

# Alabama's **TREASURED** Forests

SPRING 1996





# STATE FORESTER'S MESSAGE

by TIMOTHY C. BOYCE, State Forester



Recently I attended a Ways and Means Committee meeting of the Alabama Legislature that was chaired by Rep. Bill Fuller. Chairman Fuller began a new process in which children in Alabama were given an opportunity to address this committee. The children spoke on various subjects that day, but the message I heard is that our future truly does rest with our children.

It also strengthened my commitment to ensure that our children are well informed about the forest resources of Alabama and the economical and environmental impact those resources have on their lives. In order to accomplish this educational mission, we must all continue supporting programs like Project Learning Tree, the Teachers Conservation Workshop, and County Forestry Awareness Week.

We must also challenge ourselves to become more involved in new technology such as the Internet and CD-ROM programs so that we can compete with the “edutainment” our children are mesmerized with every day.

If you are interested in getting involved, Stewards of Family Farms, Ranches and Forests has a series of materials designed to educate both children and adults. These materials include slide shows and video programs for use in homes and civic clubs. One of these videos is designed for use in schools and comes with a teacher’s guide. “Southern Forest...Southern Heritage” is the title and theme of these materials, which explain the history of the Southern forest and the role man has played. Stewards has also developed a computer-based interactive CD-ROM educational “game” for use in homes and schools that explores the same theme.

Our children of today will be the leaders of tomorrow. Planting seeds of interest and knowledge at an early age can result in adults who have a greater appreciation of forestry. Our challenge should be to get this material in every school in Alabama.

Sincerely,

A handwritten signature in cursive script that reads "Timothy C. Boyce". The signature is written in dark ink on a white background.

Timothy C. Boyce  
State Forester

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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.

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# Alabama's TREASURED Forests

**Volume XV. No. 2**

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**COVER:** The red buckeye's (*Aesculus pavia* L.) showy flowers bloom in late spring. The small tree is found throughout Alabama in moist soils.

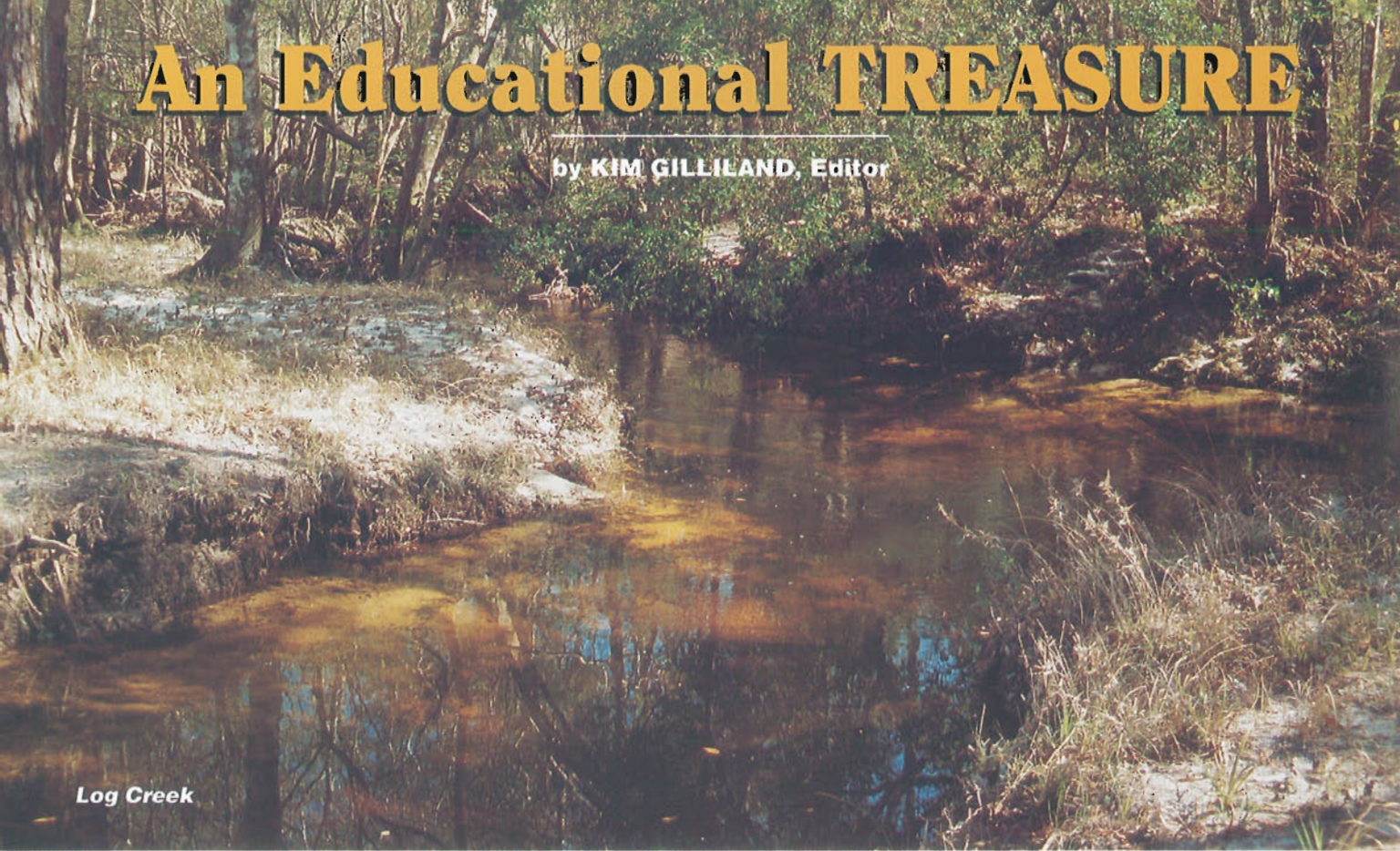
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# An Educational TREASURE

by KIM GILLILAND, Editor



Log Creek

If someone had told James and Joan Malone in 1992 that within three years they would have developed a model educational TREASURE Forest and be named the state Helene Mosley winners, they probably wouldn't have believed it. But that's just what happened to this Mobile County couple.

For most of their married lives they owned just five acres, but were constantly looking for just the right piece of property to purchase. After years of searching, they found it right in their own backyard. A neighbor was willing to part with 145 acres, which the Malones immediately purchased and began to improve.

This was in 1992, and the property was certified as a TREASURE Forest in 1993. From the very beginning Joan kept a scrapbook of the different management practices and improvements. Although she didn't know it at the time, this scrapbook with photos would prove invaluable when the Helene Mosley award nomination was written, and could serve as a documented history of their accomplishments.

## Wildlife and Timber

A wildlife enthusiast and hunter for many years, James had some knowledge of

practices that benefited wildlife. He soon found out from Mobile County Forester Steve Lyda and others that these same practices would also help manage his timber. For example, James knew that prescribed burning would produce more browse for deer. Finding out that this same practice would help his pines grow better by reducing some of the hardwood competition was an added bonus. It became easier and easier to integrate the wildlife and timber management once he understood there was a direct relationship between the two.

One of the first decisions made after the property's purchase was to thin some of the large pines. James says they debated whether to clearcut the entire stand, but after weighing all the factors decided to select cut and leave some of the better trees for future growth. This gave them some immediate income with the hope of cutting additional trees in the stand for poles in a few more years.

The diversity on the 145 acres is broad. There are flat areas especially suited to wildlife food plots and pine stands. There are wet, hardwood bottoms that flood easily, and a steep hardwood-pine area that is one of the highest points in the entire county. Longleaf, loblolly and slash pines

all grow well on the property. The longleaf is being naturally regenerated when cut, while improved loblolly and slash have been hand planted in other areas.

Approximately 27 acres are in wildlife openings, some of which are green all year. Oats, wheat, rye, clover and chufas are planted in the food plots. Additionally, fruit trees and other wildlife foods like autumn olive and bicolor lespedeza have been planted throughout the property.

According to James, one key to the successful management of the property is that everything is done in small parcels. This makes it easier to do the work themselves, and it's also easier to recover from any errors.

Log Creek winds its way through the hardwood bottom. The creek's clear, cool water is an attraction for family members in the summertime. Although it could be forded in some shallow places, the Malones constructed a permanent bridge that can withstand travel by tractors and other equipment. This protects the creek area when heavy traffic is required, as would take place during a timber harvest.

James enjoys hunting, but does most of it on leased land as a member of a hunting club. Family members are the only





Joan and James Malone on the front porch of their cabin.

ones allowed to hunt on the TREASURE Forest. The 40 acres surrounding the cabin are off limits to hunting, however. That area is available to watch and photograph deer, turkey and other wildlife.

### Educational Value

The Malones have been generous with their time and their property. Groups of all ages have visited the TREASURE Forest and found it special in more ways than one.

When their dream of owning property became a reality, it was time for James and Joan to fulfill another dream. For many years they had wanted to build a place that would reflect a simpler way of life. The goal was to keep a culture alive for their children that James and Joan had heard about from their own parents and grandparents. The result is a 1930's-style cabin made of rough-sawn wood. There is no electricity, and a pump on the front porch provides the only water.

They named the cabin and their TREASURE Forest "Heritage Homestead." The house itself provides a forestry lesson. Guests are told about the types of wood used: pine on the outside and various hardwoods on the inside. Door handles are made of sturdy vines, and furniture crafted by James using different woods adorns the rooms.

The house is used as just one part of a lesson on TREASURE Forest. Four miles of nature trails invite guests to explore the woods. Handmade signs tell the common and scientific names of trees along the way.



Invariably, James says, people get curious about other trees that are not marked, and this leads to discussions about various trees and their uses and benefits. Resting stations named by Joan can be found along the trails. A bench under some holly trees is aptly named "Holly Hill Top," for example.

Their TREASURE Forest has played host to a range of people, including school, church and landowner groups. Inquiries about visiting the property have become so in demand that Joan now has to schedule them far in advance; lunch is even prepared for some groups as well.

The tours for school groups are structured to allow the students to learn as much as possible. Stations are set up along the tour route to explain manage-

ment practices. Lyda emphasizes that the local school is lucky to have the property available to them. "This is the closest thing you can have to a private outdoor classroom," he said.

### Teaching Others about TREASURE Forest

It hasn't been difficult for the Malones to integrate timber management, wildlife management and an old style of living into one educational package. Their willingness to educate others about forestry and the TREASURE Forest program was one of the reasons they were chosen as last year's state Helene Mosley Memorial TREASURE Forest Award winners. "We were surprised, but much honored," Joan remarks.

The Malones themselves benefit from guests touring their property. "You learn something from everyone who comes here," James said. According to Joan, hosting these groups comes natural. "James and I both love sharing what we know with others."

Besides hosting the different groups, the Malones are active members of their local forestry planning committee and the TREASURE Forest Landowners Association. They are excited by the prospect of being able to recruit new TREASURE Forest landowners through these organizations.

In its 21-year history the TREASURE Forest program has recognized over 1,000 landowners who exemplify an outstanding land stewardship ethic. James and Joan Malone are, in turn, giving something back to the program by sharing their experiences with others and educating them in the process. ♣





# Editor's Understory

by KIM GILLILAND, Editor

**A**s you drive up, a sign greets you: "Welcome to Heritage Homestead." There may be a modern car in the driveway, but right away you get the feeling that this is not a place with many modern amenities. Behind a 1930's-style cabin, smoke billows from a smokehouse. A peak inside reveals a fire on the dirt floor and pieces of pork hanging by yucca leaves (bear-grass) from the ceiling. As the fire gets low, wood is added to hot coals to increase the smoke. On the other side of the cabin, steam rises from a black kettle where coffee is being brewed. Inside the cabin, wood stoves provide heat. Look around and you spy shelves of canned vegetables. These, I'm told, were made outside in the black kettle, as was the custom many years ago. When it gets dark, only candles and kerosene lamps will provide light.

Just three years ago the area where this cabin now stands was an overgrown thicket. But James and Joan Malone had a vision, and with a little machinery, a few hand tools and a lot of sweat, they cleared an opening for the cabin. James drew the first plans for the cabin on a scrap piece of paper. As a boy he had lived in a similar house, and he wanted to make it as authentic to those times as possible. The Malones talked extensively with older family members to design the cabin and smokehouse. James and a cousin did all the construction on the cabin.

In this type of design, windows and doors are placed directly across from one another; when they are open, air circulation throughout the house is increased. The large front porch is a peaceful place to sit in late afternoon and watch wildlife. It is around this time of day when deer and turkeys make their way to the large field a few yards in front of the cabin.

Bluebird houses and squirrel feeders are also found nearby.

The cabin is only a short distance from their primary residence, which allows the



*James brings out some pork from the smokehouse.*

Malones to frequently visit Heritage Homestead. In addition, they live in the cabin for an entire month each year. Joan says they are fortunate to have a business which allows this flexibility. The Malones sell small farm implements and utility tractors. "We've deliberately kept it small," she says about the business. Their products can be viewed at a display yard in Chunchula by appointment, and much of their day-to-day operations are conducted by telephone. This way they are not tied down to an office every day.

The Malones have two daughters who are married and one granddaughter. These family members enjoy spending time on the TREASURE Forest and are learning about the old ways of life as well. "They're very much involved with the property," said Joan.

The educational part of their TREASURE Forest is extremely important to the Malone family. One of the first events they hosted was a gathering from the local town of Chunchula. The group had a forestry scavenger hunt and the Malones told them about some of the management practices they had started. What they found out was that even people who live in what's considered the "country" can be unaware or misinformed about many aspects of forestry. If these people can benefit from a learning experience like visiting a TREASURE Forest, then people living in an urban environment can benefit even more, James and Joan determined.

The Malones then began hosting tours of different groups. They participated in the TREASURE Forest Landowners Association's Adopt-a-School program, and chose the fifth grade class at Semmes Elementary. "As far as children are concerned, they are just as interested in nature as adults," Joan said. She hopes that no matter where they live, visitors leave the TREASURE Forest with the inspiration to take care

and improve their own surroundings. "We want them to leave with a greater appreciation with what they have."

James believes that TREASURE Forest is the key to educating all ages about good stewardship. "The biggest impact we've had on other people is through education," he said. "We've learned to communicate our ideas through TREASURE Forest."

Heritage Homestead has become more than a way to preserve the old way of life. The heritage being passed on here is a way of caring for the land, of improving it, and keeping it productive for the next generation. ♣



*Every animal is provided for at Heritage Homestead.*

# Alabama Forestry Planning Committee Directory

Some of the agencies listed below have an office in your county. Please contact the headquarters office below or consult your local telephone directory for the address and phone number of the county office.

**Alabama Department of Conservation .....334-242-3465  
and Natural Resources**

64 North Union St.  
Montgomery, AL 36130

**Alabama Department of Education .....334-242-9114  
Vocational Division, Agribusiness Education**

5227 Gordon Persons Bldg.  
P.O. Box 302101  
Montgomery, AL 36130-2101

**Alabama Farmers Federation .....334-613-4305**

P.O. Box 11000  
Montgomery, AL 36191

**Alabama Forestry Association .....334-265-8733**

555 Alabama St.  
Montgomery, AL 36104

**Alabama Forestry Commission .....334-240-9300**

P.O. Box 302550  
Montgomery, AL 36130-2550

**Alabama Soil and Water Conservation .....334-242-2620  
Committee**

RSA Union Bldg. Suite 334  
100 North Union St.  
P.O. Box 304800  
Montgomery, AL 36130-4800

**Alabama TREASURE Forest .....334-264-3236  
Landowners Association**

660 Adams Ave. Suite 101  
Montgomery, AL 36104

**Alabama Wildlife Federation .....334-832-9453**

46 Commerce St.  
Montgomery, AL 36104

**Association of Consulting .....334-745-7530  
Foresters, Inc., Alabama Chapter**

Melisa V. Himel, Chairman  
c/o Forestry Consultants, Inc.  
P.O. Box 684  
108B N. 8th St.  
Opelika, AL 36803-0684

**Alabama Agricultural Experiment Station .....334-844-2237**

308 Samford Hall  
Auburn University, AL 36849

**Alabama Cooperative Extension System .....334-844-5323**

109 Duncan Hall  
Auburn University, AL 36849-5612

**College of Agriculture, .....334-844-2345  
Auburn University**

107 Comer Hall  
Auburn University, AL 36849

**School of Forestry, .....334-844-1007  
Auburn University**

108 M. White Smith Hall  
Auburn University, AL 36849-5418

**Tennessee Valley Authority .....423-632-1635**

Resource Management  
17 Ridgeway Rd.  
Norris, TN 37828

**USDA-Farm Service Agency .....334-279-3500  
(formerly Agricultural Stabilization and Conservation Service)**

P.O. Box 235013  
Montgomery, AL 36123

**USDA-Rural Economic and Community .....334-279-3400  
Development**

(formerly Farmers Home Administration)  
4121 Carmichael Rd.  
Suite 601 Sterling Centre  
Montgomery, AL 36106-3683

**USDA-Forest Service .....334-832-4470  
National Forests in Alabama**

2946 Chestnut St.  
Montgomery, AL 36107-3010

**USDA-Forest Service .....404-347-7930  
State and Private Forestry**

1720 Peachtree Rd. N.W.  
Atlanta, GA 30309

**USDA-Natural Resources .....334-887-4560  
Conservation Service**

P.O. Box 311  
Auburn, AL 36830-0311

# Natural Resources Conservation Service in Alabama

by JOAN LOVE, Public Affairs Specialist, Natural Resources Conservation Service

**T**he Natural Resources Conservation Service (NRCS) was created on October 20, 1994, as part of the large United States Department of Agriculture (USDA) reorganization. It is built on the foundation of the former Soil Conservation Service, which has a proud 60-year history of working with land users in partnership with soil and water conservation districts and others.

## Mission and Organization

The new name more accurately reflects the agency's mission, which is to help people conserve all natural resources on private lands. Nearly three-fourths of the technical assistance provided by NRCS is to help farmers develop conservation systems uniquely suited to their land and their individual ways of doing business. The agency also provides assistance to rural and urban communities to reduce erosion, conserve and protect water, and solve other natural resource problems.

The NRCS mission focuses on maintaining soil quantity and soil quality, natural resource assessments, biological restoration of landscapes, and working with people. It covers three major areas: soil and water conservation, natural resource surveys and inventories, and community resource protection and management. This federal agency provides technical help and, in some cases, financial help as well. A network of conservation specialists helps farmers understand

and protect the land's resources while using them wisely. Employees have strong technical and scientific expertise with professional disciplines representing soil conservation, soil science, forestry, agronomy, engineering, economics, archaeology and biology.

In Alabama, NRCS is under the leadership of State Conservationist Ronnie Murphy. Three Assistant State Conservationists for Field Operations located in Decatur, Auburn, and Grove Hill manage NRCS activities in these regions of the state. Each county has an NRCS district conservationist responsible for providing technical assistance. They work directly with farmers, foresters, and others to plan and carry out long-term conservation programs to meet their needs and the needs of their land.

## Assistance Provided

The majority of NRCS assistance is provided through the Conservation Operations Program. With funds provided through this program, employees provide information about alternative land uses and treatments for controlling erosion to reduce sedimentation and water pollution and prevent upstream flood damage. They also help farmers design, lay out, and maintain terraces and other structures; help solve waste management problems associated with animal production; help select practices for establishment of grass and trees; and provide guidance in man-

aging cropland, pasture, woodland, wildlife habitat, and other land.

As part of this Conservation Operations Program, from 1985 through 1990, NRCS targeted its resources toward helping farmers develop conservation plans to comply with the conservation provisions of the 1985 and 1990 Farm Bills. Following conservation plan development, NRCS employees were heavily involved in helping farmers install these planned conservation systems. The systems were designed to keep highly erodible land from losing its productivity and from polluting Alabama's lakes and streams. Planned practices include conservation tillage, crop rotations, proper fertilizer usage, contours, terraces, stripcrops, and crop residue management. During 1995, about 755,116 acres, or 41.54 percent of the total planted acres in Alabama, utilized some form of residue management.

Conservation tillage is a type of residue management where crops are planted in the residue of a previous crop without plowing. This is one of the most promising and cost-effective ways to protect soil and water, but it may be only part of the conservation system needed. Development of a complete water disposal system, along with a conservation cropping system, is often needed to control gully, sheet, and rill erosion. Some land, marginal for crops because of the steepness of slopes and low productivity, may need to be returned to grass or trees.

Protection and/or enhancement of our



nation's wetlands is a very important natural resource. During 1995, NRCS held a signup for participation in the Wetlands Reserve Program (WRP). In this program the federal government purchases conservation easements from participating landowners for wetland areas that were previously used intensively for cropping and forage production. Participants will be paid the fair market value of land for agricultural use, in return for a lump sum payment and cost-share assistance for restoring the wetland. The landowner retains ownership of the land. The purpose of this program is to protect and restore habitat for migratory birds and other wildlife, to help purify water supplies, and to help provide storage for flood waters.

NRCS works closely with farmers to install practices that control animal production waste, thereby protecting water quality. Poultry, dairy, swine and other animal production operations greatly benefit from NRCS technical and, sometimes, financial assistance in the design and implementation of animal waste systems. The multi-agency approach to cleaning up pollution from animal wastes has been used successfully in several watershed projects, including the Bear Creek Floatway and the Sand Mountain-Lake Guntersville area in north Alabama. More than 15 state and federal agencies are currently working together to address water quality issues in the Flint Creek Watershed.

NRCS is responsible for completing and publishing modern soil surveys that cover the nation. These surveys describe the physical and chemical characteristics of the soils and provide information on the potential, as well as the limitations of the soils for agriculture, forestry, and other uses. The soil survey forms the basic foundation for conservation planning. In Alabama, 89 percent of the land has been mapped and 45 counties have a published soil survey.

Because of Alabama's large forest acreage, NRCS foresters, biologists, and conservationists assist landowners and operators in planning the use of their forest and wildlife resources. NRCS conservationists are active members of county forestry planning committees. They work closely with the TREASURE Forest program, participating in the nomination and inspection of TREASURE Forests. NRCS also assists with planning and applying erosion control measures on private forestlands, coordinating these services with

those of the Alabama Forestry Commission, the Alabama Department of Conservation and Natural Resources, and others.

The NRCS has been assigned responsibility for administering the Forestry Incentives Program (FIP). The objective of this program is to increase forest productivity on private lands. Cost-sharing is available for planting trees, improving forest stands, and site preparation for natural regeneration. A signup was conducted by NRCS November 15-30, 1995. As a result, 190 Alabama land users have been approved for \$520,000 of cost-share funds.

**The NRCS mission focuses on maintaining soil quantity and soil quality, natural resource assessments, biological restoration of landscapes, and working with people.**

NRCS administers watershed projects for the USDA under Public Law 83-566. These projects help urban and rural communities protect, improve, and develop the natural resources in watersheds up to 250,000 acres. To date, 35 projects have been completed at a total cost of \$67,673,000. Eighteen projects are now under construction at an estimated total cost of \$64.8 million. There are more than 3 million acres included in these 53 watershed projects.

The Resource Conservation and Development (RC&D) program is designed to initiate and coordinate resource development and environmental protection in multi-county areas. Alabama has nine RC&D areas covering all 67 counties. The NRCS is responsible for administering the program and assigns a coordinator to work with a council from each area. Each RC&D area has an active RC&D Forestry Committee. Through RC&D, technical and limited financial assistance is available to rural communities to support measures that conserve and improve use of land and develop natural resources in a sound way. RC&D projects include development of pond fish farming and growing catfish in cages; promotion of forestry and wildlife resources; growing shiitake mushrooms; installing dry hydrants for rural fire protection; raising Angora goats; promoting water quality; and providing equipment for pumping out lagoon wastes and spreading these liquid wastes on cropland and pasture for irrigation and fertilizer.

NRCS also provides technical and financial assistance to landowners under the Rural Abandoned Mine Program (RAMP) to reclaim abandoned coal mined lands. Many of these sites are planted to trees and wildlife cover. Funding for new RAMP projects was not included in the FY96 budget, but progress continues on projects for which funds have already been approved.

Important members of the NRCS workforce are Earth Team Volunteers. Volunteers share their ethic of good land stewardship and do their part to conserve

natural resources for future generations. Last year more than 700 Alabama Earth Team Volunteers worked nearly 22,000 hours. Volunteers work in offices and in the field. Their jobs include everything from conservation education to water quality sampling. Alabama's Earth Teams are well known, having been named best in the nation five times since 1989.

According to founder Hugh Hammond Bennett, NRCS is about "helping landowners to make the use of every acre of every field, pasture and woodlot according to its capabilities, and to treat every acre of every field, pasture and woodlot of every farm according to its needs." And, as Aldo Leopold put it, "to read the land." That way we can help its users to sustain it, even as they produce food, fiber, and conservation on our bountiful land.

Many federal, state, and local agencies cooperate with districts and NRCS to assist in the conservation of soil, water, and related resources. Without this cooperation and assistance, much less conservation would be accomplished.

For more information about NRCS programs and assistance, call or visit the NRCS office listed under U.S. Government in your local telephone directory. ☎

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*The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status.*



# PROPERTY BOUNDARY SURVEYS

by PHILLIP E. WILBANKS, RLS, Alabama Society of Professional Land Surveyors

The profession of surveying is one with a long history. The need for surveyors actually arose from the creation of land itself. The job of early surveyors was to subdivide, establish and re-establish the boundaries of the lands with accuracy. They were expected to be competent, honest, and forthright.

When it was discovered that the world was round, instead of square as first believed, doors opened up for man to explore as he had never imagined. America was discovered and its population increased rapidly. As time passed there became a shortage of surveyors. People began moonlighting and calling themselves surveyors, just because they had worked on a survey crew. Surveying became chaotic and people were buying land that did not exist and land descriptions were unsurveyable.

The Land Ordinance of 1785 was passed to bring a uniformity to surveying. It established a rectangular system of surveying for the public lands of the United States that is still used today.

The Land Ordinance of 1785 made it easy to describe and locate any parcel of land. Two parcels of land could not exist with the same location without being discovered. This reduced the chance of fraud when land was bought and sold.

In the rectangular system, the land was surveyed into "townships" approximately six miles square. The township was divided into sections of approximately one-mile squares containing about 640 acres per section. In 1796 the numbering scheme that we still use today was determined. The numbers start with section 1 at the northeast corner of the township, with the first row (1-6) running from east to west. The next row (7-12) begins under the first

row and runs from west to east, alternating until it ends with section 36 at the southeast corner of the township (see Figure 1).

Figure 1

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Prior to the survey of townships and sections across Alabama, the original surveyor selected two principal meridians—the Huntsville Meridian and the St. Stephen's Meridian. The initial point for the Huntsville Meridian begins just a few miles north of the city of Huntsville in Madison County on the southern boundary of the state of Tennessee (approximately on the 35° of north latitude). The Huntsville Meridian then runs south until it intersects an east-west line called the Freeman Line.

The St. Stephen's Meridian has an initial point called the Ellicott Stone (on the 31° of latitude), which originally separated the boundary line between the United States and west Florida. The St. Stephen's Meridian runs north until it intersects the Freeman Line. The meridian also begins at the Ellicott Stone and

runs south until it intersects the Gulf of Mexico (see Figure 2).

## Do You Need a Land Survey?

You may be a candidate for a land survey if you do not have a land survey and a plat showing the results of an actual on-the-ground land survey performed by a competent Alabama registered land surveyor. The plat, among many other things, must have the surveyor's signature and seal with registration number on the face of the plat. If the survey was performed after April 1990, it must also have a statement that the survey and plat have been completed in accordance with the "Minimum Technical Standards for Land Surveying in the State of Alabama."

## Minimum Technical Standards

An Alabama Minimum Technical Standard (MTS) survey assures you the surveyor has actually made a field survey and the drawing depicts the result of the survey. Research is a vital part of the surveyor's function in performing a survey.

An MTS survey plat will contain the following information:

- The type of survey
- A statement that the survey and drawing has been completed in accordance with the MTS
- The surveyor's name, firm, address, city, registration number, and the signature of the surveyor in responsible charge
- The date of the field survey
- A raised embossed or stamped seal
- A reference to all bearings based on a well defined line



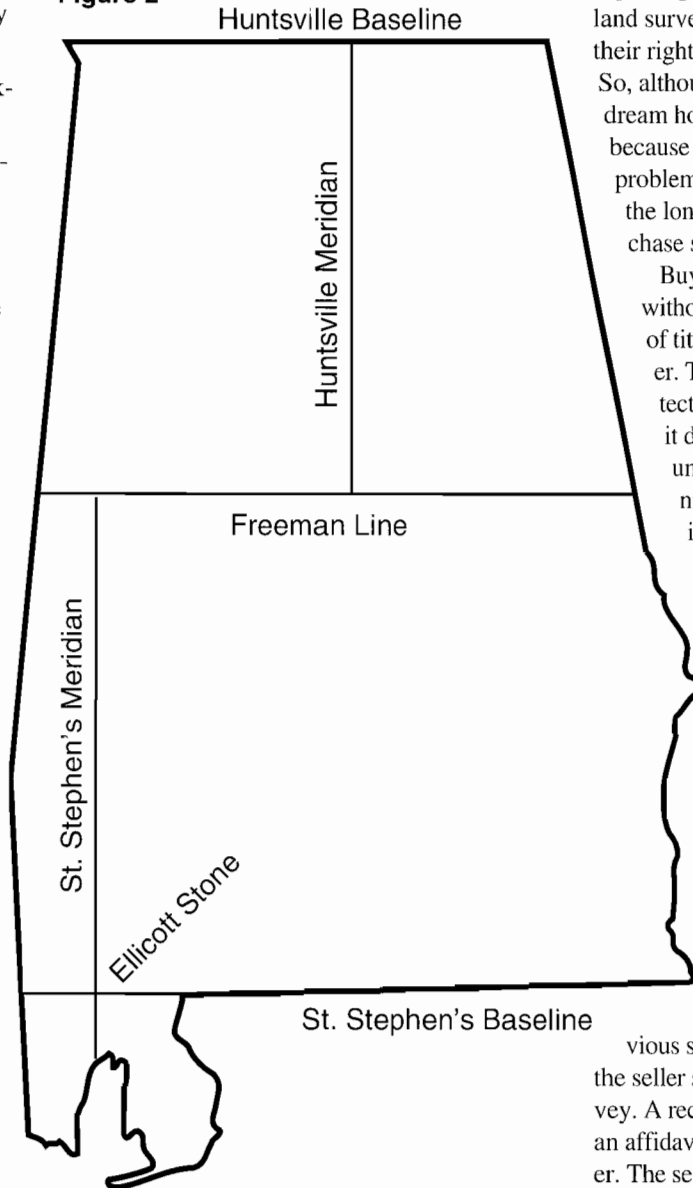
- All discrepancies between the survey and your deed
- North arrow and scale
- Any abbreviations, symbols, etc., shall be clearly noted as to their meaning
- Overlapping descriptions, gaps, fences, walls, conflicting boundary lines, monuments, etc.
- Source of information used in making the survey
- Bearings, angles or azimuths, measured and deed
- Significant elements of all curved lines
- Measured and plat distances to the nearest street intersection, if in a recorded subdivision
- Measured and plat distances to the nearest street intersection in the opposite direction; if either varies from the plat, both shall be shown, if in a recorded subdivision
- All information called for in your description as well as calls to the point of commencement, which include any discrepancies
- All visible encroachments located and shown or noted
- Only visible easements or rights-of-way will be shown
- Fixed improvements on the property, if needed, will be shown by measurements to the boundary lines
- Visible cemeteries
- All monuments (minimum 1/2" durable iron, 18" long) will be set at all corners with a durable cap bearing the registration number or the company certificate of authorization number, unless monuments already exist
- All monuments found or set will state the size, type, any i.d., etc.

### Contract

Make sure that you have a contract, and that you and the surveyor agree on what you want in the survey. The contract should be signed and dated by you and the surveyor or after you both agree. Any changes must be in writing and agreed to by both parties. According to the State Board of Registration for Engineers and Land Surveyors,

many complaints against surveyors arise from a misunderstanding by the surveyor or the client—or both—on what was supposed to have been performed. A contract should eliminate any misunderstandings.

**Figure 2**



### Purchasing Land

Without a survey the purchaser or landowner runs a risk of losing land. A boundary survey shows where the corners and lines are. It also places those that adjoin the land on notice that they do not own any land beyond your surveyed lines.

You should always have land surveyed before you purchase it. Avoid rush closings and don't get talked out of a survey. Many buyers are led to believe that a title search shows that there is no question as to the location of property corners and boundary lines. This is far from the truth.

Don't buy into problems. Many loan closings have been canceled because a survey showed encroachments, deed errors, erroneous deeds, fences, possession lines, homes located on the wrong parcel of land, or boundary lines running through adjoining homes. A title search without a land survey could deprive the purchaser of their rightful enjoyment of the purchase. So, although a purchaser may not get that dream home or investment property because the survey showed numerous problems, they in fact saved money in the long run because they didn't purchase someone else's headache.

Buyer beware of title insurance without a survey. There are two types of title insurance: lender and purchaser. The lender gets 100 percent protection; the buyer has protection but it does not include survey protection unless a current survey is furnished. Buyers may purchase title insurance, but it may be worthless without a survey; read the small print. However, many loans do close when the survey does not show any problems, and the purchaser can enjoy the property as they should. Title insurance and a survey complement each other and benefit the purchaser.

You should also be distrustful of so-called "seller's affidavits." This is a signed document by the seller stating, among other things, that nothing has changed since the previous survey. If something has changed, the seller sketches the changes on the survey. A recent survey I was part of involved an affidavit that had been signed by a seller. The seller stated there had not been any changes since the previous survey five years ago. In fact, there had been numerous changes. One was that the adjoiner had built a garage 12.5' over the property line. The purchaser is out \$2,000 already and it is not settled yet.

### Conclusion

If you need a survey, make sure it's done by a licensed surveyor. Place the survey with your other valuable documents in a safe place. Then, find time to occasionally walk the property lines to be sure no one is intentionally or accidentally taking your land. 🏠



# CURRENT USE TAXES IN ALABAMA

by L. LOUIS HYMAN, Alabama Forestry Commission

All property taxes are based on the value of the land (ad valorem). That value is based on two main estimates, the market value of the property and the investment value of the land. The market value is based on what similar tracts are selling for, and includes the development potential of the property as well. It might be a pasture now, but it could be used for a shopping mall, so the market value would be higher than for land without that development potential.

Most property taxes are figured using the market value. The assessed value of your house is based on what other houses in your neighborhood are worth. The value of your forestland is based on what nearby forests are worth. One major difference in Alabama is that timber is exempt from property taxes, with taxes paid only on the bare land value.

The other way to value property is as an investment. How much can I expect to make from the land and how much is that income stream worth? The current use system in Alabama uses the investment model to find the value of the tract based on its present land use. It assumes that farmland and forestland will produce a stream of income that can be capitalized to determine a land value.

Prior to 1978, all property was valued for taxes based on market value. A lawsuit begun in 1969 challenged the way taxes were assessed. Properties were assessed at between 9 and 30 percent of their market value, based on a mix of laws, regulations and traditions. This system was declared unconstitutional, throwing the system back on an old law that set the assessment at 60 percent of market value. This would have the effect of tripling property taxes. In response, the Legislature passed a constitutional amendment that set up four classes of property with different assessment rates. Homes, farms and forests were put into Class 3, with a 10 percent assessment. Homes would be taxed based on 10 percent of their market value.

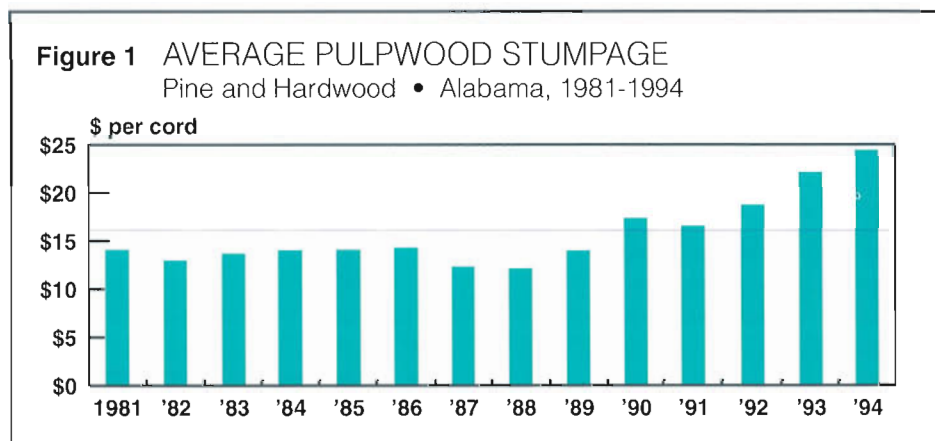
The amendment also allowed for an investment based valuation based on the

current use of the property. In 1982, the legislature passed the Current Use Act, which governs the valuation of homes, farms and forests. The law said that taxes should be calculated using "the value of the eligible taxable property, based on the use being made of that property on October 1 of any taxable year, provided that no consideration shall be taken of the prospective value such property might have if it were put to some other possible use." Applied to homes, the tax is based on the use of the site for residential housing, not on its potential to tear down the house and replace it with a factory or store.

The impact of this rule on forestland is that it lowers the taxes owed on lands

productivity classes. These classes are then grouped into four value classes. The value of a farm is based on average income from major crops, less cost of production. This net income is then capitalized, converted into land value, by dividing it by a standardized interest rate. Under the Alabama current use law, the standard rate is the 10-year average of interest rates on new loans by the Farm Credit Bank of Texas, which funds federally endorsed farm loans in Alabama. This interest rate is decreased by 4.5 percent before it is used in the calculations.

All current use values cannot fall below an initial floor value, the 1981 current use determinations, and cannot



close to a town, to allow the owner to keep it in forest, instead of having to convert it to commercial or residential property to pay the taxes. In fact, the legislative intent was just that. "Alabama is particularly concerned about the preservation of its agricultural and forest property and seeks through its property tax structure to preserve such property by providing additional preferential tax treatment for such property." (Wiessinger v. White, 733 F.2d 802 (11th Cir. 1984))

## How Current Use Works

Current use valuation is based on the productivity of the land. The law breaks agricultural and forestland into 10 soil

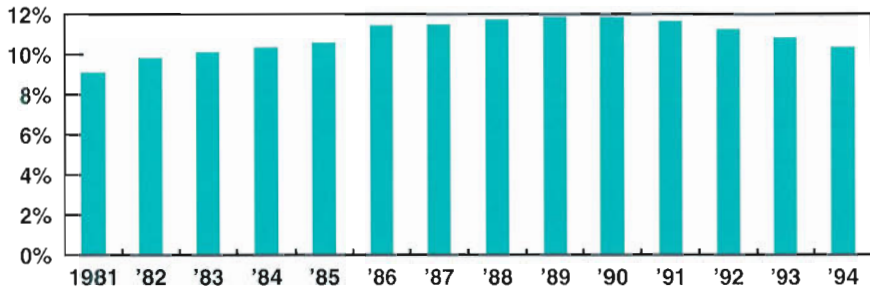
increase to a level that is more than a ceiling that increases by 3 percent per year, starting with the 1981 values.

Forestland, on the other hand, is valued using a fixed formula:

$$\frac{\text{Growth X (Price - Expenses)}}{\text{Farm Bank Interest Rate - 4.5\%}}$$

In this equation, there are two fluctuating variables, price and interest rate. The price used is the weighted average pulpwood stumpage price for Alabama for the previous calendar year. The Alabama Forestry Commission calculates this price using pine and hardwood pulpwood Timber Mart South reports for Alabama. The averages are weighted using the consumption of pulpwood shown in the sev-

**Figure 2 FARM CREDIT BANK LOAN RATE**  
10-Year Average



erance tax reports. For the 1995-1996 tax year, the Forestry Commission consolidated 1994 prices. We found an average statewide price of \$30.17 per cord for pine pulpwood and \$16.65 per cord for hardwood pulpwood, with a weighted average price for all pulpwood of \$24.76. Over the last few years, this average pulpwood price has been steadily increasing (Figure 1).

The Farm Credit Bank loan rate has varied greatly over the last 20 years. By using a 10-year average, this variation is dampened. The 10-year average new loan rate through 1994 was 10.38 percent. Over the last five years, this rate has steadily declined (Figure 2).

The other factors used in the formula are fixed in the law. Each forestland value class is assigned a productivity rate, ranging from 1.38 cords per acre per year for "good" land, to 1.05 cords/acre/year for "average" land, to 0.75 cords/acre/year for "poor" land, to 0.60 cords/acre/year for "non-productive" land. The expense ratio is also fixed at 15 percent of income.

### Current Use Valuations for Tax Year 1995

Using all these factors, the current use valuations for tax year 1995 can be calculated for each value class. These are:

- Good Forestland.....\$494 per acre
- Average Forestland.....\$375 per acre
- Poor Forestland.....\$268 per acre
- Non-productive Forestland.....\$214 per acre

These are all increases above the floor rates established in 1981; in the case of "average" land, an almost \$100 per acre increase. Why did this increase occur? The answer lies in the formula and the

relationship of value to price and interest. The formula value is directly related to income; as stumpage prices go up, the land value goes up. The formula value is also inversely related to interest rates. As interest rates go up, land value comes down; as interest rates go down, land values go up. Through the 1980s, timber prices were level or falling and interest rates were rising. Since about 1990, these trends have reversed; as a result, the current use formula values have been increasing (Figure 3).

While this is a major increase in appraised value, it is below the ceiling value set in the law, based on a 3 percent increase in value per year since 1981. The ceiling value for 1995 was \$403 per acre for "average" forestland, and \$529 for "good" forestland.


### Impacts on Landowners

The current use value is used to calculate the tax base of the property. This is the assessed value of the land, which is 10 percent of appraised value. The assessed value times the millage rate

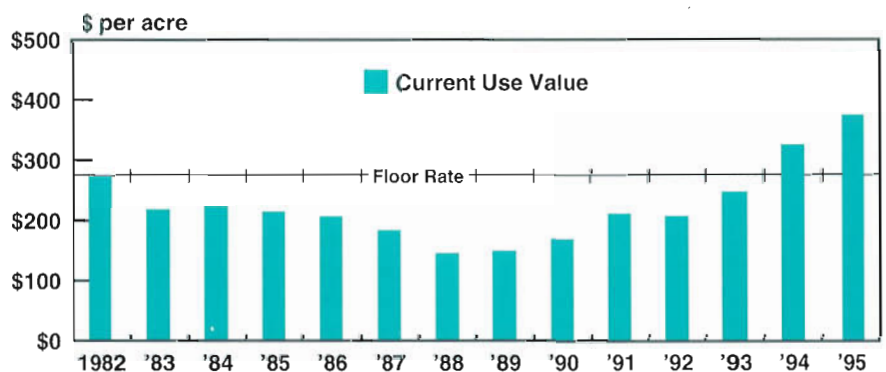
determines the property tax owed. The 1993 current use value of \$275 per acre of average forestland produced an assessed value of \$27.50. At the state average tax rate of 30 mills (0.030), the land had a tax burden of \$0.825 per acre. For 1995, the new current use rate of \$375 produces an assessed value of \$37.50 and an average (at 30 mills) tax of \$1.125, an increase of 30 cents per acre.

The current use valuation is optional to the landowner. You can elect to use fair market value at any time. According to a study done by the Alabama Cooperative Extension Service in 1992, the average forestland value in Alabama is about \$300 per acre. If the current use rate is higher than the fair market value of the land, the taxpayer can switch back to market value. In many rural counties, in fact, the market value of forestland was less than the old current use floor rate. Check with the county tax assessor and see if this switch will benefit you.

Forestlands near developing areas may find that the current use rates are still less than the market values for their lands. In that case, it pays to stay with current use.

The purpose of the current use valuation is to help landowners keep their lands in forest and agriculture and not have to convert their lands to meet tax burdens. The changes in the valuation reflect that forestry is becoming a strong investment, with potential income increasing and costs and interest rates coming down. This is good news. As forestry as an investment becomes stronger, it is increasing the value of not just the trees, but the land base as well. As these trends continue, the TREASURE in your forest will continue to grow in value. 

**Figure 3 CURRENT USE FORESTLAND VALUES**  
Average Forestland





# THE ALABAMA LOGGER, An Applied Silviculturalist

by DR. RICHARD W. BRINKER, Extension Forester and Harvesting Specialist,  
Auburn University School of Forestry and Alabama Cooperative Extension System

The private forest landowner plays a key role in forest management. Each owner probably has a number of reasons for owning forestland, and multiple objectives they wish to attain through land ownership. A forest landowner should be knowledgeable of the techniques that might be used by foresters to reach these objectives. Practically every objective that the landowner may desire requires manipulation of the vegetative species composition and density to get from the present forest stand to the desired stand. The tool most frequently used by the forester to manipulate stand composition and density is harvesting, and the operator of this tool is the logger.

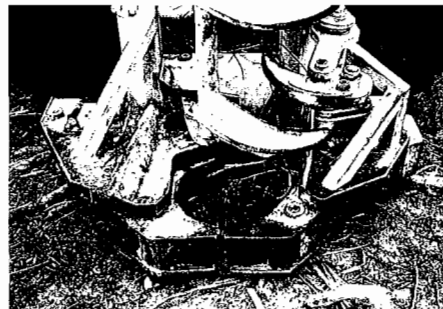
Harvests can be a series of intermediate harvests or thinnings in immature forest stands that the forester uses to reach the owner's objectives. Or it might be a final regeneration harvest that is done when the stand is mature. The type of logging equipment and the logger selected to make the harvest can have a major bearing on the success of the harvesting operation. Sometimes, landowners market their own timber to a wood-using facility, and contract directly with a logger. In this case, the landowner must have an adequate knowledge of silviculture (the care and tending of the forest), and the logging system capabilities and costs. The logger's primary customer is the landowner, who desires a silviculturally and environmentally sound harvesting job, minimal damage to the remaining trees and land, protection of the forestland, and maximum value from the timber sale.

The more common approach is for landowners to sell their timber to a timber buyer, who will contract with a logger to accomplish the silviculturally prescribed harvest desired by the landowner. In this case, the logger has to satisfy an

additional customer, the timber buyer. The timber buyer wants the logger to meet product specifications, deliver required timber volumes on a specific



*A good mule and skinner could skid a truckload of logs a day.*



*Hydraulic felling shears improved the efficiency of felling timber.*

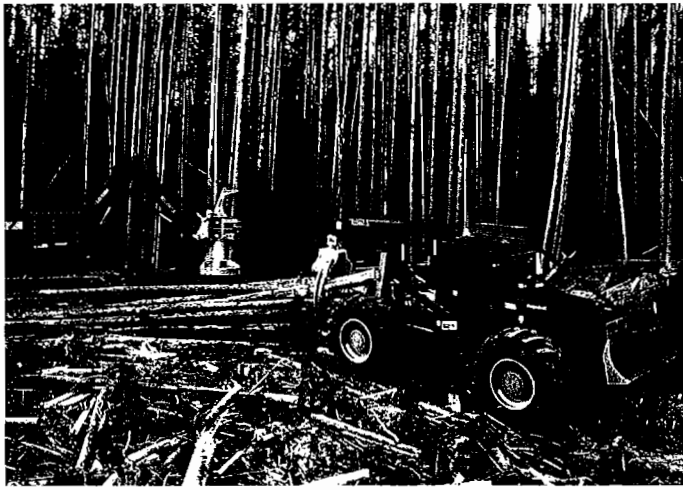
schedule, utilize Best Management Practices for protection of streams, stay within contractual agreements made with the landowner, and deliver at the lowest price possible. The logger is frequently caught between the landowner (*a rock*) and the timber buyer (*a hard place*), and often his profit potential is squeezed to

the thinnest of margins. Without an adequate profit margin as an incentive to remain in business, the logger will be unable to survive in the business of logging. Without experienced loggers who have proven records of meeting the demands of both the landowner and the timber buyer, it will become more difficult for forest landowners to adequately carry out most techniques to manipulate stand composition.

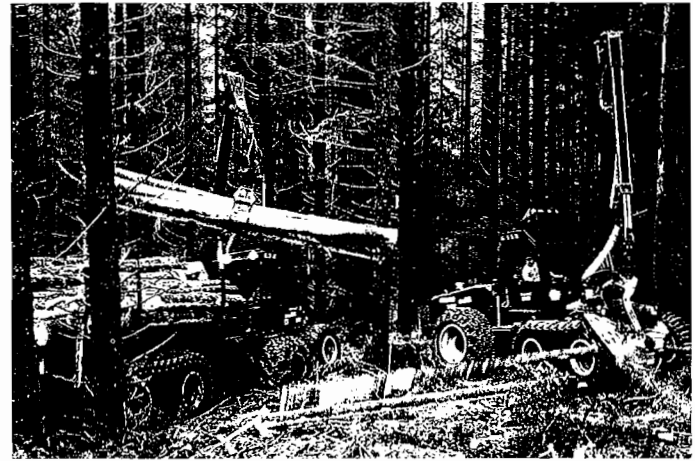
## Tools of the Trade

What tools does the logger have to ply his trade? They've changed greatly over the past 40 years—the length of time it takes to grow loblolly pine through a sawtimber rotation. Many loggers who began in the logging profession several decades ago started with a chain saw and a truck. They might have had a mule or horse to skid timber, and if they were a “high-production” logger, they used a farm tractor to skid the logs. During the late 1960s, loggers began to acquire rubber-tired skidders designed to work in the logging woods. During the early 1970s, hydraulic shears were developed to replace chain saws, and really picked up production for the logger. During this period the 1979 Pulpwood Producer Census of the American Pulpwood Association reported that the average logger in the South had a weekly production of 52.0 cords and an average crew consisting of 2.51 men.

Equipment continued to evolve during the mid-1970s. Grapple skidders allowed production to increase by reducing the time required for the skidder operator to accumulate a full load of logs. Efficiency was improved even further when equipment design engineers developed an accumulating capability for the hydraulic felling shears. By 1988, the average



*The grapple skidder and rotary sawhead feller-buncher have greatly improved productivity in the logging woods.*



*The mechanized cut-to-length system has potential benefits for a more environmentally sensitive and aesthetically pleasing harvesting job.*

weekly production for a logger had picked up to 211 cords per week, and the average crew size was 5.8 men. Mechanical efficiency was making the job of logging much easier, but logging was becoming a more costly investment.

The late 1980s saw the introduction of the high-speed, rotary sawhead. This innovation was intended to reduce the damage from fiber separation in sawlogs, but also provided a secondary benefit of greater productivity for the logger. The most recent mechanical introduction is the use of the mechanical delimeter. This latest innovation has resulted in a one- or two-man reduction on many logging crews. The highly mechanized systems used by loggers in the 1990s are highly productive, efficient, and frequently require capital investments by the logger which exceed \$1.5 million.

Based on loggers who participated in workshops conducted by the Auburn University School of Forestry during 1995, the average logging contractor in Alabama has a harvesting system consisting of one feller-buncher, two grapple skidders, one knuckleboom loader, and three tractor-trailer trucks for log hauling. This contractor produces an average of 328 cords per week and employs an average crew size of 6.8 men. Capital investment for a system such as this can easily approach \$1 million.

Many loggers use the type of system described above for clearcutting at final harvest time and intermediate thinning and selective harvests. For thinning operations there are also some specialized systems that a logger can use based on the

harvesting requirements and complexities. The early 1990s saw the reintroduction of mechanized cut-to-length (CTL) systems in some areas of the South. The concept originally began in the Southern U.S. in the early 1960s, but due to machine cost and complexity it was never widely accepted. The CTL concept and machines, refined by European harvesting machinery manufacturers, were recently reintroduced to the U.S. market.

The basic CTL system consists of a harvester and a forwarder; the number of each machine required for a balanced system is dependent on machine capabilities, tree size and volumes per acre. The harvesting head is mounted on a rubber-tired or tracked carrier, and can fell, limb, buck, and pile the logs; log lengths are usually cut to 20-ft. lengths or shorter. Many of these harvesters have computerized diameter and length scanning capabilities which allow these machines to harvest according to precise product specifications. The forwarder is usually a four- to eight-wheel, rubber-tired machine with an integral loader to fill the three- to five-cord capacity wood rack. Forwarders can carry these larger loads completely off of the ground and for longer distances than conventional skidders. This results in reduced soil disturbance, reduced road building requirements and loading decks are usually smaller than required for conventional logging operations.

CTL systems have the capability to perform environmentally sensitive harvesting, improve fiber utilization, and are most productive in second thinnings.

They also reduce the number of workers required on a logging crew, can reduce insurance costs, and allow an aesthetically pleasing harvest.

There are several CTL logging contractors working in Alabama, but the system is still in its infancy. Loggers have several concerns with these systems: the capital cost is high, frequently exceeding one-half million dollars for the two-machine system; maintenance of these machines is more complex, due to the myriad of electrical and hydraulic components; machine operation requires a higher level of operator skill and a longer training time to become efficient; and many pulpwood-consuming mills in the South are not set up to handle the CTL product.

Most of these problems translate to a higher cost of production for the logger. Like most new ideas and approaches, these hurdles will be overcome in time. But at the present, landowners who want the benefits of the CTL system must often accept a lower price for their timber.

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## Conclusion

Selecting the right logger is important to landowner satisfaction with the harvesting process. The logger must have the right equipment, experience, and reputation to complete the type of harvest the landowner wants. Finally, the landowner must clearly define what is expected of the logger, and the logger must have all of the tools required for the harvesting job. ♣



# LANDOWNERS



## LEGISLATIVE • ALERT

### NATIONAL

by BILL IMBERGAMO and TERRI BATES,  
Washington Office, National Association of State Foresters



**I**t's a busy time in Washington. As Congress completes consideration

of the Farm Bill, several existing conservation programs are being buffeted by the winds of change. Both the Conservation Reserve Program, which has helped plant thousands of acres of trees in the Southeast, and the Forestry Incentives Program, which helps reforest and improve timber stands, are expected to be reauthorized in this year's Farm Bill. Given the pressure for Congress to move before the spring planting season, we will probably know in exactly what form by the time this is published.

In the interim, however, the CRP is offering landowners yet another chance to back out of the program, raising concerns that whatever decisions are made in the Farm Bill, the program may shrink because the USDA has twice allowed farmers to pull acres out of the program. The Congressional Budget Office, Congress' bookkeeper, reduces the "baseline" funding available whenever this happens.

FIP will be in place for the current year, and will be around after that, too. Unlike in past years, however, the program's funds are already allocated to the field and most have been obligated for individual landowners already, since the USDA insisted on moving the money before the current authorization expired. State forestry agencies had to work double time to ensure these funds would be available to landowners.

The Senate passed a Farm Bill in early February, but it will have to go to conference with the House and then to the pres-

ident before anything is written in stone, or at least in the legal books.

### Early Out for CRP Contracts Announced

Facing record low grain stocks, the USDA announced Jan. 25 that they will accept a limited number of "early-outs" for less erodible lands currently under contracts which expire on Sept. 30, 1996. The offer will allow producers holding contracts for acres with an erodibility index of 15 or less and with an approved conservation plan to release those acres from contract obligations.

"This early-out opportunity is important for several reasons," said Agriculture Secretary Dan Glickman. "First, producers should have the opportunity to take advantage of high market prices by planting more of their land. Second, the offer is consistent with USDA's responsibility of ensuring a grain supply that meets market demands. Third, offering an early out for productive, less erodible land is consistent with the (administration's) commitment to an environmentally sound, low cost CRP."

Lands devoted to useful life easements, field windbreaks, grass waterways, shallow water areas, filterstrips, bottomland timber on wetlands, shelterbelts, and lands with an average distance of 100 feet of a stream or other permanent water body will not be eligible for the early out.

With no Farm Bill in place, the early-out announcement was greeted coolly by conservationists, who fear that acres leaving the program may not be replaced as the program's baseline budget continues to erode. Both houses of Congress are considering Farm Bill extensions that

would allow the program to continue at the current size of 36.4 million acres, and would allow the USDA to enroll new acres over the next two years. The prospects for these provisions are clouded by deep divisions over proposed commodity subsidy reforms, however.

For landowners with their CRP acres in trees, the early out offers will probably not be very attractive since much of that timber is below merchantable sizes.

### FIP Accomplishments in FY96

FIP passed one of the early tests of the efficiency and effectiveness of the recent USDA reorganization when close to 100 percent of available funds were obligated before the program's current authorization expired on Dec. 31, 1995. The FIP sign-up was handled for the first time by the USDA Natural Resources Conservation Service (former Soil Conservation Service).

The popularity and demand for the program proved itself throughout an often confusing transition process and uncertain future. Expectations were surpassed when the states obligated 99.1 percent of appropriated funds (\$6.25 million) by Dec. 31.

NASF expects the program to be reauthorized either in the Farm Bill or in some other vehicle during the 104th Congress.

### NASF Comments on Forest Service RPA Program

NASF filed comments on the 1995 Draft Resource Planning and Assessment (RPA) program on Jan. 17. In general, NASF praised the draft for its recognition of the agency's partnership with the state

foresters, saying, "This provides the Forest Service/State Forester relationship with higher visibility than in previous RPA documents, and constitutes progress in promoting this partnership." However, the partnership between the Forest Ser-

vice and the state foresters is still less visible than it should be.

NASF emphasized the following specific concerns that were singled out by state foresters:

- The projected 64 percent increase in

timber harvests from non-industrial private lands by the year 2040 is drastic and may not be attainable.

- To even approximate a 64 percent

*(Continued on page 18)*

## ALABAMA



**A**s far as the Forestry Commission was concerned, we had no real member of the canine family in the ill-fated special session fight for tort reform. As one

veteran onlooker mused: "It should have been dubbed 'The Tort Deform' session."

After all the well-intended efforts by Governor Fob James to overhaul the existing system of excessive damage awards, it came to no avail after 12 days of frustration. If anything, it drove a spike between some senators and their colleagues in the upper chamber.

The proceedings reached a fever pitch on the final day (February 2) when Lt. Gov. Don Siegelman called a halt to the high tension that developed on the floor of the Senate. The unfortunate part of all this was that there was not enough of a "cooling off" period between the final day of the special session and the opening day of the regular session (February 6).

As a result, the residue from the extraordinary session spilled over into the new session, causing the presiding officer of the Senate (Lt. Gov. Siegelman) to place the two funding budgets in a committee previously far removed from any budget dealings, that being the Committee on Economic Expansion and Trade chaired by freshman Senator Dewayne Freeman of Huntsville.

This Committee actually handles bills on the industrial bond program, international business expansion, domestic trade and "any bill deemed appropriate by the lieutenant governor." Serving with Freeman are Sens. Don Hale, Cullman, vice chairman; Roger Bedford, Russellville; Jack Biddle, Gardendale; and President Pro Tem Michael Figures, Mobile.

The tension became so obvious in the Senate corridors on the second day of the regular session that orders were issued to

by FRANK SEGO, Legislative Liaison, Alabama Forestry Commission

clear the entire seventh floor of all persons except the senators and the working staff of that body.

It was probably well at that point that the Legislature embarked on a 12-day recess in order for budget hearings to be conducted. This allowed ample time for the hangover of the special session to cool to some degree. However, as this column was being prepared, the governor had already introduced a new package of reform measures for regular session debate.

Those who follow the daily activities of the Legislature are joined by most Alabamians in hoping that a repeat of the special session travesty will be avoided in this and all sessions to come.

### The AFC Budget

The real fight for the Forestry Commission was, and will continue to be, aimed at restoration of funds in the General Fund budget. Consider the fact that in fiscal year 1994-95 the Commission received \$12,973,954 from the general fund.

In the 1995-96 budget the AFC suffered a decrease of \$1,289,475 for a total of \$11,684,479. That decrease translated into a \$934,590 reduction in AFC operations and a \$354,885 loss in Rural Community Fire Protection grants. It not only slashed some operational procedures, but some employees had to be released and replacements were not being hired as retirements and transfers occurred.

When the governor handed down his recommendations for 1996-97 he leveled the AFC general fund budget at the same \$11,684,479 figure as is in the current budget. A supplemental appropriation of \$500,000 was proposed by Ways and Means chairman Bill Fuller of Lafayette for volunteer fire departments.

Also, an authorization for the Commission to spend its \$1,500,000 from

seedling sales, severance taxes, etc., was introduced to patch some critical areas in the Commission's operation during the current year. As this "Legislative Alert" went to press both measures were still on the calendars of the House.

### AFC Reorganization

In the meantime, State Forester Tim Boyce took a bold step forward in a reorganization to four regions that put the Forestry Commission's resources closer to the local level. As Boyce explained: "This is the point of contact/service where we are mandated to respond to our customers, the citizens of Alabama, for their needs and requests." In doing so, he downsized the state headquarters in Montgomery by 24 positions.

The four new regions and their regional foresters include: Northwest, Wayne Strawbridge, Tuscaloosa; Northeast, Phearthur Moore, Birmingham; Southwest, Robert Dismukes, Brewton; and Southeast, Franklin McAliley, Ozark.

### Letson Passes

The Forestry Commission lost one of its most ardent supporters in the passing of Rep. Sam Letson of Moulton on February 8. A farmer and stockbroker, Letson was serving his third term in the House, representing Lawrence County and a portion of Winston County. He was a champion of the Commission's activities and was a consistent supporter of funding for his volunteer fire departments.

A special primary election to fill Mr. Letson's seat in District 7 will be held June 4. If necessary, the runoff will be June 25. The general election is scheduled for July 16.



**April 20.** "Alabama's Forest Resources Today," a satellite video conference, presented by the Auburn Univ. School of Forestry and the Ala. Cooperative Extension System. 10:30-11:30 a.m. Topics will include Planning Your Timber Harvest and The Efforts of Intensive Forest Management on Stream Quality. The conference will be shown at Extension Service offices and may also be picked up by home satellite. For more information call Mark Dubois at 334-844-1037.

**April 28-May 5.** "Harmony: People and Places" is the theme for Soil and Water Stewardship-Week in 1996. The purpose of the national observance is to create a greater awareness among individuals of their stewardship responsibility to care for our natural resources. It is sponsored by the National Association of Conservation Districts, the Natural Resources Conservation Service, and soil and water conservation districts throughout Alabama.

**May 14-15.** Tuscaloosa, AL. "Forest Management for Wildlife," an Auburn University short course. For more information call Chris Isaacson, 334-844-1042.

**May 15-18.** Florence, AL. 12th Annual Alabama Urban Forestry Association Convention. Sessions will include lectures and outside demonstrations. Featured speaker is Dr. Roger Funk of the Davey Tree Expert Company. Registration before May 1 is \$75 and includes 1-yr. membership in the Ala. Urban Forestry Association. Exhibit space available. For more information contact Brian Darr at 205-333-2477.

**July 17-18.** Tuscaloosa, AL. "Liability, Property Rights and Environmental Regulations," an Auburn University short course. For more information call Chris Isaacson, 334-844-1042.

**August 5-7.** Auburn, AL. "The Economics of Wildlife Resources on Private Lands" will be held at the AU Hotel and Conference Center. Topics will include fee and lease hunting; lease rates and determinants; threatened and endangered species and impacts on land values; community impacts; marketing strategies and more. Exhibit space available. For more information call Rhett Johnson at 334-222-7779.

## National Legislative Alert

*Continued from page 17*

increase in timber harvests, the projected increase in State and Private Forestry (S&PF) funding is woefully inadequate. There appears to be no tie between S&PF outputs and S&PF funding.

- Cooperation between the Forest Service and the state foresters has been perhaps most successful in the arena of fire control. However, the Draft RPA document does not adequately recognize this success nor emphasize the need to continue working together in this area.
- The Draft RPA documents section on urban forestry needs to more fully incorporate the "Strategic Direction" for urban and community forestry that the Forest Service finalized in October 1995.

The Forest Service will be working on revising the RPA program and will release a final document in late spring of this year.

### Uncertainty, Conflicts Lie Ahead

With most Forest Service functions funded only temporarily, it is difficult to say what the budget for such traditional programs as Cooperative Fire and forest insect and disease work will be for the rest of FY96. It seems likely, although not certain, that the next temporary spending bill will run through the end of the fiscal year, which leaves the unpalatable task of finishing fiscal 1997 bills shortly before what promises to be a contentious election season.

This leaves the major environmental legislation with an impact on forestry where they have been for the past several years: the back burner.

**Clean Water Act:** The CWA has been due for reauthorization since 1991, and many of the issues that echoed through the Bush administration have yet to be resolved.

The House-passed CWA (H.R. 961) remains under veto-threat from the White House, and companion legislation lacks support to move through the Senate. Senate Environment and Public Works Committee Chairman John Chafee (R-RI) has indicated that his staff is working on

drafting a "clean" CWA reauthorization. Chafee's effort to draft a bill stems from his dissatisfaction with S. 851, sponsored by Wetlands Subcommittee Chairman Lauch Faircloth (R-NC) and J. Bennett Johnston (D-LA). S. 851 is similar to the House-passed bill, but it does not have provisions requiring compensation of private landowners.

The issues for forestry in the CWA remain fairly narrow. Recent EPA guidelines reinforce that most normal and ongoing silvicultural operations are exempt from Section 404 permitting requirements, and forestry is documented to be a relatively minor source of non-point source pollution.

**Endangered Species Act:** Also on the reauthorization que since 1992, the ESA remains on the books but enforcement of the act has been curtailed by riders attached to other legislation. The U.S. Fish and Wildlife Service may not list any new species nor designate new critical habitat until Congress reauthorizes the law. Signs of that actually happening this Congress are few and far between.

**Forest Health:** Sen. Larry Craig (R-ID) has introduced a bill (S. 391) that would allow the Forest Service and other federal land management agencies to expedite thinning, prescribed burning and other actions intended to mitigate forest health problems on federal lands. The bill would also require the federal agencies to consult with the state forestry agency in the state where forest health emergency areas would be designated. NASF is supportive of this approach.

The bill has come under fire from environmentalists, who see it as an attempt to get salvage timber off of federal lands. To an extent, unfortunately, many other senators may feel that way, too. The bill has largely been stonewalled since the passage of the 1995 Recision Bill, which included expedited salvage sale provisions as well. Although Sen. Craig had hoped to move the bill towards the end of last session, no floor time has become available. A House companion bill has yet to be introduced, although Resources Committee staff indicate that there is a great deal of interest in doing something like the Craig bill.

Upcoming "Legislative Alert" columns will highlight developments on these and other forestry-related issues. ♣

# The Impact of Genetics on Forest Productivity

by ROBERT J. WEIR, Director, N.C. State University-Industry Cooperative Tree Improvement Program

**E**stablishing a pine plantation is hard work and it is expensive. The cost of planting seedlings is only a small part of the total price. Yet a poor choice of planting stock can frequently reduce the productivity and value of the resulting plantation and, in extreme cases, cause outright failure (Lantz and Kraus 1987). Conversely, investing in the best available genetic material can provide the opportunity to grow much greater wood volume and value per acre. Good genetics is a cornerstone of the foundation on which improved plantation productivity is constructed.

## Genetic Improvement in the South

Genetic improvement of pines began in the southern region of the United States in the early 1950s. Forward-thinking leaders of major forest products companies initiated genetics research and development coincidental with the rapid expansion of tree planting programs. To ensure a continuous supply of low cost raw material for the large pulp and paper mills in the region, these leaders reasoned that they must replant the thousands of acres of timber harvested each year with seedlings that have the genetic potential to grow rapidly, resist disease infection and produce desirable wood. Now more than 1.5 million acres are planted in the southern U.S. each year and all of these acres are planted with genetically improved tree seedlings. The very first plantations established with genetically improved seedlings in the 1960s are now being harvested. The promise of increased yield and higher value per acre is being realized.

The development of genetic improvement in the southern region has largely been accomplished through the efforts of three major tree improvement cooperatives. These organizations are partnerships among universities, forest industries and government agencies. Three cooperative tree improvement programs impact the southern region. The Western Gulf Tree Improvement Cooperative works on the genetic improvement of

both loblolly and slash pines. This program is run by the Texas Forest Service, and works in close collaboration with scientists at Texas A&M University. The Cooperative Forest Genetics Research Program at the University of Florida has a primary focus on the improvement of slash pine. The N.C. State University-Industry Cooperative Tree Improvement Program is the largest of the three cooperatives, and works primarily on the genetic improvement of loblolly pine. Members of each cooperative provide support for a scientific/technical staff. They breed, test, and select superior trees; develop seed orchards for the production of genetically improved seed; and support research focused on improving the efficiency and benefit to be derived from future genetic improvement work.

## Choosing the Correct Species and Seed Source

The first level of genetic control is to plant the species that survives and grows best, given the soils, rainfall, temperatures and general climate in your area. In the 1950s nearly 80 percent of all tree planting in the South was with slash pine.

The early fast growth of slash pine on a variety of sites, along with nearly total resistance to attack from the pine tip-moth, resulted in this species being planted in many areas where loblolly eventually proved to be a better choice. Today loblolly is planted on 80 percent of the acres reforested (Todd, et al. 1995), and slash pine planting is properly restricted to the wetter "flatwoods" sites in the lower coastal plain that commonly have a sandy topsoil over a poorly drained clay subsoil. Loblolly is best suited to the better drained soils in the upper coastal plain and Piedmont, but it does not survive or grow well on very dry, deep sands. Experience has also led to the conclusion that slash pine planted in the interior regions of the South will too often suffer severe damage from cold, ice and snow storms.

Choosing the correct seed source within a species is absolutely critical to the success of pine plantations. Slash pine has very little seed source variation and most any commonly produced source of seed is acceptable in any part of the region where slash pine should be planted. In contrast, loblolly pine has a very wide natural range, extending from

*(Continued on page 20)*

## Tree Improvement Terminology

**Clone**—All the asexually produced offspring of an individual tree.

**Family**—A group of trees having common ancestry.

**Genetic Improvement**—Increasing the benefits from trees through selection of superior performing individuals when compared with their peers under similar conditions.

**First Cycle (Generation) Seed Orchards**—Orchards established by grafting scions from selected trees that are visually superior to those growing in the same environment.

**Second Cycle (Generation) Seed Orchards**—Orchards established using tested superior performing crosses from first cycle orchard parents.

**Vegetative Propagation**—Asexually producing offspring from an individual tree by rooting cuttings, grafting, or tissue cultures.



## THE IMPACT OF GENETICS ON FOREST PRODUCTIVITY

*Continued from page 19*

Delaware to southeast Texas. When moved into Alabama, eastern coastal sources of loblolly pine are usually faster growing, yet can be more susceptible to fusiform rust and have lower wood density than sources taken from west of the Mississippi River. Western sources of loblolly may exhibit more drought resistance (Wells 1985). Generally, southern sources of loblolly pine will grow faster than northern sources. However, care must be taken not to move southern material too far north or cold, ice and snow will cause major losses. Moving seed sources northward from areas with minimum average temperatures that are 5 degrees Fahrenheit warmer than the planting site will give maximum growth gain over local sources (Schmidting 1992). Seedlings grown from the Livingston Parish, Louisiana seed source have exhibited excellent growth rates and strong resistance to fusiform rust when planted over much of the lower Gulf Coast and south Atlantic coastal areas. Again, care must be taken not to move this source too far north.

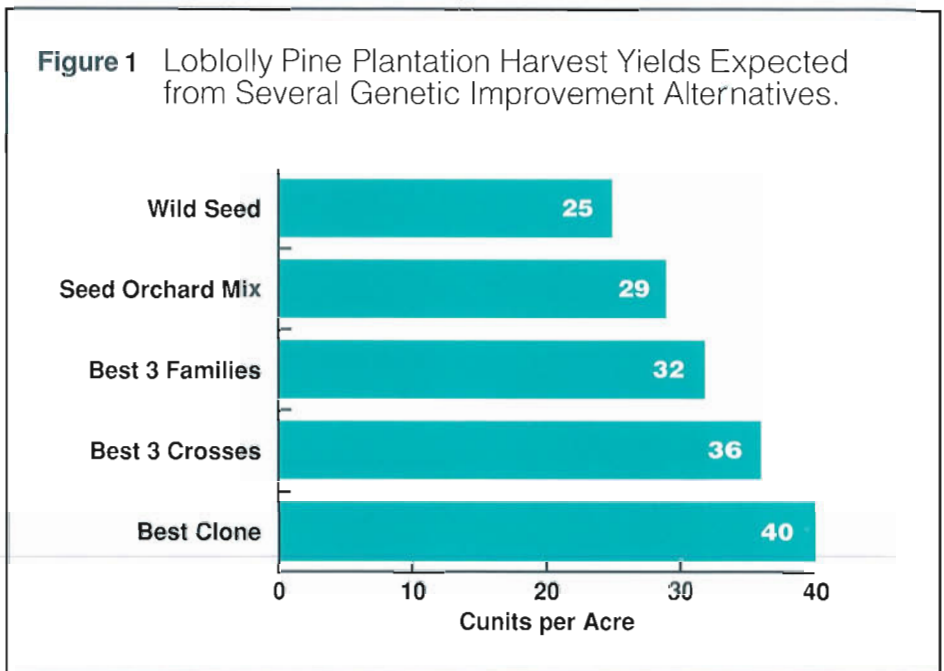
### Benefits from Improved Pines

Genetic improvement of loblolly pine has brought additional gains in volume and value beyond those achieved from use of appropriate wild seed sources. First-cycle seed orchards have produced seed, which when planted in bulk mixture, grows plantations with 8 to 12 percent more volume per acre at harvest (age 25 to 28, depending on site quality) than the trees grown from wild seed (Talbert et al. 1985). The values of genetic based quality improvements (stem straightness, disease resistance, and wood density) are more difficult to assess, but are believed to be at least equal in value to the improvement in growth rate. Second-cycle seed orchards are now producing as much as 50 percent of the total seed harvest in the region and these orchards are projected to add an additional 4 to 8 percent improvement above the gains from the initial seed orchards established in the early 1960s.

Harvest yields from second-cycle seed orchard bulk seed mixes, the best wind pollinated families, the best specific cross-

es, and the best clone selected from the best cross, were derived from the reports of Todd et al. (1995) and Frampton and Huber (1995) and are depicted in Figure 1 in terms of cunits per acre. One cunit equals 100 cu. ft. of solid wood. Second-cycle seed orchard mixes are projected to produce 29 cunits per acre at harvest, which is 16 percent more wood per acre than would be expected from plantations grown from wild seed. With increased seed orchard production, it will be possible to plant seeds from the best wind pollinated families and the yields from such a family block planting system are projected

ing seed from the best wild pollinated mother trees (a family block deployment system). The value of return in today's dollars from the \$8 invested will range from \$100 dollars per acre to as much as \$300 per acre, depending on the level of genetic improvement used. Landowners reforesting limited acreage are not justified in developing their own tree improvement program. However, all southern states and many industries produce genetically improved seedlings for sale to the public. When you buy seedlings grown from seed produced in seed orchards developed from the best available breeding stock, the \$8



to approach 32 cunits per acre.

Developmental work is underway to optimize the techniques needed to mass produce the best specific crosses from parents in second-cycle seed orchards. If this technique were operational today, it is projected that yields could be as high as 36 cunits per acre. Longer term research is focused on developing vegetative propagation methods for the mass production of the best individual tree in the best cross, which might yield as much as 40 cunits of wood per acre at harvest.

### Costs Relating to Genetics

The marginal cost of developing a tree improvement program for those organizations planting at least 10,000 acres per year is approximately \$8 per acre of plantation established. This is true for seed produced as a seed orchard mix and for those plant-

per acre is part of your seedling costs.

Depending on the level of genetic development, the benefits depicted in Figure 1 should also be realized.

The cost of more advanced technologies, such as mass production of the best three crosses, or vegetative propagation of the best clone in the best cross are unknown. The technology for these systems is still being developed or refined through research. Yet the projected increases in yield are substantial and they are expected to offset the costs encountered. Clearly, genetic improvement can be a very worthwhile investment.

Cultural treatments can provide yield increases comparable to or greater than those realized from genetic improvement. Responses to intensive site preparation, fertilization, and weed control have been well documented (Allen et al. 1990). How-

ever, to realize the full benefit from investment in cultural practices such as mechanical site preparation, fertilization and weed control, one must also plant the highest quality genetic stock. Figure 2 depicts the yield response to intensive cultural treatments for families with high, average and low breeding values. The high breeding value family is projected to have a 7.1 cunit response (age 8 volume) to cultural treatments, while the average and low breeding value families are respectively projected to have a 5.4 cunit and 3.6 cunit response. Clearly, to get the most from investments in stand culture, it must be coupled with good genetics. Good genetics and good silviculture must go together.

### The Future of Genetics

A substantial investment by the forest science community is being made in forest biotechnology research besides the ongoing research aimed at improving the efficiency of traditional tree improvement, mass production of outstanding specific crosses, and vegetative propagation. Biotechnology research involves basic science investigation at the molecular genetics level and may revolutionize genetic improvement in the years and decades ahead. Substantial progress is already being made in describing the underlying genetic control of economically important traits. Regions of loblolly pine DNA have been mapped and a marker for a single gene having major control of fusiform rust resistance has been identified (Wilcox 1955). Work is underway to locate additional resistance genes and to understand the frequency of these genes in pine breeding populations. Across the nation various research laboratories are working on lignin and cellulose production pathways, molecular control of growth rate, water stress, herbicide tolerance, reproductive sterility, etc.

Understanding the genetic control of economically important traits at the molecular level can have several benefits. Initially it may change the way tree breeders design and develop their breeding programs. Subsequently it may be possible to develop alternate and improved selection methods where it would be possible to select trees in the laboratory based on their DNA configuration rather than in long-term field tests. Such systems can only be developed if we have a greatly improved understanding of the genetic control mechanisms for

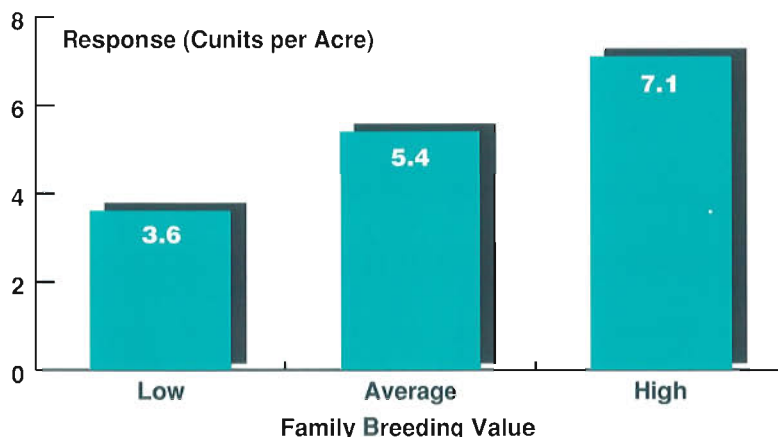
tree growth, wood formation and disease infection.

The ultimate system would involve developing cell cultures from pine trees into which important genes could be inserted, and these altered cells would then be manipulated to grow many thousands of tree seedlings, all having an "engineered" change in their genetic makeup. Genetic engineering is a powerful tool that may someday be used to make important and valuable changes in our southern pines. However, substantial barriers exist that prevent the implementation of this technology today. The potential for desirable change is great, yet it may be a long time before this technology makes a difference in the trees we grow and how we grow them.

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**Figure 2** Volume Growth Response with Intensive Site Preparation, Fertilizer, and Herbicide Treatment for Low, Average and High Breeding Value Families.





# Managing Your CRP Trees Opportunity Knocks

**O**ver 300,000 acres in Alabama have been planted to trees under the Conservation Reserve Program (CRP) since 1986. As CRP contracts expire, landowners stand at the door of opportunity. If the door is opened landowners can maximize the usefulness and value of their CRP plantations for income, soil and water quality protection, wildlife habitat improvement, and aesthetics. **The key to the door is forest management.**

## Lessons from the Soil Bank

From 1956-62, over 200,000 acres in Alabama were planted to trees under the Soil Bank (SB). Just like the CRP, SB plantings were covered by a 10-year contract. It has been well over 30 years since the last SB plantings were completed, and the condition and use of those stands show that many SB landowners never fully opened the door of opportunity.

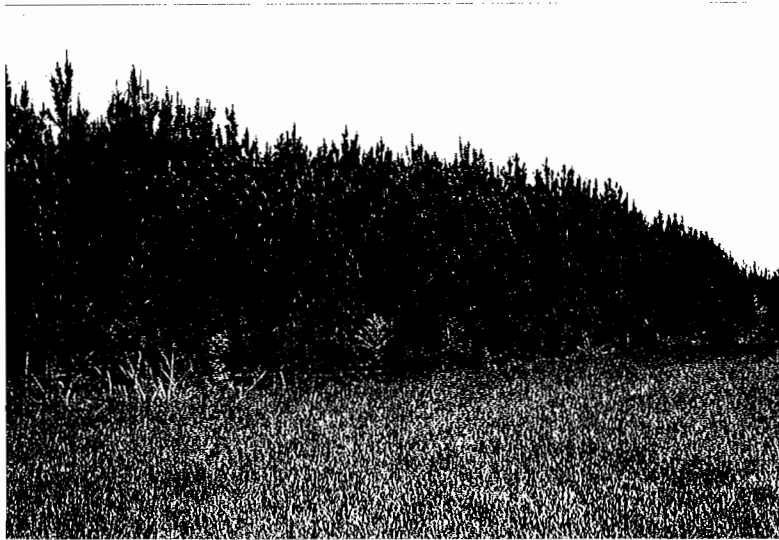
The majority of SB tree plantings have remained in trees for the long term. In 1990, approximately 80 percent of SB plantings in the U.S. remained in trees. Unfortunately, over one-half of SB tree plantings were not actively managed and were in need of some form of treatment to improve their productivity and overall health. More specifically, the stands were in need of thinning or control of competing vegetation to reduce overstocking or crowding. Many SB plantings in Alabama have the same characteristics: overstocked with poor vigor. This overstocked condition is typical of stands that are highly susceptible to southern pine beetle attack, provide

poor habitat for many species of wildlife, and severely limit timber growth.

However, using sound forest management practices you can avoid these pitfalls, providing income and other important benefits as a result. The information to follow is offered in an effort to help you choose the management approach that best suits your needs and objectives.

## Maximizing Monetary Returns

Your CRP stand offers a financial opportunity. Timber is a good investment that historically has continually increased in value, and has done so at a rate higher than inflation. An important financial advantage of timber is its flexibility. Timber can be harvested and sold at one time



to obtain its full value, or it can be thinned and sold over a period of time to obtain portions of its value as needed. Many agricultural crops do not afford this luxury.

To maximize the monetary return on your CRP timber, make decisions now. Today's management choices will affect the value you receive in the years ahead.

## Long-term Management

Many CRP landowners planted trees instead of grass because they realized the monetary value that could be gained from a stand of trees. Others planted trees without an understanding of the monetary value CRP stands would provide in the future. For many CRP tree plantings, saleable value will exist at the end of the 10-year CRP contract. However, monetary value and economic returns can be maximized through long-term timber management that seeks to produce high value timber crops.

## Fiber Versus Solid Wood Products

A variety of products can be obtained from trees. In general, these products are made from either wood fiber or solid wood. Wood fiber is used most often to manufacture paper products. Solid wood is used to manufacture a variety of items such as lumber, furniture, plywood, and utility poles. As for standing trees, those suitable for yielding solid wood products are most valuable.

Of the factors used to determine the suitability of trees for manufacturing various wood products, size is perhaps most important. Size is directly influenced by tree age and can be guided by good forest management practices. As trees grow older and increase in size, they advance through common product classes that govern the type products they can yield. Barring any significant defects (crooks, limbiness, etc.), the diameter of a tree, measured at 4.5 feet above the

ground, is used to determine its suitable product class. Three common product classes are generally defined as follows:

- *pulpwood*—smaller trees, usually 5-9 inches in diameter
- *chip-n-saw*—medium size trees, usually 10-11 inches in diameter
- *sawtimber*—larger trees, usually 12 inches and larger in diameter

When comparing trees of similar quality, the value of a tree will increase as it increases in diameter and product class. Chip-n-saw trees can be two to three times as valuable as pulpwood for the same amount of wood, while quality sawtimber is more valuable than either pulpwood or chip-n-saw. As a result, a stand managed to produce large trees suitable for manufacturing solid wood products will have a higher value than the same stand grown for an equal length of time but left unmanaged.

### Thinning

Obviously you would prefer to have large, sawtimber size trees as quickly as possible. One forest management practice that promotes rapid growth is thinning. Thinning is the harvest of a portion of the trees in a stand. Through thinning, competition for light, water and nutrients is reduced and growth of the remaining trees is increased. The most important

aspect of thinning is to leave the best trees so growth is concentrated on trees that will provide the greatest increase in value.

As 10-year contracts expire, many CRP stands will be ready or nearly ready for thinning. There are many signs that indicate a need for thinning. Crown closure is one of the easiest signs to observe. Crown closure simply means that the branches of trees in the stand are touching or overlapped. As a result, competition for needed sunlight (as well as water and nutrients) is fierce and the stand could benefit from thinning. A good rule of thumb is to thin as soon as economically feasible after crown closure. Since "economically feasible" must take into account harvest volumes, stumpage prices, and market conditions, have a registered forester assist you in deciding when and how heavily your stand should be thinned.

Besides increasing growth of the best trees, thinning also:

- Removes and obtains value for trees that would eventually die.
- Increases stand quality by removing trees that are inferior, diseased and poorly formed.
- Improves stand vigor, which increases resistance to insect and disease attack.
- Improves production of forbs and grasses beneficial to a variety of wildlife species.
- Improves stand accessibility.

### Is Long-term Timber Management Profitable?

Yes, long-term timber management can be profitable. Table 1 displays the volume of a hypothetical but realistic unmanaged CRP stand at various ages up to 35. It also shows the same information for a 35-year-old stand managed with thinning. Figure 1 displays the dollar value per acre (in 1995 dollars) associated with the volumes in Table 1. Although this example may or may not reflect the abilities of your stand, it can offer valuable insight to help you decide if it is more profitable to return your CRP acres to rowcrops or other open land uses. It can also help you decide if it's in your best interest to manage your stand. A registered forester can help you determine the actual condition and potential of your CRP stand.

Looking at the pulpwood, chip-n-saw and sawtimber volumes for ages 10, 15, and 35, without thinning, you can see that over time the volume in the larger product classes gradually increases. And, as you would expect, the value of the products harvested also increases with time. From age 10-15 the value of the stand increases by \$425 per acre due to many of the trees that were unmerchantable at age 10 becoming large enough to be used for pulpwood. If the

(Continued on page 24)

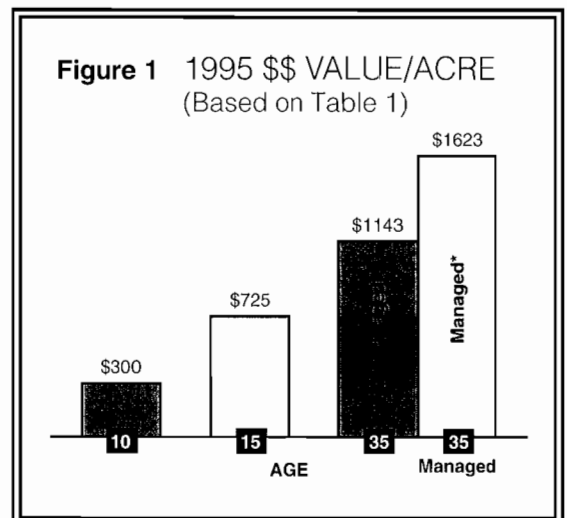
**Table 1** VOLUMES AT DIFFERENT AGES, WITH AND WITHOUT THINNING FOR A 35-YEAR ROTATION IN AN OPEN LAND PINE STAND.

AGE	PULPWOOD cords/ac.	CHIP-N-SAW cords/ac.	SAWTIMBER MBF Scribner
10	10.0	0	0
15	22.6	3.1	0
35	9.1	37.9	1.89
35 (managed)*	10.6	9.0	11.60

**ASSUMPTIONS:**

- Site Index: 60 (Base Age 25)
- Stumpage Price Increase: equal to inflation
- Discount Rate: 5 percent
- Thinning Regime: 70 square feet residual at age 15; 90 square feet residual at age 25
- Volumes do not include topwood
- Tax Treatment: Before taxes
- Stumpage Prices: Pulpwood - \$30/cord  
Chip-N-Saw - \$80/cord  
Sawtimber - \$300/mbf, Scribner

\*The 35 year managed scenario includes all volume and value from thinnings at age 15 and 25, and final harvest at age 35.





*Continued from page 23*

stand were allowed to grow another 20 years without management, the stand would increase in value by another \$418 per acre. While this does reflect an increase, it is far less than the stand's potential.

Looking at the 35-year managed stand values, the advantage of thinning becomes clear. In this scenario, the managed stand was thinned at age 15 and 25, and harvested at age 35. Each thinning concentrated on removing the smaller, slower growing trees while leaving the best trees for the final harvest. Because of the income generated from the thinnings and the large sawtimber volume present at the final harvest, the managed stand is five times more valuable than at year 10. It is over twice as valuable than at age 15, and nearly \$500 per acre more valuable than it would have been if no thinnings were performed during the 35 years. Active management of your CRP stand could yield similar results.

### Prescribed Burning

Prescribed burning is another forest management tool available to help you maximize the value and use of your CRP stand. Prescribed burning is the use of controlled fire under specific conditions to achieve specific, desired results. From a timber production standpoint, prescribed burning offers two benefits:

- Control of undesirable vegetation
- Reduction of forest fuels

Hardwoods invading a pine stand devoted to timber production can be controlled using prescribed burning. It can also reduce the potential damage caused by a wildfire in your CRP stand by reducing the amount of fuel (pine needles, leaves, underbrush, etc.) on the forest floor. In addition to timber production advantages, prescribed burning can also provide measurable benefits to certain species of wildlife and improve accessibility in stands with a heavy understory.

### Pine Straw Production

Your CRP stand can possibly provide an alternative source of income—pine straw. Commercial pine straw production

has increased dramatically in the last 10 years, and many CRP stands will be highly suited to mechanical raking. Longleaf and slash pine are most preferred, but loblolly pine is also used. Stands less than 8 years old are usually unsuitable. From about age 8 to age 15, straw production will be on the increase and is considered to be at its maximum around age 15. Stands suitable for raking must be free of weeds, grasses and hardwood brush. Many CRP stands will have minimal understory vegetation after crown closure. Others may require herbicide treatments to remove the unwanted vegetation.

Pine straw production can range from an average of 75 bales per acre around age 8, to 150-200 bales per acre around age 15. Prices may range from an average of 50 cents per bale to a high of \$1 per bale for high quality straw. Landowners interested in marketing pine straw can either rake, bale, and sell it themselves, or they can sell straw to a dealer on a lump sum per acre or per bale basis.

### Maximizing Wildlife Value and Return

Managing for, or giving consideration to, various species of wildlife is important to many landowners. Just like managing for timber, benefits to certain wildlife species can be achieved through management. The degree of management and monetary trade-off from timber production can only be determined by the individual landowner. If monetary value from timber production is the most important objective, wildlife management may be confined to improvements provided through planned and needed timber management practices, along with wildlife practices that do not inhibit optimal timber production.

For the landowner who places more or equal emphasis on enhancing wildlife habitat as opposed to timber returns, a higher degree of trade-off from timber may be more appropriate. Fortunately, many species of wildlife benefit from practices used to enhance timber production regardless of the degree of trade-off you choose.


Thinning is a management tool for both timber and wildlife. The effect of thinning is a more open stand that allows increased sunlight to reach tree crowns and the forest floor. This improves tree

growth as well as the growth of forbs, grasses, legumes, and woody plants that are valuable to many wildlife species for sources of food, cover, and nesting and brood-rearing habitat. Specific species that benefit from the changes created by thinning include white-tailed deer, eastern wild turkey, rabbit, quail, and a variety of rodents. Predators such as hawks, foxes, and bobcats will profit from the increased prey that frequent thinned stands.

In addition to thinning, prescribed burning can be used on varying schedules to create and improve habitat for certain wildlife species. White-tailed deer benefit from a three-year burning rotation that maintains desired forage in a more palatable form. Eastern wild turkey benefit from three- to five-year rotations that allow for and maintain ideal nesting habitat. Quail benefit from patchwork annual burning that provides both nesting and brood-rearing habitat. Combining a thinning program with timely prescribed burns can be a highly effective management approach that maximizes both wildlife and timber productivity.

Other opportunities to improve wildlife habitat include creating permanent wildlife openings during the first thinning, especially where large acreage of CRP is contiguous. Creating and seeding permanent firelanes with vegetation that is beneficial to desired wildlife species can also be used to improve habitat, while simultaneously offering a barrier to wildfire.

### Other Benefits from CRP Trees

Besides monetary and wildlife benefits, your CRP trees can also provide valuable protection of the land. CRP acres were accepted because they were highly erodible. Maintaining your CRP stand will provide valuable protection against soil erosion. If creeks and streams are near your CRP acres, maintaining your trees will also protect water quality. 

*The information in this article was provided by the Forest Resources Subcommittee of the Alabama Forestry Planning Committee in an effort to better assist landowners with the management of their forestland.*

## RED MAPLE



by PAT WALDROP, Alabama Forestry Commission

**M**aples are common in the Northern Hemisphere from the north temperate regions south to the tropical mountains. While most of the 200 species of maples are native to Asia, 13 are native to North America and nine of those are native to the Eastern United States. In Alabama, the red maple, *Acer rubrum*, is the most common maple and occurs in all 67 Alabama counties.

This medium sized tree can have a life span of 80 to 150 years and can reach heights of 50 to 80 feet. The current Alabama state champion in Calhoun County is 80 feet tall with a diameter at breast height of over 43 inches. Although more frequent on moist sites, the red maple will grow on a wide variety of sites and will tolerate dry conditions better than most maples. It is also one of the easiest trees to transplant and easily grown from seed. It is tolerant to both shade and sun, having a full crown when open grown.

The red maple is one of the easier trees to identify, particularly in early spring when the flowers and fruit appear before the leaves. The fruit is a double winged samara and is bright red to sometimes orangish-red. Male and female flowers may appear on separate trees or on the same tree. The palmately veined leaves are also distinctive, usually having bright red petioles. The leaves have three to five lobes (usually three) with irregularly serrated margins. The underside of the leaf can be silver, although this effect is much more common in the silver maple. One of the key points to notice on identification is that the maples have branches that are opposite one another. Other than ash and dogwood, most Alabama forest trees have alternate branching. The bark is smooth and light gray when young and turns darker with a shaggy appearance as it ages.

Although the seeds are eaten by birds and rodents, the red maple is not generally considered a good wildlife species. Some lumber is produced in Alabama from red maple, but it is considered a soft maple; the demand for maple is usually



for hard maple species such as sugar maple (*Acer saccharum*). The wood is close grained and fairly weak, with the sapwood being a light color and the heartwood being a light brown. A good portion of the maple harvested in Alabama is mixed with other hardwoods, such as oak, and goes into pulp production. Although some markets exist for maple in Alabama, it is not considered a valuable timber species. The genus name for maple, *Acer*, comes from the Latin word for maple and also means sharp in Latin. Maple was the favorite wood for spears.


Maple syrup can be made from the red maple or any other maple, but since the red maple does not produce abundant sap, it is rarely used for this purpose. The sugar maple or Florida maple (*Acer barbatum*) is much better suited for syrup production. In many parts of the world, a

common black ink or dye is made from a hot water extract of maple bark that is combined with ferric chloride or an aluminum salt.

The rapid growth and adaptability to a wide range of sites make the red maple a very popular shade and street tree. The foliage has excellent fall color that ranges from red to yellow. There are many cultivars of this species, such as crimson maple, which has a deep reddish-purple color in the fall. Most retail nurseries carry an assortment of maples. When planting a maple as a shade tree in Alabama, it is recommended to avoid the silver maple, *Acer saccharinum*, due to poor form and susceptibility to disease. Although somewhat rare and difficult to find, the chalk maple, *Acer leucoderme*, is a small maple that is native to Alabama and has brilliant red fall color. This species is gaining in popularity and should be used more often.

Due to its abundance and aesthetic qualities, red maple is sure to remain a favorite among many Alabama forestland owners.

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# The Southern Forests: 1850-1930

by DON BURDETTE, Alabama Forestry Commission

**F**rom time to time you may hear environmental prophets of doom who are predicting the utter destruction of our forests, wildlife and rivers in the not-too-distant future. Most of the time these concerns are based on a misunderstanding or misrepresentation of two very significant points: Nature is often much more resilient than we give her credit for, and natural resource managers have come a long way in cooperating with her to achieve sustainable productivity and other benefits.

However, in the late 1800s and early 1900s there really was a legitimate cause for concern. Our country and the Southeast in particular were facing near environmental and economic ruin because of the depletion of our natural resources. This deplorable condition wasn't simply the quick work of a few greedy opportunists. There are many reasons our country went from an unbelievable surplus of resources to only remnants of these same amenities in a little more than a century. The story of the depleted forest is woven into the fabric of American history and there are lessons learned that we must never forget.



*By the late 1920s, millions of acres of forestland in the Southeast had been cleared, depleted or degraded.*

By the late 1850s a well-established timber trade had developed in the South. Prices of lumber had finally begun to rise as demand increased due to rising population and increasing urbanization. As Southern states began to recognize the potential economic benefit of forest product industries, a concerned few passed laws to discourage unreasonable timber management practices. Unfortunately these early laws were in name only and usually ignored by the general population and law enforcement officials.

In 1860 the Southern states tried to secede from the Union after a long debate with the federal government over slavery, trade tariffs and state's rights issues. The Civil War that ensued for the next five years placed heavy demands on forest resources for fuel, equipment, supplies and fortifications. The South's most pressing need immediately after the war was restoration or reorganization of the regional culture, economy, labor force and infrastructure that had been destroyed by the war. Large quantities of wood were needed for local reconstruction projects.

Also, the nation as a whole began

## National Growth, Westward Expansion, and Industrialization Deplete the Southern Forests

After 1850, railroads began expanding rapidly, linking growing cities and providing access to markets for agricultural and forest products. Although called the "iron road," railroads used far more wood than iron. Except for the engine and rails, the cars, ties, fuel, bridges, trestles, station houses, fences and telegraph poles all required huge quantities of timber from the forests. By far the most significant railroad use of timber was for crossties. Each mile of track required over 2,500 ties which had to be replaced every five to seven years.

The first paper mill in the South was erected in 1856 on Three Mile Creek near Mobile, Alabama. Early manufacturing facilities used a process that converted old cotton and wool rags into paper. The refinement of the wood pulp-making process by the late 1800s enabled production of a much cheaper and higher quality paper for newspapers and books. This allowed the printing business to increase coverage, advertising and circulation, thus greatly affecting their political and social influence.

concentrating on westward expansion, renewed economic growth and industrialization. Rapid domestic and immigrant population growth and technological revolution had a major impact on the nation's and the South's forests. Demand for Southern timber from other regions where wood was either getting scarce (the Northeast and Lake States) or practically unavailable (the Plains and parts of the West) increased steadily throughout the remainder of the 19th century. The settlers on the treeless plains needed supplies of lumber for houses, fences and other construction. New cities in the Midwest were being built mostly of wood, while expanding older cities in the Northeast could not depend on their almost depleted local forests. Accelerated expansions in railroads, telegraph lines, plank roads and other outdoor wood-using industries consumed immense quantities of untreated wood that had to be replaced at frequent intervals. Demands for hardwood lumber for construction, furniture, cooperage, tools and implements also increased with the rise in population. Charcoal production had become an important support industry to the iron foundries and steel mills in the Heart of Dixie by 1876.

As the physical distance between consumers and forests grew, sawmilling became an increasingly large-scale, industrial opera-

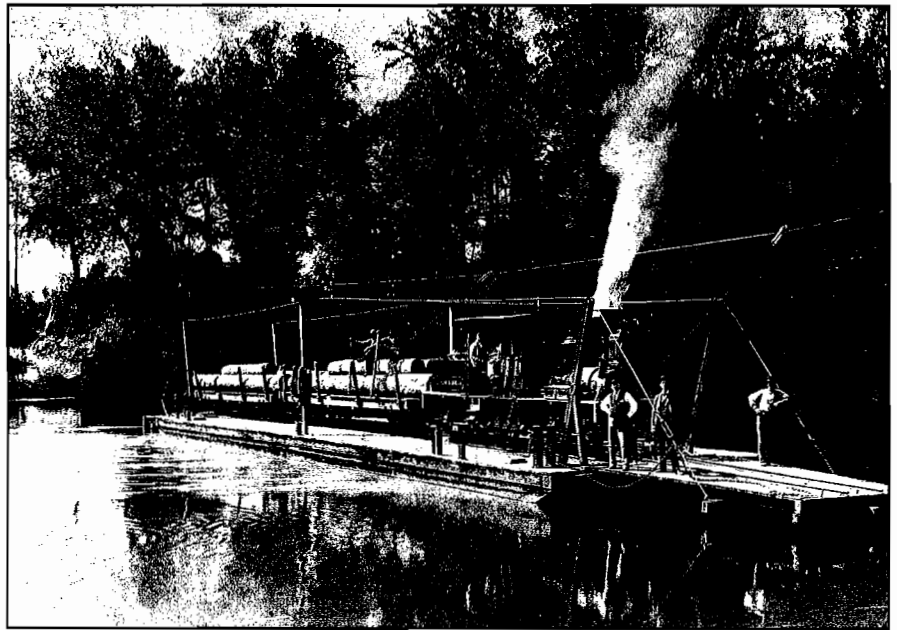
tion. By the late 1860s, improvements in steam-powered sawmilling equipment were making the lumber production process faster and more efficient. Circular saws replaced the single-bladed upright saws and were in turn being replaced by band saws. Rich, 300 plus year old longleaf pine timber was the incentive for the nation's lumber industry to develop and expand in the South. As the Plains were settled, sawmill towns and lumber depots sprang up along the Mississippi River. Southern lumber regions began to export cypress and oak as well as pine. By the 1880s, sawmills had become the dominant industry in the Southern economy.

Logging in the entire United States had become a fiercely competitive and highly speculative business depending on quick profits. This encouraged careless and extravagantly wasteful methods of logging during "cut-out-and-get-out" operations. Mechanization of the Southern forest products industry increased its capability to harvest timber and produce products needed and desired by the American public. Loggers were just beginning to use cross-cut saws and specialized wagons to speed up the timber harvesting process. Narrow-gauge tramlines were lain all over the South to open up large areas of old-growth timber to steam powered railroad equipment. Poor utilization of wood biomass was standard practice and vast tracts of timber were blatantly stripped without regard for future needs. The debris left after logging operations sometimes fueled enormous forest fires that killed residual timber, natural reproduction, and occasionally, people. Repeated high-grading, the practice of select cutting the best quality trees for harvest and leaving inferior trees to compose the residual forest, continually degraded the quality of the Southern forests, particularly in hardwood stands. The tall tales of Paul Bunyan, which had originated in the Northeast between 1850 and 1870, eventually spread and continued to flourish in Southern forests.

Predictions of a wood famine and losses of forests and wildlife also originated in the depleted forests of the Northeast and Lake States and were eventually heard in the South; but the carnage continued at a steady pace until the original, naturally regenerated, old-growth forests were almost exhausted in the late 1920s. By this time millions of acres of forestland in the Southeast had been cleared, depleted or degraded. Reasons for the Southern forests' decline were many: losses to agriculture and development, over-cutting with poor utilization, no reforestation effort, destruction of naturally regenerated and standing timber by repeated wildfire, grazing of tree seedlings by free roaming livestock, overhunting, and erosion. The capability of technology had outpaced the resiliency and our understanding of natural resources.

Wildlife had also been devastated. Beaver had been eradicated from the Eastern forest, deer and turkey were almost completely gone. Some species such as the passenger pigeon and Carolina parakeet had been driven out of existence by

market hunting, eradication by farmers and destruction of habitat by loggers. Soil erosion on a huge scale had resulted in phenomenal losses of farm productivity and degradation of water quality and fish habitat.



A ferry transports a logging train across the Tallapoosa River from Elmore County in 1898.

In spite of the deplorable condition in the early part of this century, all was not lost or we wouldn't be here today looking at and depending upon the bountiful environment that exists around us. There were still millions of acres of residual forests, remnants of wildlife populations and enough soil productivity left with which to sustain continuity until time, nature and conservation efforts could restore these resources to their former glory.

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### Next Issue

The final part of this series, *The Southern Forests: An Environmental and Economic Success Story*, will appear in the Summer issue of *Alabama's TREASURED Forests* magazine.

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# Attracting & Feeding

## NON-GAME BIRDS

by COLEEN VANSANT, Forest Education Specialist, Northeast Region,  
Alabama Forestry Commission

**T**he interest in non-game wildlife, particularly birds, seems to have increased over the past few years. Currently more than 62 million Americans feed birds around their homes. This number continues to grow as the fascination with birds captivates man.

Birds can provide a diversity of enjoyment. From the beautiful colors of the cardinal and the Eastern bluebird, to the never-ending repertoire of the mockingbird, to the soft sweetness and coo of the mourning dove, there's something about birds that brings pleasure to the human species.

One of the best ways to attract our feathered friends to the back yard is to provide a palatable smorgasbord of goodies for every taste.

Different species of birds like to feed in different ways, so don't limit yourself to just a few species by using only one type of feeder. A ground level feeder or

feeding table will attract ground-feeding birds like robins, blackbirds, and cardinals. A high feeding table mounted on a post, fence or windowsill will be a favorite of most seed-eating birds such as chickadees, goldfinches, and grosbeaks. Hanging feeders will attract birds like chickadees, titmice and nuthatches, who like a little movement when they eat.

Keep in mind that a bird's nutritional needs are very much like our own. They need fats, carbohydrates, protein, minerals, vitamins and calcium. Don't overlook this simple but important element: provide plenty of water.

Besides feeders and feeding tables, one of the best and most natural ways to feed birds is to incorporate the trees, shrubs, flowers, and vines that produce seeds and berries into your home or farm landscape. Dogwood trees, autumn olive, and holly are excellent choices. When you

**Autumn olive is one of the best loved plants by birds.**



plant your annuals and perennials in the spring, consider the birds and plant zinnias, cosmos, asters and other bird attractants. By leaving the flower heads on the flowers and allowing them to ripen and mature, a feast is available for birds.

Not only do natural plantings provide food for many species of non-game birds, but they also provide much-needed and appreciated cover. While many wild species are regarded as weeds and undesirable plants, when allowed to thrive in the right place they can provide food and cover for songbirds. Some wild plants you might want to leave include pokeberry, mullein, and Virginia creeper.

Aside from benefiting the birds, most natural plantings will provide aesthetic beauty to the landscape throughout the year with their spring blooms or fall foliage.

And don't forget the hummingbirds. Nectar feeders around your house and yard can attract these small aero-acrobats until late summer.

Remember, bird feeding is not just a winter sport. Summer feeding in Alabama will bring resident seed eaters such as chickadees, titmice, cardinals, blue jays and several others. Although fewer birds will be using feeders in the summer, many species will bring their offspring to the feeders as well.

### Birds and Their Diets

Here are some bird species and what you can use to attract them:

**Blackbirds**—Primarily ground feeders but will sometimes land on a hanging feeder meant for smaller birds. They like cracked corn, mixed seed, millet, and nutmeats.

**Bluebirds**—Rare at feeders but will pay a visit if you offer the right menu. They are attracted to suet, raisins, nutmeats, peanut hearts, and baked goods. They are attracted to natural plants such as dogwood, honeysuckle, redcedar, holly, pokeberries and other various berries.

**Bluejays**—Regulars at feeders. Things like peanuts (cracked or in the shell), sunflower and safflower seed, cracked corn, nutmeats, eggs, table scraps, suet mixtures, baked goods and fruit. Other plants that attract them include acorns, cherry, wild plum and many cultivated grains.

**Cardinals**—Timid birds who are often too shy to feed with other birds, they particularly like safflower seeds. Cardinals also enjoy sunflower seeds, cracked corn,



*Birds appreciate welcoming feeders in winter.*

millet, melon seeds, nutmeats, raisins, apples, and suet. They also like autumn olive, dogwood, cherries, and other natural berries.

**Chickadees and Titmice**—Love hanging feeders. Goodies like sunflower seeds and meats, shelled peanuts, peanut hearts, thistle, nutmeats, suet, peanut but-

ter, and baked goods will keep them coming again and again. These birds are very partial to acorns.

*(Continued on page 30)*



*Hummingbirds are attracted to the sweet nectar in feeders.*

### HOME RECIPE FOR HUMMINGBIRD NECTAR

Boil 2 cups of water, stir in one-half cup of granulated sugar, return to boiling, then cool, uncovered. Store in refrigerator. Always use a 4 parts water to 1 part sugar ratio. Feeders should be scrubbed with a mild vinegar solution at least once a week.



## PLANTS THAT ATTRACT BIRDS

### WEEDS & WILD THINGS

Bittersweet  
Boston Ivy  
Fleabane  
Lamb's Quarters  
Milkweed  
Mullein  
Pokeberry  
Thistle  
Trumpet Vine  
Virginia Creeper

### SHRUBS & TREES

Autumn Olive  
Beautyberry  
Crabapple  
Dogwood  
Eastern Redcedar  
Elderberry  
Highbush Cranberry  
Holly  
Honeysuckle  
Nanking Cherry  
Oaks  
Pyracantha  
Sumac  
Viburnum  
Wild Cherry

### ANNUALS & PERENNIALS

Aster  
Coneflowers  
Coreopsis  
Cosmos  
Foxglove  
Monarda  
Salvia  
Sunflower  
Tithonia  
Zinnia

## Attracting and Feeding Non-Game Birds

*Continued from page 29*

**Doves**—Mourning doves, pigeons, and turtledoves prefer to dine at ground level but will eat from higher up if the food is available. They like thistle, millet, sunflower and safflower seeds, cracked corn and peanuts. They are attracted to natural plants like pokeberries and holly.

**Finches**—Including grosbeaks, red polls, pine siskins and goldfinches, they love feeding stations, especially if they are filled with things like thistle seed and sunflower meats, suet mixtures, canary and safflower seed, millet, peanut hearts, and fruit. Finches, including the goldfinch, enjoy mulberry, conifers, and seeds of garden flowers.

**Hummingbirds**—Plantings for these birds should include columbine, delphinium, petunia, and trumpet creeper. These birds are attracted to the color red.

**Mockingbirds**—Love

raisins which have been soaked in water and other fruits, suet and peanut butter, nutmeats, baked goods, and hummingbird nectar. Mockingbirds love pokeberries as well as autumn olive, elderberry, highbush cranberry, and holly.

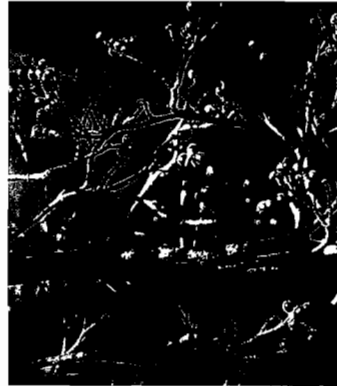
**Orioles**—Have a fondness for sweets.

They love fruits, especially oranges, and will even sip sugar water. Other attractants include suet, peanut butter, cracked corn, millet, and baked goods. Orioles like all kinds of berries including poke, cherry, and elderberry.

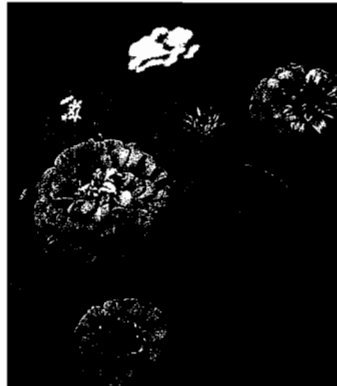
**Robins**—There's not much that a robin doesn't enjoy eating. They are attracted to cherry, dogwood, autumn olive, holly and sumac.

**Sparrows**—Will be attracted to feeders filled with millet, sunflower seed and meat, cracked corn, thistle, safflower seeds, peanuts, suet, nut meats, and baked goods.

**Starlings**—Will eat almost anything, including reconstituted dog food and cooked rice. They also like all kinds of seeds, cracked corn, peanuts, hulled oats, suet, and fatty scraps.



*Around 47 different species of birds feed on dogwood berries.*



*Birds feed on dried seed heads of zinnias and other annuals.*

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# Four Generations Have TREASURED This Land

by TILDA MIMS, Forest Education Specialist, Alabama Forestry Commission, Northport

**F**our generations of Charles Hughes' family have enjoyed the rolling forestland of the Bald Rock community in Franklin County. Today, 1,600 acres of that land is a portion of TREASURE Forest #570 owned by his son, Earl. Earl also owns 700 acres in Marion County.

On this early winter morning Earl, his son Chip and his grandson Will are enjoying the changing seasons and the anticipation of hunting season. They share a common love and respect for the land, yet their principal pastime when visiting is a little different.

Earl is a "timber man"; his primary interest is production of healthy trees. When he inherited the land in 1960, some of it had been row cropped and the rest left unmanaged for years. He then began a lifelong commitment to reforesting open areas, thinning and prescribed burning pine plantations, and improving the quality of hardwood areas.

Earl commends Alabama Forestry Commission associates Terry Ezzell, Mitch Craft and Neal Taylor for assistance with cost-share and management practices. "The Forestry Commission's been working with me since about 1985 or earlier. They've been extra helpful to

me. Anything we need to know we just ask them and they help us out," Earl said.

Although Chip takes an active role in timber management, operating some of the forestry equipment and overseeing contracted work, he and his son Will clearly favor the wildlife management aspect.

edge effect. Ample hardwoods furnish mast and den sites for large and small game and non-game species. They enrolled in the Deer Management Program in 1993.

The deer population has recovered well under their plan. In 1992, Chip killed a 10-point buck that scored 150 on the

Boone-Crockett scale and is now in the Alabama record book.

The quail population has flourished with improved food and shelter throughout the area. Three coveys were easily viewed from the forest roads on a single morning's visit.

Twelve-year-old Will seems to love everything about his Papa's forestland, but hunting is his favorite, too. According to his proud grandfather, Will is quite a marksman, able to hold his own with adults in dove hunt-




*Chip, Will and Earl Hughes*

For many years the land was freely hunted until the wildlife population began to decline dramatically. About six years ago the decision was made to restrict hunting to guests and to prohibit hunting with dogs.

Today six to seven acres of food plots offering rye, Ladino clover and other foods are scattered about the tract. Stands are managed to provide excellent

ing and deer hunting.

Touring a TREASURE Forest is always a pleasure. It is, however, a genuine delight when several generations share the labor of love that makes their forest award-winning. Future generations of the Hughes family will surely walk the same forest roads, teaching other youngsters how to manage the land for their future. 

**THREATENED  
& ENDANGERED**

**SPECIES**

# Granite Pool Sprite

## *Amphianthus pusillus* Torrey

by TIM L. GOTHARD, Alabama Forestry Commission

**G**ranite pool sprite, also known as little amphianthus, is a highly specialized, semi-aquatic plant found in Chambers and Randolph County. One of a group of granite outcrop plants, it is considered highly specialized due to the exacting conditions necessary for its survival and its inability to survive elsewhere. Not only is the plant restricted to granite outcrops, it is also restricted to specific sites and conditions that do not exist on all outcrops. To survive, it requires granite outcrops with depressions capable of collecting and holding rainwater.

Granite pool sprite is a winter annual that typically germinates in January when winter rains fill the shallow granite pools. Beneath the water the leaves form a rosette at the base of the plant. A leafless flower stalk rises to the surface of the water and supports a pair of small oval-shaped leaves that float on the water surface. Small, tubular white flowers bloom




Jarel Hilton

on the exposed leaves in March. Flower buds also occur below the water but do not open until exposed to air. Seeds are deposited into the pool and settle in the

shallow soil at the bottom of the depression, where they remain dormant through the dry months. The cycle begins anew as pools fill from the following winter's rain.

Due to the exacting and limited habitat conditions necessary for the existence and survival of granite pool sprite, botanists suggest that this plant was never abundant, and note the fragile nature of its habitat as the primary reason for its threatened status. Threats to this species include rock quarrying, eutrophication as a result of livestock and pasturing, and human disturbance. In an effort to preserve this unique plant and its habitat, the Alabama Natural Heritage Program has nominated one site to the Forever Wild Board for consideration as a nature preserve.

For more information on granite pool sprite contact the Alabama Natural Heritage Program at (334)242-3484 or the U.S. Fish and Wildlife Service at (601)965-4900. 



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