Alabama's TREASURED Forests

WINTER 1992

STATE FORESTER'S MESSAGE

by C.W. Moody, State Forester

Four of our TREASURE Forest landowners participated in a panel discussion at the Alabama Forest Resources Center Annual Meeting in Jackson, Alabama in October. I was never more proud! Three of these landowners—Jack Crosby, Dan James, and James Hughes—represented the private non-industrial forest landowners of Alabama. The panel also consisted of forest industry representatives, environmentalists, wildlife conservationists and the public.

The title of the conference was "The Non-industrial Private Landowner: In the Eye of the Storm!" Each panelist was assigned the task of speaking on the topic, "What I am expecting from non-industrial forestlands."

Bill McKee, manager of James River's TREASURE Forest, spoke for forest industry. He briefly mentioned the management strategy of their own TREASURE Forest and, as you would expect, said that forest industry will increasingly look to privately owned forestlands for its future wood supply.

Also, not surprisingly, my recollection is that the environmental representative wanted the environment protected; the wildlife conservation representatives were concerned about the future well-being of wildlife; and the public representative was interested in increased taxation to support schools, among other things.

As I listened, many problems—present and potential—were mentioned. My own conclusion was that for every problem identified, TREASURE Forest management is, at least partially, the answer.

May the sun shine warmly on your face, may the wind be always at your back, may the road rise to meet your feet, and may the rain fall gently on your TREASURE Forests!

Sincerely,

C.W. Moody
State Forester

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.

COVER: Photo by Kim Gilliland.

Alabama's TREASURED Forests

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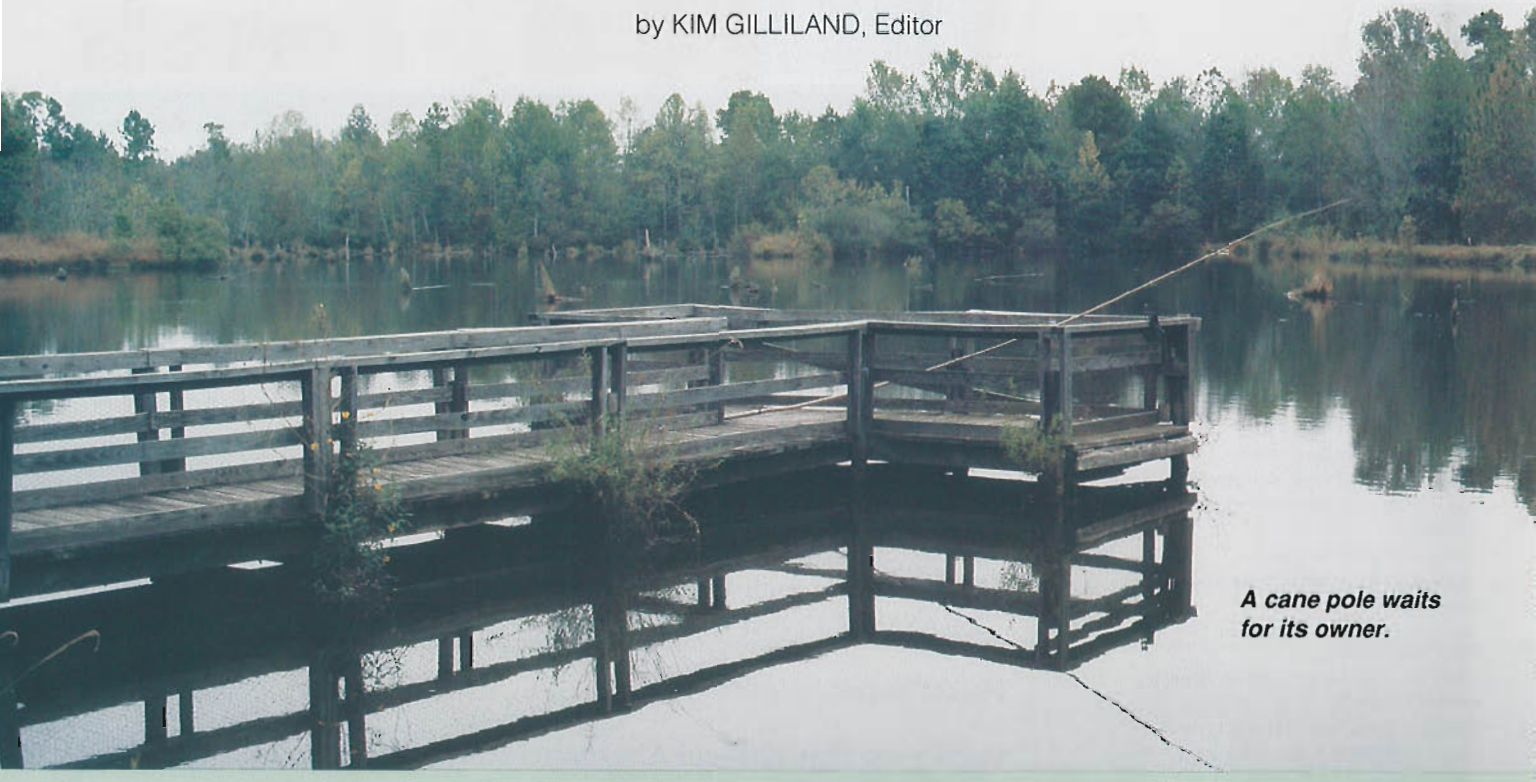
TAKING SPECIAL CARE

by KIM GILLILAND, Editor



A cane pole waits for its owner.

Almost every afternoon, after closing his medical practice in the small city of Samson, Dr. Hoyt Childs drives to his TREASURE Forest just a few miles away. Once there, he may work in the garden or the wood shop, or he may just sit on the porch of the cabin and enjoy the scenery. His wife, Ouida, will also be at the farm. Before the day is over they will take a walk on a trail through their planted pines. It is a life they enjoy, and they are working to make sure their forestland is enjoyed by future generations.

Taking special care of their TREASURE Forest is one of the many joys the Childs have. Although they don't live on the farm, so much time is spent there that it's considered a second home. Of the 120 acres, 80 have been in Dr. Child's family since 1908. He and Ouida purchased a nearby 40 acres in the 1970s, and then bought the family estate a few years later.

Bluebird Conservation

Managed for recreation and timber, the Childs' TREASURE Forest is home to numerous species of wildlife. Most prominent are the bluebirds, who have ample nesting areas. Through the years Dr. Childs has become the area's resident expert on bluebirds, and gives lectures and programs to local groups and clubs on bluebird management.

Bluebirds can find upscale and downscale housing on this TREASURE Forest.

Dr. Childs became interested in bluebirds several years ago, and began reading as much as he could about them. He builds bluebird boxes not only for himself, but he also gives them to others who share his interest.

Predators are a major concern to those who wish to have bluebirds use nesting boxes. "Their natural enemy is a rat snake," Dr. Childs said. To keep predators from climbing up to the boxes, he puts many of them on pipes. "A snake can't climb up a slick pipe, but he'll sure climb up a post." Dr. Childs says the boxes should be cleaned out in the spring because bluebirds will build several nests in a year's time, one on top of the other. "One of the reasons you clean it out is when that nest gets up near the hole, a starling can sit in that hole and reach in and get the little birds," said Childs. "There's supposed to be nine inches between the bottom of that hole and the bottom of the box so a sparrow or a crow can't reach down in there," he added. Placing the boxes about five feet off of the ground makes them easy to service, advises Childs.

More Wildlife

Dr. Childs also builds boxes for wood ducks. These are placed around the pond area. In addition, he has built and erected boxes for screech owls and bats. While most people don't consider bats to be desirable neighbors, Childs says they perform a valuable service by eating mosquitoes. "We have feeders out for the hummingbirds, too," he said.

"Some people say a planted pine field is nothing but an animal desert, but it doesn't have to be," said Dr. Childs. He generally mows between the rows of planted slash pines, but he is careful to provide a habitat for the quail and other animals. "I leave several rows without bushhogging so the small animals will have cover."

The deer also find food and cover on the property. Sawtooth oaks have been planted in between some of the pines to produce food for wildlife. He chose the sawtooth oak was chosen because of the large acorns it produces.

If all this wildlife wasn't enough, this TREASURE Forest is also home to hawks, several alligators and a large population of gopher tortoises!

Cropland was converted to trees.

Pond Management

The 4-acre pond takes a great deal of maintenance, according to Dr. Childs. He limes the pond and then fertilizes it every two weeks from February until July, using approximately 240 pounds of fertilizer. He also fertilizes the pond in the fall. "To have big fish you've got to fertilize it and lime it," he said. The pond is stocked with crappie, bass, bluegill, bream, and a few catfish.

Mrs. Childs loves to fish, and says that what she enjoys most is having the freedom to go out in the boat and come back when she wants to. She also enjoys just going out in the boat and riding around. Mounted on the walls of the cabin are some of her most prized catches. The largest fish ever caught out of the pond, a 10-pound largemouth bass, was caught by Mrs. Childs.

The hardwoods growing around the pond, as well as the tall grasses, are a prime attraction for ducks and provide an excellent habitat. "We get a lot of ducks stopping in here during their migration," said Dr. Childs. In addition to the nesting boxes, dead trees have also been left for the ducks to use. Ronnie Hickman, Alabama Forestry Commission supervisor for Geneva County, notes that many people never get to see such natural beauty and observe waterfowl as closely as Childs does. "He has an ideal sanctuary here," Hickman said.

Timber Management

When they took over the family property, the Childs tried row-cropping for several years, and then started planting trees. Dr. Childs found that in some areas the poor soil conditions from years of farming, as well as dry weather, made growing trees difficult. A four-year-old stand is doing well now, but was planted three times before a good survival rate was attained. The oldest planted pines are nine years old. A mixture of pine species grows on the property, but most of the planted pines are improved slash. Dr. Childs says that he had good success with a few containerized loblolly pines last year, and will probably try planting more of those in the future.

A 20-acre hardwood area along a creek is being left for wildlife and aesthetics. Dr. Childs also cuts a great deal of firewood out of the area. Although it's unusual to find in South Alabama, mountain laurel grows near the creek that runs through the property. "In the spring it looks real pretty," Dr. Childs says of the blooming mountain laurel, wild azaleas and dogwood trees.

Since owning the property, Dr. Childs has harvested one crop of longleaf. Another natural longleaf stand is prescribe burned on a regular basis. "Burning has improved it so much; the pines are looking good back there," said Childs. Other trees have been removed because of insect damage, and that area will be reforested this winter.

As an experiment, Childs collected longleaf cones off of his property a couple of years ago and processed and planted the seeds himself. Although he didn't get very good survival, he says he may try it again, possibly growing containerized seedlings.

A Diverse TREASURE

The Childs' TREASURE Forest holds a diversity of enjoyment for the entire family. Along with the timber and wildlife areas, a garden is planted every year and fruit trees are maintained. A blueberry orchard was established many years ago. The blueberries were plentiful last year, and friends and neighbors were allowed to pick all they wanted.

With all that they have, Dr. Childs says that some people may wonder why he and his family are choosing to grow trees. After all, they may never see the results of their labor. "It's good for the land, he says. "It's good cover for wildlife, and—in the future—someone *will* profit from it."

Editor's Understory

by KIM GILLILAND, Editor

If you assemble the entire Childs family for any length of time, there's a good chance the conversation will turn to medicine. It's only natural, you see, with four doctors and a nurse in the family. Hoyt Childs is a family physician in Samson, Alabama, and has been in the same office for 38 years. He and his wife, Ouida, have four children: three boys, who are all doctors and one girl, who is a nurse. In addition, they have a daughter-in-law who is a doctor and a grandson is currently in medical school. However, talk about medicine is off-limits at the dinner table, according to Mrs. Childs!

Ouida and Hoyt Childs recently celebrated their 50th wedding anniversary.

The Childs married soon after high school, just before Hoyt began serving five years in the military during World War II. After returning from the South Pacific, he attended the University of Alabama, earning a B.S. in Chemistry. He attended medical school at the University of Alabama in Birmingham, graduating in 1952. After a year at Carraway Methodist Hospital in Birmingham, and a year practicing in Winfield, Alabama, Dr. and Mrs. Childs returned to their home in Samson in 1954, where they have lived ever since. Samson is a small city in Geneva County only a few miles from the Florida border.

The Childs recently celebrated their 50th wedding anniversary with friends and family. Family is very important to the Childs, and they take every opportunity to visit with their grandchildren. The six boys and five girls range in ages from three to 22. "We just can hardly wait for them to get here," said Mrs. Childs. When they visit their grandparents, the children enjoy fishing, an above-the-ground pool, and riding a go-cart. A playhouse has been built for the younger children. Large family reunions are also held twice a year, and Mrs. Childs says that one of the traditions is to pick blueberries. "They all make it a special thing to go to the blueberry patch," she said. "They have the best time; it's just a joy to see them get together!" The house where Dr. Childs grew up is still on the property and is kept in working order so family members will have a place to stay when they visit.

The cabin located on the TREASURE Forest is where the Childs spend a great deal of their time. It was originally a church built in the 1920s by members of the community, and was in a different location on the property. Gradually, members of the church moved away or died, and the church sat vacant for several years. Hoyt and Ouida moved it to its present location facing the pond in the mid-1970s, and added room partitions and a screened-in porch. One would never guess its background, though, because it looks like it was built just for its present site. Thirty-year-old longleaf pines surround the cabin area, and Dr. Childs has cleared the brush from under the large trees for aesthetic purposes and to increase visibility.

This attractive setting is perfect for the scout troops who like to come and fish and camp under the trees. "I always let them fish all they want to," says Dr. Childs. "They have a ball out there!"

Hoyt and Ouida Childs will be the first to admit that taking care of a place like theirs involves a great deal of work. But they also know that hard work pays off. Their TREASURE Forest was a district Helene Mosley Memorial TREASURE Forest Award winner in 1989, an honor the Childs accepted with gratitude. There are also other important benefits of their TREASURE Forest—the pleasures it provides their family today, and the ones it will continue to give in the future.

TIMBER HARVESTS: More Than Cutting Trees

by JIM JETER, Management Specialist and
TILDA MIMS, Information Specialist, Alabama Forestry Commission, Tuscaloosa

Getting the most money shouldn't be the only objective of a timber sale. The future productivity of the land and the protection of sensitive areas such as streams, young timber stands and erodible soils should be equally important to the landowner.

The forest landowner not only has an ethical responsibility to be a good steward of the land, but bears a legal responsibility to protect the environment. At present, the landowner shares the liability of protecting water quality and endangered species with the logging contractor, the consultant forester and other involved parties.

A timber harvest is the culmination of many years of growth and should be held in high regard. If the harvest is done properly, with an eye to the future, the landowner can profit from the sale and, equally important, the site will be protected for the next reforestation effort.

Unfortunately, forest landowners are not always prepared to make a wise timber sale. Most people sell timber only once or twice in their lifetime and are unaware of the problems that can arise from a poor harvesting operation.

Each year many forest landowners receive a healthy check for their timber, yet are angry with the resulting condition of their property after harvest. They find the land damaged to the degree that they are not only upset with the appearance, but also face a major investment to reclaim it into productive, healthy forestland.

Often adjacent landowners are affected by a poor harvesting job, too. Downed fences, opened gates, road damage and litter are the most common complaints of neighboring landowners when the harvesting operation is not carefully planned.

Most logging contractors do a good job of harvesting trees with a minimum impact on the environment. However, special attention to detail takes time, so the contractor giving you the highest price is not always the one who will do the best job.

Generally, there are two ways a landowner receives payment for harvested timber: lump sum and per unit basis.

A lump sum payment is when the landowner receives one large payment before the timber is harvested. This method is usually associated with a closed bid system where all bids are opened at one time and the highest bidder is awarded the sale. Landowner refusal rights should be included with the request for bids.

The lump sum payment method usually yields the highest dollar value for the timber and eliminates the landowner's concerns about how the timber is to be merchandized. Merchandizing refers to the sorting of the timber into pulpwood and sawtimber categories while in the forest.

In a unit basis payment method, the landowner receives a set sum of money for each cord of pulpwood and/or each thousand board feet of sawtimber as the timber is harvested and delivered. Payments are usually made on a weekly basis. Merchandizing of the timber plays a very important role in this system.

The best practice for all parties is to put the timber sale agreement in writing. A simple contract would include identification of the seller and buyer, location and description of the timber being harvested, the value of the timber and the method of payment.

There are several other considerations to address when writing a timber sales contract:

- Requirement that all logging be conducted in accordance with the Alabama Best Management Practices (BMPs). A booklet on BMPs is available at no charge from your local Alabama Forestry Commission office.
- A "performance fund." This is a substantial amount of money given to the timber owner by the buyer to insure that the conditions of the timber sale are met. Upon successful completion of the job, the performance fund is returned to the buyer.
- Species to be cut, allowable tree size, and trees to be cut will be designated.
- Provisions for removal of litter and other waste after the harvest.
- Penalty for cutting non-designated timber and/or not cutting designated timber.
- Duration of agreement and when the logging should start and stop.
- Provision for payment of severance taxes.

Forest landowners should always consider seeking professional assistance when preparing to harvest timber. A professional forester can determine the amount and actual value of the timber. A tax accountant familiar with forestry taxes can direct timber sale income and reforestation expenditures to reduce the tax burden.

An attorney experienced in timber sales contracts can ensure that the best interests of both parties are represented. Often a professional forester can assist the attorney and/or accountant in forestry-related areas.

A successful timber harvest benefits both the landowner and the land. The landowner receives the financial and environmental rewards of responsible forest management, and the land is protected and preserved for future generations.

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SMZs For Wildlife

by DR. GEORGE A. HURST,
Department of Wildlife and Fisheries,
Mississippi State University

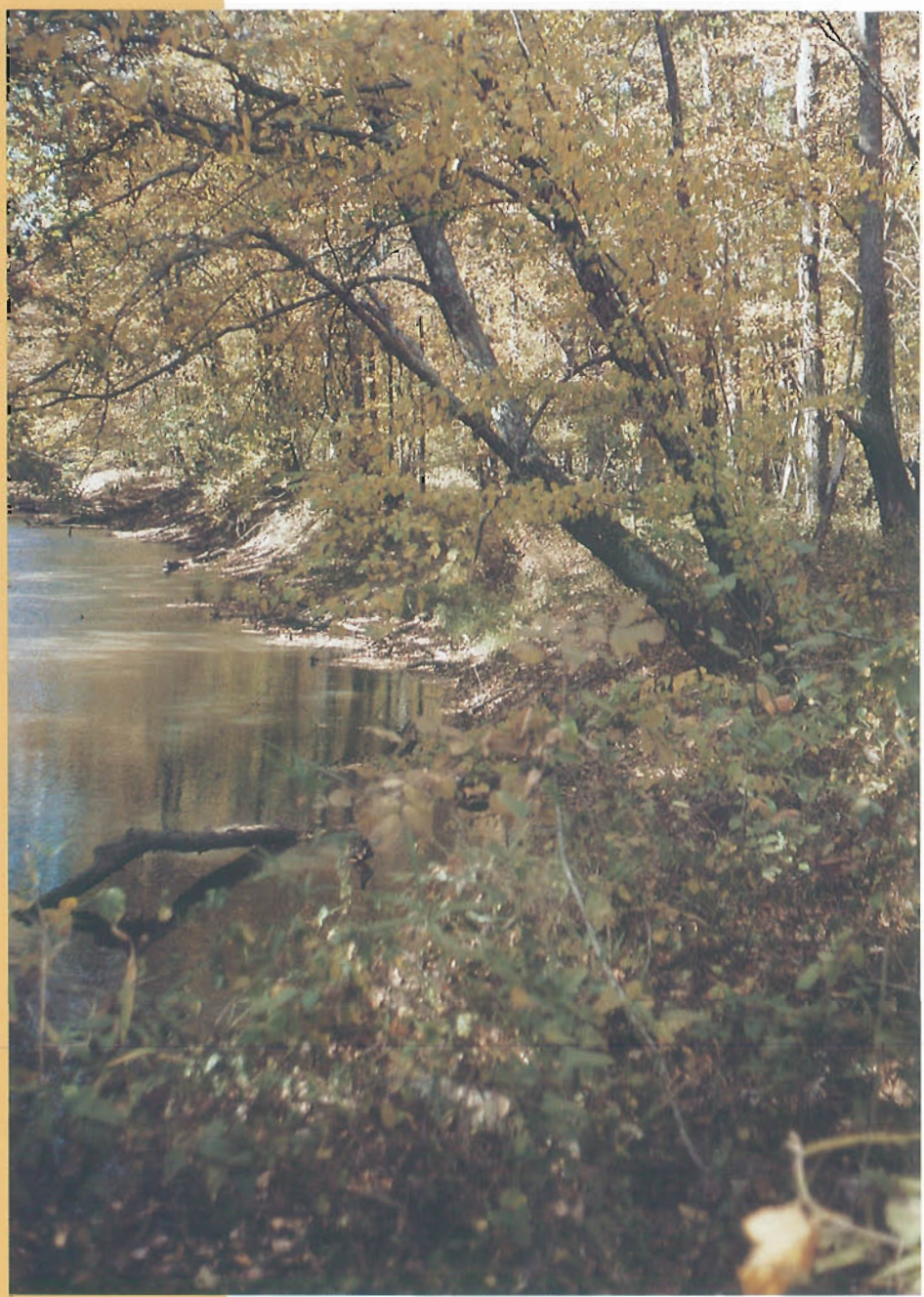
SMZ is the acronym for streamside management zone. This is usually a strip of mature, hardwood forest purposely left along creeks or rivers when the adjacent forest is harvested. Some people call them hardwood stringers, hardwood leave areas, or hardwood corridors. In the Western U.S. the common term is riparian area, and these highly productive zones are important to a host of wildlife.

Just what is wildlife? The term can mean different things. Previously, it was synonymous with game species in great demand, such as deer, ducks, and turkeys. However, the meaning of wildlife has changed, and it now represents all free-living, wild (non-domesticated) creatures (plants and animals). Yes, slimy, scaly, "not pretty" animals are wildlife. Nongame species are an important part of wildlife management, too.

Alabama has adopted Best Management Practices (BMPs) which include establishment of SMZs to prevent degradation of the creek bank and to prevent erosion, as well as provide wildlife habitat. Legal requirements associated with waterways, water pollution, and stream crossings have been presented in earlier issues of this magazine. Clean water is a product of our forests. Private landowners should take pride in the protection of the state's waterways and in the production of clean water.

Wildlife Value

What are the wildlife values of SMZs? Wildlife use of SMZs is much higher than the average person would ever expect. For example, if 7 percent of the land base is in SMZs, approximately 80 percent of wildlife use is in SMZs. SMZs are usually mature, bottomland hardwood forests which add habitat diversity



A Streamside Management Zone prevents erosion and provides wildlife habitat.

Left: aerial view of an SMZ with pine plantations on either side.

to the pine-dominated landscape. Soils/sites in SMZs are nutrient-rich and result in wide species composition.

The junction of a water to a land habitat has a particularly high value. Obviously, creeks or rivers provide many places to live. Fish, amphibians, reptiles, some birds, and furbearers are "tied" to the waterway. Due to high mast production and presence of den trees (cavities), squirrels abound. Wild turkeys use SMZs much more than expected, and deer readily use SMZs.

Many additional species live in SMZs. This is good, because a major wildlife problem currently is the decrease in biological diversity. Man is responsible for maintaining the diversity of life in all its forms. By keeping the "super-strips" on our waterways and drainages, we help to maintain biological diversity.

By establishing SMZs, a long, meandering edge is created. Hardwood forest is adjacent to pine plantations or some other habitat. Ecologists are debating the value of edge to wildlife, but several game species like quail and deer benefit from increased edge. Perhaps some nongame birds also do better with increased edge. Many predators hunt edges as well. Species that require large blocks of hardwood forest will not select SMZs for a home, but they might use them for passageways.

SMZs serve as wildlife corridors—interhabitat travelways—for both plants and animals. Travel can be short-term (a young raccoon takes three days to move to its new home range) or long-term (a plant moves vegetatively 200 yards in five decades). It is fascinating to sit in a tree stand and watch wildlife pass-in-review, or to find all the signs of traveling wildlife in SMZs.

SMZs also serve as habitat links (connecting corridors). Some of man's activities fragment forests and divide the landscape into isolated areas, or islands. SMZs can join the fragments and allow movement of wildlife from these isolated areas. A free-flow of individuals and genetic material is important.

To maximize the wildlife value of SMZs, leave a hardwood strip on small drainages that flow to the SMZ. You can provide a network of corridors to link upland to bottomland.

Some people no longer consider themselves a part of "wildlife," but SMZs have many values for them. A silent stalk with a primitive weapon along the creek puts us back into the wild. We enjoy—and need to—return to our roots. For many people, a day of fishing in a favorite hole is worth a great deal. Picnics and swimming were fun things at the ole creek. The trapper will find a bountiful supply and he or she can recall the trappers who used waterways to discover the country. Hiking, camping, canoeing, and bird watching in and along SMZs provide man many pleasures and relief. Be selfish—SMZs can be for us as well as the environment.

Planted pines and the SMZ hardwoods meet a road.

Managing the SMZ

Are there problems? Always. First, can the trees in SMZs be harvested? Can SMZs be managed for wood products? Due to site conditions, there is a potential for excellent hardwood production. Simply setting aside areas for water or wildlife benefits is difficult for some to accept. But by devising management plans and techniques we can make SMZs more acceptable; thus, we (wildlife) gain overall. Access to trees in SMZs, on a long rotation in conjunction with adjacent pine stands, has potential.

Initially, large pine sawlogs could be removed—carefully. However, remember that pine seeds are a favorite food for quail, turkey, and squirrels. A mature pine component adds to the value of SMZs. Many SMZ stands are in poor condition due to past high-grading operations. We would like to get the stand into vigorous hardwood regeneration where necessary. Select or partial cuts can be used to improve stand conditions and not destroy the wildlife values of SMZs. In many cases, WSI (wildlife stand improvement) would be better than traditional TSI (timber stand improvement). Landowners can decide how many cull trees should be left for mast and dens. Loggers would have to appreciate the fragile areas on which they are working, and use appropriate practices.

How wide should an SMZ be? There is no standard width—one to five chains (1 chain = 66 feet)? It varies according to creek size, soil/site conditions, company policy, mill demand, and owner wishes. It is not the best management to have a "picket fence" (a few scattered trees along a creek). This is not an SMZ; it does not have the characteristics of an SMZ. Very narrow SMZs might serve as "killing zones" for passing wildlife. Predators can make narrow SMZs ecological traps.

SMZs must be wide enough to retain their distinct habitat conditions. When SMZs are too narrow, sunlight pours in from both sides and changes the vegetation on the forest floor. The stand may also be vulnerable to wind-throw. Although there is no set width, common sense must prevail. Silviculturists and landowners will have to agree on what is essential (regulations) and what is acceptable (desired).

Beavers are problems in SMZs. They like to create ponds which are valuable habitats for many critters; however, they also destroy (flood, girdle) stands. Beaver activities are a tradeoff. You have to decide when control becomes necessary.

The S in SMZ represents sensitive, special, and stewardship. Enjoy your SMZs, and realize you did good by saving these super-strips for wildlife. Good stewardship includes SMZs, because SMZs are real treasures!

"Now Where Did I Put That?"
Recordkeeping For Forestland Owners

by LOU HYMAN, Chief, Conservation Education

Did you ever spend half a day looking for a receipt that you needed? Is tax time a major hassle, with a lot of wasted time spent scrambling to prove deductions? And then you find out two weeks later that you missed counting several big items. The way to solve these problems and make life a little easier is to set up a simple recordkeeping system for your forestland investment.

Need for Records

Why should you keep records of your forestland? Having a complete set of records will help with several projects. One key issue is determining when and if the forestland investment makes a profit. A complete list of costs and revenues allows you to run a forest as a business, even if that is not your primary goal.

Another valuable benefit of keeping a set of records is being able to later develop a history of the property. Good records can answer the questions, "How old is this plantation?," "When did we establish this food plot?" and "When did we pay off the mortgage?" Also, during the sad time following a death, good records enable the family to reconstruct what is where and what was done. This enables the heirs to pick up the pieces and keep the forest business intact and growing.

Even though these are all good reasons, the most critical need to keep records is for income tax purposes. In order to keep the classification of being an "Active Manager," the Internal Revenue Service (IRS) requires that the landowner "prove" that he or she has spent at least 100 hours managing the property, and that no one else has spent more time than the manager. (see "Tax Tips for Alabama Landowners," *Alabama's Treasured Forests*, Fall 1990). Also, while the capital gains tax rate is the same as regular income, having good records enables the seller to include all the costs of the timber, and thus lower the amount of gain that is taxed.

How To . . .

A good set of records will contain information on timber inventories, silvicultural activities, all costs and incomes, and time spent by all owners. There are many ways to keep records. The level of intensity is based on the level of detail needed and the complexity of operations involved.

The simplest system is to keep all receipts and records bundled together in an old shoe box. The only other thing needed is a set of pocket calendars marked with the dates you worked on the property. Landowners with small tracts and little activity can do this and still meet IRS needs. If shoe boxes seem too shabby, you can improve the system by sorting receipts and notes by category and filing them in an accordion file envelope. These are available at stationary stores or places like Wal-Mart.

As the level of complexity of the forestry operation increases, you may wish to move to a journal system. A Forest Journal is a business diary that contains details of each business transaction dealing with the property. In the journal, the landowner records what was done, when, for what reason, and the cost or income. The journal is written as the work occurs, and should also include dates and times that the landowner spent on the property.

Journal books are available at many stores for less than $10. A sample journal would contain a listing of dates, actions taken, reference numbers, cost or income. After this listing, a series of detailed notes and tables can be written, using the reference number to correlate between listings. The IRS may still need to see the receipts, so they need to be kept in a file as well as recorded in the journal.

As the forestry investment gets more complicated, you may need to add a set of accounts to the journal. These accounts are specialized listings that follow the diary part of the journal and record aspects of the enterprise that relate to just the land, or the timber, or any plantations, or to annual management costs.

Journal Accounts

The number and type of journal accounts will vary for each forest owner. The most common accounts are Land, Timber, Reforestation, Equipment, and Annual Management Expenses.

A **Land Account** includes the costs and incomes related to land and permanent improvements, such as roads. The land account mostly records costs that are only recovered when the property is sold.

A **Timber Account** includes merchantable volumes, the basis, or original cost of the timber, and the premerchantable value at the time of acquisition. The main feature of the timber account is the depletion schedule.

Depletion is the recovery of the basis in the timber as the trees are cut. Depletion is the main "cost of goods sold" used to calculate the amount of capital gains from a timber sale. A depletion schedule has two components: estimated volumes and historical costs. The cost includes the original basis plus any additional costs that cannot be taken as an annual deduction.

A key part of any forest record is the initial timber volumes and the rate of timber growth. If you do not have a timber inventory from when the property was acquired, either by purchase or inheritance, it can be reconstructed by a forester. Using present volumes and growth rates, the forester "grows the forest backwards" to estimate the timber volume back when.

When timber is sold, a depletion unit must be calculated. The unit is the basis in the timber divided by the total volume on the tract. This unit is then multiplied by the volume sold to find the "cost" of the timber sale. Obviously, the higher the depletion unit, the lower the taxable gain from the timber sale, and the less tax to be paid.

A **Reforestation Account** should also be set up. The reforestation account has two parts: initial basis in young trees and reforestation expenses for either natural or artificial regeneration. Reforestation expenses are eligible for the Reforestation

Tax Credit and Amortization (see "Tax Treatment of Reforestation," *Alabama's TREASURED Forests*, Tax Supplement, 1984). An amortization schedule should be included in this account so that you can be sure to claim the deduction each year.

Both the original basis and any excess reforestation expenses are transferred to the timber account as the trees grow to merchantable size. This can be done on an annual basis, moving all the basis over a 12- to 15-year period, or it can be moved all at once when the plantation turns 12 to 15 years old.

An **Equipment Account** includes the cost of all depreciable equipment, machines and non-permanent improvements to the land. These expenses are depreciated over a 5-, 7- or 10-year period, resulting in an annual tax deduction. The cost of major repairs to equipment can be added to the account and likewise depreciated. Non-permanent land improvements include bridges, culverts, graveling roads, fences, firelanes, and temporary or logging roads.

A **Management Expenses Account** would include a listing of all costs that cannot be capitalized and all operating costs of the forest that can be deducted each year. Expenses in this category include property taxes, fees paid to consultants, prescribed burning costs, wildlife management costs, timber stand improvement costs, repairs and maintenance, small tools, hired labor, and travel expenses. These need to be recorded and backed up with receipts or records that can substantiate the annual deduction.

This has been a very brief tour of a complicated subject. The best advice is to take it one step at a time. Begin by collecting all records and receipts into a box or file. Then if you want to get a better handle, start a simple journal, going as far back as you can. If things get too complicated, then add accounts and schedules to fit your needs.

Maintaining records takes time and effort, but it will improve your knowledge of your forest and will protect you when the IRS comes to call.

For more information about forestland recordkeeping, obtain a copy of Ag. Handbook 681, "Forest Owners Guide to Timber Investments, Federal Income Taxes and Tax Recordkeeping." Write to the U.S. Forest Service, 1720 Peachtree Rd., Suite 850, Atlanta, GA 30367.

8TH ALABAMA LANDOWNER AND TREASURE FOREST CONFERENCE

McCallister Farms in Houston County was the winner of the 1991 Helene Mosley Memorial TREASURE Forest Award. The award is given annually to the outstanding TREASURE Forest in the state. The McCallister family was present to receive the award at the Landowner Conference held in Eufaula Oct. 10-11, 1991. Runners-up and winners in their respective districts were Dr. Samuel Eichold, Escambia County, and R.B. Brown, DeKalb County.

The Coosa County Planning Committee (pictured above) took top honors as the planning committee winner in District 2 and the state. The winner in District 1 was Jackson County, and the winner in District 3 was Tuscaloosa County.

The Masters Award is presented each year to an outstanding planning committee that has previously won a state award. St. Clair County was honored with the Masters Award for 1991.

FOREST ROADS

by ROBERT TUFTS,
Associate Professor, School of Forestry and Agricultural Experiment Station, Auburn University

The enjoyment, management, and utilization of the forest resource requires access in the form of a road network. However, the improper placement and construction of this road network can cause a decrease in water quality and added expenses in terms of construction and maintenance. Studies report as much as 92 percent of the sediment in streams is associated with roads. Most of this sediment comes from the surface of the road, which in turn increases road maintenance expense.

The objective of this article is to help you develop a road network that will serve your purpose, minimize your expense, and protect water quality. It is not written as a description of Alabama's Best Management Practices (BMPs) for forestry, although many of the suggestions presented are contained in Alabama's BMPs.

Once constructed, roads tend to become a permanent part of the forest. Most of these roads are constructed to support the removal of timber and are usually built by paper company personnel or timber harvesting contractors. Their interest in the road system is short-term compared to the landowner's. Because of the long-term impact of the road network, it is imperative that the landowner become involved in the planning and construction of any roads.

Most of you are aware that the Alabama Department of Environmental Management (ADEM) is the regulatory agency that enforces the Alabama Water Pollution Control Act. It appears that, currently, the responsibility for any water quality problem will be shared among all parties involved, i.e. the landowner, timber harvester, and purchaser of the timber.

Standards

The first consideration for the landowner is the standard of road to be constructed. The lowest standard sufficient to the purpose is usually the best. Considerations are:

Width—one lane, one lane with turnouts, or two lane? How much clearing on either side of the road (more sunshine for faster drying and greater visibility for safety)? One mile of road with a 20-foot wide cleared area removes 2.42 acres from timber production.

Surface material—improves the life, increases serviceability, and reduces maintenance of the road. It also doubles the cost of the road.

Drainage—two-ditch with culvert cross-drains and wing ditches or vertical-cut banks with broad-based dips?

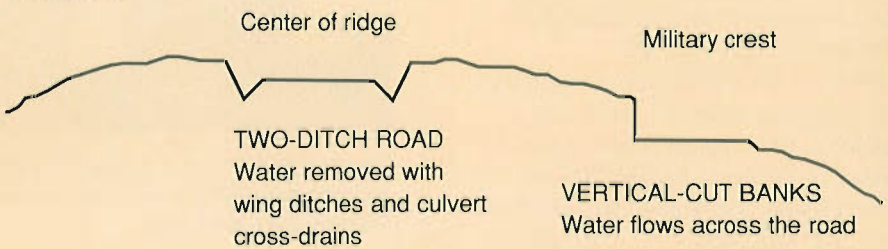
Grade—should be determined by the type of soil. Sandy soils will generally not be stable on slopes over 3 percent. For any earth-surfaced road, the steeper the slope, the greater the erosion problem.

Location

Roads should be located so there is minimal impact on the drainage pattern. If the road creates dams or redirects flow, maintenance problems will usually increase. Roads should be constructed as far from streams as possible to minimize potential water quality problems and above flood plains and wet areas to reduce maintenance expense. The best location for a road is the military crest of a ridge, not the center of the ridge *(see Figure 1)*. If the road is constructed down the center of a ridge, subsequent maintenance can lower the surface below the surrounding terrain and create drainage problems. If the road is built to the side of the ridge so that the terrain is lower to one side of the road, there will always be an outlet for the water to drain from the road. Other advantages of the ridge-top locations are light excavation, good alignment and excellent drainage.

The potential problem with a ridge-top road is continuing the road beyond the nose of the ridge. (The absolute worst location for a road is perpendicular to the contour because it is almost impossible to remove the water from the road.) Generally, the slope from the nose of the ridge to the drain is steep enough to cause excessive erosion for a road with no surface material. In this case, pick the best place to cross the drain and an appropriate slope for the construction material. Use a clinometer (a hand-held instrument to measure slope percent) to trace a path back to the top of the ridge at the allowable slope. This will produce a section of side-hill road that reduces the maintenance problems.

FIGURE 1.

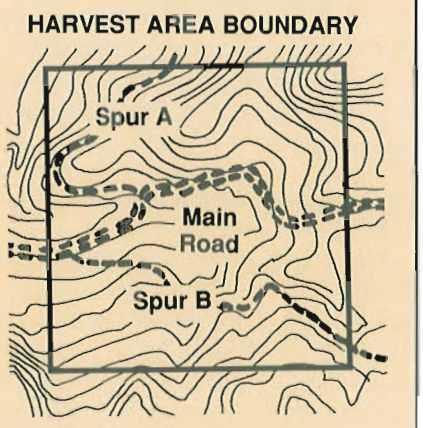


The amount of road constructed should be negotiated between the landowner and the timber harvester. The timber harvesting contractor can minimize his skidding cost by changing landing locations frequently to reduce the skidding distance. However, more road equals more disturbance, which means a greater potential for water quality problems.

Once the road standard has been chosen, the approximate location can be determined from an examination of a topographic map. The map should be used to minimize the number of stream crossings and determine the best location for the road *(Figure 2)*. The map location supplemented by field reconnaissance determines the final location for the road.

The actual location should be flagged prior to construction. A clinometer can be used to locate the preliminary grade line at the design slope. A minimum 60-foot radius curve is needed for truck-trailer passage. Sharp curves will need to be widened to allow for vehicle off-tracking.

FIGURE 2. Topographic Map



Construction

Roads should be constructed several months prior to use to allow for settling. Road strength is directly proportional to compaction and inversely proportional to soil moisture content. During construction of the road, you should try to spread traffic across the entire surface to aid compaction. By minimizing the amount of material disturbed, you decrease the erosion potential.

Install drainage structures during construction. A minimum 3 percent grade is needed to cause water to drain off rather than soaking into an earth-surfaced road. The best structure to remove water from the road surface is the broad-based dip *(Figure 3)*. In-and out-sloping can be dangerous and in-sloping creates the need for cross-drains. Crowning a road surface by pulling the side dirt into the center of the road is also used for road surface drainage and is subject to the same rutting problem. Crowning is generally not effective unless a surfacing material that decreases the rutting is used. Water turn-outs or wing ditches *(Figure 4)* should be installed to carry the water away from the road.

FIGURE 3. Broad-based Dip

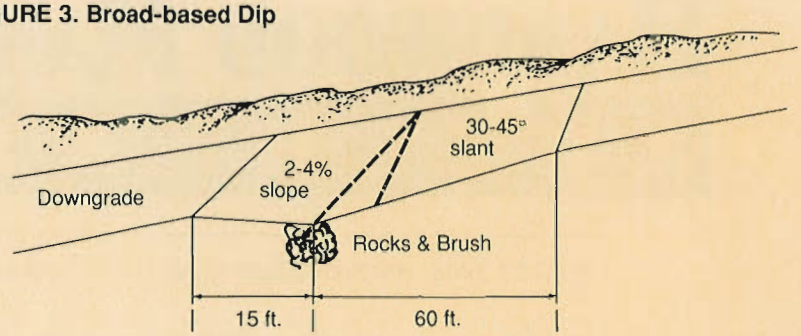
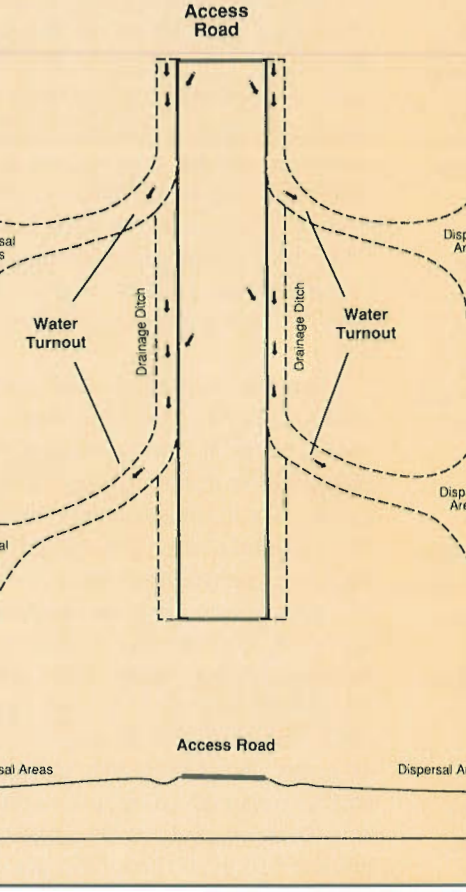


FIGURE 4. Water Turnouts



Maintenance

Road maintenance problems are usually associated with water eroding the surface of the road and/or deteriorating the water quality in streams. Erosion is directly proportional to the volume and velocity of water running over the surface of the road. It is difficult, if not impossible, to correct drainage problems for an improperly located road. Once a road has been built with too steep a grade or is lower than the surrounding terrain, the best solution is to stabilize and retire the old road and relocate a new road with the proper parameters. Other road maintenance practices include stabilizing critical sections, avoiding the disturbance of stable road surfaces and closing roads during wet weather.

After timber harvesting, temporary roads should be reclaimed. As a minimum, the road should be reshaped and water bars installed. Culverts should be removed to avoid "blowouts." To minimize erosion the road could be seeded, possibly after ripping or discing.

Roads are an important management tool which should meet economic and environmental criteria. If you are interested in additional information, contact the Alabama Forestry Commission through your county forester. In addition, Auburn University will sponsor two road location and design workshops in February. For more information on the workshops contact Dr. Dick Brinker at 844-1038.

HARDWOOD MANAGEMENT ALTERNATIVES

by DAN SIMS, Hardwood Specialist, U.S. Forest Service, Atlanta, Georgia

Wide ranging technological and economic developments are altering the historical dominance of softwood over hardwood as a preferred raw material for many kinds of forest products.

Of course, the high quality furniture grade hardwoods are in constant demand and historic stumpage prices have reflected this strong demand. These are the extraordinary hardwoods of preferred species which have been the ultimate goal of our management strategies.

The fly in the ointment of hardwood management has been what to do about the ordinary hardwoods that are so prevalent in our stands. These are the lesser preferred species and the hardwoods of less than premium quality. Here is where the major changes and opportunities hold promise for the South's forest landowners. Demands for these ordinary hardwoods are increasing with evolving technological advances. They are appearing more often in a broad range of forest products, from traditional products such as paper, wood panels, and lumber to wood energy and biotechnology.

These innovations for hardwood use have been predicted for years. Now, as we enter the 1990s, they are suddenly appearing on every product front. This expanding use of the more common hardwoods provides improved options for silviculture and resource management.

Many of our best hardwood stands have been miscut in the past because highgrading the best, highest quality trees was about the only marketable choice. As a result of this past abuse, the most logical silvicultural option has been to clearcut, regenerate and start over. This is still the most logical and efficient silvicultural alternative for stands with little or no potential high quality stems remaining. However, many landowners are reluctant to clearcut for various reasons and pressure is being put on foresters to offer other silvicultural alternatives.

To decide which course of action best fits your landowner objectives, you will need to make a pre-harvest analysis of stand conditions. This should include site quality, current stocking, and regeneration potential. Also consider any other objectives, such as wildlife habitat management, aesthetic values, and timber market opportunities. Although this article emphasizes timber management options, other resource values should be an integral part of the land management scheme.

Initial decisions will be influenced by the stand's current condition. Of primary importance is the threshold of stocking that determines whether we manage the existing stand or regenerate. The North Carolina State Hardwood Cooperative offers some good advice on the subject from regeneration guidelines they developed. They recommend that bottomland stands containing less than 20, 40 and 60 square feet of basal area per acre in desirable trees at 20, 30 and 40 years, respectively, are candidates for regeneration. Stands of acceptable trees meeting or exceeding these basal-area values can often be upgraded by improvement cutting.

Work done by the Forest Service Southern Forest Experiment Station on upland stands in Tennessee suggests thresholds for managing existing upland stands. A promising stand may contain 30 to 40 dominant or co-dominant trees per acre of desirable species in the 10- to 14-inch diameter class with good form and vigor. With expanding markets for lower-quality hardwoods, some cutting might be feasible to favor these crop trees. The residual stand may have 30 to 40 square feet of basal area, including the smaller trees that will grow into timber size. These stands have the potential to produce 150 to 200 board feet per acre per year on good sites. Of course, stands with stocking of good crop trees above this level promise even more potential. Opportunities for intermediate cuttings in well stocked stands will increase as hardwoods become more acceptable for a wide range of products. Coordinate harvests with market opportunities for the best price.

Regeneration Alternatives

Suppose the desirable stocking level is below the level needed to carry the present stand or it has reached the stage of financial or biological maturity. In either case, it may be time to consider regeneration alternatives. First, we must decide whether to use an even-aged or uneven-aged system of management. Several regeneration alternatives are available under each system.

Even-Aged Management Systems

Even-aged systems are used to grow stands of trees that grow together as a single age class. Even-aged systems incorporate a regeneration harvest cut that allows regeneration of the stand over a short period of time. Some even-aged systems include periods of time during regeneration and subsequent development when two age classes occupy the site but not more than two. Because most important southern hardwood timber species do not reproduce and grow well under the shade of other trees, even-aged management is a logical choice for southern hardwood stands.

The silvicultural clearcut involves total canopy removal of residual trees following harvest. All trees down to 1 or 2 inches in diameter are cut or deadened to allow sunlight to reach the forest floor. Using this method, natural regeneration can usually be counted on to regenerate southern hardwoods adequately.

Clearcutting is a most efficient and natural means of regenerating southern hardwoods if properly done. Clearcutting, however, is controversial and often misunderstood. Several even-aged and uneven-aged alternatives show promise where clearcutting is unacceptable.

Irregular Shelterwood or Two-Aged Stand

Many landowners prefer at least some high forest cover for aesthetics, hard mast production, deferred income and other reasons. The two-aged stand, or irregular shelterwood, resembles a seed tree cut. The purpose of the method is not to provide seed or shelter for the new stands, however, but to provide an alternative to clearcutting while still regenerating a major portion of the stand.

Good results with two-aged stands are based on 20 years of research at the Bent Creek Experimental Forest near Asheville, N.C. An average of 12 trees per acre (24 square feet of basal area), 19 inches DBH, were left as residuals following a commercial timber harvest. All residual mid-story and understory trees were removed with a herbicide treatment. Regeneration has developed quite well in the open spaces between the larger, widely spaced residuals. The 100 largest trees per acre in the regenerated portion of the stand averaged 7.3 inches DBH and 54 feet in height after 20 years. The two-aged stand is quite similar in species and growth to an adjacent clearcut of the same age.

Research also shows that the large residuals responded favorably to the additional space provided to them. The annual board-foot volume growth of 221 feet per acre is about 60 percent of what might have been expected from a fully stocked stand. The residuals can be cut or retained indefinitely using this regeneration method.

To reemphasize, this is not intended as a seed tree or regular shelterwood, but merely as a two-aged alternative to clearcutting. Residual basal area should not exceed 20-30 square feet, and unwanted trees following the commercial harvest should be cut or eliminated with herbicides. Research at Bent Creek was done in upland stands, but there's no reason to believe the method wouldn't be applicable to bottomlands as well.

Uneven-aged Management Systems

Uneven-aged management implies selection-harvest of trees to perpetuate a stand of trees varying widely in age and size. Under this system, intermediate treatments and regeneration harvest cuts are made at the same time. Harvesting is concentrated on removing financially mature trees, favoring growth and development of future crop trees and securing regeneration. In practical terms, the stand would be structured to carry three or four age classes simultaneously.

Group Selection

Although single-tree selection and diameter-limit are considered uneven-aged methods, they have not proven effective for managing light-demanding southern hardwoods. The group selection method, while somewhat difficult to regulate, has potential for regenerating southern hardwoods on an uneven-aged basis. Trees can be harvested in small groups, usually less than an acre. The area is large enough to allow sufficient sunlight for regeneration and growth of shade intolerant species. This regeneration method is probably best suited to small landholdings when owners, for aesthetic, wildlife, or other reasons, do not want to clearcut. A general rule is to make openings at least two times as wide as the height of adjacent trees.

From a practical standpoint, the practice presents some problems: locating groups to maintain desirable stand structure becomes difficult at about the third cutting cycle; shade from trees on the edge of small openings affects regeneration on a high percentage of the opening; residual trees on the edge are apt to degrade in quality from epicormic sprouting; and harvesting enough volume for an operable cut can be difficult. Southern hardwoods can be regenerated using the system, but careful planning and installation is required.

Alternatives for hardwood silviculture and management have increased with improved market opportunities. Continuing research and practical application will provide an increasing array of choices to owners for management of our valuable hardwood forest resources.

LANDOWNERS LEGISLATIVE · ALERT

NATIONAL

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

As the current session of Congress comes to a close, some of the more contentious issues of the next one are already taking shape. As Congress finishes work on the appropriations bills for Fiscal Year '92, hearings are continuing on the reauthorization of the Clean Water Act (CWA), and interest groups are preparing for work on the reauthorization of the Endangered Species Act. Private property rights will be an important aspect of every natural resource debate, including ones that impact upon the practice of forestry conservation.

Changes Proposed for CWA and ESA

House and Senate panels have already heard from industry groups, environmentalists, and natural resource professionals on several aspects of the Clean Water Act reauthorization. The forestry community is working to ensure that the Act retains its current recognition of the special role that forestry can play in protecting and preserving water resources.

Representatives from state forestry and the forest products industry have expressed concern over some contemplated changes to the Act, especially changes that would imply increased federal controls on non-point sources of pollution. Timber harvesting is recognized as only a relatively minor source of non-point source pollution (U.S. Environmental Protection Agency estimates 4-7 percent), and sedimentation can effectively be controlled through the use of Best Management Practices (BMPs).

The National Association of State Foresters told the Senate that states have developed effective Best Management Practices, and that the federal effort should be geared toward helping the states implement their programs, not creating new ones at the federal level.

The wetlands protection program, created on the authority of Section 404 of the CWA, has also come under intense scrutiny recently, and will be a contentious aspect of the reauthorization of the law. In August, the Bush administration released a new manual for federal agencies to use in the identification of jurisdictional wetlands. Landowners must obtain permits from the Army Corps of Engineers before dredging or filling jurisdictional wetlands. Environmental groups have been sharply critical of the manual, although they have supported many aspects of the president's wetlands policy, including the "no-net loss" goal and increased emphasis on wetlands acquisition through the newly authorized and funded Wetlands Reserve Program.

On the other side, many commodity groups, including agriculture and forest products industries, have been critical of the president's proposal and the new manual as insufficient reforms in a process that badly needs it. They claim that areas historically recognized as upland areas are now called wetlands under the proposed changes and that regulators are taking private property without just compensation, which is unconstitutional.

Many groups are pressing to have environmental regulations, such as the CWA and Endangered Species Act (ESA), changed to take better account of private property rights. The main proposal they have advanced so far is a bill, *S.50*, known as the Symms Amendment. The amendment would make an Executive Order that defines takings of private property law. Environmentalists and labor organizations have come out against the proposal, which they feel uses too broad a definition of takings. The result of the enactment would be to water down environmental protection, they argue. Others have objected to attempts to pass the amendment without specific hearings on the subject. Currently, the bill is attached to the Senate's version of the highway bill and their version of a bill to give the EPA cabinet status. House leaders have been cool towards the measure.

Initial proposals for changes in the ESA include greater protection for private property rights as well. A bill offered by Rep. **James Hansen** (R-Utah), called the Human Protection Act, would require the federal government to subject decisions under the ESA to cost benefit analysis, and require that takings of private property be compensated. Although the conflict over the protection of the Northern spotted owl on public lands in the Pacific Northwest has captured national attention, the Southeast is experiencing similar difficulties on private lands. The red-cockaded woodpecker, for instance, is endangered in the Southeast, and reports of conflicts between landowners and federal regulators are beginning to crop up. Conflicts such as these have led many to criticize the procedures of the ESA for not taking into account economic factors when making listing and protection of the species.

Forestry Can Be Solution

Forestry, of course, can in fact be part of the solution to environmental problems. Forested wetlands can be, and in fact are, managed to provide both important wetland functions and timber. Forestry BMPs can allow for timber har-

vesting without dangerous impacts to clean water, and wise use of riparian corridors can protect streams and lakes from other sources of pollution. Managed forests also provide habitat for game and non-game species of wildlife.

New efforts are being made to use forestry as a pro-active tool for rural economic development and the conservation of important natural resources. The Conservation Reserve Program, for instance, is actively seeking opportunities to put trees into conservation easements to help control erosion and run-off. Other forestry programs, such as the Forestry Incentives Program, the president's America the Beautiful program, and Forest Stewardship program, received funding for next year. Congress's renewal of these programs indicates the continued recognition of the importance of managed forests and good forest practices for the economy and ecology of the country.

ALABAMA

by FRANK SEGO, Legislative Liaison,
Alabama Forestry Commission

A citizen's earthly goods often depend on his land and woods

Now it's not known whether a poet ever penned that or not, and this writer certainly wouldn't profess to be one, but there is a message in those lines that best expresses the dependency so many Alabamians have on our forestland.

While we were waiting on a call for one of the anticipated special sessions of the legislature—which never came before this magazine's deadline, and probably won't until January—we thought this might be a good time to reflect on the treasured heritage that is our forestland.

In 1969, the State Legislature, acting with infinite wisdom, realized the need for Alabamians to have an agency that could function on its own rather than being a division of the Department of Conservation and Natural Resources.

In the 1969 Regular Session, Rep. **Joe McCorquodale**, a timber landowner and forest products businessman, was joined by 10 other House members in sponsoring *H.B. 673* which sailed through the House and Senate. In September 1969 it was signed by the governor and enacted into law as *Act No. 69-764*.

Landowners Applaud Enactment

Forest landowners hailed the enactment as an opportunity to get increased attention toward the preservation of their lands from fire and insects, and to get the urgently needed technical assistance in forest management.

The law clearly stipulates that the duties of the Forestry Commission are to maintain, supervise, operate and control state forests, but especially to provide as much advice, assistance and cooperation as may be practical to the private, non-industrial forest landowner.

The Commission is composed of seven members appointed by the governor with the advice and consent of the Senate. They serve five-year staggered terms. At least two must be licensed and registered foresters under Alabama law. At least three members must be timberland owners. By law, they have the responsibility of employing the state forester.

At the time of their initial appointments, then State Forester **J.W. (Jake) Stauffer** was on the eve of his retirement. This sent the seven-member Commission on a search for the man who would eventually succeed him. They found the man they wanted in **C.W. (Bill) Moody**, who possessed an extensive background in forest industry and private consulting. Upon Stauffer's retirement, Moody immediately set his sights on expanding and improving every facet of Alabama's forestry program.

Moody Sends the Signal

With the slogan, "The forests must meet the needs of our citizens and our citizens must meet the needs of forestry in Alabama," the message was signalled loud and clear across the 21.3 million acres of Alabama forestland.

Moody saw Alabama as a heavily forested state with two-thirds of its land area covered with trees—third in the nation in commercially forested acreage. He realized that the growing demand for forest products could provide an opportunity for Alabama to increase employment and, in so doing, would enhance economic growth within the state.

He knew that to take advantage of this opportunity he must convince the private, non-industrial landowner that an investment in forestry can be profitable. It was a fact then—and is today—that some 200,000 landowners collectively own 75 percent of the state's forested acres.

Undoubtedly, his most notable innovation was the TREASURE Forest concept. It was, and is, Moody's contention that the forest landowner has the right as a good steward to pursue and achieve his own objectives on his privately-owned land. He believes that they have the right to control access to their forestlands as long as it is consistent with the common good. And, just as importantly, the forest landowner has the right to receive full and just compensation for his investment.

For 20 years now Bill Moody has lived by that standard and has inspired the forest landowner to become a better steward of his land.

This is only a brief insight on the progress of forestry in Alabama, but it didn't come without the blood, sweat and tears of a Commission, a state forester and a staff that worked closely with members of each Legislature to promote the value of Alabama's great forest resource. Next time we'll discuss redistricting, tax reform and other issues facing the 1992 Legislature.

A Lesson in Stewardship

by VICTOR HOWELL, Conecuh County Supervisor, Alabama Forestry Commission

Salem Saloom always wanted to own property. In 1983, he realized his dream by purhasing 120 acres. An adjacent 80-acre tract was purchased the next year. Located in rural Conecuh county, less than an hour's drive from his Brewton home, the property offers a family retreat free of telephones, cars and worries.

The mostly untouched hardwood bottom, planted sawtooth oaks, food plots and autumn olives are evidence that the property is managed primarily for wildlife. Tree stands have been established in several areas, offering friends and family good places to hunt and view wildlife.

Now an avid turkey hunter, Dr. Saloom called his first turkey on one of the property's oak ridges. This ridge is a significant landmark. Not only did it serve as inspiration for the name of the TREASURE Forest, Oak Ridge, it also serves as a scenic overlook to the pond established in 1984.

Across the pond from the oak ridge is a sheltered retreat. The one-room wooden building, which blends in with the surrounding hardwoods, serves as a gathering place for fish fries with friends and family. During turkey season, the rustic shelter becomes an overnight camp. "There's nothing quite like being here when the sun rises," says Dr. Saloom. "You are so close to nature that time of day."

Wildlife and personal enjoyment are the landowner's primary concerns, but timber management is not neglected. Following the advice of an industry forester, a badly eroding field was planted in pine trees. Forty more acres were converted to pine in 1984. Established timber stands are managed for the most part through selective thinnings. This practice allows timber utilization while maintaining good wildlife habitat and aesthetic appeal. A prescribed burning program in the pine stands not only promotes timber growth, but also improves habitat for wildlife.

Diane, Salem and Patrick Saloom

Although the Saloom's have a busy schedule, they manage to visit the property several times a month. Much of this time is spent maintaining and improving the property. Dr. Saloom and his family do almost all the work on the property. These "hands on" property owners build trails, plant food plots and erect bluebird houses. Bushhogging, fence maintenance and constructing and maintaining roads are a part of their normal weekend activities.

One of the reasons Dr. Saloom aspired to own property was to give his son, Patrick, an opportunity to grow up taking care of and learning about the land. Walking with young Patrick through the area, it is easy to see that he has gained an appreciation for nature. A collection of turkey feathers, acorns, rocks and leaves fill his pockets before the return to the cabin.

Certified a TREASURE Forest landowner in 1985, Dr. Saloom believes in the concept of TREASURE. When asked the importance of the program, Saloom responded, "TREASURE Forest teaches us to be good stewards of the property—God's property. Through TREASURE Forest I am able to teach my son to be a good steward, not only of the land, but also in other aspects of his life."

Forest of Fears

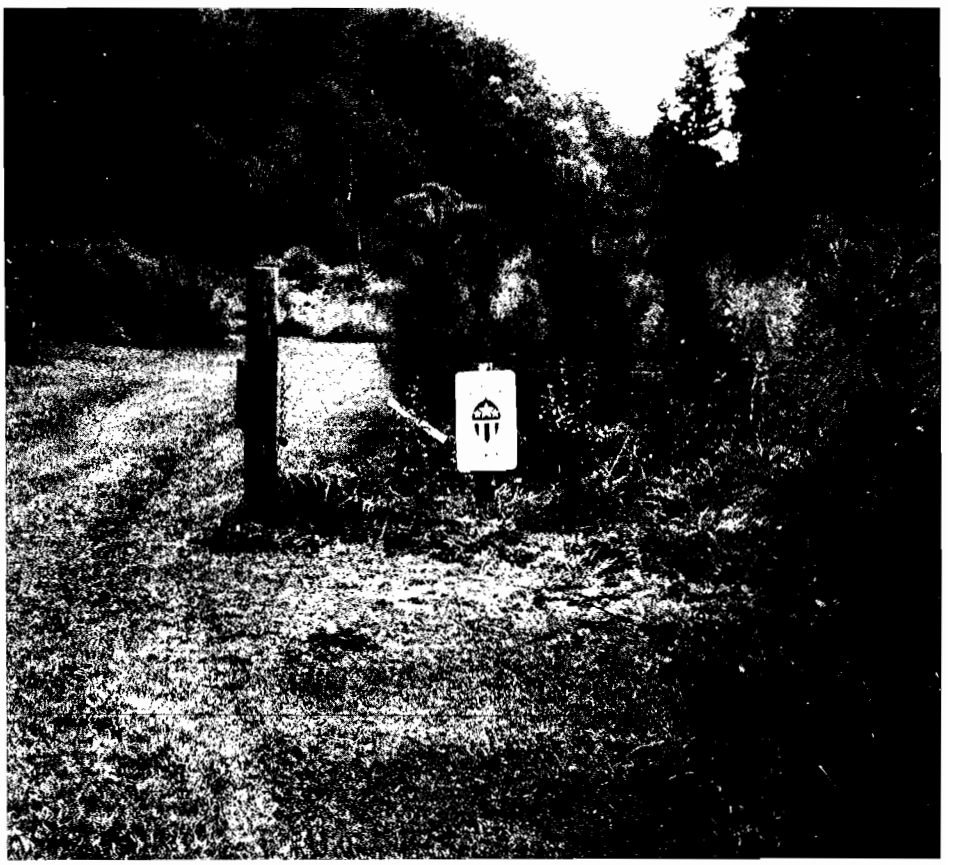
by JOHN TYSON, Alabama Forestry Commission, Dadeville, and GLENN BERRY, Cleburne County Supervisor

Wayne and Sherry Fears were dreamers with a plan. When they decided to buy a piece of land they made up a list of things it should have: streams, old-growth hardwoods, adjacent to a National Forest, etc. The search was a long one covering a number of states but finally, four years ago, they bought the 145-acre tract that was to become their TREASURE Forest. It wasn't perfect by any means, but they recognized the raw potential of the land. It had the basics, and with good management they developed it into their dream place.

Wayne Fears is a professional writer, wildlife management consultant, and wildlife habitat and outdoor equipment researcher. He uses his TREASURE Forest in all of these endeavors. One of his special research interests is the value of over-mature hardwood stands as wildlife habitat. He uses the findings from his research in his work as a wildlife management consultant. He is also experimenting with planting mixed stands of hardwood to provide permanent wildlife food plots. These could replace the traditional plots of planted annual plants. Fears uses a mixture of sawtooth oak, hybrid poplar, dogwood, redbud, persimmon and walnut. He uses random spacing in these plantations to give them a more natural appearance. Some of the Fears' wildlife plots are near woods roads and Wayne uses several rows of pines planted between the plot and the road to screen the plot from human activity.

They do not live on this tract, but there is a one-room cabin that is sometimes used by the Fears and their friends. Sherry says that although they have a generator to provide electric power to the cabin, almost no one ever uses electricity. They just seem to prefer using an oil lantern and the wood burning stove.

This forest is on the edge of the Talladega National Forest in Cleburne County. It was newly cut over when the Fears bought it. Since it came into their possession they have prescribe burned parts of the tract and planted thousands of pine seedlings in addition to the hardwood wildlife plantings. Wayne likes to maintain a certain amount of diversity in the stands. He sometimes uses them as the background for photographs to illustrate some of his books and articles. He also has several ranges on the land that he uses to test hunting rifles, shotguns, ammunition, and archery equipment. He says that while there are many good caliber rifles, his own favorite is the .280 Caliber. He believes that you have to hand load the .280 to get its full potential, however.



Entrance to the Fears' TREASURE Forest

You can talk a long time about all of the versatile and unique features of this TREASURE Forest. The Fears plant and fertilize honeysuckle. They feel that honeysuckle is an excellent deer food plant and use it in their wildlife management program. There are also many plants that provide food for hummingbirds and other nongame species.

The name J. Wayne Fears is familiar to many outdoorsmen. He is the author of 14 books. Some of the better known ones are *The Complete Book of Outdoor Survival, Hunting Whitetails Successfully, Hunting North America's Big Bear, Successful Turkey Hunting,* and *The Wild Turkey Book.* In addition, he is the author of numerous magazine articles. J. Wayne Fears is a very knowledgeable outdoorsman and his land is a TREASURE Forest.

Wilderness in Marengo County

Wilderness, a word that once had connotations of hardship and risk, has taken on a meaning in the American lexicon that evokes feelings of friendliness, peacefulness, and relief from the grinding day-to-day struggle to make a living in the asphalt jungle.

Take the word, mix it with "riverbend" and "wildlife," and you can set millions of Americans to drooling. Place it in 3,200 acres of southwest Marengo County, and you have a picture of an idyllic setting for recharging the emotional batteries.

That—and more—is a fair description of the Riverbend Wilderness Management Area in Myrtlewood. This veritable "Garden of Eden" in a family-style setting is operated by an exclusive club . . . well, corporation, actually.

The spacious clubhouse, with room for 70 persons, sits overlooking a valley that stretches along the Tombigbee River. The valley is a TREASURE Forest, replanted with a mixture of pine and hardwood to make comfortable accommodations for the deer, turkey and dove that serve as targets for hunters armed with weapons ranging from the primitive to the highly efficient.

The clubhouse was built when the paper mill (then called American Can) was opened 32 years ago, said Julia Breckenridge, who, along with her husband, Will, serves as director of operations for the wilderness operation.

"It was used for seven or eight years as a guest house for the paper mill," said Mrs. Breckenridge. "Then it sat here for 20 years or so unused."

The clubhouse and land were bought six years ago from Willard Rhyn, who bought it from the James River Corporation, Mrs. Breckenridge said. The clubhouse was renovated. As part of the sale price, Rhyn took four of the wilderness corporation's 75 shares of stock.

Membership is $25,000 per share, and all shares have been sold since three years ago, she added.

Julia Breckenridge

The old pine on the land was cleared before it was replanted in the mixture of trees, she said. Also planted were 52 greenfields and 60 acres of corn, which is left on the field until the next season.

There also is brown-top millet and sunflower seed for doves to feed on, and "a lot of clover for turkeys."

The club members and their guests harvest an average of 65 does per year, but that dropped to 35 last year. "The hunters try to get them all with bows," she said. Guests are allowed a lifetime kill of only one deer or turkey.

A deer hunter herself for 30 years, Mrs. Breckenridge now hunts turkey "every day of turkey season."

The 3,200 acres are occupied by an average of 15 hunters per day during bow-hunting season for deer, she guessed, and 25 during the gun season.

As a safety measure, all hunters sign in and designate on the land map the area in which they are hunting. Once a hunter gets to his stand, he has to stay there until dark. This keeps hunters out of areas being hunted by others, she added.

There is a walk-in cooler at the clubhouse, and a fully staffed kitchen during hunting season. The camp receives one hindquarter from every deer kill.

In the planning stage is a 60-acre lake, which will be stocked for fish for use by members.

Conservation is a word you'll hear often when talking with members of the club. For instance, hunters kill only those bucks with an antler spread of 13 inches or more.

The lower jawbone of every slain deer is removed, and the animal is weighed. The information and the jawbone are sent to a biologist, who examines it and makes recommendations about how many deer to kill during the season.

Members are fined sharply for killing deer with antler-spread of less than 13 inches. "We're really into conservation," Mrs. Breckenridge concluded.

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Family TREASURE

by GEORGE LOWREY, Fayette County Supervisor and
TILDA MIMS, Information Specialist, Alabama Forestry Commission, Tuscaloosa

When family heirlooms are considered, thoughts often turn to delicate antiques, sepia photographs and handcrafted furniture. Among forest landowners, however, the family legacy is likely to include acres of forestland carefully managed to produce timber, beauty and recreation for future generations.

Whether the family heritage is a treasured cameo broach or a TREASURE Forest, the concern remains the same: Will it be preserved for future generations?

E.B. Richey of Fayette County has the satisfaction of knowing his 236-acre TREASURE Forest, Pine Lake, has passed into able hands. This summer its guardianship was transferred to his son Tom, and the TREASURE Forest was recertified in Tom's name.

Pine Lake is more than scenic forestland, it is home to both Richey and his son. Their homes are almost side by side, facing a lake built by Richey's father-in-law. His wife's father believed that the recreational lake would serve as a "centralizing element" for the family—something to entice his 12 children and their families back to visit the family homestead.

The lake and surrounding forest worked its magic on the Richey family, drawing them from the hubbub of Birmingham for frequent weekend trips. In the early 1960s the Richeys bought the tract from her family and built the lake house. In 1967 Richey retired, and he and his wife moved to Fayette County.

Richey has devoted his retirement years to forest management. Over the last 30 years he has cleared, thinned and planted on the tract with the goal of 100 percent growth. In 1976 Richey became Fayette County's first TREASURE Forest landowner, and the fifteenth one in Alabama.

L-R: Tom Richey, E.B. Richey and George Lowrey

In 1983, he was presented the Weyerhaeuser Company's Mississippi/Alabama Region Tree Farm Family Plantation Award. In 1991 he was named Conservationist of the Year for Fayette County by the Alabama Wildlife Federation.

"Forest management keeps me active," Richey said. "I work five or six hours a day outright. I have an old-fashioned feeling that work does you more good than pills. I firmly believe I wouldn't have lived into my 80s without it."

Tom Richey found pleasure in forest management and enjoyed working with his father on weekends and holidays, until he, too, escaped the busy life of the city. In 1985 Tom accepted a position in nearby Vernon, and moved his family to a home nestled amid the serenity of Pine Lake.

"It's peaceful here. I've lived in Birmingham and Huntsville, and they're just too crowded," Tom said. "Here I can hunt and fish, and I garden for our family and the deer," he jokes.

Continuing his father's efforts is serious business, however. "I want to maintain my father's goals of achieving maximum growth of our timber and maintaining ample wildlife habitat," he said.

"I hope to deal with some new things as well. We plan to plant all loading zones in food plots and establish firebreaks in all new roads. Improved technology and computers will help to dictate our future in forest management."

Research and high technology will help to shape the prospect of Alabama's forests. Nothing, however, will guarantee their future more than the tradition of stewardship practiced by the Richey family.

QUALITY:

The Key to Value and Management of Hardwoods

by ROBERT H. JONES, Assistant Professor, Auburn University School of Forestry

Hardwood forests provide many important benefits, including income from timber sales. With a steady demand for quality sawtimber, an increasing demand for hardwood pulpwood, and record prices for hunting leases, profits from hardwood management look rosier than ever. Or do they? In this article I discuss how one overriding factor—quality—can affect the economics of hardwood timber management.

Many factors affect the value of hardwoods, but quality is most important. Good quality trees can be used to produce sawtimber or veneer—products that bring a much higher sale price compared to pulp, firewood, or cross-ties. Sawtimber and veneer trees must be at least 12 (preferably 16) inches in diameter at breast height (DBH) and mostly free of defects such as knots or rotten spots. Even if a tree qualifies for sawtimber or veneer, its final value largely depends on the number of defects. For example, a top quality 20-inch DBH sawtimber oak may be worth 50-100 percent more than an oak of the same size with just a few extra knots. If sawtimber management is your goal, it is imperative that you strive for large, defect-free trees.

In addition to quality, species strongly influences hardwood tree value. There are over 200 species of hardwoods in our state; however, only two dozen or so are commercially valuable. Ash, red oak, and white oak are worth the most. Sweetgum and yellow poplar are intermediate, while hickory, maple, birch, beech, sugarberry, and most other species are generally of low value (although short-term demands can sometimes raise the value of any species at any time). Not all red and white oaks are of the same value. Of the red oaks, cherrybark and northern red are the best; scarlet and blackjack are among the worst. The best white oaks are swamp chestnut and white; the worst are post and overcup.

Location and timing are additional factors affecting hardwood timber value. The highest timber prices are usually found where a woodlot is located near a hardwood mill. The timber is easy to harvest, and the harvest is done when market prices are high. If you can afford to wait for good prices, your profits may improve significantly.

Undesirable species include low-value species, poorly formed trees, and trees with too much defect, such as this post oak.

> "Many factors affect the value of hardwoods, but quality is most important."

Now let's get to some specific situations. Suppose that you own some hardwoods and income from timber sales is your goal. There are three main choices for management: 1) harvest the present forest and regenerate a new one; 2) work with the present forest to increase its value before final harvest; or 3) wait awhile before you do anything.

Option 1: Harvest and Regenerate

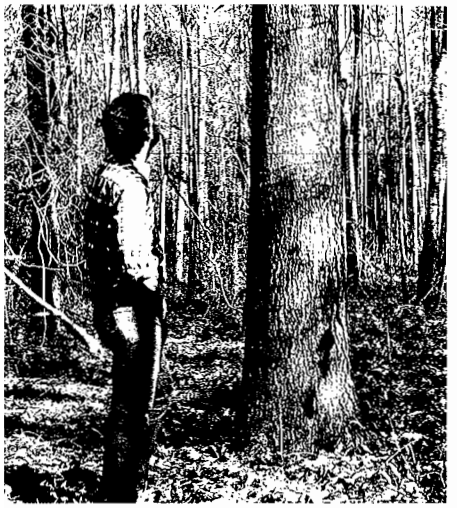
This is the choice to take if further improvement in timber value is not likely, or if growth in value is lower than some alternative investment. Take as an example a woodlot of mature trees increasing in sawtimber volume at an annual percentage rate of 3 percent, but not increasing in quality (a professional forester can determine growth rates and potential for increased quality). In this case, the value growth rate is only 3 percent. You may wish to harvest the mature trees and invest your money somewhere else for a much higher rate of return.

If you choose to harvest, plan to regenerate your forest. A number of standard, low-cost natural regeneration methods are available, including clearcutting, shelterwood, and selection. Several low-cost artificial (tree planting) methods are also available; however, because most hardwoods take 50-60 years or more to mature, expensive tree planting and site

preparation techniques are not recommended. They probably won't pay. From an economic and operational standpoint, its best to regenerate hardwoods at the time of harvest. The longer you wait after harvesting, the more expensive the regeneration may become. Sometimes, the logger can do the job for you while the mature trees are being harvested. That way you don't have an out-of-pocket expense for the regeneration, you pay for it out of timber sale revenue.

Option 2: Improve the Present Crop Trees

In some cases, the value growth rate of your hardwood forest can be improved by removing undesirable trees and leaving behind the best. Undesirables include low-value species, poorly formed trees, and trees with too much defect. Removal of a few trees won't reduce overall *volume* growth rate in a forest because growth that would have gone into undesirables is captured by the better trees. If these better trees are capable of improving in quality, the forest can improve substantially in *value*.



Cherrybark oak is one of the most valuable red oaks.

For example, a forest growing in *volume* at 3 percent a year may be growing in *value* at 10 percent or more! However, the removal of undesirable trees is not a simple task. Much skill is needed and the potential pitfalls are many. Most thinnings or partial cuts in Alabama actually remove the better trees and leave behind those of second quality. This can significantly reduce profits. Furthermore, thinnings may damage crop trees, or worse, they may stimulate sprouting of new branches on the trunks of the crop trees. In either case, the quality of the trees declines and so does the value of the forest. Never thin a hardwood forest without solid professional advice.

Hickory is considered a low value hardwood species.

Option 3: Leave the Stand Alone

This is often the best option when you have small trees of good quality. You simply wait until they reach the optimum size for harvest. "Optimum" size (for maximum profit) depends on predicted tree growth rates, potential increases in individual tree quality over time, and market conditions. There are no hard and fast rules on when the optimum time to harvest will occur; a careful economic analysis of each situation is needed. However, as a general rule, you shouldn't harvest until most of the crop trees are at least 16 inches DBH, the point at which they can qualify for the highest possible quality. For oaks on bottomlands, larger sizes may be better.

Before attempting hardwood timber management, landowners should look in their woodlot to determine species, present tree quality and, most importantly, potential future tree quality. This information will determine if money can be made. For maximum profit, aim to produce top quality wood in the shortest time possible. Be careful with partial cuts; they can jeopardize tree quality and ultimately result in reduced profits. And finally, look for advice from a professional forester. A professional can help you enhance tree quality—the key to good hardwood management.

CALENDAR

January 28-29—Auburn, Ala. Alabama Fertilizer and Pesticide Conference to be held at the AU Hotel and Conference Center. Registration is $20. Call 844-5003 for more information.

February 11-12—Auburn, Ala. Forest Roads Workshop. Call 844-1038 for more information.

February 19-20—Webb Wildlife Center, South Carolina. "Longleaf Pine, Multiple Use Opportunity," a short course offered by the Forest Resources Continuing Education Program, Clemson University. Call 803-656-3302 for more information.

February 23-29—Arbor Week in Alabama—Plant a tree!

February 25-26—Auburn, Ala. Forest Roads Workshop. Call 844-1038 for more information.

March 27—Callaway Gardens, Ga. "Southeastern Wildflowers—to Know and Grow." Fee: $25. To attend this one-day workshop on wildflowers, call 404-663-5153.

April 22—Callaway Gardens, Ga. Workshop on Timber Taxes sponsored by the Forest Farmers Association. Call 404-325-2954 for more information.

April 22-24—Callaway Gardens, Ga. 1992 Southern Forestry Conference and Annual Meeting of the Forest Farmers Association. Call 404-325-2954 for more information.

April 24-25—Clemson, S.C. "Aerial Photography in Forestry Applications," a short course offered by the Forest Resources Continuing Education Program, Clemson University. Call 803-656-3302 for more information.

April 27-30—Mississippi St. University. Prescribed Burning Short Course. Contact Dr. Tom Monaghan, Dept. of Forestry, P.O. Box 5446, Mississippi State, MS 39762; 601-325-3150.

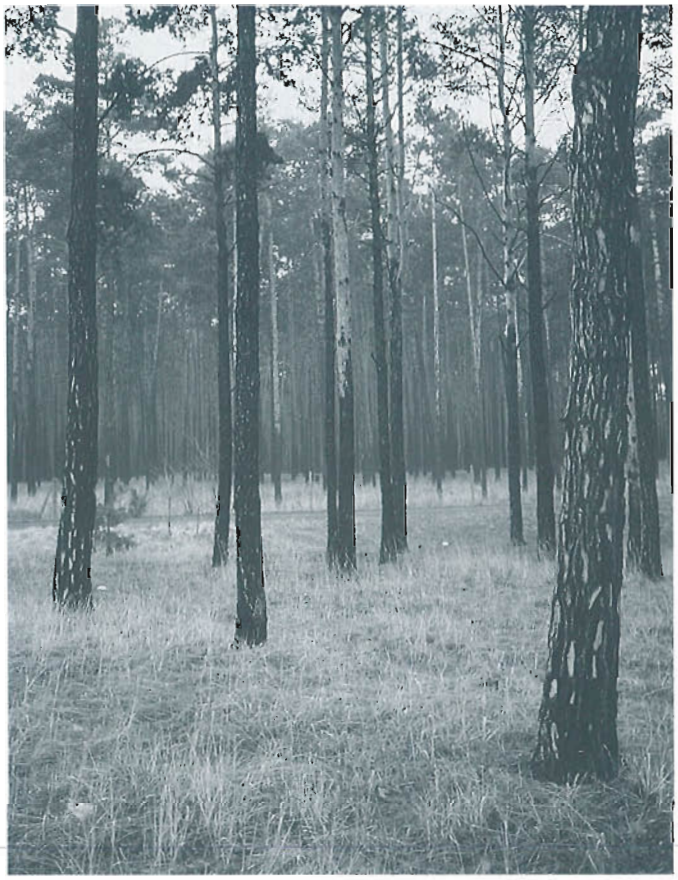
May 6-8—Mobile, Ala. Eighth Alabama Urban Forestry Association Conference. For information contact Neil Letson, 240-9360.

Forestry in HUNGARY

by PAT WALDROP, Economics and Marketing Specialist, Alabama Forestry Commission

Editor's Note: *In the spring of 1991 the author toured Hungary and Czechoslovakia with a delegation from the University of Alabama and Belgium. The purpose of his trip was to explore the possibility of increasing wood products trade between Alabama and those countries. This article is offered as an insight to the role of forestry in Hungary, a country smaller than the state of Alabama.*

The collapse of Communism in Eastern and Central Europe has brought many dramatic changes. Possibly the best change has been the lifting of most travel restrictions. Since the end of World War II, the Iron Curtain has kept us from getting a very good look at how these countries manage their forest resources. Many species of commercial hardwoods and conifers are native to the region and once existed in abundance. Now we can venture in and take a look at how forestry is done—communist style.



40-year-old Scots pine (Pinus silvestris) *plantation near the Austrian border.*

Hungary is probably the most open of the old Soviet bloc countries since they started their transition to the free market economy somewhat earlier than their surrounding countries of Romania, Czechoslovakia, and the USSR. Austria to the west and Yugoslavia to the south are their other neighbors. The Hungarian forestry officials are very open about their plans, their accomplishments and even their problems. Let's take a peek at forestry in this old historical country.

Although it is about 70 percent the size of Alabama, Hungary has over twice as many citizens with 10.6 million people. Hungary was once a larger country but lost much of its territory after World War II. It also lost a large percentage of its forests at that time. Over half the population live in an urban area. Budapest, with over 3 million residents, is the capital and only major urban area in the country. Sometimes referred to as the breadbasket of Eastern Europe, most of the land (70 percent) is in farmland. Forests in 1945 accounted for 12 percent of the land and currently it occupies 18 percent. The majority of the reforestation has been on marginal cropland. The bulk of the forestlands are in a belt running east-west across the northern part of the country.

Almost all Hungarian foresters attend the Forestry School at Sopron on the Austrian border. The curriculum is a four-year program with a summer camp, with pretty much the same classes taught at Auburn University or any other forestry school. There is a strong Austrian influence since the Hungarians have had such a long history of association with the Austrians. There is also a Wood Technology School in Sopron. After graduation they join the Society of Hungarian Foresters, which serves the role of Board of Registration.

The Minister of Agriculture is over the forestry schools, Office for Forestry and Wood Industry, and the Ministry of Agriculture. Like other communist countries, everything is very centralized. The state owns 99 percent of the forests and about 70 percent of this land is in state forests. The rest is in agricultural cooperatives and other state management groups.

Forest Industry

Close to 50,000 people are employed in forestry in the country. There are four paper mills in the country, all of which need updating. Trade tariffs on wood products equipment has been sharply lowered recently. This should help in their updating efforts. Softwood is imported to meet the demands of the mills and should remain that way. Hungarians entered a long-term cellulose agreement with the Soviets and took financial part in a large cellulose plant in Siberia that reportedly has had major problems and hardly works. The Soviets are also reducing paper and pulp imports by 10 percent in 1993, which will force Hungary to develop different markets or not meet their paper needs.

Their newest wood-using industry is a particleboard plant, which is a joint venture with the Austrians. Some 30 primary plants, mostly sawmills, are in the country, and great progress has been made recently in updating machinery which has increased production. There are also a couple of parquet plants, a pallet mill and a veneer mill which is only open part of the year. Most of the furniture is imported, primarily from Yugoslavia. The government is actively recruiting joint ventures on wood using industries, particularly in the furniture area.

In the field, there is a lack of equipment—particularly logging equipment. The equipment they do have is 80 percent imported and obtaining spare parts is a major problem. This also leads to the work being very labor oriented.

Forest Composition

The latitude of Hungary places it along the Canadian border, so with the shorter growing season the rotation length on stands are just about double that of Alabama's. The bulk of their reforestation efforts have taken place on marginal cropland and plans are to plant another 500,000 acres over the next 10 years. The Minister of Agriculture feels they have 2 million acres that fall into the category of marginal cropland. Most of the plantings have been softwoods, primarily Scots pine *(Pinus silvestris)* and black pine *(Pinus nigra)* on a 60- to 80-year rotation. Alabama foresters would consider the stands planted too closely at 4 ft. x 4 ft., but the thinning seems to take place on time. This method leaves well pruned trees with very little competition. Gray poplar *(Populus canescens)* and white poplar *(Populus alba)* are also planted quite a bit for pulp production on a 20-year rotation.

Although broadleaved tree species make up 85 percent of Hungarian forests, Hungarian foresters generally use natural silvicultural methods for regeneration. Some planting and seeding is done but success has been somewhat limited. What they call turkey oak *(Quercus cerris)* is the most valuable of their hardwoods and it comprises roughly 12 percent of the forests. Grown on a 100- to 120-year rotation, this 100-foot red oak looks very similar to a Shumard oak both in form and leaf shape. Other oaks, such as English oak and Hungarian oak, account for another 23 percent of Hungary's forests. Black locust, which is sometimes thought of as a weed tree in Alabama, is managed on a 50-year rotation and accounts for 18 percent of the forests. Another commercial species is the beech *(Fagus silvatica)*, which generally has a better form than our American beech. Beech is grown on a 120- to 150-year rotation.

Coniferous forest near the Czechoslovakian border.

Forest Management

The pollution problems that Black Forest and other European forests are experiencing don't seem to be occurring in Hungary, although it is showing up to the north in Czechoslovakia. They have an assortment of detrimental insects, although none compare destruction-wise with our Southern Pine Beetle. Woods fires are almost non-existent with all the hardwoods and snow on the ground much of winter.

As one could imagine with the state owning most of the land, management plans have been written on all forestland. A lack of nursery growing stock due to a cold winter (sounds familiar) has put them behind on some of their planting. The multiple use concept is very important to Hungarian forestry officials. They were recently introduced to the TREASURE forest concept and were very impressed with it. They did have trouble understanding how privately owned forests could be managed as well as they apparently are.

Over 50,000 hunting permits were issued last year in Hungary, with 15,000 of these going to foreigners. Trophy game animals exist in roe and red deer, although overpopulation is a problem in the south. There is also an abundance of wild boar and game birds. With its abundant river system and the largest freshwater lake in Europe, Lake Balaton, fishing is very popular with bream, carp, and pike being the common species. The Hungarians love hiking and horseback riding and most of the state forests have a abundance of trails.

Urban forestry is not unknown to Hungary and they actually do an excellent job in this area of forestry. The Buda section of Budapest boasts many fine street tree specimens.

The future of forestry in Hungary looks good. How well the economy performs will be a key factor in the Hungarians being able to carry out their programs. They are ahead of many countries because they have well written management plans and qualified people to carry them out.

Sources

Mr. Tamas Brokes, Hungarian Ministry of Agriculture, Budapest.

Dr. Milelds Mocsenzi, University of Forestry and Wood Industry, Sopron.

Mr. Ferenc Nemes, U.S. Foreign Agriculture Service, Budapest.

Dr. Peter Toth, Hungarian Ministry of Trade, Budapest.

Mr. Karoly Apaczky, Erdert, Budapest.

This stream may still look much as it did in Bartram's time.

THE WORLD THAT WAS

by JOHN TYSON, JR., Alabama Forestry Commission, Dadeville

Forest primeval, original forest, and wilderness are words familiar to all of us. They project mental images of tall, massive trees, densely shaded forest floors and swarming wildlife. But, is this picture a photograph or an impressionist painting? What type of world was Alabama before the first settlers came to this place? Did the forest stands that were here then look like our modern plantations, like managed timber stands, or what? Is there anywhere in the state that we can see forests that still resemble those DeSoto saw, or are they all gone forever? Before we can answer this we are going to have to determine exactly what those early Alabama forests did look like.

Bartram's Travels

We are fortunate to have a written record of the early vegetation made by a trained botanist, William Bartram. Bartram traveled widely across the Southeastern U.S. from 1773 to 1778 when almost all of Alabama was still under Indian control. Bartram crossed Alabama by following a wandering course from east to west. He entered the state at Uche Town, a large Indian settlement on the Chattahoochee River. He went from there to Tallassee and other Indian towns on the Tallapoosa river before turning back southwestward to Mobile. Bartram was a trained botanist and has left a very thorough record of the tree species that he observed. He is less thorough in breaking down precisely how the various species were grouped into communities and on the exact sizes of the various trees. The last two probably weren't considered important by scientists of the 18th Century. They were still too busy "discovering," naming, and describing all of the new species.

Bartram sometimes uses scientific names for trees that are now obsolete, and it is not always easy to know exactly what species he is talking about. In general, however, his descriptions are clear and informative. He speaks of passing through a vast open forest consisting of oaks, hickory, ash, sourgum (blackgum), sweetgum, beach, mulberry, maple, walnut, dogwood, wild plums, abundant chestnut on the hills, and pines. He says that he passed through this stand for 70 miles north of the Alabama River.

He speaks of crossing a vast grassy savanna and cane meadows with narrow forests and groves along the streams with longleaf pine scattered through the grassland. This was on the river Schambe (maybe Escambia) and extended for a distance of 50 miles. He says that they spent three days going from Uche Town on the Chattahoochee River to Tallassee on the Tallapoosa. Bartram described the land between these two rivers as being "a vast level plain of expansive savannas, groves, cane swamps, and open pine forests." He also described the Tallapoosa River as being very clean and having an agreeable taste.

Bartram also speaks of the abundant birds, fish, and animal life. He said that he met one hunter on the Tombigbee who was reputed regularly to kill 300 deer a

year. Even for a skilled hunter this would be very difficult unless the animals were extremely abundant. One thing in Bartram's narrative is surprising. He talks of crossing a great deal of open grassland. One usually doesn't think of Alabama as being an area of large natural grasslands.

After reaching Mobile, Bartram traveled up the Tombigbee River for several days before returning to Mobile and leaving the state. He describes one stand of trees on the Tombigbee as containing cypress, ash, sycamore, cottonwood, yellow poplar, and other species that were by far the tallest, straightest and in every way the most enormous that he had ever seen or heard of. He also says that cane along the river sometimes reached a height of 30 feet and the thickness of a man's arm. One joint of this cane could easily hold a quart, Bartram reported.

Other Observations

Early settlement probably did not have a great affect on most of Alabama's forests. Dr. Grady McWhinney of Southern Methodist University believes that only about 10 percent of our state was under cultivation at the time of the Civil War. So how long did the original, old-growth forest stands last in Alabama? I don't know, but when I was a boy in the 1950s, I heard two old men describe what the woods in North Alabama were like when they were boys. Both of these gentlemen were in their 80s at the time, so this would probably mean they were describing a situation that existed in the 1880s. One of them said part of Sand Mountain was still the "big woods" when he was a boy, and that there were mostly big trees—more pine than any other kind—with grass growing under them. The other man said that when he was young, the woods in Marshall County had been open enough "so you could run a horse through them anywhere you wanted to go."

He said that there were all kinds of trees, but he thought there had been more chestnuts than any other kind. "They were all bigger than any trees that we have now," he said, spreading his arms to indicate a large diameter. These men weren't trained scientific observers as Bartram was, but they were describing what they had seen. They seem to be much closer to Bartram's descriptions than to what is sometimes now described as a natural forest.

Were these early forests unaffected by man? Probably not. The native Indians cleared land for farming and at times set fires that burned the forest to improve game habitat. The Indians were as willing to manipulate their environment for their advantage as we are. The big difference is technology. You can clear substantially more land with a D-6 bulldozer than you can with an ax. There are also a lot more people now than there used to be. The population of the state is now over 4 million and climbing. Because they are here, even people who live in the city and rarely visit a forest have an effect on the forest environment.

One of my college professors used to summarize the forest environment by saying that "everything out there effects everything else." This is a pretty good way of summing up an environmental situation. People in modern cities are a major element in the environment of our forests. They operate machines that create air pollution, they create acid rain, and they create a demand for forest products of all kinds. All of these things effect our forestland. These people also pay taxes, which helps to pay for the cost of fire protection and incentive payments to landowners who are trying to manage their timberland properly. People also vote in Alabama, and their opinions have a far-reaching effect on policy toward our forestlands. People, just by their presence, effect the forest in ways that are both positive and negative. They are part of the forest's environment.

The forest primeval is, of course, gone, but it did really exist. It must have been a wondrous place. It is gone, though, because the conditions that produced it are gone.

People have become more and more of a function in the processes that determine what sort of forest we will have. Over the past 150 years we have often harvested timber in a destructive fashion. We have caused wildfires and allowed our livestock to indiscriminately graze our forest. Since the first World War, air pollution, acid rain and other environmental spin-offs from our civilization have come to be more and more prevalent in the forest. In fairness, we have also spent millions to control forest fires, planted untold numbers of trees, restored wildlife, and passed environmental laws. All of these things have had an effect because they are and have been part of the forest's environment—past and present.

Will forests like those seen by Bartram ever grow in Alabama again? I doubt it. Conditions are just too different. This doesn't mean, however, that we won't have fine forests in the future. If we leave the future of our forests to chance instead of managing them, things can get a lot worse. If, however, we apply the knowledge that we have and manage the forest wisely, things can only get better.

Did the "open grassy savannas" that Bartram described look like this regeneration area?

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FIRE & OUR NATURAL HERITAGE: Rare Plants, Animals, and Natural Communities

by MARK A. BAILEY, Zoologist, Alabama Natural Heritage Program

When Europeans first toured Alabama, they reported a natural landscape far different from that which we see today. Open, park-like stands of longleaf pine covered millions of acres of upland soils in the Coastal Plain, and pure stands of this tree even dominated some high elevation portions of the Ridge and Valley and Blue Ridge provinces as far north as Cheaha Mountain and beyond. These early observers may have wondered why longleaf was so often dominant over all of the other trees. Today we know the answer: longleaf pine is better adapted for living with fire. Longleaf can survive hot fires that kill other trees, and its seedlings need open sun and exposed soil for germination—and fire provides just that. So, not only could the vast longleaf pine ecosystem survive fire, it required it.

Fortunately, after a period of total fire suppression earlier in the century, prescribed burning has become an accepted management practice in Alabama's pine forests. Burning has traditionally been conducted during the winter, largely because growing-season burns have been thought harmful to pine silviculture. A growing number of conservationists are now arguing that growing season burns are not overly harmful to pines (especially longleaf) and are critical to restoration and maintenance of the natural ground cover vegetation and the open conditions required by many rare animals.

It should be pointed out that although fire is good for many rare species in upland habitats, it can be bad for others that occupy habitats that ordinarily burned rarely, if at all. For example, under natural conditions, fire in hardwood ravines is nonexistent or rare, and prescribed burns in such places can eliminate desirable species such as trilliums and rhododendrons.

There is little doubt that summertime is the natural fire season in longleaf pine forests and adjacent areas such as pitcher plant savannas. Lightning from warm afternoon thunderstorms is most frequent at this time of year, occasionally setting trees ablaze or smoldering, even during heavy rains. A smoldering tree can ignite a ground fire days later when conditions are dry again, and this didn't have to happen often in the original forests to burn off vast areas. Before man-made fire barriers like roads and croplands existed, the only firebreaks were natural wetlands, streams, and steep hardwood-forested ravines. A fire could spread for miles, and there are reports of burns in Florida covering several counties. It has been estimated that the original longleaf forests burned naturally every three to five years, sometimes more often, sometimes less. Of course, lightning still starts fires today, but we are less tolerant of wildfires (and better equipped to control them) than our forebears were, and those fires that we don't extinguish promptly are usually snuffed out soon enough upon reaching a road.

So fire, more than anything else, was the major force in the development and maintenance of Alabama's original pine forests and their associated species. To compete and survive in this fire-maintained ecosystem, plants and animals had to develop special fire adaptations. In fact, much of the fire-adapted flora of the longleaf community actually needs summer fires in order to reproduce.

Plants and Animals

Since the settlement of Alabama's Costal Plain began, man's activities have drastically altered the normal fire cycle. Without summer fires, flowering isn't triggered in many species of plants native

BAILEY

*The pine barrens treefrog (*Hyla andersonii*) was discovered in Alabama as late as 1979. Without occasional fires in the seepage bogs of Escambia, Covington and Geneva counties, trees such as red maple, sweetbay, and yellow poplar would dominate and eliminate the frog's habitat.*

BAILEY

To minimize ecological disturbances and maximize aesthetics, mowed firebreaks are superior to plowed lines. Once established, benefits include ease of maintenance and zero erosion.

to the longleaf community. The inability of wiregrass and other fire-adapted plants to set seed and reproduce sexually under these conditions has no doubt shifted the mix of plant species in longleaf ecosystems toward species that do not require summer fires.

Local extinctions have probably been widespread, as has been documented in the case of the endangered American chaffseed *(Schwalbea americana)*. Historically known from Alabama, this perennial herb has been lost from all known localities here, and of 78 historic locations, only 18 remain. Most surviving plants are in areas that are still subject to frequent fire, including plantations being prescribed burned for quail management, and an army base impact zone that is frequently ignited by live artillery shelling.

Animals of the longleaf ecosystems developed their own fire adaptations, often by simply modifying their behavior. Fires may destroy the nests and young of ground-nesting birds such as nighthawks and Bachman's sparrows, but they readily re-nest. Gopher tortoises avoid the scorching summer heat (and avoid fire) by excavating deep underground burrows. A number of rare reptiles and amphibians, including indigo snakes, gopher frogs, and pine snakes, depend on the gopher's burrow for shelter. Red-cockaded woodpeckers could never ride out a hot fire if they nested in dead trees as do most of their kin.

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Yellow pitcher plants (Sarracenia flava) *and goldcrest* (Lophiola americana) *two months after a spring fire in Covington County.*

Instead, they laboriously excavate cavities in living pines. An endangered species today because of its dependence on mature longleaf with an open understory, the red-cockaded woodpecker may well have been the most common woodpecker in Alabama's pre-settlement pine forests.

These species are all tied closely to their fire-maintained habitat, and as it disappears, so do they. Of Alabama's plant and animal species listed by the U.S. Fish and Wildlife Service as threatened, endangered, or as candidates for threatened or endangered status, eight animals and at least 18 plants can be considered fire-dependent in their habitat requirements.

Fire has long been recognized as a tool to manage game species, but land managers are increasingly using it to restore natural conditions required by rare and endangered species. The Alabama Forestry Commission, in cooperation with the U.S. Fish and Wildlife Service and the Alabama Natural Heritage Program, is using fire to manage several bogs containing remnant populations of the endangered green pitcher plant. We are still learning lessons from our experiences in managing these plants. It is becoming evident that winter burns aren't enough to control the woody shrubs and trees that are gradually overtaking the meadow-like boggy areas where these rare plants grow. Growing-season burns are clearly needed, not only for the plants, but for the rare pitcher plant moth, *Exyra*, that becomes dormant

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Another fire sweeps the pine forests of southern Alabama. Without periodic renewing fires, the complex longleaf ecosystem will eventually be a thing of the past.

and overwinters in the dead tube-like leaves of the plants. Adult moths can easily fly ahead of flames during warmer months, but preliminary observations indicate that *Exyra* populations have declined at the green pitcher plant sites that have been winter-burned. Another problem encountered when burning boggy soils is disruption of the natural soil drainage by improper placement of firebreaks, which can dry the soil, degrading the habitat.

Ideally, firelines should be mowed rather than plowed to minimize disruption of soil hydrology. Where plow lines are required, they should follow contours well above the level of wetter soils. Plowed firelines are no longer being used in bogs owned by The Nature Conservancy in Alabama.

Vanishing Ecosystem

No discussion of fire and rare species in Alabama can ignore the plight of the vanishing longleaf pine ecosystem. While the tree itself certainly is not rare, the fire-adapted natural landscapes dominated by longleaf, and the many rare species associated with them, are declining at an astonishing rate. According to the U.S. Forest Service Forest Inventory data, between 1972 and 1990, naturally-regenerating longleaf pine forest in Alabama decreased from 741,100 to 481,600 acres, a 35 percent decline in only 18 years! Over one-fourth of the remaining non-plantation longleaf in Alabama was lost between 1982 and 1990, at an average yearly rate of 21,412 acres. Although a few preserves will certainly remain, at least on public lands, if the current rate of conversion of natural stands proceeds, Alabama will lose its last natural longleaf stands within 21 years. Most recent losses of natural longleaf have resulted from conversion to plantations, but unless fire is part of the management plan, longleaf ecosystems are doomed in the long run even if left untouched.

Conservation and prescribed burning of what is left of the once-vast longleaf pine ecosystems can only be done by those who control the resources, but public land managers can't shoulder all of the burden. Throughout its range, a surprising 73 percent of longleaf pine is in the hands of private landowners. Most private forest owners like the idea of having rare species on their property, and to the greatest extent possible, they want to manage an "ecologically correct forest." Ask any south Alabama landowner where the gopher tortoises on his property are, and he can probably tell you (if he has them). What he might not know, however, is that "gophers" need sunny openings for nesting and a diverse ground cover of forbs and grasses for foraging, and that suppression of fires in their habitat invariably results in their eventual decline. Armed with this knowledge, a landowner partial to gophers might elect to use fire as a tool to maintain good gopher habitat while at the same time improving his timber stand.

Timber harvesting doesn't have to mean the end of the natural diversity of plants and animals of the longleaf community. Provided some seed trees are left and the ground cover is allowed to carry fire from time to time, Alabama forest owners can realize a profit from their timber while at the same time taking pride and satisfaction in responsible stewardship of our natural heritage.

We must remember that the practice of prescribed burning exists only because society allows it. Most Alabamians are not interested in fire management until it is linked with an issue deemed unacceptable, such as smoke on highways, perceived threats to wildlife, or "unsightly blackening of the woods." Reactions from the public are often rooted in emotion rather than fact, so it is the responsibility of land managers, foresters, and biologists to join forces and step up efforts to inform the public of fire's positive aspects, including its natural and vital role in maintaining the biological diversity of Alabama.

Fire-dependent Alabama Animals and Plants of Federal Conservation Concern

	Scientific Name	Federal Status
ANIMALS:		
Mississippi sandhill crane	*Grus canadensis pulla*	Endangered
Red-cockaded woodpecker	*Picoides borealis*	Endangered
Eastern indigo snake	*Drymarchon corais couperi*	Threatened
Gopher tortoise	*Gopherus polyphemus*	Threatened
Dusky gopher frog	*Rana capito sevosa*	C1
Flatwoods salamander	*Ambystoma cingulatum*	C1
Florida pine snake	*Pituophis melanoleucas mugitus*	C2
Black pine snake	*Pituophis melanoleucas lodingi*	C2
PLANTS:		
Green pitcher plant	*Sarracenia oreophila*	Endangered
Alabama canebrake pitcher plant	*Sarracenia alabamensis*	Endangered
Chaffseed	*Schwalbea americana*	C1
Three-awn grass	*Aristida simpliciflora*	C2
Chapman's aster	*Aster chapmanii*	C2
Coyote-thistle aster	*Aster eryngifolius*	C2
Panhandle lily	*Lilium iridollae*	C2
Birds-in-a-nest	*Macbridea carolina*	C2
A panic grass	*Panicum nudicaule*	C2
A butterwort	*Pinguicula planifolia*	C2
A meadow beauty	*Rhexia parviflora*	C2
Panhandle meadow beauty	*Rhexia salicifolia*	C2
White-topped pitcher plant	*Sarracenia leucophylla*	C2
Wherry's sweet pitcher plant	*Sarracenia rubra* ssp. *wherryi*	C2
Royal catch-fly	*Silene regia*	C2
Mohr's goat's-rue	*Tephrosia mohrii*	C2
Kral's yellow-eyed grass	*Xyris longisepala*	C2
Rough-leaved yellow-eyed grass	*Xyris scabrifolia*	C2

C1 = Candidate Category 1 **C2** = Candidate Category 2

Clay County Teams Earn Top Honors

by KIM GILLILAND, Editor

When 4-H and FFA forestry judging teams reach the state contest, the competition is usually tough. Last year was no exception. The two teams that came out on top, though, were from the same county, a first for the competitions. Clay County is home to these winning teams from Lineville High School, and the support and guidance they have received from the Clay County Forestry Planning Committee has contributed to their success.

The two four-member teams also went on to national competitions. The 4-H team, who went in as underdogs, ended up placing first in the nation, while the FFA team placed fourth nationally.

Helping the teams has long been a project of the planning committee, and they sponsor and help set up county competitions each year. Both the 4-H and FFA team advisors are members of the committee. With the assistance of the planning committee and hard work from team members, each team went from third in the state in 1990 to being state champions in 1991.

Tommy Futral, Extension Service, advises the 4-H team and coaches it, along with W.N. McCollum. McCollum, a ranger with the Alabama Forestry Commission, has a special interest in the team, as his twin sons, Wade and Wesley, are members. The other two members are Scott Miller and Kirk Miller. The boys are currently in the 10th and 11th grades at Lineville High School.

The 4-H team competed locally in several contests and went on to the district and state competitions in Montevallo. The team was named the best in the state, with Wade placing first in the individual competition, Wesley second, and Kirk third. It was the first time in the history of the state competition that the top three finishers were from the same team.

The 4-H team traveled to Weston, West Virginia in July for the national competition, where they vied against 17 other state teams. According to team members, they really didn't feel any competition because no one expected them to win. The boys say they enjoyed getting to know the other teams from the different states and just tried to do their best. It turned out that their best was good enough to place first in the nation! Not only did the team win the national award, but Kirk Miller placed first in the nation in the individual competition, with Wade McCollum placing third, and Wesley McCollum placing seventh. Futral says that the boys worked extremely hard, and the consistency of the team as a whole is the reason they won.

Lamar Dewberry, a vo-ag teacher who coaches the FFA team, is no stranger to championship teams. Three years ago he had a national winning team, and the 1991 team came very close. Members of the team are Kenneth Rush, Phillip Edge, Jason Daugherty and Kevin Parker. Both Kenneth and Phillip graduated from Lineville High School last year, and Kenneth is pursuing a degree in forestry. Jason and Kevin are high school seniors this year.

The FFA team began preparing for competition last spring and competed against 13 other teams at the state level. In addition to the team winning top honors, Jason Daugherty was the top scorer in the state. The team traveled to Kansas City, Missouri for the national competition in November and placed fourth out of 30 teams.

Dewberry says that the ninth grade is usually where girls and boys begin building the foundation of knowledge for the different 4-H and FFA competitions, because that is the first year they have an ag class. He hopes that some of the members of the 4-H team will move on to the FFA team in the next two years. This way they can keep competing and learn even more skills.

Back row l-r: *W.N. McCollum, 4-H team coach and planning committee member, FFA team members Kevin Parker, Jason Daugherty, Phillip Edge, and Kenneth Rush, FFA advisor and planning committee member Lamar Dewberry, and planning committee member Earl Smith.*
Front row l-r: *Tommy Futral, 4-H advisor and planning committee member, 4-H team members Wesley McCollum, Scott Miller, Kirk Miller, and Wade McCollum, and planning committee member Billy Walker.*

Each team competes in several different events, such as tree identification, tree measurement, forestry and wildlife recommendations, insects and disease, and a written test of forestry knowledge. There is also a "forestry bowl" where teams compete against one another.

In addition to assisting the forestry judging teams, the Clay County Forestry Planning Committee is active in other projects. They are focusing on educating landowners about the TREASURE Forest program and the number of certifications in the county is steadily increasing. Kirk Miller, one of the 4-H team members, was recently certified as a Jr. TREASURE Forest landowner, the second one in the county. The committee has also constructed an arboretum in the Lineville City Park. It is for all members of the community to enjoy and is used by the judging teams as a practice area.

To go as far as these Clay County teams have takes a certain degree of determination, as well as a tremendous amount of hard work. But the members of both teams and their coaches will agree that having the support of the Clay County Forestry Planning Committee didn't hurt, either!

HARDWOODS OF ALABAMA

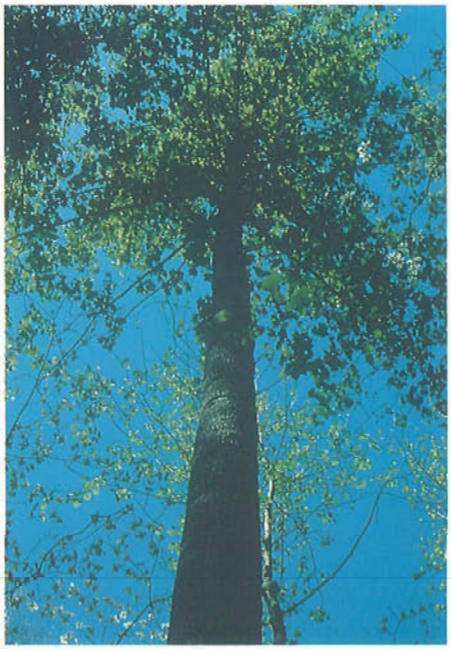
YELLOW POPLAR: A TREE OF BEAUTY AND BENEFIT

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

Yellow poplar (*Liriodendron tulipifera* L.) is one of the most important commercial hardwood species in Alabama due to its rapid growth, availability, excellent form, and large size. The mature yellow poplar is tall, clean and straight, and presents a striking appearance to those who see it in a forest stand. It has many uses, such as hidden furniture parts and core stock, cabinet wood, veneer, pulpwood and plywood. Unlike many commercially important species, yellow poplar is relatively free from insects and disease and the quality of lumber produced remains high.

Wildlife also benefits from the yellow poplar. The seeds of this tree are part of the quail, gray squirrel, and cottontail rabbit diets. Twigs and foliage of the yellow poplar are succulent foods for the white-tailed deer.

The yellow poplar produces an abundance of seed and also sprouts prolifically when cut and preparatory cuts are not needed. Under normal conditions the site disturbance caused by logging the mature



stand is the only seedbed preparation needed to provide seedlings for a new stand. Once established on a desirable site, yellow poplars originating as seedlings and as sprouts grow rapidly in height. It is common for seedlings to be from 8 to 15 feet in five years time and sprouts as much as 25 feet tall in this same time span. Height growth will continue rapidly for the next 25 years before slowing down noticeably.

Yellow poplar stands can grow to maturity and produce acceptable yields with minimal management effort. At the same time they are extremely responsive to management. Many management objectives can be met by manipulating the timing of thinnings and the density of residual stands. Maximum sustained growth of individual trees, greatest yield of high quality material and shortest rotation can be achieved by thinnings that begin early and are repeated at 5- to 15-year intervals. The first commercial thinning will begin when the trees or stand is between 20 to 25 years old and thereafter as needed.

In summary, the yellow poplar is a valuable tree for commercial use, wildlife, and aesthetic beauty, and benefits our state in many ways.

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