branches. These broad, corky projections usually develop on branches late in the first or second growing year. As a result, the tree is sometimes referred to as "cork elm."

The range of winged elm extends from southern Virginia, south to central Florida, west to central Texas and north to Central Missouri. This species is occasionally found in wet

areas but is more frequently found on drier upland or sandy soils. It is not a major component of any forest cover type in the United States. Winged elm often invades forest openings and old fields, and it is difficult to kill with herbicides.

The leaves of this elm are simple, alternate and doubly serrat-



Like other elms, this tree is susceptible to the fungus *Ceratocystis ulmi*, which causes Dutch elm disease, and to an organism that causes elm phloem necrosis. Both are transmitted by insects and have spread to Southeastern states from the north.

The small branches from the winged elm are used in decorative floral arrangements and other arts and craft displays. Wood from elms is primarily used for furniture, hardwood dimension and flooring, boxing and crates. The wood is heavy, hard, and resists splitting, making it a perfect choice for the manufacture of hockey sticks. During the 18th and 19th centuries, rope for fastening covers of cotton bales was made from the fibrous inner bark of the winged elm.

References

Little, Elbert L. **The Audubon Society Field Guide to North American Trees, Eastern Region**. New York: Alfred A. Knopf, 1980.

Silvics of North America. *USDA-Forest Service Agriculture Handbook* 654. 1990.

York, Harlan H. **100 Forest Trees of Alabama, Second Edition.** 1995. **☆**



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