

Alabama's TREASURED Forests

SUMMER 1994



STATE FORESTER'S MESSAGE

by TIMOTHY C. BOYCE, State Forester



In the past, the practice of forestry faced many challenges, but the challenges we faced and conquered have become our legacy. Those struggles produced a forest that far exceeded anyone's greatest expectations. Few, however, will ever know the many dedicated heroes who fought so hard to make Alabama's forests what they are today.

Many championed unpopular causes, such as laws against the open grazing that was the catalyst to uncontrolled burning and the rampant spread of wildfires. Those bold people started state forestry agencies, state tree nurseries, and formulated laws to control wildfires and timber theft that still exist today. Many were landowners, and many were in the timber business or both. They had the farsighted vision that the South's forests could return through strong timber markets, reduction of wildfires, accelerated tree planting, and proper silviculture. We owe a lot to these visionaries of the past!

Today, as in the past, we have many dedicated landowners facing different challenges—overzealous regulations, erosion of private property rights, and environmental radicalism. The list can go on, but the vision and determination are still there. Our forests will continue to be better because of them.

It has been my privilege to have met a few of these uncommon visionaries across Alabama and the South. Their spirit is captured in this creed written by Dean Alfange.

I DO NOT CHOOSE TO BE COMMON

It is my right to be uncommon — if I can.
I seek opportunity — not security.
I want to take the calculated risk; to dream and to build, to fail and to succeed.
I refuse to barter incentive for a dole.
I prefer the challenges of life to the guaranteed existence;
the thrill of fulfillment to the stale calm of utopia.
I will not trade freedom for beneficence nor my dignity for a handout.
I will never cower before any master nor bend to any threat.
It is my heritage to stand erect, proud and unafraid; to think and act for myself,
enjoy the benefit of my creations and to face the world boldly and say, this I have done.
All this is what it means to be an American.

"My Creed" by Dean Alfange

Sincerely,

A handwritten signature in cursive script that reads "Timothy C. Boyce".

Timothy C. Boyce
State Forester

Alabama's TREASURED Forests

Volume XIII, No. 3

Summer 1994

CONTENTS

Nothing Happens by Accident / by <i>KIM GILLILAND</i>	4
Pruning: A New Look at an Old Practice / by <i>NEIL LETSON</i>	7
The Alabama Forestry Commission:	
Practicing What It Preaches / by <i>JAMES W. MOYE</i>	8
The Need for Forest Management / by <i>TOMMY PATTERSON</i>	9
Harvesting Upland Hardwoods / by <i>BOBBY L. LANFORD</i>	10
Alabama Severance Tax / by <i>STEVE NIX</i>	12
Revised Severance Tax Law / by <i>WALTER VEST</i>	13
Adopt-A-School for TREASURE Owners / by <i>DON BURDETTE</i>	14
Ecosystem Management / by <i>DR. KATHRYN FLYNN</i>	18
Ecosystem Management in Alabama / by <i>LOU HYMAN</i>	19
Uncertain Futures: CRP and FIP / by <i>TIM GOTHARD</i>	20
Cool Season Food Plots for Deer / by <i>LEE STRIBLING</i>	23
Longleaf Seedlings: Bareroot vs. Containerized / by <i>JOHN R. RICE</i>	24
Recreation Liability: Is Your Tree Farm at Risk? / by <i>CARLTON N. OWEN</i>	26
Southern Pine Beetle Management / by <i>JIM HYLAND</i>	28
"Woods, Water and Wildlife . . ." / by <i>KIM GILLILAND</i>	30
Ecosystem Management for Alabama Forest Owners	30
Registration form for 11th Annual Landowner Conference	31
Order Seedlings Now	32

DEPARTMENTS

State Forester's Message	2
Editor's Understory	6
Memorial	15
Landowners Legislative Alert	16
Hardwoods of Alabama	22
Calendar	22

COVER: This white-topped pitcher plant (*Sarracenia leucophylla*), photographed in Baldwin County, is also known as a crimson pitcher plant. The tall plants growing behind it are gold crest (*Lophiola americana*), and the small, round flowers are bog buttons (*Eriocaulon*). Photo by Kim Gilliland.

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

The Alabama Forestry Commission policy prohibits discrimination based on race, color, national origin, sex, age, religion or handicapping condition.

COMMISSIONERS

Carol Jean Grisham, *Chairman*
Cecil Tanner, *Vice Chairman*
John Barfield
Clifford J. Drouet
Charlie Hamilton
Randall Rogers
Guice Slawson

STATE FORESTER

Timothy C. Boyce

ASSISTANT STATE FORESTER

Richard H. Cumbie

ALABAMA FORESTRY

PLANNING COMMITTEE

- Alabama Department of Conservation and Natural Resources
- Alabama Department of Education, Vocational Division, Agribusiness Education
- Alabama Farmers Federation
- Alabama Forestry Association
- Alabama Forestry Commission
- Alabama Soil and Water Conservation Committee
- Alabama TREASURE Forest Landowners Association
- Alabama Wildlife Federation
- Association of Consulting Foresters, Inc., Alabama Chapter
- Alabama Agricultural Experiment Station, Auburn University
- Alabama Cooperative Extension Service, Auburn University
- College of Agriculture, Auburn University
- School of Forestry, Auburn University
- Tennessee Valley Authority
- USDA—Agricultural Stabilization and Conservation Service
- USDA—Farmer's Home Administration
- USDA—Forest Service, National Forests in Alabama
- USDA—Forest Service, Southern Region, State and Private Forestry
- USDA—Soil Conservation Service

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

EDITORIAL BOARD

Brian Bradley John C. Kummel
David A. Frederick Tommy Patterson

EDITOR.....Kim Gilliland

ASSISTANT TO EDITOR.....Alexis London

TECHNICAL ADVISORS

Don BurdetteWater Quality
Tom CambreHardwoods
James HylandForest Health
Louis Hyman.....Taxes
Neil LetsonUrban Forestry
Tommy PattersonTREASURE Forest
Stan StewartWildlife
Walter Vest.....Forest Law Enforcement

NOTHING HAPPENS By ACCIDENT

by KIM GILLILAND / Editor



Seth Lowe

When Seth Lowe purchased 364 acres of property in 1961, he was faced with a challenge. Open fields were grown up in brush and the forestland was mostly cutover. But, as Seth himself will tell you, it's no accident that today this property contains excellent stands of mature timber, young pine plantations and thriving wildlife. This was accomplished by hands-on management and specific planning.

The western Lauderdale County property was certified as a Tree Farm in 1964 and a TREASURE Forest in 1987. The acreage now stands at 433, with the most recent purchase of 15 acres in 1992.

Seth Lowe's property is one of the tours scheduled for participants during the 1994 Landowner and TREASURE Forest Con-

ference. Visitors will get to see first-hand the accomplishments of Lowe, as well as evidence of the powerful forces of nature. An ice storm earlier in the year did considerable damage to parts of the property.

Managing for Multiple Uses

In addition to assistance from the Alabama Forestry Commission in managing his property, Lowe participates in Packaging Corporation of America's (PCA) forest management assistance program. He credits PCA foresters Kirk Rutledge and Cliff Daniels with giving him good advice on how to improve his forestland. Low-grade hardwoods, which were present when the property was acquired, were harvested and planted in improved loblolly pine, as were 25 acres of open fields. "We converted from very low-



Hardwood sites like this one have been left for wildlife and aesthetic value.

of this method of spraying was reduced because PCA arranged to have it sprayed along with some of their property.

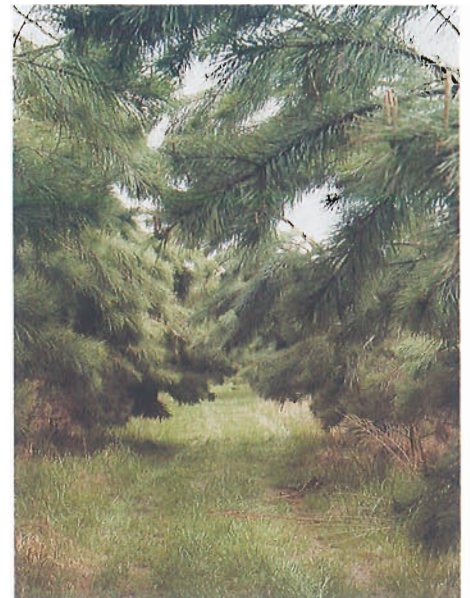
Wildlife is also an emphasis of Lowe's management strategy, and several permanent wildlife food plots have been established. In addition, the deer like to feed on grasses still present in the fields which were converted to pine trees. Sawtooth oak, autumn olive and lespedeza thumbergii have been planted especially for wildlife. Approximately 50 bluebird boxes have been erected for the non-game bird.

While guests have always been allowed to hunt with permission, Lowe will begin leasing the property to the Oak Grove Hunting Club this year. Deer, rabbits, squirrel and quail are the main species hunted. Several small ponds fed by natural springs are accessible for animals to drink from and add to the natural beauty of the upland hardwoods.

Setbacks and Comebacks

There have been and, unfortunately, continue to be setbacks to Lowe's management of his forestland, but each time he has not only recovered, but found a way to accomplish his goals. When an attempt at direct seeding of loblolly pine failed soon after the property was acquired, the 70 acres were replanted in seedlings.

The weather has caused some significant setbacks over the years. In 1987, 125 acres of open fields were planted in loblol-



Most of the ice damaged trees are 7-year-old pines.

ly pine, only to have a drought kill 60 acres of the young trees. Not to be defeated, Lowe planted again the next year and the seedlings have survived.

The most recent and devastating setback occurred in February 1994, when an ice storm damaged the area by breaking limbs, toppling trees and bending tree trunks in the most unnatural positions possible. The damage to Lowe's property is still being assessed. According to Lauderdale County Forester Steve McEachron, it may be months before the fate of many of the trees is known. "We're waiting to

(Continued on page 6)

grade hardwood stands to pine. We tried to improve the conditions for pine to grow," said Lowe.

In addition, black walnut and catalpa trees were planted in the late 1960s. The catalpa trees were planted for worm production, and fishermen and friends are allowed to harvest them. The worms are attracted to the heart-shaped leaves of the catalpa tree and feed off of them, but no harm is done to the tree. Royal paulownia, an unusual but valuable species, has also been planted.

Currently there are 280 acres of 7-year-old improved loblolly pines. Lowe has used the newest technology to manage this acreage. Two years ago these pines were sprayed with Arsenal® by helicopter. "That was probably the most successful thing we've done," claims Lowe. The cost



Regular prescribed burning in this pine stand has helped reduce the hardwood competition.

Editor's Understory

by KIM GILLILAND, Editor

As a retired educator, Seth Lowe places a special importance on enlightening other landowners on the benefits of managing a TREASURE Forest. Naturally, he is looking forward to welcoming visitors to his property during the 1994 Landowner and TREASURE Forest Conference (more information on the conference and a registration form can be found on pages 30-31).

Lowe enjoys showing people what he's accomplished, but wishes for more time so visitors could see everything. "It's hard to take people on a tour in an hour," says Lowe. But in his daily life he is an educator on the values of multiple-use management. "I've talked to a lot of landowners about it," he says. "I've tried to get as many as I could to plant trees."

Being a member of the Lauderdale County Forestry Planning Committee has enabled him to meet with and speak to many about the TREASURE Forest program and its benefits. He has also had several tour groups visit his property over the

years, including a Farm-City Week tour and boy scout visits. A chainsaw safety workshop was held in 1992. The property has also been designated as a demonstration forest by the Lauderdale County Forestry Planning Committee.

Growing up in central Mississippi, Lowe was exposed to forest management at an early age since family members owned forestland. His interest continued to peak, and when he bought his own property in 1961, he was ready to actively manage it.

Lowe graduated from Mississippi State University and took his first job as a teacher in Rogersville in 1938. "Jobs were hard to find that year," he says. "It was still in the Depression." Lowe went on to receive a master's degree from the University of Alabama in 1967 in school administration. Over the years he and his family have lived in several different Alabama towns, but settled in Florence in 1953. He and his wife of 54 years, Mirial, still live there today. It seems that the field of education runs in the family. Mirial is a

retired teacher, and the Lowes have three daughters who are currently working in the field.

Lowe has received special recognition in the past, including being a finalist for the Tree Farmer of the Year Award in 1989. His TREASURE Forest was one of three district winners of the Helene Mosley Memorial TREASURE Forest Award in 1992.

At the age of 79 he is still actively involved with the management of the property, but now has the time to appreciate the peaceful moments as well. A heart operation in 1993 may have slowed him down a bit, but not much. There are still regular trips to the TREASURE Forest with Mirial frequently accompanying him. "We look at tracks of wildlife," Lowe says, commenting that he's seen bobcat, cougar and coyote tracks all over the grounds. "I just enjoy walking and looking." And while you can put a price on the timber, you can't put a price on the enjoyment received from that. ♣

Nothing Happens by Accident

Continued from page 5

see how many will straighten back up this year." Lowe, however, is optimistic. He's already noticed that many of the trees are starting to recover, and believes only a small percentage will end up having to be cut down. "We'll have a few spots not to survive, but there will be enough to survive to make a pretty good stand," he said. The main damage was done to the 7-year-old pines.

Surprisingly enough, though, some of the same aged trees were unharmed by the storm. Lowe has a theory about why this occurred. The Arsenal® sprayed by the helicopter was applied too heavily to this area, and Lowe believes this "burned" the tops of the trees and stunted their height growth. He says this allowed them to continue to put on diameter growth so they



Autumn olive has been planted for wildlife.

is a must, however, so much clearing of fallen trees and debris has already taken place. The property has been on a regular prescribed burning program, so the underbrush has been reduced on a periodic basis. With so many fallen limbs on the ground now, the past prescribed burning has great-

were able to withstand more of the ice's weight. Indeed, the trees do look sparse at the top and have fewer needles, which may also have contributed to their ability to withstand more weight.

The ability to travel on roads

ly reduced what might have been there had no burning taken place.

Current Management Activities

Most recently, Lowe has site prepped and planted pines on the newly acquired 15 acres. He will also thin the 30-year-old pines during the summer, and hopes to have a crew working during the Landowner Conference tour in October so visitors can see a thinning operation at work.

Seth Lowe particularly enjoys visiting his TREASURE Forest and planning the management activities that he wants to accomplish. As he says, things don't happen by accident. It takes a great deal of planning, and that's part of the enjoyment of owning forestland. "You never get through on a TREASURE Forest," says Lowe. "There's always something to be done. It may not always be a success; you just have to try." ♣

PRUNING:

A New Look at an Old Practice

by NEIL LETSON, Urban Forestry Section Chief, Alabama Forestry Commission

Imagine you are in school again. The teacher announces a “pop” quiz on tree pruning. The test consists of three simple statements where you are to give true or false answers. The questions are: “flush cutting is the best way to remove a limb;” “tree paint should be applied on every pruning wound;” and “pruning limbs after tree planting to balance the crown to the roots is the best way to help your new tree.” Not too long ago you could have answered true to every statement and would have been graded correct. But today, the right answer to each of these statements is **false!** What’s changed in the last few years? Are trees any different than they were before? No. Trees haven’t changed. Instead, what we now know about how trees work has revolutionized the way we understand and care for them. No where has this been more dramatic than with tree pruning.

Pruning

Tree pruning has been done almost as long as can be recorded in history. Reasons include training young plants; improving a plant’s health and appearance; controlling size, influencing flowering; fruiting and vigor; invigorating a stagnant plant; compensation for root loss; and to increase the marketability of trees.

While it may appear that benefits are received, have our pruning techniques really helped trees in the best way? Take flush cutting for example. Everyone has read or heard that cutting a limb close to the trunk is preferred because it allows faster “healing” and leaves a straight trunk line over the cut. On the surface this looks valid. But underneath the wound, it’s clear that flush cutting is a giant step backwards and can actually do more damage than is necessary. The key to this new understanding is in knowing how branches are really attached to trees.

A branch is held to a tree by a series of collars that form annually and lock the limb to the trunk. As hard as it is to

believe, branches are not really structurally connected to tree trunk tissue, except where the branch tissue flows downward from the base of the branch into trunk. The secret to branch attachment is where the limb meets the trunk. After the branch base swells and forms a collar, the trunk tissues grow over the branch collar holding it in place. Each year’s growth forms a new collar and a stronger hold.

*What we now know
about how trees work
has revolutionized the
way we understand
and care for them.*

Flush Cutting

What does this say about flush cutting? Since the branch and trunk are distinct from each other and held together essentially by overlapping collars, a flush cut injures both separate tissues. By removing the protection zone with a flush cut, decay then becomes a problem for both the limb and the trunk. A proper cut outside the trunk collar injures only the branch, leaving the stem unaffected from wounding.

Tree Wound Paint

Applying tree paint over a freshly cut wound is a common treatment throughout the country. The concept behind this is that the compound will somehow seal out decay organisms from the exposed wood. There is no research information that has ever been produced to show that this is actually what happens. In fact, some evidence shows that tree wound paint may actually encourage decay organisms by sealing in moisture! An understanding about how trees respond to injury is the key. A tree’s natural defense against

injury is to “wall off” decay. Trees don’t “heal” and they don’t replace injured cells. They compartmentalize wounded areas and form new cells in the cambium zone below the bark. If you want to retard or limit decay from pruning, then work with the tree’s natural defense system and make your cut in a way that limits the injury to just the branch.

Balancing Crown to Roots

Many newly planted trees have been top pruned to balance the crown to the root system. The idea behind this is that the roots have been damaged and cannot sustain the unaffected crown, resulting in some kind of stress to the plant. The idea may seem logical but is not based on science. By pruning the crown back at planting, a bigger problem has been created. A tree gets its food and energy from the crown’s foliage. After planting, the tree needs energy to replace the damaged roots. By pruning back the crown, the tree’s generating source for much needed energy has been reduced, making it harder for the roots to rebound. If a person wants to help a newly planted tree after planting, then leave the healthy crown alone. Each green leaf will be a rich source of energy that the tree can use to restore the root system.

Rural Applications

Tree pruning based on new tree biology is not limited to just homeowners. Many forest landowners use pruning as a means to increase the quality of their forest. A number of forest industries and some private landowners prune the limbs on the lower portion of trees grown for sawtimber. The fewer the limbs, the higher the merchantability of the saw log. Pruning these trees on bad science can actually lower their value. Applying good science based on the knowledge of how trees really work and how they respond to injuries can mean more money for the landowner and the state’s economy. ♣

The Alabama Forestry Commission Practicing What It Preaches

by JAMES W. MOYE,
Alabama Forestry Commission

The Geneva State Forest is an example of what TREASURE Forest is about—a multiple-use concept.

The forest, which is located in the northwest corner of Geneva County, is certified as a TREASURE Forest. Consisting of 7,120 acres, it is the largest state forest in Alabama.

The multiple use management plan emphasizes timber production, recreation, wildlife management, experimental projects, environmental quality and genetic tree improvement.

Timber management is the primary objective with recreation as the secondary objective. The management plan is implemented on a sustained yield basis which requires an ongoing cycle of timber thinning, timber salvage, natural and artificial regeneration and prescribed burning. Longleaf pine stands are scattered over the forest.

The forest management also includes the protection of several colonies of red-cockaded woodpeckers, an endangered species, located on the forest. Other activities include the installation of houses in selected areas to encourage the bluebird population.

For recreation there is a 100-acre fishing lake that is open to the public seven days a week, sunrise to sunset, at a cost of \$1.50 per day. The lake operates on the honor system. The lake also provides an excellent area for picnicking, bird watching, or for the wildflower enthusiast.

The unpaved roads contribute to a scenic view for walking, horseback riding and other activities where nature is appreciated. Also, for hunters the forest provides deer, turkey, quail, squirrel and other small game. The Geneva State Forest is a part of the Covington Wildlife Management Area.

The Alabama Forestry Commission began the first cycle of its Genetic Tree Improvement Program in the late sixties at Geneva State Forest. The third cycle material is presently being selected. Tree improvement is a slow process; however, as a participant in a cooperative effort with universities, industries, and other government agencies, the Alabama Forestry Commission provides some of the highest quality planting stock available in the Southeastern United States. The forest is an excellent geographical area for the tree improvement program.

The multiple-use management technique used at Geneva State Forest allows for a healthy and productive forest while at the same time meeting other objectives such as environmental quality, wildlife enhancement, and recreation. If you have any questions or need information about the forest, call (205) 898-7013. ♣



Red-cockaded woodpecker colony tree.



The 100-acre fishing lake is open to the public.

The Need for Forest Management

Is There Time to Leave It to Nature?

by TOMMY PATTERSON, Forest Management Chief, Alabama Forestry Commission

A natural forest. I suppose all forests are natural since man does not have the power to create life.

Foresters are faced daily with the challenge to furnish products from and enhance the quality of forests and to make as little impact as possible on those forests.

When America was first being settled, our forests provided more than enough for man's need. Those forests had grown for a long period of time. Their diversity was created by infrequent natural circumstances like fire, insect attack, disease and storms. These fortuitous circumstances were followed by long growth periods. By today's standards, those forests would be considered **unmanaged**. It is logical then, to consider why man should attempt to direct nature.

As population has increased, so has man's need for resources of the forest. All the plants and animals in a forest struggle unceasingly to perpetuate themselves. Our society, however, has determined a preference or need for certain species. Thus the need for **forest management**. Forests could grow the needs of man, but not within the available time to supply our growing population. An unmanaged forest does not yield products of the kind, amount or value of a managed forest. We no longer have the luxury of waiting for unmanaged forests to produce those resources.

An unmanaged forest can contain a large variety of plant species. Some of those species have greater economic or biological benefit than others. Some species are better suited to a particular physiographic location. In a **managed** forest, certain plant species are favored by harvest methods and by seedbed preparation. This favorable treatment of desired species tends to create healthier individuals. The unmanaged forest tends to accumulate misshapen, stunted and disease prone trees.

An unmanaged forest usually has too many or too few trees if timber production is an objective. Both conditions are usually caused from lack of preparation for regeneration. Too many trees (crowding) reduces growth rate and produces stress. Stress can promote insect or disease attack. Too few trees reduces timber volume and produces trees too branchy for good quality timber. A properly managed forest contains a proper balance of trees throughout the life of the forest stand.

In an unmanaged forest, trees damaged by insects, fire, disease or storms are not salvaged. Damaged trees can often be utilized if timely salvage can occur. This salvage could reduce the product pressure on undamaged trees. More importantly, prompt and proper removal of insect or disease damaged trees can prevent the loss of healthy trees.

When looking at a forest from a purely economic standpoint, trees in a managed forest are grown to an optimum size and age to be harvested. Many unmanaged forests are cut before they have reached their peak value. Trees grown beyond their optimum size lose value to decay, mortality and slower growth rates.

Some very positive reasons to properly manage a forest have little to do with timber production. The same techniques used for improving wildlife habitat are usually good forest management. A managed, healthy forest maintains an aesthetic beauty and provides for excellent recreation.

Most people that are interested in forests understand the concept of plant succession. This concept, simply put, describes how one species of plant replaces another species over time if left undisturbed. The somewhat final outcome is referred to as the climax type of forest. This climax type is often proclaimed the "natural" forest and held to be superior to earlier successional stages. If man's needs could be met entirely from such a forest, then all forested acres could be left alone until this final stage. However, some departure from natural succession is certain. The protection of a so-called wilderness area from fire and its use for recreation prevent it from being wholly natural. The best approach to forest management is to determine which stage of succession is most desirable to meet the objectives of both man and nature. 🌱

Is Your Mailing Label Correct?

Are you receiving *Alabama's TREASURED Forests* at the correct address? If not, please complete the following form and return to:

Alabama's TREASURED Forests Magazine, 513 Madison Avenue, Montgomery, Alabama 36130

New Address

Name: _____
Address: _____
City: _____ State: _____ Zip: _____

Old Address as it appears on mailing label

Name: _____
Address: _____
City: _____ State: _____ Zip: _____

Please check here if receiving duplicate copies and enclose both mailing labels.



Since the harvest cut is probably the only treatment an upland hardwood stand will receive, proper execution is essential.

Harvesting Upland Hardwoods

by BOBBY L. LANFORD, Associate Professor, School of Forestry, Auburn University

When most people connected with forestry in Alabama discuss timber, pine is the species most commonly addressed. Rightly so, pines are our major cash forestry crop. Especially in uplands, hardwoods are only a by-product of pine harvests. Bottomland hardwoods, such as those gracing our major river systems, are a different situation because of the high value associated with hardwood logs from these areas and the greater abundance of volume. For this discussion, only upland hardwoods will be emphasized even though there are many

overlaps with bottomland species.

Hardwoods in Alabama stretch from as far south as Baldwin County to the north at the Tennessee border. In the far southern portion of Alabama, most hardwood stands of any great commercial importance are in the river bottoms. As you travel north from the coast, upland hardwoods increase in amount and quality. Probably our highest valued upland hardwoods occur in the northern third of the state. While some are concerned with a decline in hardwood acreage, particularly with the commercial importance of pine

culture, surveys show a net increase in hardwood acreage across the state, particularly in the northern half of the state.

For commercial uses and harvesting differences, upland hardwoods can be broadly grouped in two species categories—soft hardwoods and hard hardwoods. Soft hardwoods include sweetgum and yellow poplar primarily, and hard hardwoods are primarily the oaks and hickories. Soft hardwoods compare favorably with pines in growth and provide much the same products—pulpwood, sawlogs and plylogs. Increased interest in paper products

requiring the short fibers found in hardwood have greatly increased demand for soft hardwood in pulping. While hard hardwood is preferred for crossties and pallet materials, soft hardwood is being used. Soft hardwood can be peeled for some types of plywood.

Hard hardwoods provide many of the same products as soft hardwood but are preferred in many cases and required for others. Hard hardwoods are used in making paper and lumber. As mentioned, crosstie and pallet manufacturers prefer hard hardwoods. Hard hardwoods are also preferred in furniture manufacturing. The slower growing hard hardwoods provide strong, beautiful materials that are symbols of lasting endurance. There are other specialty products from hard hardwoods such as handles made from ash and hickory and textile loom shuttles made from dogwood.

While management of pine forests is well known, hardwood management is less understood. For southern hardwoods, even-aged management is the most appropriate means due to the intolerant nature of most species. Planting of hardwoods for regeneration has not proved as successful as planting pines and is considerably more expensive. Most hardwood regeneration is by natural means from stump sprouts or seed fall. While thinning of pole size hardwood stands is a possibility, very little is currently being done. Therefore, the most common management practice for hardwoods is to clearcut, regenerate naturally, and grow the stand until the next clearcut. Since the harvest cut is probably the only treatment an upland hardwood stand will receive, proper execution is essential.

Harvesting Differences

Harvesting of hardwoods is somewhat different for the two species groups mentioned earlier. Soft hardwoods receive the same treatments as pine. Many grow along with pine and are only differentiated when delivered to mills. Soft hardwoods can be felled, skidded, and delimbed the same as pine. Felling can be with manual chain saws, shear feller-bunchers, or saw-head feller-bunchers. Skidders can delimb trees with delimiting gates or with mechanical devices like the C-T-R delimeter attachment to a loader. Trucks or trailers can be loaded with tree-length pieces or slashers can reduce the trees to pulpwood boles for delivery.

Hard hardwoods offer different harvesting challenges from pine. Pole size hard hardwoods, like soft hardwoods, are similar to pine and can be treated in a like manner. After a hard hardwood is mature the differences become more pronounced. First, the trees have a different shape. Rather than having a bole that tapers to a point at the top, oaks fan out into multiple large limbs more like an umbrella than a cone. The boles of mature hard hardwoods are not cylindrical like pines and are often fluted and flared near the ground where the felling cut needs to be made.



Surveys show a net increase in Alabama's hardwood acreage.

While hard hardwoods grow in all types of terrain, they often occur in places unsuitable for planting pines. These sites typically have rock out cropping and steep slopes. These locations are sometimes too rough for mechanical fellers and require manual chainsaw felling.

While felling is the most important single part of a logging operation, in hardwood logging it becomes even more important. Trees need to be felled away from the direction the skidder intends to pull them so that the butts will be available for easy choking or grappling. With the large tops common to hard hardwoods, felling in the wrong place can destroy other small trees during felling or during skidding when the skidder drags his load over trees trying to travel to the landing area.

Delimiting of mature hard hardwoods usually requires manual chainsaw work. The large limbs cannot be gated or mechanically removed. Due to the size and pressures developed in these tops, chainsaw operators must take extreme

care in this delimiting operation. Large limbs under pressure can spring back and break legs or worse when cut improperly. Delimiting is much like bucking in that the log must be watched carefully during bucking to anticipate the pressures and forces before they are released.

Bucking is much more critical for hardwoods than pines. Most pine material is relatively consistent, but not so with hardwoods. Defect is much more of a problem with hardwoods. Improper bucking can reduce a very valuable sawlog to pulp quality. Hauling a hollow log to a mill might require the reloading of the entire load after the load has been returned to the woods. While sawlog quality pine logs are delivered in tree-length form, hardwood logs are typically cut into cut-to-length logs. Lengths range from 10 to 16 feet in 2-foot increments and are required to have 3 to 6 inches of trim allowance. A 12-foot log cut to 11 feet, 11 inches is paid for as a 10-foot log during the scaling process. Bucking is usually performed at the truck loading location under the close scrutiny of the crew supervisor.

As a last point, upland hardwood logging impacts some of our most ecologically sensitive areas. Hardwoods removed from steep ground offer the potential for erosion, especially when roads are built or improved. In steep ground, skidders must work up and down hill because side slope skidding would be dangerous. Skidding up hill can cause ruts and potential erosion. Of course with proper care, erosion should not be a problem. Hilly areas with hardwoods are sometimes the habitat of endangered species like the red hills salamander. Streamside management zones (SMZs) are a part of upland hardwood stands and must receive special care during timber removal.

In summary, harvesting of upland hardwoods offers additional challenges as compared to pine harvests. While timber management knowledge is less for upland hardwoods than pines, the current approaches have been successful. The future promises new management alternatives that may make hardwood logging even more challenging. ♣

ALABAMA SEVERANCE TAX

by STEVE NIX, Resource Analyst, Alabama Forestry Commission

Taxes on harvested timber have been in effect for nearly a century. State governments in the South began taxing trees as early as 1910 when Louisiana developed a yield tax on harvested timber. Alabama developed a similar tax in 1923. This yield tax was assessed as a percentage of the total value of trees harvested and was considered to be an *ad valorem* tax. Unlike the present severance tax on timber the old Alabama yield tax was developed as a property tax at an 8 percent rate payable in the year of harvest.

State yield taxes, in most cases, have been replaced by forest severance taxes and used to protect and sustain the forest products they are imposed on. Alabama's forest severance tax is assessed by applying a rate to each forest product removed from the forest.

In 1945, The Alabama Legislature passed the **Alabama Forest Products Severance Tax Act**. This act placed a tax on severed timber stumpage and overturned all existing timber taxes. The original law has been amended to reflect rate increases, to further define and clarify the law, and to make changes as production technology has improved. Even with revisions the original Alabama law has

retained its basic intent. This tax is levied by the state on the severer of timber. The tax is paid on the amount of wood harvested by the severer and is reported to the Alabama Department of Revenue. This is done quarterly using the "Forest Products Severance Tax Return" or Form FPST-1.

All stumpage, including products severed from lands owned by the State of Alabama and the United States of America, is subject to severance tax. The only exemption would be an individual who occasionally cuts trees from his or her own forest to be utilized in the construction or repair of structures. This includes wood used for home consumption and in processing farm products.

In addition to the severance tax there is also a processors or privilege tax. The privilege tax is assessed on secondary manufacturers who further refine or remanufacture primary forest products. This tax is equal to one half the tax already paid by the severer and is levied against out-of-state processors and manufacturers using Alabama wood as well as manufacturers within the state. This tax is reported quarterly using the "Processors Forest Products Severance Tax Return" or Form FPST-3.

Other southern states having a sever-

ance tax law include Mississippi, Louisiana and Arkansas. Several other states are in the process of enacting forest severance tax legislation.

Who Gets Taxed?

According to the law, severance tax is collected from "every person engaging or continuing to engage in the state in the business of severing timber or any other forest products from the soil for sale, profit or commercial use whether as owner, lessee, concessionaire or contractor." This is usually the timber buyer or his company.

This person, firm or corporation has an obligation to keep records of the timber cut for three years. They are required to record the county of severance, the person from whom it was acquired, the gross volume or weight of the wood and the date delivered.

Record keeping is very important for crediting the tax back to the source of severance. A portion is required to be spent in the county where the tree was cut.

Because the records indicate the kind and quantity of products produced by each county, data is compiled and used in the assessment of timber volume drain from Alabama forestlands. The resulting report, called the "Production of Forest Products by Counties in Alabama," can be requested through the Alabama Forestry Commission. See Table 1 for the current severance tax rate paid on major forest products in Alabama.

The legislative intent of the **Forest Product Severance and Privilege Tax Law** is to tax the person or company actually cutting and manufacturing the product. This tax is not to be levied in any manner upon the person owning the land from which the timber is harvested.

Who Gets the Tax?

Receipts from forest product severance tax is credited to the State of Alabama to be used by the Alabama Forestry Com-

Table 1: Current severance tax rate paid on major forest products in Alabama

Pine Lumber	50 cents per thousand board feet (board measure)
Pine Logs	10 cents per ton or 75 cents per thousand board feet (log scale)
Hardwood Lumber	30 cents per thousand board feet (board measure)
Hardwood Logs	6.5 cents per ton or 50 cents per thousand board feet (log scale)
Pine and Hardwood Pulpwood	10 cents per ton or 25 cents per cord
Pine and Hardwood Chips	10 cents per ton or 25 cents per cord
Cross Ties	15 cents per ton or 1.5 cents per piece
Switch Ties	17 cents per ton or 2.5 cents per piece
Mine Ties	15 cents per ton or 12.5 cents per 100 pieces
Coal Mine Props	15 cents per ton or 12.5 cents per 100 pieces
Pine Ore Props	75 cents per thousand board feet or 15 cents per ton or \$3.12 per thousand lineal feet
Hardwood Ore Mine Props	50 cents per thousand board feet or 15 cents per ton or \$3.12 per thousand lineal feet
Crude Turpentine	15 cents per barrel
Stumpwood	12.5 cents per ton
Poles and Piling	20.5 cents per ton or \$1.87 per thousand board feet (log scale)

(revised 9/93)

mission. No local government can tax forest products through local legislation.

This tax is designed solely to protect Alabama's forests in all 67 counties. In fact, the tax was supported by Alabama's forest industry when it was created because of a critical need to protect both their valuable investments and a resource they depend on. Millions of acres of pine and hardwood forests are protected through the financial support of severance taxes received.

The Alabama Forestry Commission received \$5,751,999 in severance and privilege taxes during state fiscal year 1992-93. Severance tax collections made up nearly one quarter of the total budget of the Commission last year and is the second largest source of revenue. Only the General Fund accounts for more.

The Alabama Department of Revenue collects the tax and deposits the revenue into the State Treasury. When paid into the State Treasury all funds are credited by the Treasurer into a special state fund called the Forestry Fund of the State of Alabama. This money is disbursed under the supervision of the state forester.

By law, 85 percent of this severance tax is to be expended for forestry protection. In reality, much more money is spent annually for forest protection in Alabama than the total annual severance collection raised. Severance tax can not do the job alone.

Also by law, each individual county will be given at least 50 percent of the four year average of taxes collected on forest products severed within its boundary. All counties receive this 50 percent amount in addition to state matching funds, acreage assessments and county appropriations, tri-party agreements, and earned income, including firebreak plowing and prescribed burning.

Hopefully you have a better understanding of our forest severance tax structure and how the money is being put to work. The tax is necessary to the task of protecting Alabama's forests.

References

Alabama Forest Products Privilege and Severance Tax Laws, January 1991.

Alabama Department of Revenue.

Annual Report, Fiscal year 1992-93.

Alabama Forestry Commission, 1993.

Timber Tax Journal, State Forest Tax Laws, pp. 244-245, date unknown. ♣

Revised Severance Tax Law

by WALTER VEST, Alabama Forestry Commission

Timber theft has reached an epidemic stage in Alabama. These thefts range from single, small truckloads to large tracts being stolen from both the Alabama timber industry and the private landowner. In the past two years, timber theft in Alabama has amounted to about \$1.8 million, and those are only the known cases. Many of the losses occur on absentee landowners' property and may not be reported for some time.

In an effort to deter the theft of timber and lumber, the Alabama Forestry Commission, with the support of the Alabama Forestry Association, was able to persuade the Alabama Legislature during the First Special Session of 1993 to amend section 9-13-63 of the Code of Alabama.

Before the amendment was passed, the law required the buyer of unmanufactured or semi-manufactured forest products to report the section, township and range where the product comes from. This was often unknown by the truck driver delivering the product, so it was not obtained for the record. The new amendment eliminates the section, township and range information, and only requires the county that the product comes from along with the name of the seller, the volume or weight, and date of delivery.

These records should be kept for a period of three years from the date of delivery. The maximum fine for non-compliance has increased from \$100 to \$1,000, with up to one year imprisonment or both. The Alabama Forestry Commission has been designated as the enforcement agency. They will begin enforcement of the new amendment on October 1, 1994, after a campaign to notify all those affected. Each county forestry office will attempt to notify all buyers in that county of the changes.

It will continue to take the effort of the public to report the suspected timber theft to make a difference.

The revised law (section 9-13-63, Code of Alabama, 1975) reads as follows:

"Any person, firm, or corporation buying, contracting to buy, or otherwise acquiring logs, poles, pilings, crossties, pulpwood, veneer bolts, stave bolts, or other unmanufactured or semi-manufactured forest products shall keep a written record in this state of every such purchase. The record shall contain the name of the person or persons from whom the product was acquired, the county from which the timber or other forest product was severed, the amount thereof and the date of delivery, which information shall be obtained from the person or persons from whom the product was acquired. This record shall be a true, accurate, and correct statement of the transaction as provided for in this section. Any person who knowingly gives false information to the purchaser of the product or who willfully misstates the facts with intent to defraud is guilty of a misdemeanor and shall be punished by a fine of not less than one hundred dollars (\$100) nor more than one thousand dollars (\$1,000), or a jail sentence of not less than 10 days nor more than one year or both fine and imprisonment. The purchaser shall be entitled to rely upon the information furnished by the seller. The information given under this section shall be kept by the person or persons acquiring the forest products and shall be available during business hours, to a duly authorized agent or employee of the state Forestry Commission. The record shall be kept available for a period of not less than three years. Any person, firm, or corporation failing to keep record or in any manner falsifying it is guilty of a misdemeanor and shall be punished by a fine of not less than nor more than one thousand dollars (\$1,000), or a jail sentence of not less than 10 days nor more than a year or both fine and imprisonment."

ADOPT-A-SCHOOL for TREASURE Owners

by DON BURDETTE, Alabama Forestry Commission

Good teachers and school administrators are continually looking for new ways to keep the learning process informative, interesting and relevant for their students. This search for fresh ideas often leads to incorporating outside resources into routine class activities. Businesses and other organizations have risen to the occasion in the past by contributing "hands-on" learning opportunities for local schools. "Adopt-A-School" programs have proven tremendously successfully in improving the learning process within many public and private school systems in Alabama.

A Matter of Balance

From forestry's standpoint, there is also a need to develop a balanced natural resource conservation ethic within school children where they understand both the environmental and the social/economic aspects of managing and using these resources. In addition, students need to know that it is mostly private individuals and families—rather than government or forest industry—who control most of the forestland resources in our state; some environmental educational programs ignore this fact. Supplemental programs such as **Project Learning Tree (PLT)** and **Project Wild** help meet these needs and their use is rapidly increasing throughout Alabama. However, a missing element from these programs is a way to bridge the gap between learning concepts in the classroom and seeing these concepts being put into practice during real-life situations out in the forests.

Enter **TREASURE Forest**. This outstanding Alabama stewardship program is based on the philosophy that a forest should be more than just tree farms from which to produce wood commodities. Wildlife, clean air and water, recreation and aesthetics are also key components of **TREASURE Forests** properly managed under the multiple-use concept. Pri-

ate properties recognized as **TREASURE Forests** throughout the state can provide excellent outdoor classrooms from which to demonstrate balanced land management.

Local **TREASURE Forest** landowners are also the most appropriate instructors for describing their role as conscientious decision maker, manager, benefactor and steward of the natural resources entrusted to them. The students need to see and hear from local landowners that forest management decisions not only have an impact on the environment but on people in the community and on them personally.

"adopt" a local school, and for that school to "adopt" the landowner and his or her **TREASURE Forest**. The Community Education Section of the Alabama Department of Education has also been involved to provide encouragement and guidance to the local landowner and school participants in the program.

The theme of the program is "Man and the Forest: Partners in Life." The purpose has been to emphasize the role of landowners as stewards and caretakers of the land. It has also made students aware of the tremendous impact forests and



David Malone, Mobile County landowner, helps teach a biology lesson by showing the parts of a familiar tree.

Establishing Conservation Education Partnerships

During the fall of 1993 the Alabama Forestry Commission and the Alabama **TREASURE Forest Landowners' Association** initiated a pilot program for **TREASURE Forest** landowners to

wood products have on their own life-styles. This will result in two benefits: train future landowners in the proper care of the forest and reassure future decision makers that forests can be properly cared for and enhanced to benefit both present and future generations.



Sterling Kemp introduces a fascinated bunch of kids to the pros and cons of beaver dams on his property in Mobile County.

During an orientation session at the Shelby County 4-H Center, selected TREASURE Forest landowners were introduced to members of the education community to hear the importance of landowner involvement with Alabama's youth. It was clear from the educators' testimony that there is a need for good role models for young people in today's society; there is a need for people willing to share their agri-forestry experience with students of an urbanized point of reference; and there is a need to renew young people's interest in traditional values that come with taking on the role of good neighbor and steward of God's natural resources.

Initial participants also received training in the use of Project Learning Tree and Project Wild. These programs enabled the landowners to effectively present important points about forestry in either the classroom or their TREASURE Forest and at the same time help the teacher accomplish his or her teaching objective. During the weeks and months following the orientation session, the Alabama TREASURE Forest Landowners' Association supplied participants with additional free resources such as

tree identification guides, lesson plans and video tapes for students on pertinent subjects.

Now, How About You?

I hope you are not one to agree just in theory with the concept of Adopt-A-School. I hope you, too, are willing to make a commitment. If this idea is to yield fruit, it is going to take dedicated people working with schools and carrying out the objective of creating balanced thinking among Alabama's future landowners and decision makers. Otherwise, who is going to tell the landowners' story and how will it be told?

The experience gained during the pilot program shows that this doesn't have to be complicated. Landowners work at their own pace with whatever resources are available at a local school, on their own property and from groups such as the county forestry planning committee. The rewards for involvement and commitment are, first, a positive impact on the way an increasingly urbanized Alabama society thinks about private land ownership and management and, secondly, a significant contribution

and investment into Alabama's educational system.

For more information about participation in the Alabama TREASURE Forest Landowners Association's Adopt-A-School program, write the Association at 660 Adams Street, Suite 101; Montgomery, AL 36104 or call them at 205-264-3236. ☎

MEMORIAL

VONCILE CARGILE HUTTO, Fayette County TREASURE Forest landowner, died Jan. 2, 1994, at the age of 88. She was a native of Lamar County, and attended the University of Alabama in Tuscaloosa and Florence State Teacher's College in Florence.

The nomination for Hutto's TREASURE Forest certification noted, "Her dedicated work and sound environmental practices have resulted in a farm making a maximum contribution to Alabama and America."

LANDOWNERS

LEGISLATIVE • ALERT

NATIONAL

by BILL IMBERGAMO, Washington Office, National Association of State Foresters



Congressional action on natural resource issues continued to be

controversial this session, and prospects for passing a reauthorization of the Clean Water Act faded as agricultural and forestry groups weighed in with Congress, expressing serious concerns over proposed changes in the law. Meanwhile, a group of lawmakers have united around the issue of private property rights, risk assessment, and unfunded mandates in environmental legislation.

Clean Water Act

The Senate was scheduled to take action on a bill to reauthorize the Clean Water Act in June. The original bill, S. 1114, was significantly modified by a marathon committee mark-up session in February, and was reintroduced with a new bill number in May. Now going by S. 2093, the Clean Water Act rewrite, championed by Montana Sen. Max Baucus, continued to attract controversy. The bill does contain some provisions that have raised concerns in the forestry community.

The main forestry issues are the bill's non-point source provisions, which would make a distinction between "new" and "existing" sources of non-point source (NPS) pollution. In the original version of the bill, forestry sources would have been designated as "new" sources, whether or not they actually were new. They would have been subject to broad, new federally mandated management measures. NASF pointed out to Congress that forestry represented a minor source of NPS pollution problems, and fortunately, specific reference to forestry was removed in the new bill.

However, S. 2093 still makes a distinction between "new" and "existing"

sources, but it leaves it up to the administrator of the Environmental Protection Agency to designate what types of sources will fall in each category. Given past experience with EPA, it seems likely that they will designate forestry as a "new" source if given the discretion to do so.

Just when the Senate seemed ready to move forward with consideration of the bill, a group of 46 senators from agricultural states wrote to Chairman Baucus expressing concerns about his bill's impact on their states. They specifically cited the bill's non-point source provisions as an area of concern. While their letter focused on agricultural concerns, it did address forestry issues in a broad way.

It should also be noted that a group led by the National Governor's Association and the Association of State and Interstate Water Pollution Control Administrators was also pressing Senator Baucus for changes in his bill. These groups argue that the bill would require states to initiate costly new programs without providing federal funds to cover the costs, a problem known as unfunded mandates. They also complain that the bill will take away state and local flexibility needed to allocate resources to the most pressing water quality needs.

In the House, the Clean Water Act is awaiting action in the relevant committee. Representative Norman Mineta of California was about ready to move his bill (H.R. 3948) when a bi-partisan group of legislators, led by Rep. Jimmy Hayes (D-LA) and Bud Shuster (R-PA) came forward with an alternative. The alternative included provisions to compensate landowners for loss of property values resulting from the denial of permits under the act's wetlands provisions (aka Section 404).

Chairman Mineta was forced to hold hearings on the alternative when it became

apparent that he did not have the votes to move his original bill out of committee. His original bill also made a distinction between "new" and "existing" sources of NPS. His situation is especially glum; a large coalition of environmental groups sent him a letter condemning his original bill; it does not seem likely that he will be able to satisfy the advocates of private property rights and the environmental community at the same time.

Regulatory Relief

The situation encountered by the Clean Water Act is a good example of what all natural resource and environmental issues are running into this Congress. A broad, bi-partisan group of legislators has organized itself around the issues of protection of private property rights, implementation of cost-benefit analysis in the formulation of regulations, and an end to the practice of unfunded mandates.

The group is led by conservative members from the Southern U.S., particularly Representatives W.J. "Billy" Tauzin (D-LA), Jimmy Hayes (D-LA), and John L. Mica (R-FL). While their critics insist that they are out to "gut" environmental laws which have reaped many benefits, they say that they are merely trying to bring reason to a regulatory process that has grown too complex and burdensome for the small landowner or businessman. They also argue that the federal government should not accomplish its objectives by requiring the states to carry out their programs and then not provide promised financial assistance.

The Senate drew first blood on this issue last session when it added a provision to the bill making EPA a cabinet department that required the agency to do cost-benefit analysis of all proposed new regulations. The threat of similar provi-

sions forced the House leadership to abandon their version of the EPA cabinet bill.


The proponents of these issues have

shown that they have the strength to garner solid majorities in both Houses. As a result, the Clean Water Act is likely to see

significant modification, which could be beneficial for forestry. The balance on environmental issues is beginning to turn. ♻️

ALABAMA

by FRANK SEGO, Legislative Liaison, Alabama Forestry Commission



Let's look at the 1994 Legislature and its impact on forestry.

First, it must be said that this was a most unusual year.

In a session where election-year jitters were being felt throughout the statehouse, legislators were forced to return for a special session after finalizing their regular session in only 28 working days.

The reason: Governor Jim Folsom, Jr.'s education reform package. The education proposal, which flunked in the regular session, was the subject of the governor's call to begin the very next day after the regular session ended in April.

However, after six days of a possible 12 in the special session, only a handful of the education proposals—three to be exact—passed out of the total package of 54 bills.

When this exercise in futility was concluded on May 5, the governor vowed to call the lawmakers back to a second special session after the primary elections—probably the week after Independence Day.

Landowner Rights Bill

In our last *Legislative Alert*, we gave an account of the "Landowner Rights" bill, which had been introduced on the third day of the regular session.

As you recall, this proposal was backed by Stewards of Family Farms, Ranches and Forests. It would have provided for inverse condemnation civil actions as a method of relief for real property owners in this state, as guaranteed by the Fifth and 14th Amendments to the U.S. Constitution. This would apply in instances where property rights and values are taken or diminished by government.

In Alabama there are more than 200,000 private, non-industrial landowners. These landowners usually make long-term investments on their farms, ranches and forestlands in order to maintain productivity. They need the assurance that their investments are secure.

The bill, as introduced by Senator Pat

Lindsey of Choctaw County in the Senate, and Representative Richard Lindsey of Cherokee County in the House, would give these landowners a right to file civil action of inverse condemnation against officials of a governmental unit when land values are diminished by regulatory practices.

In double-quick action, Rep. Lindsey had the bill before the Committee on Commerce, Utilities and Transportation. It moved swiftly to a favorable report and appeared on the House calendar only two days after its introduction.

Opponents were stunned by the acceleration of the bill and flocked toward the statehouse to apply the brakes. In spite of repeated efforts by the bill's proponents, it was stalled at that point and died on the House calendar. Its companion suffered the same fate in the Senate, being postponed indefinitely after a substitute bill was offered by its sponsor, Sen. Pat Lindsey.

This writer is firm in his belief that you will see a renewed effort to bring this bill a successful conclusion when the regular session convenes in 1995.

Prescribed Burning Bill

Rep. Allen Layson proposed a measure that would create the Alabama Prescribed Burning Act, giving the Alabama Forestry Commission the authority to set forth certain requirements necessary for the conduct of prescribed burning.

Contents of the bill provide that a property owner conducting a prescribed burn not be liable for any damage caused by the fire unless negligence is proven. Boyd Kelly of the sponsoring Alabama Forestry Association said the proposed act was designed to promote the continued use of prescribed burning for ecological, silvicultural and wildlife management.

It was introduced midway in the regular session and died in the House Agriculture, Forestry and Natural Resources Committee on March 9.

AFC Fares Well

The Forestry Commission enjoyed one

of its best sessions, thanks to several key House and Senate members who led the way in restoring funds for the '94-'95 general fund budget, as well as the restoration of \$165,000 for the state's volunteer fire departments, which had been slashed from earlier budget proposals.

State Forester Timothy C. Boyce lauded the work of Senators Ann Bedsole, Bobby Denton, Larry Dixon, Crum Foshee, Don Hale, Wendell Mitchell and Walter Owens, along with Senate president pro tem Ryan deGraffenried, House Speaker Jimmy Clark, Representatives Mike Box, Taylor Harper, Bob Harvey, and Richard Laird for their efforts in getting the Commission's '94-'95 budget back to its current level.

The Forestry Commission also secured passage of a bill that authorizes the department to spend the \$1.3 million that was earned from increased severance tax over the anticipated amount projected in the '93-'94 budget, and from the sale of timber and land in Baldwin County.

Direct Per Diem Pay

The Commission was also successful in the passage of legislation that allows state agencies the option of paying the cost of an employee's meals and per diem directly to a hotel, restaurant or a facility furnishing room and board when the employee is rushed to the scene of on-going wildfires and other natural disasters. Examples are the ice storm and the Piedmont tornado which occurred earlier this year.

This act is especially beneficial to employees of the Forestry Commission, as well as other agencies that have to dispatch employees without giving sufficient notice for them to be prepared for the number of days they might be away from their home base.

As you read this *Legislative Alert* the primaries of '94 will be over and everyone will be looking toward the November general election.

'Til next time, we hope you will enjoy the good ole summertime. ♻️

Ecosystem Management

by DR. KATHRYN FLYNN, Extension Specialist, School of Forestry, Auburn University

When asked to write this article about ecosystem management, I spent a great deal of time thinking about how to begin my discussion. I decided that the best way to begin was by talking about some of the concepts which are important if an understanding of ecosystem management is to be gained. Once this foundation has been established, some of the complexities of ecosystem management may become more understandable. Then we can decide if, as many people say, ecosystem management is nothing new, but rather something we have been doing all along or if, as others say, there is no way that we can possibly succeed at making ecosystem management work.

Defining Terms

We often hear terms such as "environment," "community," "diversity," and "ecosystem"; but how many of us feel confident in our knowledge of what these terms mean? Introductory ecology textbooks generally address each of these terms while discussing various ecological theories and concepts. Most of us could probably come up with a good definition of "environment." Our **environment** consists of everything around us which affects our survival, growth, or reproduction, including such things as other organisms, the air we breathe, the water we drink, the sun. The same definition of environment holds for all living organisms and this fact illustrates the interdependence of living beings.

Organisms within an environment are further organized into groups. Individuals of the same species make up populations (the human population, the deer population). **Communities** consist of groups of organisms living in the same area and having similar life habits (the insect community, the bird community, the tree community).

Diversity is another term which is

becoming more common in everyday discussions and which involves the measure of the complexity and abundance of organisms within populations and communities. The concept of diversity has two components: species richness or variety (the number of different species which are present in a given area), and the concept of relative abundance (how many individuals of each species occur within the given area).

Ecologists use the framework established by these definitions in order to study ecosystems. The term **ecosystem**, first used in 1935, describes the living and non-living components of an area. The boundaries of an ecosystem are flexible and are determined by what you are interested in studying or discussing. Usually, when people talk about an ecosystem they are referring to an area such as a pond, a forest, or an urban industrial complex, which consists of several interacting communities. Ecosystems are dynamic and flexible, but it is important to define the scale (size and extent) of the system you are interested in. It is also important to realize that although ecosystems are flexible and dynamic, activities occurring within them can have severe and long-term impacts on their function.

Challenges

What does all of this have to do with ecosystem management? Well, as our utilization of natural resources has become more intensive we have come to realize that our impact on natural systems is also becoming more intense. In many places these impacts may have reached the point where the performance of multiple functions by an ecosystem is threatened. Evidence that this may be occurring includes the increasing number of plant and animal species whose numbers are decreasing—for instance, many species of ducks, migratory birds, and amphibians. Decreases in the extent of forested

wetlands, water shortages and invasions of non-native plant species in the Everglades, impacts from deposition by acid rain, and other high-profile environmental issues are all related to our failure to consider how human activities will affect important ecosystems within our environment.

What does all of this mean to the private forest owner? The answer to this question is likely to evolve and change with time. However, the following concepts and challenges are worthy of consideration. Ecosystem Management offers a number of challenges to government agencies, professional foresters, industry representatives, scientists, and private landowners. One challenge is the need to establish lines of communication between these diverse groups. Another challenge will require the use of these communication lines in order to develop cooperative efforts in the areas of planning, management, and economics. Admittedly, establishing such linkages between government agencies and/or industry representatives may prove to be much easier than developing linkages between private landowners. This may be especially true for small landowners because of sheer numbers, lack of organization, or lack of interest.

However, it is possible that small landowners would, over the long-term, profit more than any other group from such linkages. For one thing, forming a network with adjacent landowners for planning and management of land may mean that small landowners, who alone could not afford to utilize professionals for help, will be able to pool their resources and access this type of expertise. In addition, by forming a single management unit from several independent pieces of property opens the door to management techniques that might not be practical for 10, 20, 50, or even 100 acres of land.

Development of such groups will require:

- Assumption of a leadership role by one agency and by one or two landowners within a working group.
- Cooperation between private landowners.
- Increased cooperation within private and government agencies.
- Increased cooperation between private and government agencies.
- A willingness to cross established professional boundaries.
- Recognition that not every piece of property can perform every function.
- Recognition that determination of the most valuable functions performed within a particular area will often be subjective.

Developing Long-term Plans

Determination of a particular ecosystem's "health" will be necessary before long-term ecosystem management plans can be developed. Any plan developed must have flexibility built into it in order to allow adjustments if adverse conditions develop. Within an ecosystem there are often a variety of land forms, soil types, species associations, and other variables. This type of diversity has many values—not the least of which is aesthetic. Differences in plant and animal species composition develop in response to characteristics such as the soil type, land form, availability of water and/or nutrients, or length of time since a disturbance event (such as a storm, clearcut, or fire).

As with most management plans, decisions made under the guise of ecosystem management should be based on physical and economic considerations. However, ecosystem management also requires roughly equal consideration or both ecological and social factors. I believe that the increased use of tools such as Geographic Information Systems (GIS), satellite imagery, and global positioning systems will make such determinations possible. This means that ecosystem management is truly a viable management choice once people have made a commitment to this choice.

It is obvious from this brief discussion that professional foresters will be vitally important in this type of management scheme. They will increasingly be called on to work with diverse groups of people and realize that individuals will not often feel that their primary goal is wood pro-

duction. It is a mistake to think that the average landowner will see wood production as his or her primary objective. Instead of saying, "We can't do it that way," or "We should do it this way because that's the way we've always done it," we must all begin to explore other options and ask, "Why not?" We must begin to ask, "What is the best we can do for our natural resources?" and "Are we leaving our children with something we can be proud of and they can live with?"

There will be an opportunity to learn

more about the subject of ecosystem management at a half-day seminar to be held prior to the TREASURE Forest Conference. This seminar will be held on October 12, 1994 in Sheffield, Alabama. Registration will be \$25 which includes registration fee, break, and seminar materials (registration information can be found on page 30). For more information contact Ms. Alwina Spurlock, Forestry Continuing Education at the School of Forestry, Auburn University, AL 36849-5418 or call (205) 844-1042. ♣

Ecosystem Management in Alabama

by LOU HYMAN, Forest Resources Planning, AFC

In the accompanying article, Dr. Flynn explained the basic concepts of ecosystem management. This management trend is not new, but is receiving renewed emphasis. The basic building block of ecosystem management is building and maintaining diversity of plants and animals. This diversity is looked at on a variety of spatial scales.

Within Stand Diversity looks at the range of trees, plants and animals in a stand of trees. Some stands, such as some hardwood or mixed pine hardwood stands, are highly diverse. Other stands have less diversity, such as pine plantations. A pine monoculture has no plant diversity, but is also very rare, as most pine plantations do have a hardwood component.

Between Stand Diversity looks at the variety of trees, plants and animals in adjacent stands of trees. This level is more important than within stand diversity, because it more closely resembles the natural situation of a variety of forest types and age classes within an area.

Within Ownership Diversity looks at diversity across an entire ownership, or forest block. It is at this level that ecosystem management begins to operate. A diverse forest contains a variety of forests and animals as well as some protected sites. In Alabama, this philosophy of management has been in place for nearly 20 years. We call it TREASURE Forest. Through TREASURE Forest the landowner seeks to reach his or her ownership objectives in a way that enhances the ecological condition of the forest and improves the forest for future generations.

Landscape Diversity looks at diversity across ownerships, either within a watershed or some other "landscape," up to a county area in size. Many landscapes in Alabama are already diverse because of our diverse land ownership pattern, with the average size ownership being about 90 acres. Much of the literature and debate about ecosystem management looks at this level and tries to find mechanisms to help groups of landowners manage their lands cooperatively.

Regional Diversity looks across landscapes to cover whole areas, such as Southwest Alabama, the Longleaf Pine Belt, or the Southeastern United States. Regional Ecosystem Management focuses on protecting and enhancing rare areas and maintaining a wide level of diversity.

TREASURE Forest owners have been practicing ecosystem management before ecosystem management was "cool." The challenge facing forestry in Alabama is how to get more people to follow this management philosophy and improve their forest management while respecting the landowners' right to manage their property to meet their needs.



The Conservation Reserve Program helped landowners establish pine plantations on erodible lands.

UNCERTAIN FUTURES CRP & FIP

by TIM GOTHARD, Cost-Share Specialist, Alabama Forestry Commission

Reauthorization of the Farm Bill in 1995 will decide the fate of two federal cost-sharing programs that have significantly impacted tree planting on private non-industrial lands in Alabama. Without the aid of a congressional lifeboat, the Conservation Reserve Program (CRP) and the Forestry Incentives Program (FIP) will end in 1995.

Conservation Reserve Program

Arising from the needs to curb agricultural commodity production and reduce erosion, the 1985 Farm Bill established

the CRP. To accomplish the objective of reducing the overall crop base, producers received annual rental payments to retire highly erodible acres for a minimum of 10 years. Erosion control was achieved by cost-sharing the establishment of conservation cover such as grass or trees. In the short-run, the incentive approach was viewed as less expensive to the nation than providing other price supports on these same acres. Furthermore, the program would result in long-term savings to the nation if the enrolled acres remained out of production after the 10-year maintenance contracts expired.

As the 1985 Farm Bill created the CRP, the bill also called for CRP to terminate in 1995. With 1995 just around the corner, many questions must be addressed before the 1995 Farm Bill reaches the floor. Currently, much of the talk revolving around the future of CRP relates to the likelihood that CRP acres will or will not revert to commodity production once rental contracts begin to expire in early spring 1996. Based on the trends which followed the conclusion of the highly similar Soil Bank Program (1956-62) some of the acres enrolled will surely revert to commodity production if no additional emphasis is

placed on securing their permanent retirement. In fact, the Soil Bank was considered ineffective for the most part in permanently retiring those acres which were enrolled. The exception is the 80 percent retention rate for acres planted to trees.

What should we expect concerning the future of CRP? First, it is highly unlikely that a long-term, across-the-board extension of contracts will occur. As one congressman stated, "Budgets were tight when CRP was created in 1985—now they're even tighter." Just as unlikely is another open enrollment for additional acres to grass; however, some desire additional incentives to have landowners change their CRP cover from grass to trees—particularly hardwoods—as a means of permanent retirement. One incentive that may be considered is a selective extension of contracts on the most highly erosive areas. For acres in trees however, it is unlikely that extensions will be made since the historic retention record for cost-share tree plantings is very good.

Another factor that may effect the CRP decision is wetlands protection and the Wetlands Reserve Program (WRP). Although presently not available in Alabama, the WRP is available in 20 states and represents somewhat of a shift in priority from erodible lands to wetlands. All of these factors will play a role in the final outcome of the CRP.

Forestry Incentives Program

Around the mid-70's projections of future softwood timber supplies were envisioned to fall short of the supply necessary to support society's growing demand for forest products. Simply put, the demand for timber was projected to exceed the supply. Compounding the problem was less than optimum timber production on private non-industrial lands, which collectively represent the single greatest source of wood to supply the manufacture of needed forest products. The FIP was viewed as an avenue to address this problem by providing monetary incentives to private landowners through cost-sharing, thereby increasing the nation's softwood timber supply through improved forest productivity on private lands. Although much has been accomplished through the FIP, 1995 marks the point when Congress must decide if a need for the FIP remains.

Summer 1994

What will be considered in making the decision to extend or terminate the FIP? Several key points are emerging. Foremost in the plan to end FIP is the new federal cost-sharing program called the Stewardship Incentive Program (SIP). The SIP was designed to address all the facets associated with the forest: timber, wildlife, environmental integrity, recreation, aesthetics, etc. It was envisioned with the inception of SIP that the FIP could be ended and, in essence, merged into the SIP program. To many this view is logical and sound, while others perceive problems with funding the tremendous demand still exhibited for the FIP. Furthermore, some question the ability of a broad-based program to address adequately and directly the need for increased timber productivity on private lands. For the southern U.S. this factor becomes increasingly important as the demand for the South to provide a larger portion of the nation's consumer need for wood products continues to climb.

On the other hand, some view tax

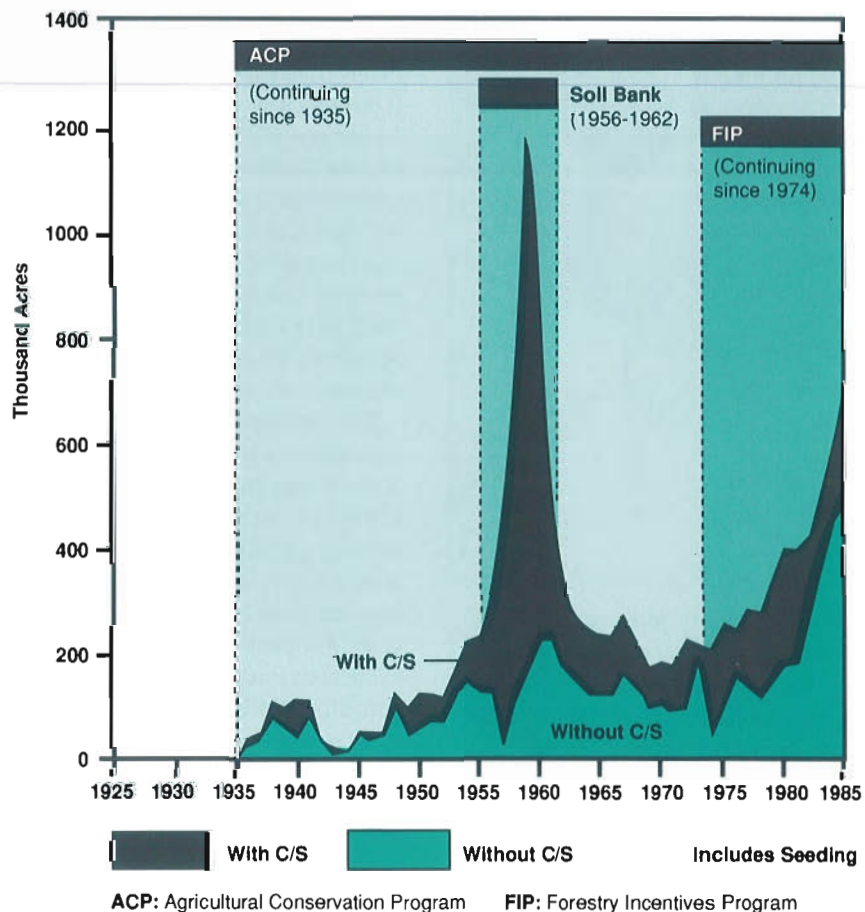
incentives as a more favorable and economical approach to fostering improved forest productivity on private lands in lieu of the traditional cost-sharing approach. This approach favors the sunset of the FIP and a rerouting of the governmental incentives so that reforestation and proper management are still promoted.

History has shown a direct relationship between the availability of afforestation/reforestation incentives and the amount of non-industrial private forestland planted (Figure 1). As a non-industrial private forestland owner you should evaluate the need for government incentives for reforestation and productive management, as well as the avenue for delivering those incentives (cost-share, tax incentives, or other), and notify your congressman concerning your desires. 🌲

Reference

"A Statistical History of Tree Planting in the South: 1925-1985." USDA-Forest Service, SA-MR8, 1986, 23 pp.

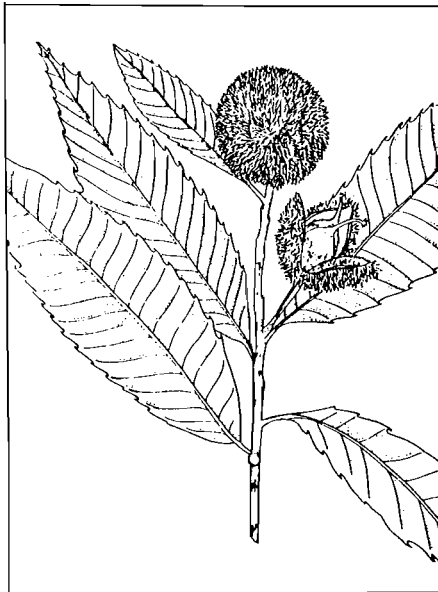
Figure 1. NIPF Planting in the South 1925-1985



THE AMERICAN CHESTNUT: Gone But Not Forgotten

by TOM V. CAMBRE, Statewide Hardwood Specialist,
Alabama Forestry Commission

The American chestnut (*Castanea dentata*) was once the most important forest tree in the deciduous forests of the eastern United States. The decay resistant wood was useful in construction work and was almost the exclu-



sive source of utility poles, railroad ties and the main domestic source of tannin. The nuts were marketed in the Appalachian Region for human consumption. Deer, turkeys, squirrels and other wildlife depended on the nuts for food each fall.

The American chestnut was described as formerly a large tree with a massive trunk and a broad, rounded, dense crown. The height of the tree ranged from 60 to 100 feet with a diameter of 2 to 4 feet.

The bark was dark gray-brown and furrowed into flat ridges. The leaves were 5 to 9 inches long and 1 1/2 to 3 inches wide, narrowly oblong and long-pointed. Each leaf had many straight, parallel veins ending in a curved tooth. The leaves were shiny yellow-green above, paler green below, and turned yellow in autumn.

The Chestnut (*Castanea*) is in the Family Fagaceae which also includes oak (*Quercus*) and beech (*Fagus*). There are 13 species native to the temperature zones of Asia, Southern Europe and the Eastern United States. The U.S. species other than the American Chestnut are called chinkapins. They are an imprecisely defined group of four to six species of shrubs and small trees found in the Southeast; the Allegheny chinkapin and the Ozark chinkapin are the two most common.

The chestnut blight, a fungus, was discovered in New York City in 1904. It is a wound parasite which attacks the phloem of susceptible trees, generally forming a girdling canker on the trunks. It totally destroyed the American chestnut as a commercial tree in a period of 40 years. Fortunately there is no threat of extinction; sprouts continue from roots until killed back by the blight, and cultivated trees grow in Western states and other areas where the parasite is absent. American and Chinese species are being developed for ornamental, shade and wildlife uses.

This tree is virtually gone—but not forgotten—from the commercial market.

CALENDAR

"Integrating Forest and Wildlife Management" will be the topic of a series of landowner meetings sponsored by the Productivity Subcommittee of the Ala. Forestry Planning Committee. Speakers will include some of the premier forest and wildlife managers in the South. Meetings will be held in Evergreen on August 16; Auburn on August 18; Tuscaloosa on August 23; and Cullman on August 24. For more information on meeting locations and registration, contact Tim Gothard at 205-240-9348.

September 7-9—Athens, GA. "Hardwood Management," a Univ. of Ga. short course. For more information contact Dr. Richard Field, (706)542-3063.

September 11-23—Clemson, SC. "Managing Forest Ecosystems," a continuing education course offered by Clemson University. For more information contact Dr. Jackie Haymond, (803)656-4831.

September 19-23—Durham, NC. "Land Conservation Strategies," a week-long course providing knowledge, information and identification of available resources to enable a volunteer or experienced professional to plan, finance, acquire, and manage a conservation program. For more information contact the School of the Environment, Duke Univ., (919)613-8015.

October 3-4, 5-6—Athens, GA. "Timber Cruising You Can Count On," a Univ. of Ga. short course. For more information contact Dr. Richard Field, (706)542-3063.

October 5-6—Auburn, AL. "Forest Roads," an Auburn Univ. short course. For more information contact Chris Isaacson, (205)844-1042.

October 26-27—Auburn, AL. "Harvesting Operations in Wetlands," an Auburn Univ. short course. For more information contact Chris Isaacson, (205)844-1042.

November 8—Mobile, AL. "Timber and the Federal Income Tax," an Auburn Univ. short course. For more information contact Chris Isaacson, (205)844-1042.

Cool-Season Food Plots for Deer

by LEE STRIBLING, Extension Wildlife Scientist

Would you like to improve your chances of harvesting more deer and turkey during the hunting season? You might improve your hunting success by providing deer with high-quality winter food plots. In most cases, your turkeys will readily use these plots, too.

Plot Size and Shape

The ideal size of a winter food plot is from 1 to 3 acres. Try to plant at least one plot per 100 acres of forestland. A good rule of thumb is to devote from 1 to 5 percent of your deer range to wildlife plantings. Less acreage than this will make your range less attractive to deer, or it may cause early over-grazing. The cost of planting more than 5 percent of your acreage can be prohibitive.

In general, it is better to have a larger number of well distributed small plots than a small number of large ones. Also, smaller plots reduce the distance hunters are tempted to shoot, which can result in better shot placement and less wounding. An oblong or crescent-shaped plot produces more edge where the plot and the forest meet than a round or square plot does. The more edge produced, the better the plot.

Location

Locate your winter plots in sites that are already fully or partially open. This will decrease the initial establishment cost and minimize the amount of timber revenue you or the landowner will lose by putting the land in wildlife food plantings. Possible locations for food plots are old logging decks, little-used woods roads, beetle kill areas, idle crop fields, firebreaks, or utility rights-of-way. When using natural gas rights-of-way, check with the appropriate gas company before breaking ground to be sure the gas pipe is buried deep enough.

If possible, find sites that are level or nearly level. Very dry ridge tops and very wet bottoms should be avoided if other places are available. Locate plots away from boundary lines, and try not to plant areas that are easily visible from public roads. If you have to plant near a road, you may want to plant a thick screen of Virginia pines or other evergreen trees or shrubs between the road and the plot.

What to Plant

Deer preferences vary from one location to another and with the season. Their preferences are influenced by the availability and variety of natural and planted foods they encounter during their daily movements. As the abundance and quality of foods change, the deer change their feeding habits. Deer select foods that provide certain nutrients that they need at certain times of the year. Therefore, a variety of plantings is better than a single crop.

Table 1: Small Grain and Clover Combinations

Mix 1	2 bu. wheat 1 bu. oats 5 lb. crimson clover 7 lb. red clover
Mix 2	1 bu. wheat 1 bu. grain rye 1 bu. oats 5 lb. crimson clover 7 lb. red clover
Mix 3	2 bu. grain rye 5 lb. ladino clover
Mix 4	15 lb. red clover 10 lb. crimson clover

The amounts in these mixtures are for planting a 1-acre food plot.

Small grains and clovers are usually planted as cool-season foods for deer. These plants stay green in the winter and they are attractive to deer. There are many small grain and clover varieties to choose from. Some produce early, while others provide maximum forage production later in the growing season. Mixes are often planted to spread the production over a longer period of time.

Mixes 1 and 2 (Table 1) are adapted to a wide variety of soil types and conditions and will have to be replanted annually. Mix 3 will do best on soils that have good moisture-retaining capabilities but are not wet. Some examples are moist bottomlands and blackbelt soils. Once the ladino clover in Mix 3 becomes established, it can persist for 5 years or longer. Mix 4 will produce on sites that become too dry for ladino clovers. Clover Mix 4 probably will produce for 1 or 2 years and then have to be replanted.

No specific varieties have been noted. Use the variety adapted to your area. Your county Extension agent can give you information on which type to buy. Compare prices and ingredients that go into commercially prepared mixes (state law requires a listing on seed bags). A comparison will help you decide whether you want to buy a name brand mix or make up your own.

Time to Plant

In Alabama, late August to mid-September is the best time to plant cool-season deer foods. Labor Day weekend is the traditional time for planting food plots on many hunting club lands in Alabama.

Soil Preparation

Break and harrow your plots several weeks before planting. This allows rains to settle the soil before planting time. The

(Continued on page 27)

Longleaf Seedlings

Bareroot vs. Containerized

by JOHN R. RICE, Alabama Forestry Commission

Why would or should anyone consider spending approximately four to five times more per thousand to purchase containerized seedlings? There is no concrete answer that would apply to everyone—a case by case evaluation would be necessary. Here are some considerations that should help with this decision.

Leidner (1988) stated that, “At one time, the longleaf was the dominant pine species that grew from Virginia to Texas.” Longleaf has the best quality of the southern pines, providing excellent lumber and poles, and was important in the production of naval stores. Longleaf is more resistant to insects, diseases and fire than the other southern pines. The drawback to longleaf has been the difficulty in establishing a stand. Longleaf is very intolerant and, unlike any other southern pine, spends several years establishing a root system. During this period stem elongation does not occur. This is referred to as the “grass stage,” because it can be mistaken for a stand of grass. This stage can last three to six years (exceptionally 12 or more years) according to Harlow and Harrar (1958). Over the years it has been shown that the grass stage period can be shortened by controlling competition; the less competition for moisture and nutrients, the shorter the grass stage.

Dormancy a Key Factor

Why consider longleaf and not other southern pines or hardwoods for this article? Longleaf pine is the most difficult of the southern pines to establish using seedlings. To understand this we need to consider dormancy. According to Webster’s Ninth New Collegiate Dictionary, dormant is “not actively growing but protected (as by bud scales) from the environ-

ment.” Various degrees of dormancy are readily visible every fall and winter when most hardwoods shed their leaves and appear dead-looking, while the southern pines remain green and alive-looking. Closer observation, however, would show that the pines have almost ceased growing. The degree of dormancy varies among the pines; loblolly becomes more dormant than slash, and slash becomes more dormant than longleaf.

Once a seedling is removed from the soil it begins to die. The more dormant the plant, the slower the dying process if all other factors are equal. As mentioned earlier, longleaf is less dormant, thus the time span between lifting and planting is more critical. Care should be taken when lifting, transporting and planting all seedlings, but longleaf appears to need more care due to its tender condition (less dormant).

Successful bareroot plantings of pine plantations have been achieved over the years. Lantz, et al (1989), however, stated that survival in southern plantations has declined recently because seedlings are “critically wounded” by events that nursery workers, transporters and planters consider insignificant. The Alabama Forestry Commission has made a special attempt over the past few years to reverse this trend. Proper training of those involved with lifting, transporting and planting seedlings is essential. A well-trained, successful crew planting bareroot loblolly pine seedlings will not necessarily have success planting bareroot longleaf seedlings without special training and/or instructions. Longleaf requires more special care than the other southern pines.

Bareroot longleaf plantations can be successfully established. Hollis E. Hyde, Jr., nursery supervisor at John R. Miller State Nursery, Autaugaville Ala., states that during pre-CRP days approximately

1 million bareroot longleaf were grown annually at Miller Nursery for several government agencies. The planting success averaged about 80 percent. Close control was maintained from seeding through planting to improve the chance of success. Cordell and Marx (1992), using state-of-the-art bareroot technology, achieved survival averages of more than 90 percent and 85 percent respectively for *Pteromycorrhizal* (a beneficial fungus) inoculated loblolly and longleaf pines as part of a five-year reforestation plan at the Savannah River Site near Aiken, South Carolina. In addition, “two-year-old longleaf pines have over 90 percent emergence from the grass stage.”

Advantages and Disadvantages of Containerized Seedlings

So where do containerized longleaf enter the picture? Over the years, after reading about numerous tests comparing bareroot versus containerized seedlings, I feel that it would be difficult to justify the extra seedling costs for loblolly, slash or virginia pine unless there are special circumstances involved; i.e., the short rotation, high value of Virginia pine Christmas trees. When comparing bareroot and containerized longleaf survival, however, most results favor containerized longleaf. When growing containerized seedlings the plants remain in the same medium from seeding to outplanting. This means there is minimal disturbance of the root system, and the plant does not begin dying after lifting. Containerized seedling survival should especially be higher for the less dormant species like longleaf.

This minimum disturbance of the root system also extends the planting season; containerized seedlings can be successfully planted anytime they reach plantable



Longleaf seedlings being lifted by hand.

size if other conditions such as soil moisture, etc. are favorable. Another advantage for containerized seedlings would be that less trees per acre are needed due to the higher survival; this would partially offset the higher seedling costs. Also, spot planting or replanting, if discovered in time, could be done without waiting for the next planting season.

As with bareroot seedlings, containerized seedlings can be hand or machine planted. Jones and Alm (1989) compared different hand planting tools (bar, planting tube and dibble) for planting containerized seedlings and found that the type of tool did not significantly affect survival after two growing seasons. They did report, however, that with the bar a significant percentage of seedlings were planted too shallow compared with the other two tools. With the planting tube a significant percentage were planted too deep compared with the other two tools. Planting depth is very important with longleaf

because the terminal bud must be planted at ground level, or, according to some planters, slightly below ground level (rains would later expose the buds).

In addition to the high seedling costs, other disadvantages of containerized seedlings are that they are more difficult to handle due to the increased bulk. More time and manpower is spent getting the seedlings to the planters. The planting depth is important, as it is with bareroot, but more care is required to assure the plug is covered with soil so "wicking" does not occur.

Bareroot? Containerized? If you are in doubt seek professional help from sources such as a forest nursery, forestry consultant, or local Alabama Forestry Commission office, especially if you are unfamiliar with and wish to plant longleaf pine. Equally important is to purchase quality seedlings and use well-trained professionals to transport and plant your seedlings. *Alabama Forestry Commission seedling*

sales information can be found on the back cover of this issue.

References

- Cordell, Charles E. and Marx, Donald H. "Custom Longleaf and Loblolly Pine Seedling Production-Savannah River Site (SRS)- Aiken, SC." Southern Forest Nursery Association, July, 1992.
- Harlow, William M. and Harrar, Ellwood S. *Textbook of Dendrology* (4th ed.) 561 pp., 1958.
- Jones, Brad and Alm, Alvin A. *Tree Planters' Notes*. Vol. 40(2):22-24, Spring, 1989.
- Lantz, Clark W., et al. "A Guide to the Care and Planting of Southern Pine Seedlings." *U.S.D.A.-Forest Service Management Bulletin R8-MB39*. December, 1989. 44 pp.
- Leidner, John. "Longleaf Pine Makes a Comeback." *Progressive Farmer*. p. 50. March, 1988.

RECREATION LIABILITY: Is Your Tree Farm at Risk?

By CARLTON N. OWEN, Champion International Corp., Greenville, SC

While opening your tree farm to guests will allow them to enjoy the beauty of the forest (and perhaps allow you to benefit financially), a landowner must be aware of the threat of liability claims.

It wasn't too long ago that our neighbors, friends, and even polite strangers were welcome on most private forests. Whether their goal might be to bag a deer, walk and bicycle in the woods, or gather mushrooms, the interests of these visitors were compatible with many owners' objectives.

Today, supported by a mentality of "someone else is responsible for everything that goes wrong" and a legal system all too ready to make sure landowners pay the price for any harm that comes to a casual woodlands visitor—everything has changed. Not only is it true that a landowner is subject to liability when lands are open to guests, but in some cases, even a trespasser can threaten to cause financial ruin.

Could It Happen to You?

As strange as it may seem, a thief tried to bring a lawsuit against a landowner of a Mississippi tree farm just a few years ago. The private, and posted, tree farm had a good crop of Christmas trees, long tended by the absentee landowner. As an individual who had just stolen a tree was making his exit from the property, he fell into an old well, injuring his leg. Most of us would assume that such an individual would just make a painful getaway, thankful his injuries weren't life-threatening. Not so this bold thief. He filed a liability case against the landowner. In essence, the suit charged the landowner should have protected the thief while he went about stealing a tree. Fortunately for the landowner, the case was dropped, but not before he suffered some legal expense.

Sure, that's an odd case, but it does highlight the need for landowners to understand their responsibility to protect visitors to the tree farm. Over the years, most states (except Alaska), have adopted laws intended to limit the liability exposure of landowners who open their lands to recreational opportunity. Most



have limitations (fine print and definitions) that make these laws far from perfect. Texas has the only law that states clearly that recreational fees for hunting—as long as they do not exceed twice the tax rate—do not limit protection.

Most such laws were drafted in a time before recreation became big business, when landownership costs were lower, when most users showed more courtesy, and when sheer population levels ensured fewer conflicts and demands. Today, 250 million people and declining recreational opportunities in many areas have combined to make the potential for abuse of lands more common. At the same time, many recreational users—especially

hunters—are more than willing to pay for access to quality areas.

Limit Your Exposure

While some have taken steps to close their lands to all use, don't spend money on a small version of the Great Wall of China yet. There are things you can do to lessen your risk of liability.

First, you should inspect your property to make sure there are no special hazards that might be especially troubling. Old wells, cable strung across roads, unprotected machinery, and other hazards should be eliminated, barricaded, or clearly marked. In most cases, natural hazards such as stump holes aren't the problem. But any condition left that suggests a "willful or wanton neglect" may place you in jeopardy. In short, you should take "reasonable" care to ensure that your property is safe.

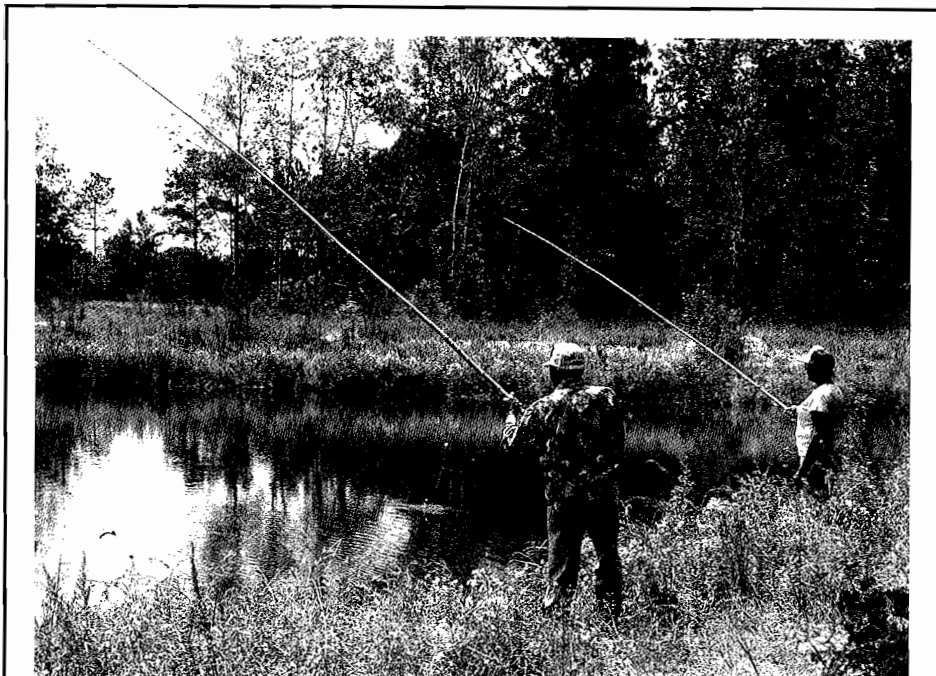
Second, become familiar with your state's recreational liability code (see box). Does it provide limitations for applicability if you charge for access? If so, you will need a permit or lease agreement that each user or group (for hunting clubs) signs to show they accept their responsibilities, and that those responsibilities will not come back on you. In the longer term, you may want to work with your state forestry association or other landowner associations to upgrade your state's law to ensure it properly recognizes changing conditions and achieves its intended purpose of encouraging landowners to make lands available for recreation.

Next, you may wish to gain additional insurance coverage that specifically addresses recreational liability. There are a number of specialized carriers that offer good coverage at a reasonable cost. In many cases, you can require the recreational users to carry the coverage and name you as an "additional insured" on the policy. Such protection covers you and the users.

While your potential liability exposure from recreational use of your property may be more perceived than real, the downside risks of not taking proper precautions could be devastating. Our increasingly litigious society, and the rapidly expanding number of lawyers, will ensure that you can't guarantee your lands will be lawsuit-free. However, working to upgrade state

liability laws, correcting any dangerous conditions, and obtaining liability insurance should limit that exposure to acceptable levels. ♣

*Carlton N. Owen is director of wildlife and resource issues for Champion International Corp. in Greenville, SC. This article was reprinted with permission from **Tree Farmer** magazine.*



Alabama's Recreational Liability Code

SYNOPSIS OF §§ 35-15-1, et seq., CODE OF ALABAMA 1975, PERTAINING TO DUTY OF CARE OWED BY LANDOWNER TO RECREATIONAL USERS OF HIS PROPERTY

Alabama's recreational liability code, §§ 35-15-1, et seq., Code of Alabama 1975, establishes the duty of care owed by a landowner to recreational users of his property. The law provides that a landowner does *not*, simply by giving his permission to a recreational user, extend any assurance that the premises are safe for the recreational use intended. However, the landowner is not limited from liability for the willful, malicious or negligent failure to warn against a dangerous condition of which the landowner has actual knowledge. For example, if a landowner had knowledge of an uncovered well on his property where people had been given permission to hike, he would have a duty to warn them of this hazard.

This law applies *only* to recreational use of property, including such uses as hunting, fishing, sightseeing, hiking, water sports and camping. It does not apply to commercial or business uses of the property, which includes any activity that is profit-motivated. A higher standard of care than established by this law is required for commercial uses.

No duty of care is owed by a landowner to a person who has not been given permission to enter the landowner's property.

Cool Season Food Plots for Deer

Continued from page 23

seedbed should be well prepared but firm. If lime and fertilizer are recommended by a soil test, they should be incorporated at this time.

It is very important to apply lime if needed. Lime corrects the pH of soil that is too acid. If the soil is too acid, much of the fertilizer will be tied up in the soil and will not be available to the plants you are trying to grow. Also, some crops, such as clover, are very sensitive to acid soils and will not grow if the pH problem is not corrected.

Planting

Broadcast small grain mixtures as evenly as possible over the seedbed. Lightly disk to cover seeds about 1 inch deep.

Clover can take nitrogen from the air if the proper bacteria are present in the soil. Many soils do not have the bacteria, so it is a good idea to add the bacteria to the clover seed before it is planted. This is called "inoculating" the clover seed. Clover inoculum can be purchased where you buy your seed. Follow the directions on the inoculum bag.

Several manufacturers produce seeds that are pre-inoculated. Pre-inoculated seeds need only to be planted because the inoculum bacteria are in a coating applied to the seed. This makes planting easier and assures that each seed is properly inoculated. Pre-inoculated seeds do weigh more than "raw" seeds, and you must plant more of them than raw seeds. Pre-inoculated seeds usually cost more than raw seeds, as well.

Inoculated clover seeds should be broadcast over the seedbed after the small grains have been covered with the light disking. If you are doing a small area, a hand-operated broadcast seeder works well. Clover seeds must not be covered very deeply (1/4 inch is best). A drag made from a piece of chain-link fence wire will cover the seeds properly. If a roller or culti-packer is available, use it. A slightly packed seedbed can conserve moisture, help germination, and increase seedling survival. ♣

Reprinted from ACES Circular ANR-592, Auburn University.

Southern Pine Beetle Management

by JIM HYLAND, Forest Health Section Chief,
Alabama Forestry Commission

We've all seen it—those once lovely pine stands that have become little more than dead or dying snags. Lack of proper management causes thousands of productive acres to fall prey to the state's number one forest predator—insects and disease! Let's get acquainted with one of the most common pests in Alabama.

The southern pine beetle (SPB) is the most destructive insect pest of pine forests in Alabama. The beetle ideally represents the definition of its genus—killer of trees! The southern pine beetle is a small, cylindrical insect about 1/8" long and brown to black in color. All life stages (egg, larva, pupa, and adult) occur in or under the bark of infested pines.

SPB can have up to seven generations per year in Alabama. Adult beetles kill pines by attacking the main bole of the tree. The first signs of attack are popcorn-size lumps of pitch called "pitch tubes," which occur at heights up to 60 feet. During dry weather, pitch tubes may not appear; instead, red boring dust, which looks like fine sawdust, will collect in bark crevices and in spider webs along the base of the pine.

In later stages of southern pine beetle attack, you will be able to see small "s-shaped" galleries cut on the inside of the bark. The tree quickly dies from the girdling action and blue stain fungus. The final sign of attack and the sure mark of death for the tree is a fade in needle color from green to yellow to red.

After the eggs hatch, small white grubs (larvae) feed in the inner bark, soon turning into pupae and then new adults. In just 30-35 days in the summer, the new brood emerges and flies to other trees to repeat the cycle. The southern pine beetle attacks all species of pine, but prefers loblolly and shortleaf.

What Can You Do to Keep Your Forest from Falling Prey?

You certainly do not have to stand by and watch your pines be killed by southern pine beetles. The key is in prevention rather than addressing the problem after it occurs! One of the most widely used programs is hazard rating.

The goal is to identify pine stands growing under conditions preferred by the beetle. These high-hazard stands should be managed to favor vigorous tree growth and to promote natural resistance to beetles.

You can assure long-term protection from southern pine beetles by taking these precautionary measures:

1. Hazard rate pine stand to assess susceptibility.



When southern pine beetles attack, they construct s-shaped galleries under the bark.

2. Manage high hazard stands to increase tree growth and reduce risk.
3. Detect and control active infestations when they occur.

Hazard rating provides a basis for scheduling thinning or other preventative treatments. It also aids in setting control priorities should an outbreak occur. Timber losses can be reduced during outbreaks by controlling infestations in order of priority, based on hazard, tree value and level of beetle activity.

Several different rating systems have been developed for different areas throughout the South. After two years of data collection and analysis by Mississippi State University, one system was determined to be best for Alabama. This system, called the Mississippi-Alabama System, can be applied only to loblolly and shortleaf pine.

First, to rate a pine stand using this system you need information on pine basal area (BA), total basal area, stand age, and site index. Pine basal area is a measurement of the number of square feet of pine per acre. Generally, the higher the BA the higher the hazard. Total basal area is a measurement of the number of square

feet of all trees per acre. Generally, the higher the percentage of hardwood the lower the hazard. Stand age is the average age of the stand. This is usually measured by using an increment borer. Site index is a measurement of the height pines will grow on a particular site in 50 years.

Second, this information is taken at each plot, with plots generally 330 feet apart or at the same interval used in taking other forest management measurements. Third, this information is put into a formula to determine the score. The score is then associated with a hazard class (see box).

How to Reduce the Risk

There are several things you can do to reduce the risk of southern pine beetles. One, thin to reduce the pine density to basal areas of 70-100 ft.²/acre. This will promote rapid tree growth as well as resistance to beetles. On sandy soils use borax on stumps to prevent annosus root rot. Low thinning or "thinning from below" is recommended to reduce competition and to remove slow-growing trees, which are mostly subject to SPB attack. The poorer crown classes—suppressed and intermediate trees—are cut first. Dominant and codominant trees with large live crown ratios and desirable phenotypic traits (overall appearance) should be favored as crop trees. They are most likely to respond to thinning and to provide the greatest number of silvicultural options in the management of residual stands.

Two, harvest and regenerate overmature stands. Susceptibility of trees to SPB attack increases with age. Mature and overmature trees usually have slower radial growth, flat-topped crowns, and sparse foliage. These trees seldom respond to intermediate cuttings, and should be replaced with the most resistant host species or a species mix suited to the area.

Three, reduce competition from hardwoods or suppressed pine by using prescribed fire or herbicides. Prescribed burning should be considered as a pest management practice. Burning can be used to eliminate suppressed high-hazard trees from overstocked stands. Stand vigor will be further increased by reducing competition from understory hardwoods and vegetation. Prescribed burning before and after thinning also reduces severity of annosus root rot in the South.

Prescribed use of fire, as opposed to wildfire, does not increase SPB activity. It



The thicker the pine stand, the higher the southern pine beetle hazard.

The Formula to Determine Hazard Rating:

$$\begin{aligned} \text{Score} = & 1.8342 \text{ (Pine BA)} \\ & + 0.4085 \text{ (Total BA)} \\ & + 0.7050 \text{ (Age)} \\ & + 0.8800 \text{ (Site Index)} \\ & - 206.315 \end{aligned}$$

220	Very High
168 - 219	High
62 - 167	Medium
11 - 61	Low
10	Very Low

Example:

If a stand has a total basal area of 130 ft.²/ac., pine basal area of 110 ft.²/ac., stand age of 27 years and a site index of 109, the relative hazard would be determined as follows:

$$\begin{aligned} \text{Score} = & (1.8342 \times 110) \\ & + (0.4085 \times 130) \\ & + (0.705 \times 27) \\ & + (0.88 \times 109) \\ & - 206.315 \\ = & 163.51 \end{aligned}$$

The score of 163.51 falls between 62 and 167. The relative hazard rating would be "Medium."

can be a useful tool in reducing losses from pests. Pine release herbicides can be used to control competition from unwanted hardwoods and vegetation. Care should be taken in order to select the proper herbicide for the site to ensure the residual pines are not damaged.

Four, remove high-hazard trees. Every stand has some damaged or weakened trees that are highly susceptible to SPB attack. This damage can result from lightning, logging, ice, or other destructive agents. Susceptibility is greatest immediately following damage and tends to decline with time.

There is a proven interaction between southern pine beetle infestation and annosus root rot. When considering prevention by the use of hazard ratings, collect data on both the beetle and annosus rating at the same time. Recommendations to lower southern pine beetle hazards through thinning should always take into consideration annosus root rot potential.

Every landowner should know that prevention doesn't cost—it pays in the form of more valuable timber, less mortality, and the satisfaction of knowing that you are managing your forest to benefit not only yourself, but generations to follow. Through Integrated Pest Management you can turn an unmanaged forest into a TREASURE. ♣

“Woods, Water and Wildlife . . .”

by KIM GILLILAND, Editor

“Woods, Water and Wildlife” is the theme of the Eleventh Annual Alabama Landowner and TREASURE Forest Conference. Northwest Alabama will have its first chance to host the conference, which will be held in the “Shoals Area” on October 13-14, 1994. The two-day conference will include both indoor and outdoor sessions revolving around the theme.

Just before the conference begins on Oct. 13, the annual TREASURE Forest Landowners Luncheon will be held at the Holiday Inn Sheffield. The luncheon is open to TREASURE Forest landowners and members of the Alabama Forestry Planning Committee only.

The Ramada Hotel and Conference Center in Sheffield will be the site for the indoor sessions of the conference. The program on the afternoon of Oct. 13 will feature speakers on “Managing Upland Hardwood,” “Duck Habitat Management,” “Environmental Education: What

the TREASURE Forest Landowner Can Do,” and “Landowner and Public Attitudes Toward Forestry.” The indoor session is being sponsored by the Colbert County Forestry Planning Committee.

A banquet to honor some of the best TREASURE Forests and county planning committees in the state will be held on the evening of Oct. 13.

On the morning of Oct. 14, participants will tour two sites in Lauderdale County. The Seth Lowe TREASURE Forest tour is being sponsored by the Lauderdale County Forestry Planning Committee and Packaging Corporation of America. This 433-acre TREASURE Forest is being managed for the multiple benefits associated with timber production and wildlife habitat management. Highlights of the tour will include stops on Herbaceous Weed Control, Prescribed Burning, Site Preparation and Planting, and a Thinning Demonstration.

Seven Mile Island Management Area is

the second tour planned. The Lauderdale County Forestry Planning Committee and the Alabama Game and Fish Division will conduct a tour of this wildlife management area owned by TVA. Management Techniques Beneficial to Small Game, Beaver Management, and Wood Duck Banding will be displayed.

After the two tours, everyone will eat lunch at McFarland Park.

Forest landowners, forest industry representatives and forest agency representatives are encouraged to attend the conference. Preregistration for the event is \$20. This includes a buffet dinner at the banquet on Thursday night and lunch on Friday. Registration after September 16 is \$40. **Please see the form on page 31 for information on how to register.**

In conjunction with the Landowner Conference, a half-day seminar on Ecosystem Management will be held on Oct. 12. Information and a registration form for this seminar can be found below. ♣

Ecosystem Management for Alabama Forest Owners What? Why? How?

October 12, 1994

Ramada Hotel and Conference Center, Sheffield, Alabama

Come one day early to the TREASURE Forest Conference and learn about the latest thinking in forest management: the ecosystem approach. While many of the scientific principles of ecosystem management have long influenced forest science, implementing these principles on the ground is new, exciting and controversial. Our objective will be to introduce landowners and managers to the ecological foundations of ecosystem management, discuss the potential for ecosystem management in the Southeast, and explore how you can put it into practice on your forestland.

This half-day seminar is open to all attending the TREASURE Forest Conference. Separate registration is required, using the form below. Seating is limited. Please pre-register by September 15, 1994.

Name: _____

Address _____

City _____ State _____ Zip _____

Phone _____

Registration fee: \$25.00

Includes registration, break and course materials. Make checks payable to AU School of Forestry.

Send registration form and fee to:

Ms. Alwina Spurlock, Forestry Continuing Education, School of Forestry, Auburn University, AL 36849-5418

Questions? Call 205-844-1042

Eleventh Annual Alabama Landowner and TREASURE Forest Conference

Ramada Shoals Hotel & Conference Center • Sheffield, Alabama • October 13-14, 1994

Theme: ***“TREASURE This: Woods, Water and Wildlife . . .”***

Name(s) of Attendees:

#1 _____

#2 _____

#3 _____

#4 _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

CATEGORY(IES) OF ATTENDEES (Check one category only)

#1	#2	#3	#4	
___	___	___	___	TREASURE Forest Landowner
___	___	___	___	Government Agency/TREASURE Forest Landowner
___	___	___	___	Landowner
___	___	___	___	Government Agency/Landowner
___	___	___	___	Government Agency
___	___	___	___	Private Forest Industry/Consultant
___	___	___	___	Other

Indoor session on Oct. 13; two tours will take place on Oct. 14: Seth Lowe property and Seven Mile Island WMA

Following the early morning tours, everyone will eat lunch at McFarland Park.

I am attending the conference and am enclosing

\$20 preregistration x _____ attendees = \$ _____

I am attending the TREASURE Forest Landowner Luncheon and the conference, and am enclosing

\$20 preregistration x _____ attendees, plus \$13.00 x _____ luncheon attendees = \$ _____

NOTE: The TREASURE Forest Luncheon is for TREASURE Forest landowners only. Luncheon is by preregistration only.

NOTE: The TREASURE Forest Luncheon will not be held at the Ramada Conference Center.

The luncheon will be held at the Holiday Inn Sheffield.

CONFERENCE INFORMATION

- The first day of the conference is indoors. The second day will consist of outdoor tours. **Please dress appropriately.**
- The registration fee includes both days' sessions, banquet and luncheon on second day. Registration will be from 10:00 a.m. until 2:00 p.m. Oct. 13. Preregistration fee for conference **per person if postmarked by Sept. 16 is \$20.**
- Preregistration fee for conference and TREASURE Forest Luncheon **per person if postmarked by Sept. 16 is \$33.00.**
- **NOTE:** The TREASURE Forest Luncheon is for TREASURE Forest landowners only. **Luncheon is by preregistration only.** Luncheon will begin at 11:30.
- **NOTE:** The TREASURE Forest Luncheon will not be held at the Ramada Conference Center. The luncheon will be held at the Holiday Inn Sheffield.
- Registration fee for the conference after Sept. 16 is \$40.
- Mail upper portion of form and fee payable to **Alabama Forestry Conference to: Iva Sanders, USDA-Forest Service, 2946 Chestnut St., Montgomery, AL 36107-3010; 205-241-8114**

HOTEL INFORMATION

- You will need to make your own reservations.
- The Ramada Shoals Hotel & Conference Center is offering a special room rate of \$39 for up to 4 people. Please specify that you are attending the Alabama Landowner & TREASURE Forest Conference when you make reservations there.
Ramada Shoals Hotel & Conference Center, 4205 Hatch Blvd., Sheffield, AL 35660; 1-800-272-6232
- A registration confirmation, map, agenda, and complete list of area hotels will be sent to everyone who preregisters.

ORDER SEEDLINGS NOW!

The Alabama Forestry Commission began accepting seedling orders for the 1994-95 planting season on June 1. All slash and loblolly pine, including the second generation loblolly, are **SUPER TREES**, genetically improved for sites in Alabama. All seedlings are guaranteed to be of high quality, healthy and vigorous. Orders are being accepted now on a first-come, first-served basis.

For delivery information or to obtain an order form, contact your local Forestry Commission office or write:

Nursery Section
Alabama Forestry Commission
513 Madison Avenue
Montgomery, AL 36130
205-240-9345



A landowner's seedling order is loaded for transportation.

PINES	Per 1,000	Per 500
2nd Generation Loblolly—SUPER TREES	\$35.00	\$22.00
Piedmont Seed Source		
Loblolly Pine—SUPER TREES	\$30.00	\$20.00
Coastal Seed Source		
Piedmont Seed Source		
Slash Pine—SUPER TREES	\$30.00	\$20.00
Longleaf Pine	\$42.50	\$28.00
Virginia Pine (Christmas Trees)	\$42.50	\$28.00
LESPEDeza THUNBERGII	\$40.00	\$26.00
(quail cover/food)		

HARDWOODS

Oaks:

Cherrybark Shumard
 Northern Red Water/Willow
 Nuttall White
 Sawtooth

Other Hardwoods:

Autumn Olive Green Ash
 Dogwood Yellow Poplar
 Redbud

Prices for all hardwood species:

Number of seedlings ordered	100-1,900	2,000 +
Price per 100 or 1,000	\$20/100	\$150/1,000

Minimum hardwood order is 100 per species.



Alabama's TREASURED Forests
 513 Madison Avenue
 Montgomery, Alabama 36130

Bulk Rate
 U.S. Postage
PAID
 Permit No. 109
 Montgomery, AL