

Alabama's TREASURED Forests



SUMMER ISSUE 1983

STATE FORESTER'S MESSAGE

by C. W. MOODY



This issue of *Alabama's TREASURED Forests* marks the completion of one year's publication of material which we hope has been of value to landowners of this state. We have tried to combine the efforts of knowledgeable people to best serve your needs.

Alabama's forests support this state's leading manufacturing industry, and to be able to continue to do so, landowners must accept the challenge of good stewardship. Slightly more than 200 Alabamians own certified TREASURE Forests. They are doing their part to provide timber and other benefits to our state. It is our hope that all 200,000 landowners in our state will accept the challenge to manage as wise stewards of the land.

The *TREASURED Forest* magazine demonstrates a cooperative effort among many agencies involved in protecting and replenishing the natural resources of Alabama. We encourage landowners to contact any member agency of the Alabama Forestry Planning Committee for information. We have been able to provide the magazine to over 6000 landowners each quarter free of charge. We hope we will be able to continue this service and increase the number of landowners receiving the magazine.

Our staff hopes that you will use the magazine to assist you in managing your forestland. That is what it is designed to do. Please feel free to ask questions for our "Stumped Column" or offer suggestions for articles regarding a subject of interest to you.

If you are a landowner, please complete the questionnaire located elsewhere in the magazine regarding suggested improvements so that we might better serve your needs.

Sincerely,

A handwritten signature in black ink that reads "C. W. Moody". The signature is written in a cursive, flowing style with a long, sweeping tail on the final letter.

C. W. Moody
State Forester

Alabama's TREASURED Forests

Volume II

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Number 3

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

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No fields of soybeans wave gently in the breeze, nor do livestock lazily graze on the hillside. Perseverance and determination make this a different place because . . .

MILDRED'S FARM'S

by CYNTHIA K. PAGE, Editor

Neatly perched on a gentle rise, the small wood framed farmhouse overlooks green pastures and a clear sparkling lake. Just opposite is another hillside covered with trees, but Mildred Owens tells us that when she purchased the 250-acre farm in 1970, the surroundings were quite different!

The petite, gray haired landowner had endured two bouts with surgery and felt that she needed a challenge to motivate her toward a swift recovery both physically and mentally. "At the time, I was in the mortgage banking and insurance business. I had always told my husband that I wanted a farm. Well, when this place came across my desk, I had *my* money and access to *his*, so I bought it!" she said.

Mr. Owens (Everett) travels for EIS Automotive, a division of Parker Hannifin, and was out of town when the transaction occurred. One look at the farm invoked utterances from him to the effect of, "How could you have done this?" Mildred says that he was in such a state that she immediately contacted her lawyer (in case he wanted a divorce), her doctor (in case he became a wife abuser), and her banker (in case he retrieved his checkbook)! He gave in when she assured him that she would stay at home for a year and manage the farm. "Manage?" she did!

A Novice Approach

Knowing that her husband travelled, Mildred realized that farming crops and raising cattle would be out of the question. So what else do you do with a farm?

Dressed in a Lilly Anne suit, hat, and white gloves, Mildred proudly strolled into the offices of the Soil Conservation Service, the Agricultural Stabilization and Conservation Service, the Alabama



Mildred Owens finds many treasures in her TREASURED Forest.

Forestry Commission, and the County Extension Service. Laughingly she says, "They must have thought I was crazy! The fellows down at the ASCS later admitted that they only gave me 90 days!"

Working with these agencies and reading everything she could get her hands on, the uptown country landowner received her first ten-year plan from the SCS in 1972 mainly covering land form management such as lakes. Two years later, the AFC developed a Woodland Resource Analysis Program (WRAP) to guide decisions in forest management to fit her own objectives.

The Lady Goes to Work

Ten years prior to the purchase of the farm, fire had consumed practically every acre. Few trees had survived and wildlife was virtually nonexistent. Mildred chose wildlife as one of her main objectives, followed by outdoor recreation, timber

management, and enhancement of the environment. Deer, quail, turkey, rabbit, and songbirds receive most of her attention. Management for the various types of wildlife required a diverse forest.

Taking advantage of cost-share assistance, Mildred's first step was to hand plant 40,000 loblolly pines in the first year. Site preparation was accomplished using a bulldozer to get stumps and snags out of the way. Undesirable hardwoods were hand cut and planting was begun! There are now more than 160,000 pines spaced out over 182 acres. Mildred laughs when speaking of hand cutting those first hardwoods. "Everett gave me a Hypo-Hatchett for my birthday so it's a lot easier to get hardwoods out of my pine stands," she jokes.

Utilizing information provided by the Etowah County Forestry Association, she located people who would contract to do the work. In addition, she used the services of an elderly couple and their family to plant the seedlings.

A TREASURE!

Approximately 20 acres of upland hardwoods sprawl across the mountain ridge with oaks and hickories being the major components. Natural regeneration is the mode of establishment on this plot, and with the exception of sawtooth oak, no planting of hardwoods has been accomplished.

Mildred admits that she's really not too interested in cutting timber on her farm. "Oh, I might cut some when my grandchildren get ready to go to college," she says. "Everett thinks that they are so pretty just growing, but it's nice to know I have them if I ever need the revenue."

With natural springs being abundant, the SCS recommended that four lakes be constructed at various locations. These lakes which total ten acres are stocked with bream and bass. Again, cost-sharing figured significantly into the decision to proceed with the digging. The first lake was built in 1974; two more in 1976; and the last in 1978.

Any time that a person manages a farm, fire must be a major concern. Approximately 12 miles of fire lanes have been constructed on the Owens' farm and are constantly maintained, however, problems do still arise. Once a neighbor's prescribed burn crossed onto her property, and she has also experienced a railroad fire (Mildred applauds the assistance from the railroad company). "I've worked too hard to watch it burn," she said.

The Work Paid Off

Yes, indeed, work she did! In 13 short years she has converted a scorched 250 acres into a luscious and thriving piece of real estate. In 1977, she received Tree Farm Certification; then, in 1978, her farm was recognized as a TREASURE Forest. Slightly more than 230 acres are well stocked with timber, while lakes, a



(photo by Ray Sandretto)

homesite, woodlot, and pastures account for the rest.

Mildred explains TREASURE this way: "Treasure Forest has meant several different things to me. First of all, it is a challenge. Then, of course, it's an opportunity to develop land. After all, there's not any more land being created. I've also met a lot of people, and while I've been helping them, they've been helping me. It's just the fellowship—that's my reward!"

Besides all of the work on the farm, Mildred has also been a crusader for legislation favoring the small landowner and farmer. She's labored long and hard for benefits to educational institutions. "The answer lies with our youth," is her philosophy. Because of her zeal for such programs, she was asked to serve on the Etowah County Farmer's Market Committee.

She also kept her promise to Everett and stayed at home for a year to manage the farm, but "It started raining one day," she said, "and I got bored so I bought a country store!" She works in that store every day from 8:00 a.m. to 5:00 p.m. and still manages to keep the farm going.

Her daughter, Charlene, comes for a visit every now and then from Tennessee and brings the grandchildren. "Mimi's" farm is a real delight to them! And what about Everett? Well, he will retire next year, and the two of them have a 250 acre TREASURE just waiting to be enjoyed! Hiking, fishing, hunting—all one could possible want!



Four small lakes lend beauty to Mildred's farm.

EDITOR'S UNDERSTORY

By CYNTHIA K. PAGE

The wood framed farmhouse sitting on the crest of a rolling knoll seemed to fit neatly into its surroundings. Freshly planted azaleas were equally spaced around the porch and several others still remained in pots just waiting for their permanent home. Birds fluttered around a small birdhouse while ducks waddled and cackled below. A lake formed a half moon crescent in the green valley below which made it visible from two sides of the house.

Everything reflected "a woman's touch," a phrase often applied to many situations even though there has never been any real definition attached to it. After all, many stereotypes of women exist—gentle, compassionate, motherly, and at the same time bossy, stubborn, headstrong, and determined. After spending a couple of hours with Mildred Owens, I understood why the farm had "a woman's touch" look about it.

Petite at about 5 feet 2 inches, Mildred looks gentle, compassionate, and motherly with a round smiling face haloed by silver gray hair. Life has not always been easy for her, but still she looks far younger than she is. She carries her small frame with an air of dignity and pride.

The interior of the house matched the exterior, clean right down to the bare wood! A country house always has more personality than a city house. They just look lived in and enjoyed throughout every room. All of the furnishings were compatible with the house, some old and some new but all very comfortable and in good taste.

A hint of an aroma of coffee welcomed us as we entered and the dining room table was spread indicating that we were invited to lunch. Of course, she says she's not very domestic, but the lunch suggested otherwise. Some people learn to

cook a few dishes very well and always serve those to guests. My daddy used to say, though, that a real cook could be judged by her biscuits! (Where I grew up, this was the main criterion for a proposal of marriage.) The lady gets an A-plus on that score as well as on the rest of the meal which consisted of chicken salad, cabbage casserole, deviled eggs, congealed salad, and squash pickles. Pound cake was offered for dessert, but some members of our company had indulged too much already.

Mildred told of her purchasing the farm without her husband's knowledge. "I just called him up and told him I bought a farm!" she said. Later she recounted other tales of independence all of which seemed to cost poor Everett (Mr. Owens) money. When dynamiting for the ponds, the water flow to their well was changed!

Mildred will admit that she's bossy. On passing a photograph of her when she was quite young, she exclaimed, "That's when I was young and bossy!" Maybe that's how she's accomplished so much. I rather tend to distinguish between "bossy" and "determined."

Whichever the case, her dream of a farm, and a prosperous one at that, has materialized. Her efforts turned 250 scorched acres into a thriving forested paradise. To accomplish this in 13 short years took much labor and love. Everett travels and is only home on weekends. Even though he obviously is supportive, not to mention understanding, of his wife's efforts, he refers to the place as "Mildred's farm" since she wanted it and also since she put most of the effort into making it what it is.

She has shown her compassion for others through her work with the schools in her county and also in her struggle to gain supportive legislation for programs to benefit landowners. Once she even supplied food from her own freezer to prepare 75 lunches for school children!

Mildred is looking forward to Everett's retiring next year, and if our calculations are correct, after 42 years of marriage and only seeing his wife on weekends, he's only had a full six years actual time spent getting to know her! Let's hope he knows her well enough to realize what's in store for him. One of her last remarks was, "I might just put mistletoe on my coattail and go to Paris!" She just might at that!

P.S. to Everett

Retirement ain't gone be sittin' in a rocker on the front porch!



LANDOWNERS' LEGISLATIVE ALERT

STATE by FRANK SEGO, Legislative Liaison, Alabama Forestry Commission

In our last issue of *Alabama's TREASURED Forests*, our LEGISLATIVE ALERT column enumerated the goals of the Alabama Legislative Forestry Study Committee. We now report some of the accomplishments of the Committee during 1982.

One of the primary goals established by the Committee was to make periodic evaluations of the productivity of forest lands and determine how yields can be increased on lands of the private, non-industrial landowners, including minority owners.

The initial phase of these evaluations was accomplished in two forums for small, non-industrial landowners sponsored by the Alabama Forestry Planning Committee, Alabama Forestry Association, Alabama Farm Bureau and private farms. The first was held in Montgomery with two landowners from each of the state's 37 south Alabama counties. One week later, a similar group of landowners from 30 north Alabama counties assembled in Cullman.

It was found that forum participants owned an average of 430 acres of land of which about 78% was forested. About one-third of the group had previous contact with a professional forester, primarily personnel of the Alabama Forestry Commission. Also, about one-third had parti-

ipated in a public cost-sharing program such as the Forestry Incentives Program. However, only about 15% of the landowners had been involved in a public cost-sharing program within the past five years.

At the conclusion of the two forums, a Special Report was prepared by the Forestry Study Committee outlining the findings and recommendations of the Committee. Action was recommended in each of the findings as well as an assessment of current programs. Conclusions revealed that landowners attending the forums frequently did not know about existing programs available to them by the forestry community. The Committee further concluded that programs in place should be maintained, improved and expanded to reach all of Alabama's 200,000 non-industrial forest landowners.

Ways to increase productivity of the state's forest resource through utilization of logging residues and residues from wood processing plants was another issue of the Study Committee in 1982.

A sub-committee on wood energy met several times during the year. Many hours were spent going over details of various existing public service regulations, rates, orders and similar topics. All members of the Committee agreed that their deliberations had been practical and that all posi-

tions were understood.

From their findings came the conclusion by the Study Committee that it should continue its pursuit of possibilities for utilizing wood for energy. It was further determined that state organizations should be staffed with people researching the Committee's options and that a well-organized and publicized campaign should be conducted to keep Alabamians aware of needs as they relate to wood energy development.

Additional accomplishments of the Study Committee were recorded in the area of state-owned lands. At the recommendations of the Committee, the identification of and the management of forest lands owned by various state agencies has improved. Cooperative forest management agreements have been made and implemented between the Alabama Forestry Commission and the State Parks Division, State Lakes Division, Board of Corrections and the Highway Department.

Deliberations of the Study Committee led to the introduction of a bill in the 1983 Regular Session of the Legislature which would create a state land resources information center within the Lands Division of the Department of Conservation and Natural Resources. ♣

NATIONAL by J. KENNETH MYERS, Legislative Affairs Staff, Forest Service, USDA

Congress has been fully involved in a wide range of activities since convening in late January. Over 1200 bills have been introduced in the Senate and nearly 3,000 in the House. Currently, both bodies are moving toward completing action on appropriations for the Federal Government for the fiscal year beginning October 1, 1983. Included is funding for the Forest Service, USDA that provides cooperative grants to the Alabama Forestry Commission for forest protection and landowner assistance activities. Also included is funding that provides cost-sharing under the Forestry Incentives Program that is administered by the Agricultural Stabilization and Conservation Service in the state. The administration had, in its budget proposals for Congress in January, recommended substantial cuts in these cooperative forestry programs. But congressional committees have recom-

mended that most of the cuts be restored to the extent that funding would be only slightly less than the previous year. A final determination must await decisions by the appropriations committees and votes by the full Senate and House. This is not expected to occur until June or later.

In other action affecting landowners in Alabama, several senators from southern states have introduced bills that would establish a program to encourage landowners to divert cropland, particularly that which is erosion prone, into long-term conservation uses which could include the planting of trees. Payment to the landowner who diverts cropland would be by surplus USDA commodities instead of cash. Thus, the program would be similar to USDA's Payment-In-Kind program in which farmers receive commodities which can then be sold for cash in return

for limiting planting of certain crops. The legislation has not been the subject of hearings yet, nor has the administration stated a position on the bills.

Designation of certain lands on the Bankhead National Forest as wilderness would be provided for under a bill introduced by Congressman Ronnie Flipppo (H.R. 2477). About 28,500 acres would be added to the existing Sipsey Wilderness on the national forest by this bill. Establishing these lands as wilderness would enable them to be used exclusively for this recreational pursuit and exclude their use for other resource activities. The bill was the subject of a hearing by the House Subcommittee on Public Lands and National Parks on April 23. Further action by House committee and by the Senate will be required. ♣

SEED QUALITY—A KEY FACTOR IN COST OF NURSERY SEEDLINGS

by BILL PADGETT, Chief, Nursery Section

The cost of seed planted in the Alabama Forestry Commission's three forest nurseries is reflected in the overall cost of seedlings, as are all costs of nursery operations, but it is easy to overlook the importance of quality seed in view of the Commission's total silvicultural effort.

The quality of seed used in the nursery affects many key phases of the nursery operations. Excellent seed handling and management is vital. Any activity that affects the germination of the seed is reflected in the cost of producing seedlings and in the cost of planting. The production of seed from established seed orchards throughout the South has placed new emphasis on seed handling. The value of the seed has increased tremendously over the seed from wild collections and this forces managers to give more attention to all phases of seed management, e.g. collection, processing and storage.

The value of the seed has promoted the development and use of better equipment in sowing seed in the nurseries. The nursery manager must calculate his sowing rates to produce the maximum number of plantable seedlings while making maximum use of seedbed space. This calculation may vary with the species and within species to be sown.

An interesting point to make concerning southern pine seed is that it takes two growing seasons to mature. During this time, a number of things can happen that may seriously affect the seed production. Poor flower production and pollination certainly take their toll in seed production. Insects and diseases affect the seed flower formation to mature seed. Severe outbreaks can reduce seed production by



Checking seed placement on nursery seedbed

50 percent or more in individual seed orchards. Ice storms can be very damaging to seed orchards through breakage of limbs bearing flowers or mature cones. Damage of this type will reduce seed production for several years until the orchard recovers. Hurricanes and tornadoes damage seed orchards through limb breakage and uprooting of trees. All of these have to be built into any plan for collecting and handling seed. Any operation highly dependent on quality seed should have at least a three-year supply of seed in storage to guard against any disaster that might occur.

The measure of just how good seed really are is how many seedlings are produced. Tests should be performed on the seed to determine just how good they are and determine if any changes are taking place. Seed that are in storage should have a current germination test made so that the nurseryman can make the best calculations possible on what the seedling production might be. In the Southeast, we are fortunate to have the services of the National Tree Laboratory available to us

for performing many of the tests necessary to determine seed quality. The Alabama Forestry Commission has its seed tested each year, prior to planting, so that an accurate determination can be made of the quantity to sow to meet planned seedling production.

Good records must be kept of nursery production to determine how well seed perform. This will provide information on improving seed-handling techniques. The emphasis now being placed on quality seed moves seed management from a lesser role in seedling production to the forefront.



Improved seedlings ready for lifting

ORDER SEEDLINGS NOW!

Forest tree seedlings for reforestation purposes are now available from the Alabama Forestry Commission (AFC). Nursery Supervisor Bill Padgett says that the AFC forest tree seedlings are in excellent condition and are sold on a first-come, first-serve basis. County Agricultural Stabilization and Conservation Service (ASCS) and Forestry Commission personnel can provide order forms and information on these seedlings which will be shipped in the fall. The price schedule for one-year old seedlings (FOB nurseries) is as follows:

Species	Price/Thousand
Loblolly pine (regular)	\$15.00
Livingston Parish La. loblolly (resistant to fusiform rust)	20.00
Improved Pine	
Loblolly	20.00
Slash	20.00
Longleaf pine	20.00
Virginia pine (Christmas trees)	40.00
Lespedeza bicolor	15.00
All hardwood species	60.00

For ordering information contact the nursery section of the Alabama Forestry Commission, 513 Madison Avenue, Montgomery, AL 36130. Telephone: 832-3718 or 832-3719.

PREPARE NOW— FOR PLANTING PINE SEEDLINGS THIS WINTER

by TOMMY PATTERSON, Chief, Forest Productivity

Planting pine seedlings, to establish a pine forest, is a job that requires a great deal of careful preparation many months before the first seedling is placed in the ground.

Tree planting can be very costly and waste years of time if done improperly. However, southern forest owners can achieve an excellent rate of return on their investment if they choose the right tree species from a good geographical seed source, protect the seedlings from the nursery through planting and plant the seedlings in the proper manner at the proper spacing.

The Alabama Forestry Commission (AFC) grows some 90 million pine seedlings each year at the three state-owned tree nurseries. These seedlings are sold at cost to Alabama landowners in an effort to maintain the forest as a renewable resource. Since the seedlings are sold on a first-come/first-served basis, a landowner should place his order during the month of June even though pick up or delivery will not be made until December. The planting season in Alabama occurs normally from December through March. To place an order for seedlings, the landowner should contact the local office of the Alabama Forestry Commission to obtain an application form. This same office can advise the landowner as to the current costs and species availability of seedlings.

Deciding What Species

As mentioned earlier however, the landowner must decide what kind and how many tree seedlings are needed before he places his order. The species will depend to some extent upon the products the landowner wishes to grow, but more importantly, it will depend upon the soil and location of the planting site. Generally, speaking, loblolly pine seedlings are the correct choice for the majority of Alabama forest landowners. Loblolly grows well on many different soil types, can withstand some ice and snow and produces good wood products in a reasonable time period. Slash pine will generally outperform loblolly on the wetflats of the lower coastal plain (about the

southern one-third of Alabama). Because slash pine is severely damaged by ice storms and becomes heavily infected with fusiform rust, it should only be planted within its natural range and on wet sites where it clearly outperforms loblolly.

Shortleaf pine is very resistant to fusiform rust, but in the seedling stage it can be severely infested with tip moth. Older stands can be susceptible to littleleaf disease on certain sites. Loblolly will usually be preferred over shortleaf pine except on very dry sites in the northern limits of loblolly's range and where ice damage is severe.

Longleaf pine is not susceptible to tip moth or fusiform rust, but it can be seriously damaged in the seedling stage by brown spot needle blight. The seedling can also remain in the "grass stage" for a long time. However, because of excellent resistance to fire damage and fusiform rust, it may be preferred on drier sites within its range where these problems are chronic.

What About Spacing?

To determine the number of seedlings to order, a decision has to be made on what spacing to use. Spacing is simply the distance between seedlings in a row and the distance between rows. No universal spacing can be recommended because of differences in site quality, local survival patterns, products desired and other factors. The optimum spacing is that which will produce the greatest volume of product in the size, form and quality of trees required. The trees must be planted closely enough so that the tree

crowns do not produce an excessive number of limbs which would reduce the quality and quantity of usable wood found in the tree trunk.

Choice of spacing depends to some extent upon the characteristics of the species. Wide crowned trees like loblolly pine should be planted on a wider spacing than those like longleaf pine which has a relatively narrower crown.

For most situations in the South, spacings of 7x9, 7x10, 8x8, and 8x9 feet (600-700 trees per acre) have many advantages over closer spacings. Wider spacings are much cheaper (about half as many trees are needed with a 7x10 spacing as with 6x6 spacing) and produce approximately the same amount of wood volume in 20 years on fewer stems, which increases the end value. Choosing the wider spacings enables the landowner to delay his decision on product objective—pulpwood and/or sawtimber—without a serious financial penalty. This gives the landowner a hedge against market changes during the 15 to 20 years after planting.

At the same time, closer spacings do have some advantages over wider spacings. Closer spacings produce a greater volume of wood the first 20 years and provide more insurance against poor survival and losses to insects and diseases. Closer spacing may produce a higher quality tree and make better use of good sites. As a precaution with any spacing, some rows should be spaced 10-12 feet apart at regular intervals to provide access for fire-fighting and harvesting equipment.

There is no reason why the trees have to be planted in squares provided that they are evenly distributed. Along the same line, deviations from the spacing pattern are fully justified to avoid patches of poor soil or competing vegetations.

The spacing of trees is not something which should be regarded as rigid for each situation and should be based on considerations such as soil quality, species habits, expected survival and product objectives.

In summary, the selection of what trees and how many to plant are only the very beginning of the planning process of reforestation. Much detailed attention should be given to site-preparation and seedling care. It is in the landowner's best personal interest that he obtain the advice and assistance of a professional registered forester in making forest management decisions. Forestry is a good sound investment but only good and sound when planned properly. ♣

Spacing (Feet)	Trees
6x6	1210
6x8	908
6x10	726
7x9	691
7x10	622
8x8	681
8x9	605
9x9	538
10x10	436
10x12	363
12x12	302

Foresters know that their profession is diverse, but it must seem utterly bewildering to most outsiders and amateurs. Some aspects are truly complex, but complexity is not where most woodland owners run aground. Most people accept the idea that experience is the best teacher. However, Catch-22 rules forestry with an iron hand — you seldom get a second chance with a timber crop if you guess wrong the first time.

In an effort to sidestep Catch-22, I have developed an annual small woodland management course, taught through the Continuing Education Division of Alabama A&M University. The course is aimed at landowners in my project area, but the ideas and details are available to anyone who would like to give it a try.

The class starts in September, timed to span the best autumn outdoor weather, and ends by the Saturday before Thanksgiving. About fifteen people make up the class — men and women, mostly in their 30's and 40's, who either own some woodland or have been thinking about investing in some. The goal is to remove as much mystery and mythology as possible from the small woodland owner's use and enjoyment of the land.

The setting for the course is Madison County (Huntsville), Alabama, which lies in the heart of the highly productive Tennessee Valley agricultural region, but which is also a cosmopolitan urban area with high-technology industries and the many support services that balance the area's economy. Of its half-million acres, about one-third lies in the southwest corner of the Cumberland Plateau, presenting a broad range of timber types, including pine plantations, rich coves, mixed hardwood slopes, dry and rocky cedar glades, and sandy upland plateaus, as well as the stream bottoms that adjoin the agricultural Highland Rim soils in the western two-thirds of the county. Ownership patterns are diverse, from large family and corporate holdings to week-end retreats.

Students are not publicly sought for the class. First, a class of more than about 15 would be too impersonal, especially in the field sessions. During the winter, spring, and summer names of landowners who want to be notified before the next class starts are collected. Autumn is the only good time for the class. Summer brings heat and vacation conflicts; winter brings holidays, inclement weather, and

poor conditions for beginning tree identification; and spring entices people who want to spend their weekends hiking, canoeing, and doing the other things that have been put off all winter.

From the outset, the goal is not to turn the students into foresters (one of my nightmares is that a real estate salesman will try to use this course as a license to estimate timber values). The object is to give landowners enough vocabulary, "feel" for forestry, and confidence to make good decisions and to deal with the other elements of the world of forestry — timber buyers, private foresters, industry's assistance programs, loggers, planting and site preparation vendors, Soil Conservation Service and Agricultural

One Foot In the Woods

Stabilization and Conservation Service agents, and public foresters in other counties or states.

Let's begin with the trees themselves — basic dendrology and ecology. Each four-hour Saturday morning field session complements the previous two-hour week-night session, first visiting disturbed areas to get a feel for plant succession, and then progressing to mountain forests, rolling lands, and bottomlands. Along the way the class sees examples of how elevation, moisture, aspect, soils, management history, and other factors interact to determine characteristics.

By the fourth week specifics are taught. One evening is spent on mapping, and the following Saturday morning a compass traverse is made to be mapped out by the next session, when fragmentary discus-

sions on management problems and options that have cropped up during the previous meetings are all pulled together. During the last half of the course outside perspectives are brought in: a consulting forester to guide a visit to a property that he manages; a sawmill's timber buyer to talk about forest products, values, and price factors; an industry forester to guide a visit to a paper mill; sometimes another consultant to talk about timber sales. With help from the Timber Harvesting Management staff at Alabama A&M University, the basics of timber measurement and marking are addressed by actually cruising a small tract of the university's forest to bring out the differences between prism cruising and other techniques. The final evening sessions on record keeping, taxes, and other money matters draw together all the parts of the course, leaving the students with a clearer idea of where they stand with their personal investments.

As often as not, the students become teachers, as in the case of the attorney who has twice conducted the sessions on taxation and economics, the orthodontist who used his office computer to calculate acreage within the compass traverse, the engineer who has set up a sawmill for his post-retirement occupation, or the amateur wildflower expert who helps the class to see non-economic values. Throughout the course the theory of classroom discussion comes to life in the problems of students who own unproductive "rock-piles," out-of-state holdings, or parts of family estates caught in tax squeezes.

Small woodland owners usually fall into one of only two important categories — those who want to learn, and those who don't (or can't). The second group are rightly the clientele of consulting foresters, who earn their pay by doing the landowner's thinking and legwork, for a commission. This is not to say that thinking landowners never need private foresters — but that a person who lacks the interest or time to manage his land needs more help than most public foresters are able (or allowed) to give, especially if the owner hopes for a return on his ownership.

In the first group, ties to the land were at least partly broken when they chose a personal or professional career that tied them to the city. While some may have inherited or married into land ownership, many have bought woodland in an effort

to send roots back into the land. Many would-be forest owners fit this profile, as well, and they are equally welcome. This group includes not only attorneys, engineers, doctors, and dentists that more or less fit the statisticians' stereotype of small woodland owners, but also teachers, postal clerks, homemakers, a few students, and others whose presence is difficult to explain in terms of disposable income and tax shelters.

With so much diversity, they have at least two things in common. First, they feel unequipped to manage land that represents a sizeable part of their capital; and second, they don't accept the notion that forestry is a mystical art beyond the reach of all but foresters.

Urban forestry is another aspect of the course. While standard urban forestry brings the disciplines and perspectives of forestry to bear on urban environments, the landowner course gives city-dwellers access to the same resources for use on their rural properties.

Does the course work? Measured in dollars, the landowner's investment in the



Landowner-students learn to recognize tree species and interpret the past and future of a forest site.

course is \$52 for 10 weeks. The tuition is set by the University, and the fraction that would normally go to the instructor simply passes into the county forestry budget

to be recycled. Besides new found knowledge, the landowner earns continuing education credits.

Most dollar benefits to the students are hard to measure, but occasionally some feedback is received. One former student who owns 80 acres near Birmingham received a property tax notice for \$580; using the information from this course, he requested reclassification under Alabama's new Current Use tax law, and ended up paying a total of \$80. Another landowner decided during the course to sign his out-of-state land up under a timber company's management assistance program. Without the course, he would have made a blind decision.

Perhaps as great as the dollar values, though, are the intangible results — association with other landowners, both individually and in more organized groups that build on the foundation that this course lays. Woodland owners also derive satisfaction from understanding what they own and possess the ability to make decisions and undertake activities that had always before seemed beyond their reach.

DEMONSTRATION FORESTS “SHOW AND TELL” FOREST MANAGEMENT TO LANDOWNERS

by FRANK A. ROTH, II, Alabama Cooperative Extension Service

While not a heavily industrialized state with a high per capita income, Alabama is rich in many ways. Among her richest blessings are 21.7 million acres of commercial forestland which cover about two-thirds of the state. This acreage supports Alabama's largest manufacturing industry, the forest products industry. Harvest of the state's commercial forestland exceeds 800 million cubic feet of wood each year. Some two billion board feet of logs go into lumber, plywood, and pole production, while the round pulpwood harvest amounts to five million cords. Value of the annual wood crop is more than \$250 million before harvest, and the value added in manufacturing of forest products is about \$1.4 billion per year.

But, the real value of forestry to Ala-

bama cannot be properly measured by the value of its trees alone. Wood-based economic activities employ more than 50,000 Alabama citizens. In many counties, wood-based industries constitute the economic basis for income and employment. Forestland is also the basis for water supply, soil stability, fish and wildlife habitat, recreation, clean air and noise abatement—all important for a healthy environment. Thus, all Alabamians have a stake in the future of our renewable forest resources.

Alabama's outlook for the future is bright because the demand for forest resources is on the increase, and the Southern United States, including Alabama, is potentially the best timber producing region in the world. But, will this potential be realized? And, if so, how?

The forest industries own only 21 percent of Alabama's commercial forestland, and 5 percent is publicly owned. The remaining 74 percent, about 16 million acres, is in the hands of some 200,000 nonindustrial private landowners. They may be farmers, businessmen, doctors, lawyers, retirees, or from almost any walk of life, but much of their timberland is producing at less than half of its potential. Alabama's forests must become fully productive to meet the increasing demands of its people.

A group interested in the full development and use of Alabama's forest resources is the Alabama Forestry Planning Committee, a counterpart of the USDA-Forestry Planning Committee. This committee is comprised of those state and federal agencies which have responsibil-

ity for forestry work in Alabama. Membership is limited to the chief administrative officers of the organizations listed in the front of this publication.

One way to encourage better forest management in Alabama is to demonstrate sound forest management practices and their results so that private landowners can see first-hand what they can accomplish on their timberlands. In 1976 the Alabama Forestry Planning Committee decided to develop ten Educational Forest Management Demonstrations across the state. These demonstrations served as locations for landowner tours and meetings.

The first ten demonstrations proved to be so successful that the Planning Com-

mittee established a new goal of at least one demonstration in every county. Each demonstration is established on privately owned, "nonindustrial" forestland and is managed to meet the needs of the landowner with help from the County Forestry Committee. County Forestry Committees are composed of local representatives of the various member agencies, like the County Ranger, District Conservationist and County Agent, as well as representatives of forest industries and local consulting foresters. This group helps the owner of the demonstration forest manage his land with economically sound, multiple resource management practices, and then plans meetings or tours to show others what can be done with their forestlands.

There are 37 Educational Forest Management Demonstrations in Alabama, and 10 more are being developed. These demonstrations represent more than 22,000 acres of nonindustrial private forestland under multiple resource forest management. During 1982 there were 28 forestry tours or meetings attended by more than 1800 people held across the state. Fourteen of these were conducted on demonstration properties.

If you are interested in improving production on your forestland and want to tour a demonstration forest in your county, contact your local office of the Alabama Forestry Commission, Soil Conservation Service, Alabama Cooperative Extension Service, or Agricultural Stabilization and Conservation Service.

ACTIVITIES

District 1

Paul McCabe, Forester, in recognition of his outstanding aid to education in agriculture, and specifically for his interest in the development of youth, was presented the highest honor given by the State FFA Association, the **Honorary State Farmers Degree**. This presentation was made at the annual convention at the Montgomery Civic Center on June 8.

Philip Smith, Etowah County Ranger, and **Charles Weber**, Madison County Forester, held a "Career Day" at the **Gadsden Mall**. Booths were set up from different agencies.

Alvie Lemley, Madison County Forest Ranger, held the annual **FFA Forestry Judging Contest** on April 21. **Hazel Green High School** won the county contest and also the district competition on April 30. The state competition will be held the second week in June.

In March, **Larry Parker**, Marshall County Ranger, presented a forestry demonstration to the girl scouts.

Jackson County Association of Volunteer Fire Departments had a house burning training session on **John Jacob's** property. John is a **TREASURE** Forest applicant.

On April 23 the **District FFA Forestry Judging Contest** was held in Jackson County. **Ohatchee FFA Chapter** from Calhoun County came in first, and the **North Sand Mt. FFA Chapter** placed second. Both teams will compete for the state winners in June.

District 2

Lee Laechelt, **Tom Kimbrell**, **Jim Gober**, **Terry Jacobs**, and **Daryl Lawson** attended the Forestry Herbicide Training sponsored by the **Alabama Forestry Association** in Cullman County, March 8, 1983.

Dr. Carroll Perkins, Wildlife Biologist with Mississippi State University, spoke to the **Alabama Forest Owner's Association (AFOA)** in March and was interviewed on Channel 13 News.

The **1982 Alabama Tree Farmer of the Year**, **Bealie Harrison**, spoke at the AFOA Annual Meeting and appeared on Tom York's Channel 6 Morning Show and spoke on Bill Lawson's WERC Radio Program.

Project SOIL Steering Committee members have selected **Blount County** as one of the counties for establishing a resource management conservation farm. Forest Ranger **Zed Armstrong**, Forester **Terry Jacobs**, and District Forester **Barton Williams** represented the Blount Forestry Commission program at an "Operation Soil" Training Session April 14, 1983, in Decatur.

On April 27, 1983, the **Birmingham Audubon Society** and the **Shelby and Jefferson County Forestry Commission** cooperated with the **Birmingham Water Works Board** to prescribe burn an area for Red-Cockaded Woodpecker habitat improvement.

Forestry Commission employees will conduct WRAP Inventory on **Oak Mountain State Park**. A WRAP Plan will be written and submitted to park authorities to assist them in better management of the 10,000 forested acres.

District 3

The **TREES FOR MARGINAL CROPLAND (TMC) Program** supplied 1.1 million pine seedlings to landowners in **District 3**. Cooperation of local industry and the Alabama Forestry Commission helped the County Forestry Planning Committees to insure prompt delivery and planting of the "TMC" trees. **Weyerhaeuser Company** made three planting machines available, and **Gulf States Paper Corporation** assisted.

District 3 distributed 24,000 free seedlings to schools, garden clubs, Tuscaloosa's Park and Recreation Authority, and Tuscaloosa County's Solid Waste Authority during January. Seven thousand seedlings were donated to Volunteer Fire Departments in Tuscaloosa County to assist in raising funds.

York, Alabama, has been designated as **District 3's first TREE CITY, USA**. On April 7, District Forester **Wayne Strawbridge** presented **Mayor Bellenger** of York with a plaque and **TREE CITY, USA** flag. The ceremony, held in the York City Hall, was covered by WTOK-TV and WLBMTV of Meridian, MS.

Hugh Mobley, Chief, Fire Control and Prevention Section, conducted a Prescribed Burning and Smoke Management workshop on March 22. The meeting was held in the Forestry Commission's office in **Carrollton**.

In February, **Chuck Weber**, Urban Forester for District 1; **Lee Laechelt**, Urban Forester for District 2; and **John Harper**, District Conservationist, Soil Conservation Service; spoke on the "Environmental Approach to Development in Wooded Areas." The seminar was held at the Continuing Education Center, Univer-

CALENDAR*

July 14—Limestone County, 7:00 p.m., Forest Marketing. Learn how to get more money for your timber. Contact Mike Banzhoff, 574-3217.

July 14—The RD&D Forestry Committee will sponsor a forest management seminar at 7:00 p.m. in Athens, Alabama. Location to be announced later. For more information contact the Tennessee Valley RC&D Forestry Committee, 574-3217.

July 16—Jefferson County, 10:30 a.m., Alabama Forest Owners Association. New Market for Hardwood. See Firewood Processor in Operation. Operated

city of Alabama, and was sponsored by **District 3** and the **Tombigbee RC&D** project. Seventeen developers attended the meeting.

Keith Utz, Forest Finance Specialist, U. S. Forest Service, spoke at two **Forest Income Tax workshops** sponsored by the Tombigbee RC&D project and District 3. Approximately 30 forest landowners, industrial foresters, and tax accountants were present at the meetings in **Fayette** and **Tuscaloosa**.

District 6

Barbour County Farmers Day was held February 4 in Clayton and approximately 100 people attended. **Don VanHouten**, County Supervisor, organized the forestry part of the program which dealt with the economics of growing pines and the "Free-Tree" Program for marginal land.

District 6 hosted the second quarter **TREASURE** Forest certification meeting in **Eufaula, Alabama**, March 10. Two landowners from Coffee County were certified as new **TREASURE** Forests; and on March 11, a tour of **Mr. Bob Snyder's** property was held. Mr. Snyder, who worked for the AFC before retiring, conducted the tour for all involved, and **Mrs. Synder** prepared a delicious lunch buffet for the group at their weekend cabin on the farm. Snyder's property was chosen as one of the top three **TREASURE** Forests in the Helene Mosley competition for 1981.

Dale County conducted a **Forest Taxation workshop** on March 24 in Ozark, Alabama, sponsored by the **Dale County Forestry Planning Committee** and **RC&D Forestry Committee**. **Bruce**

by one man, this new, fully automatic machine may help cut firewood processing costs.

July 18-22—Lee County. Teachers Conservation Workshop funded by Alabama Forestry Foundation for teachers of science and the humanities. Help your local teachers create a more practical awareness of our forest resource. Contact **Rei Boyce**, 265-8733.

July 21—Montgomery County, 9:00 a.m. Farm Bureau Forestry Seminar, morning, with afternoon tour of Auburn Forestry Research. Bus transportation available. Contact **Steve Guy**, (800) 392-5705.

July 28—Cullman County, 7:00 p.m. for District 1 landowners. Location to be announced. For further information call **Mike Banzhoff**, 574-3217.

Hancock, County Supervisor, was happy to have **Mrs. Jean McDaniel**, District Manager for H & R Block Company and well known in the wiregrass as a forest taxation specialist, as the guest speaker.

The **Wiregrass RC&D Forestry Committee** composed of interested landowners, industry, and consultants met April 7, 1983 in Ozark to formulate the 1983-84 work plan. **Brian Bradley**, RC&D Forester, conducted the meeting which was designed to discuss the problems facing forest landowners and then to formulate programs to meet those needs.

Pike County hosted the **District FFA Forestry Judging Contest** on April 23, 1983. **Pike County's Charles Henderson High School of Troy** won the contest and will go to the state competition. County Supervisor **Wayne Craft** and Ranger **Mike Stinson** organized the event with help from **Southwest Paper Company** foresters and technicians. Also assisting the day of the judging was District 6 Fire Specialist **Bruce Bowden**.

The City of **Eufaula** became Alabama's **third TREE CITY, USA**, during ceremonies February 24, 1983 at City Hall. The recognition ceremony was organized by **Barry Lawrence** and county Forester **Don VanHouten**. State Forester **C. W. Moody** made the presentation, and after the ceremony free seedlings were given to the public. The groundwork for Eufaula's selection for this honor was accomplished primarily by District Staff Forester **Barry Lawrence**.

District 8

J. R. Crosby, Baldwin County, received the **National Arbor Day Foundation Good Steward Award** on April 23

August 9—Forest Economics Workshop, Greenville Holiday Inn. Program designed for foresters and other professionals in natural resources field. Contact **Bill McKee** (826-5330) or **Bill Jones** (265-8733).

August 16—Same as for August 9, but location is Cullman Holiday Inn.

August 25—Forestry Taxation Seminar to be held at 7:00 p.m. for District 1 landowners. Location to be announced. For further information, contact **Mike Banzhoff**, 574-3217.

September 10—Marketing Seminar for Tennessee Valley RC&D, Fort Payne, 7:00 p.m. Call **Donald Cole**, 845-1331.

*Any Alabama Forestry Planning Committee member agency can be contacted about events listed in this section. ♣

in Nebraska City, Nebraska.

Christmas tree producers in **Baldwin County** received advice at a meeting held in **Robertsdale** during April.

Chester Billie coordinated a training session on water quality and best management practices conducted for **St. Regis Paper Company** personnel in southwest Alabama.

On June 2, **Mr. Bealie Harrison**, Clarke County, was recognized as **Regional Tree Farmer of the Year** for the Southeastern United States. He will compete with other regional winners for national recognition.

District 9

Dorsey Taylor of Marion County was named **Extension district winner** for the **Helene Mosley Award**. District Forester **Gerald Steeley** and **Frank Roth**, Alabama Cooperative Extension Service, presented Mr. and Mrs. Taylor with an award plaque and a \$500 check on April 4 in a ceremony at the Taylor farm.

Mr. William Pratt Thomas of Columbus, Mississippi, has received **TREASURE** status for his property in **Colbert** and **Franklin** counties. His official presentation came at the District 9 cooperators meeting on May 17 which was attended by officials from **Tennessee River Pulp and Paper Company**, **Champion Paper Company**, and the **Alabama Forestry Commission**.

A W. Kelly Mosley Environmental Award was approved for **Mrs. Pat Bates** of **Florence** to help finance a **Nature Awareness Camp** at **Bear Creek Educational Center**. **Dr. Harry Larsen**, Auburn University, made the presentation to Mrs. Bates. ♣

AWF

ALABAMA WILDLIFE FEDERATION

CITIZENS FOR WISE USE

By MARVIN TYE, Executive Director Alabama Wildlife Federation

Founded in 1936, the Alabama Wildlife Federation (AWF) is the state's oldest and largest private conservation organization. Since the beginning AWF has been a strong advocate of wise multiple use of our natural resources. It is not and never has been a preservationist organization.

The men who founded AWF more than 45 years ago were businessmen and sportsmen who saw a need for wise conservation practices to protect and restore our wildlife and forests to insure a sustained harvest. AWF has always supported hunting, fishing and private ownership of firearms.

Alabama is nationally recognized for its outstanding deer and turkey hunting and fishing for largemouth bass, striped bass, and other species. This excellent wildlife and fisheries program is the result of long-range planning and much hard work conducted by the Alabama Department of Conservation and private landowners.

These programs have always been supported by the Alabama Wildlife Federation. Efforts in informing the public of these programs has helped them to gain acceptance. Strong support of certain legislative action by the AWF has helped to



Mike Stanton of Birmingham Bass Buggers taught fly casting to teenagers at Alabama Wildlife Federation's Youth Conservation Camp at Camp Grandview.



Lawson Richards of Frank Carter Company taught the campers how to use spin-casting and spinning tackle.

insure that many beneficial programs were completed.

The 1979 session of the State Legislature offers a prime example. Alabama was suffering from an epidemic of deer poaching. The Alabama Wildlife Federation developed a statewide campaign to fight this problem through supporting legislation to enable conservation officers to confiscate guns, vehicles and other equipment used in illegal night-time deer hunting; to increase minimum and maximum fines for selling game meat; to increase the minimum fines for non-residents convicted of hunting without the proper license; and to increase hunting and fishing license fees. All of these bills were enacted into law.

Confiscation and sale of some expensive vehicles used in poaching and the penalties of more severe fines drastically reduced poaching in many areas. Money raised from increased hunting and fishing license costs was used to hire more law enforcement personnel, to purchase new vehicles and to conduct important wildlife and fisheries research.

In 1982 AWF members worked with representatives of the Alabama Forestry Association, Alabama Cattlemen's Asso-

ciation, Alabama Farm Bureau, Alabama Department of Conservation, Alabama Forestry Commission and others to write and help pass what has been called some of the most significant conservation legislation ever enacted in Alabama. These laws were designed to combat increased activities of trespassing, illegal killing of game, destruction of property and even murder that had occurred in our woodlands.

The new laws substantially increased minimum and maximum fines for these violations and provided for mandatory jail sentences and hunting license revocation for repeat offenders.

Although vigorously opposed to game law violations, AWF strongly supports hunting and private gun ownership. Most of its officers, directors and other members are enthusiastic sportsmen. There is deep concern over the growing, still mostly urban, views that wildlife needs to be completely protected by the abolition of hunting.

The AWF has participated in and organized Hunting and Fishing Day Programs, appeared on television and radio and published articles to describe the use of hunting as a wildlife management tool and the contributions of hunters to wild-



Hugh Blackburn of Bear Archery Company showed the campers how to shoot a bow and arrow.

life conservation. AWF urged the Alabama Congressional Delegation to support H. R. 1493 and S. 49 to open vast areas of Alaska's prime wildlife habitat to hunting. This legislation would simply change the designation of these lands from parks to park preserves. It is a national issue of pro-hunting versus anti-hunting.

On the local scene the organization actively opposed efforts to require licensing of rifles and shotguns in Jefferson County and efforts to ban the sale, ownership or possession of handguns in Montgomery. Both of these moves were defeated.

AWF supported and lobbied for passage of the non-game wildlife bill which allows individuals to have a contribution to the Alabama Department of Conservation deducted from their state income tax refund checks. Revenues derived from the income tax refund check-off will be used for the management of non-game wildlife. Non-game wildlife is defined as species which are not commonly taken by hunting, fishing, or trapping. To protect our valuable wild turkey population AWF supported legislation to prohibit individuals from releasing pen-raised turkeys into the wild.

Alabama Wildlife Federation is primarily a conservation education association. They cooperate with National Wildlife Federation each year in the distribution of Wildlife Week teacher kits to every school system in the state. In 1981 a youth conservation camp was conducted at Camp Grandview. In addition to AWF members and staff, personnel from Alabama Department of Conservation, Alabama Forestry Commission, Auburn University, Alabama State Soil and Water Conservation Committee, U.S.D.A. Soil Conservation Service, Birmingham Bass Buggers, Bass Anglers Sportsman Society, Frank Carter Company, Zebco, Bear Archery Company and other groups taught wildlife conservation, multiple-use forest management, outdoor careers, respect for game laws, ethical hunting, and outdoor skills. More than 40 teenagers from across the state attended the week-long camp.

Each year AWF recognizes the state's outstanding conservationists at its Governor's Conservation Awards Banquet. The program is sponsored by Sears, Roebuck and Company and recognizes individuals for outstanding achievement in the following categories: Conservationists of the Year, Wildlife Conservationist of the Year, Soil Conservationist of the Year, Water Conservationist of the Year, Air



Instructions from the Alabama Department of Conservation taught firearms safety, marksmanship and ethical hunting and discussed outdoor careers.

Conservationist of the Year, Forest Conservationist of the Year, Conservation Educator of the Year, Youth Conservationist of the Year, Legislative Conservationist of the Year, Conservation Communicator of the Year, Conservation Organization of the Year and Enforcement Officer for Conservation.

Winners of these awards receive a handsome trophy and a certificate of appreciation signed by the Governor. Nominations can be made by any group or individual. The purpose of the Governor's Conservation Awards Program is to encourage the teaching and practice of conservation of our natural resources, soil, water, minerals, forests, and wildlife. It is designed to develop a greater knowledge and awareness of conservation practices and to give proper recognition to those persons and organizations who make outstanding contributions to the natural resource welfare of Alabama.

The Weyerhaeuser Company sponsors an annual Big Buck Awards program. Like the Governor's Conservation Awards, the Big Buck Awards are presented at AWF's annual meeting which will be held on August 12 and 13 this year



Alabama Wildlife Federation President Allen W. Layson, right, presents the first-place non-typical buck award to successful hunter Larry Weldon. The Weyerhaeuser Company has sponsored Alabama Wildlife Federation's Big Buck Awards Program for the past nine years.

in Montgomery. Handsome engraved plaques are awarded to the hunters who bag the largest bucks in three categories. These categories are bucks with typical antlers, bucks with non-typical antlers, and bucks taken with bow and arrow. Four runners-up in each category receive certificates suitable for framing. Bucks are scored by the official measurement system used by the Boone & Crockett and Pope & Young Clubs. The outstanding bucks taken each year are displayed at AWF's annual meeting.

Alabama Wildlife Federation is now involved in a struggle to restore funding to the U. S. Fish and Wildlife Service's Fiscal Year 1984 Budget to allocate funding for operation of the two Cooperative Fish and Wildlife Research Units at Auburn University. The units at Auburn are among the very best in the country. Research conducted through these units has been a tremendous asset to Alabama's Fish and Wildlife program. The entire nationwide unit program has functioned at a cost of only 4.5 million federal dollars per year. The research generated annually is worth many times that amount of money.

Funding for operation of the Cooperative Fish and Wildlife Research Units at Auburn University and at other universities throughout the country is not included in the proposed budget. These programs would be totally eliminated unless this funding is secured. AWF President Allen Layson wrote a letter to the entire Alabama Congressional Delegation urging them to take every possible action to assure that the Cooperative Fish and Wildlife Research Units will be retained at full funding. Other AWF officers and members have made similar appeals. We feel that AWF's action of this type last year helped to secure funding for the Cooperative Fish and Wildlife Research Units during 1983.

Alabama Wildlife Federation is supported primarily by individual membership contributions. Because of its 501-C-3 tax exempt status as an educational association, contributions to AWF are tax-deductible.

Members of AWF receive a monthly publication "Alabama Out-of-Doors" which tells of conservation projects conducted throughout the state and also features entertaining and informative articles on hunting, fishing and other outdoor recreation. If you are not a member of Alabama Wildlife Federation, you are urged to contact the Alabama Wildlife Federation, 111 Coliseum Blvd., Montgomery, AL 36109.

DON'T GET IN A RUT

PLAN FOREST ROADS TO SERVE YOUR NEEDS AND PROTECT THE LAND

by BOB KUCERA, Water Quality Forester

Forest land provides many benefits to the landowner and the public in general. The general public receives the value of clean air, pleasing scenery, wild-life habitat, a clean dependable water source, and a source of wood which is used in every aspect of our lives.

The forest landowner receives these benefits plus more, such as hunting rights and other recreational uses, pride of ownership, the income received from the harvest of forest products (Dissmeyer and Foster, 1980), the use of forest land for collateral on loans, and even the option to sell the land for a profit.

The point is that forest land is an asset of value to its owner and the general public. Because the amount of forest land is decreasing, more demands are made on that which remains, making it more valuable than before.

The road system on a tract of land is one of the most important of the components which together add up to the total value of a land. A good road system provides year-round access to the property for management, recreation, harvesting, and protection. A poor road not only provides inadequate access but also subtracts from land values. Erosion rates on logging roads in the Southern Coastal Plain may average 20 tons/acre of soil. This increases expenses for maintenance and repairs, operating costs of harvests and other uses of the land, silts in streams, and takes land out of production as roads are moved to new ground to avoid the old rutted and gullied sections.

These old, rutted roads are all too com-

mon in the forests of Alabama. They characteristically are located on the tops of ridges and follow the shortest route from point A to B, regardless of the contour of the land. A ridge road often lacks opportune locations for draining water off to the side, and it also often runs straight up and down the slope when the ridge comes to a bottom.

This condition results in water accumulating in the ditches on the sides of the road and running down the ditches to the bottom where there often is a stream of intermittent drainage. The ditches and road surface become gullied and are leveled by subsequent road grading. This repeated process leaves the landowner with a two-ditch road entrenched between the banks which formed as the road surface washed down hill. The only places where this two-ditch design will work is on soils which are very stable or in a location where adequate opportunities exist to provide side drainage and to slow the momentum of the water moving downhill.

There is a reasonable alternative to the two-ditch road. The alternative is a road system developed by researchers in Georgia and known by the Alabama Forestry Commission (AFC) Pest Management Section as the Georgia Road System. At least one company in Alabama has adopted the "Georgia Road" system. The characteristics of a "Georgia Road" are that the grade is less than five percent wherever possible; it follows the contours of the topography, has a flat (not crowned) surface and water is moved off

the road surface by slightly outsloped broad-based dips; it is located below the ridge top; and there is a straight bank cut on the inside but no ditch.

It should be emphasized that these roads require advanced planning and on-the-ground layout. The length of road needed will be greater than that of a two-ditch road in the same area. But, once installed, the "Georgia Road" saves on operating and maintenance expenses because of its low grade and because erosion is minimal.

The Georgia Road is first penciled in on a topographic map in the office after consideration of its objectives and anticipated use. There may be more than one apparently viable route at this stage. The final route is selected and flagged out on the ground. The road is constructed by a bulldozer making a cut in the hillside and establishing a level, not crowned, road surface.

The bank cut is straight to minimize the amount of soil exposed. The small amount of excess soil is simply pushed onto the forest floor on the downhill side if it is not needed for fill in a drainage. Rainwater is intended to move along the road surface for short distances and occasionally is moved onto the forest floor on the downhill side by a slightly (3%) outsloped elongated depression called a broad-based dip.

Some type of outfall protection should be provided on the downhill side of a broad-based dip to prevent the road from washing out there. This could be made of local materials such as rocks and trees



**FIGURE 1
BROAD-BASED DIP**

20-30 FT. SPACING = 400 SLOPE % 100 FEET Construction detail for broad-based dips in the Piedmont.

that were pushed out during the initial work of establishing the road bed. Figure 1 illustrates a broad based dip in the Piedmont (Hewlett et al, 1979).

Although a Georgia Road is designed to follow the contour at a low grade, there are still situations which present problems identical to those of the two-ditch road. At some places the road will have to run at least a short distance straight up hill at a steep grade. This would be caused by a need to avoid obstacles, to connect with logging decks on the ridge top, or to cross a stream bottom at a right angle. In these situations the plans must revert to traditional measures to limit the amount and velocity of water moving on the road. These measures include ditch turnouts, water bars, and dips.

Because it follows the contour, a Georgia Road will intercept more hillside seeps and overland drainages. Water seeping from the uphill cut should be channeled in an inside ditch and diverted from a collection point through a culvert

under the road. An intersection with a stream or an overland drainage depression must be filled over a culvert of adequate size to maintain the drainage.

The side banks of fill areas are very erodible and may be maintained with the least expense by being immediately stabilized with vegetation or mulch. It is important that the culvert under the fill be large enough to maintain adequate drainage or the fill could act as a dam until enough water collects to wash it out completely. Culverts that are properly sized and aligned with the original channel and which have adequate outfall protection will provide long-term service. Figure 2 and Table 1 provide a guide for determining culvert sizes by the "Hasty Method." (Darrach et al, 1981)

The *Hasty Method* uses measurements taken in the stream channel to estimate the size of the opening including a 100 percent safety allowance. To make the estimate, do the following:

1. Measure the width (W_2) of the channel at the bottom. See Figure 2.
2. Measure the width (W_1) of the channel at the high water mark.
3. Measure the height (H) from the channel bottom to the high water mark.
4. Add the widths and multiply by the height to obtain the cross section area including a 100 percent safety factor.

This article is intended to introduce only a few of the considerations necessary for construction of forest land roads. It would be helpful to read the citations noted in this article and to seek out examples of good forest roads in your area. The Alabama Forestry Commission will assist in planning and provide information for building roads which will increase the value of your forest land assets and save operating costs of the activities on that land.

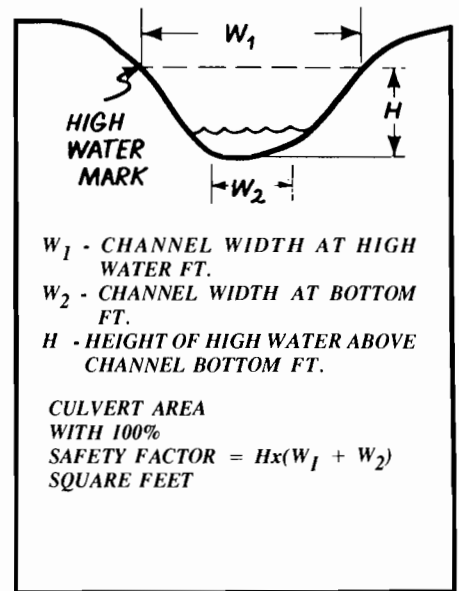


FIGURE 2

**CULVERT END AREA
BY HASTY METHOD**

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Dissmeyer, G. E. and G. R. Foster. 1980. A Guide for Predicting Sheet and Rill Erosion on Forest Land. U.S.D.A. Forest Service, State and Private Forestry Tech. Pub. SA-TP11. 40 pp.

Hewlett, J. D., W. P. Thompson, and N. Brightwell. 1979. Erosion Control on Forest Land in Georgia. U.S. Government Printing Office. 1979-645-338. ♣

**Sizes of Round Pipe Needed For
Areas of Waterway**

Area Square Feet	Diameter Inches
1.80	18
3.10	24
4.90	30
7.10	36
9.60	42
12.60	48
15.90	54
19.60	60
23.80	66
28.30	72
33.20	78
38.50	84
44.20	90

TABLE 1

Like shopping for the best interest rate, finding the proper forestry advisor requires some looking

CHOOSING THE RIGHT CONSULTANT

by L. KEVILLE LARSON, Association of Consulting Foresters

The number and importance of consulting foresters steadily increases as landowners learn that consultants can help make timber growing profitable. A recent U.S. Forest Service study indicated that in the South 50% of the owners who regenerated after harvesting and 50% of those with management plans received their advice from consultants. This article will give some guidance for selecting and working with a consulting forester.

You can find a consultant to perform any forestry service there is. He can represent an owner on a sensitive issue such as a boundary line dispute, appraisal or litigation, or he can take over completely and act for the owner in all matters. Consultants are especially well versed in timber sales, the crucial pay off point in forest management, and will affect the value of the landowner's future growth. Consulting foresters know about marketing, merchandising and seeking competitive bids. They know which contract terms are appropriate such as penalty rates, performance deposits and damage clauses. They can advise on tax treatment and can give whole hearted representation to the owner in any timber sale dispute. Most important, increased returns will more than offset the cost.

In the area of financial management, consultants can provide appraisals, investment counsel, advice and analysis, record keeping for tax or other purposes, assessing and paying land taxes, estate planning and assistance with timberland loans. In connection with litigation problems they are frequently called on to assist in preparation and expert testimony for contract, tax, possession or trespass cases. They are also available to handle one time specialty problems, such as growing Christmas trees or making an equitable property division. Consultants often become a permanent advisor or manager for a landowner. The critical decision is finding one you like who is

properly equipped, experienced and located for your needs.

Making a list of available consultants is the first step. Some sources for this information are:

1. Professional Associations such as the Association of Consulting Foresters, Society of American Foresters, or State Consulting Organization.

2. Forest industry or landowner organizations such as Forest Farmers Association, Southern Forest Institute, or state forestry associations.

3. State or Federal Government sources such as a state forester, Extension forester or Soil Conservation Service forester.

4. Friends or neighbors who have employed a consultant.

5. Attorneys, accountants, or bankers who may have worked with consultants.

The next step is to choose among the candidates, considering several factors.

1. *Reputation.* Perhaps the single most important factor is the consultant's general reputation in his business, personal, and professional relations. Opinions can be obtained from landowners, other foresters, bankers, accountants or lawyers. Is he known for reliability, honesty and good work?

2. *Experience.* A consultant's expertise is what he has to sell. His education, training and experience have shaped his knowledge and judgment. He should have been in business long enough to have a proven track record. Does he have a good professional background and keep up to date through continuing education courses, conferences, and professional journals?

3. *Staff.* Some consulting firms employ foresters, technicians or laborers to

carry out the work. The quality of these employees is important. Are they permanent or temporary employees and is the work well supervised?

4. *Location.* A consultant needs to be located near small jobs or handle several in the same area. Large jobs may be economical at any distance. Sometimes it is convenient for the consultant to be located near the owner instead of the property. Is location important to you?

5. *Philosophy.* Consultants do not all think alike and business and management philosophies may vary widely. There may be more than one good forest management practice for a given situation and a recommendation will depend on the condition of the property, the objective of the owner and the forester's philosophy. Have you asked about his forest management ideas?

6. *Cost and Agreement.* The landowner should have a clear understanding concerning fees and work to be done. Some consultants work on a time charge basis, others may use a fixed fee or percentage arrangement. Until a consultant is familiar with the tract it may not be possible to predict costs accurately. Are you comfortable with the method for billing and work agreement?

7. *Rapport.* Your consultant should be someone you can trust, he offers a continuing personal relationship. Do you feel he understands your objectives and can you identify with him?

Once a consultant has been selected there are certain things which will help make a long lasting, satisfactory relationship. To make good recommendations your consulting forester must know your needs and wishes. Level with him. Let him know clearly what you want. Often the hardest part of a consultant's job is getting the landowner to explain his objectives. Then listen to him and let him gather information if he says it is necessary. A doctor must examine the patient before he can diagnose and prescribe, and he must charge for the examination. A written understanding is good business, and it should spell out the work to be done, the charging method, cost estimate and a time schedule for the work. When you have reached this point, trust is the key word in your relationship. Make a commitment to your consultant, trust his judgement. He is dedicating his career to giving forestry advice and assistance.

One final word. There is no clear defi-

dition of what a consultant is. Throughout this article references have been made to full time, independent, consulting foresters who are not engaged in buying timber. The highest standards of education, experience and ethics are set by the Association of Consulting Foresters (ACF). Membership in this organization is one measure of professional standing. There are well qualified consultants who are not ACF members. In addition there are many professional foresters who consult part time, or during retirement or as a sideline to their regular employment. Forest industry and timber dealers often have foresters who assist owners (assistance foresters) and they sometimes use the

term consultant. It is important to recognize the difference. A full time independent consultant works solely for the landowner. For this he charges a fee agreed upon in advance; industry assistance foresters may provide services for little or no direct charge in return for an opportunity to purchase an owner's timber. Again philosophies between these two groups generally differ in regard to timber cutting and marketing.

In summary, careful selection, good communication and a written understanding are important in choosing and working with a consultant. The result should be a continuing relationship of trust, and profitable timber growing. ♣

find a book that is compact and practical to use. A large book with many pages and references is good for home study but cumbersome outdoors. Keep it simple.

An excellent book for use is *IMPORTANT TREES OF EASTERN FORESTS*. It is published by the U. S. Forest Service and can be ordered from their Atlanta office while supplies last.

Indispensable to any serious naturalists is a simple hand lens. This too can be an important part of your collection. With it, you can detect small details not seen by the naked eye, especially when examining tree flowers, leaves and twigs.

There are several kinds of hands lens you may want to consider. The common large round reading glass can magnify two to three times and is simple to use. The large viewing field can be used at a distance and enable a quick scan of tree trunks and other large surfaces.

Another type is the watchmaker's lens. It can be held in one eye with practice and comfort. With this type both hands are free.

The most common lens is similar to the watchmaker's lens but swivels between two metal plates. It must be hand held close to the object and eye. The lens is inexpensive, and magnifications vary from x5 to x20. For use in tree identification a x10 lens is fine.

Regardless of the type lens used, they are hard to keep track of when in the field. Attach a string on the lens and tie it around your neck.

No true forester or woodsman would dare go outdoors without a pocketknife. In addition to many practical uses, a knife can be handy when studying trees. It can be used to collect samples for home study and to show someone else for further examination. In addition, some trees have internal characteristics which a knife will expose. For example, a black walnut has a chambered pith which can only be seen when the twig is cut.

Any type pocket knife will work, but most outdoorsmen prefer one which is convenient to carry and can keep a sharp blade.

Once you get started and begin to learn the different tree species on your land, you will probably run across some trees you will be unable to name. In that case, take advantage of one of the many foresters across the state. Some may visit you or will ask you to bring a leaf sample to their office. If he cannot figure out what tree it is, encourage him to find out from another source. You will be doing both him and yourself a favor. ♣

Knowing what's growing on your land is fundamental to managing your woodlot and can help you improve communications with foresters and other landowners

WHERE TO START WITH TREE IDENTIFICATION

by NEIL LETSON, Treasure Forest Coordinator

There are 160 tree species native to Alabama. Yet many landowners would be hard pressed to identify more than just a few trees outside their own door. Why is this important? Because knowing what trees are growing in your woods is a basic part of forest management and by learning tree names, habits and needs you can multiply the rewards of owning forestland.

For example, by increasing your tree knowledge, you can manage each tree for its true value (wildlife, income, aesthetics, etc.) Also, you will better communicate with resource managers and other landowners. This will result in improved personal knowledge and a better understanding of management recommendations. And, finally, it can be the first step in developing an intimacy with the forest. If Alabama landowners are to be good stewards and provide for their needs and America's, they must first appreciate and know what the forest is.

To the beginning student of tree study,

a simple collection of tools and equipment are necessary. This includes a good tree identification book, a hand lens and a pocket knife. Fortunately, these items are easy to obtain and low-cost.

Book stores and libraries are filled with tree books often ranging from highly technical to basic information. Some list trees found world wide and some cover areas on a local range. Regardless of your location in Alabama, a book which describes trees in at least the Southeastern United States is recommended.

When selecting a book, look for four things. First, make sure it is durable. This is a book which will be used in the field in both good and bad weather. It will also be handled and referred to regularly. A cheaply made book won't last any time at all. Second, buy one with good pictures or drawings of each tree. Those with color are best. Third, select one listing identification features (with diagrams!). This will help you understand tree terms used to describe each species. Finally,

LOSING SIGHT OF SITES

MISCONCEPTIONS
CREATE
MISUNDERSTANDINGS

by TOM CAMBRE, Hardwood Specialist

Quite often the public is up in arms about cutting hardwoods and planting pines in their place — unwarranted concern which has developed because of a lack of public education with regard to sound management practices. Suitable site selection is a major key to growing any plant. Rice cannot be grown on a hillside; corn cannot be grown in a marsh; the same principle applies to growing hardwoods and pines.

Generally hardwoods growing on a hillside should be replaced by pines which are quite productive on such sites. Oh, yes, hardwoods will grow there all right, but they will be of poor quality and will have less value to the landowner. Hardwoods are somewhat more selective with regard to site suitability than pines. While pines may in fact grow well on some hardwood sites, a good steward of the land will preserve these plots for the production of high value hardwoods for commercial reasons and also to attract wildlife. A few hardwoods may be preferred on pine sites to support wildlife or for fuelwood purposes, but a landowner should not allow so many that there is competition with his pine timber.

The public needs to be aware of hardwood requirements as well as the landowner's objectives before making judgments with regard to his management practices. The landowner, too, should be informed on suitable techniques.

A good example might be "stream management zones" (SMZ). Such areas along creeks and streams should be left intact when clearing for pine regeneration purposes. The SMZ provides runways through which wildlife can travel undisturbed and also guarantees food and shelter for the different species in the area. The buffer strip also contributes to clean and clear water.

Clear-cutting generally has a negative impact with the general public. However, the case may be that this is what should be accomplished on a particular site. If a

hardwood area has been high-graded (cut the best and leave the rest) and then left alone until another harvest is feasible, the results would not be in the landowner's best interest. The stand would be dominated by cull trees and other undesirable shade-tolerant species developing within the shade of the culls. These unproductive stands would be occupying valuable fertile lands and should be replaced by vigorous young stands of desired trees.

To avoid this situation, a clear-cut, commonly referred to as a regeneration cut, should be performed. The steps necessary for obtaining a new stand of desired hardwood regeneration are as follows:

1. Survey the understory plants, seedbed condition, density, and composition of the overstory.
2. Understory trees, known as advanced regeneration, should be inventoried because they will form the bulk of the new stand.
3. Vines in the understory should be noted since they are particularly damaging to small trees.
4. Presence of overstory trees that germinate from seeds (yellow-poplar and sycamore) should be noted since the new stand will often contain more of these trees than presently exist.
5. If the landowner/land manager is depending on seed instead of on advanced regeneration and sprouting, the time of the cut is of great importance. Poplar, sweetgum, and sycamore are examples of this. These species should be cut between November and February when the current year's seed crop is mature and ready to fall so that the seed will be scattered over the ground when the trees are cut. Reproduction from seed must be established during the first year of cutting to avoid competition by vegetation that may sprout later.

Hardwood regeneration does not follow a set of "cut and dried" principles. Even among hardwoods, there are species which prefer some sites over others. ♣

SIXTY-SEVEN STORIES OF PROGRESS AND SUCCESS

by TOM KIMBRELL, Forester, District 2

"When I went to work for the Forestry Commission in 1948, they did not have a truck for me. I drove a 1941 Mercury. I had four rakes, two flaps and a pump that I hauled in that car. I got four cents per mile and could not log over 1000 miles per month."

Zed Armstrong, Blount County supervisor with the Alabama Forestry Commission, was recalling past fire fighting methods as his department received new equipment last fall.

"I remember that not long after I began work with Mr. Brothers (supervisor Herbert Brothers) we climbed to the top of Shuff Mountain where we looked over the county and counted 18 forest fires. I asked him, "Which one do you want me to go to?" He said, "Take your choice." "Today, we hardly ever have a fire to burn through the night. People are involved. Our volunteer firefighters are



(photo courtesy of Southern Democrat, Oneonta, Alabama)

doing a wonderful job. Things have really changed." Armstrong said.

Blount County's forest fire fighting and equipment have come a long way in 35 years as can be seen in the adjacent photo. Each of the 67 counties in Alabama has a Forestry Commission office with a story of progress and success. They would welcome your visit. Why not stop by? ♣

FIRE ITS BEARING UPON LAND AND MAN

by PAUL S. FRANK, JR., Fire Staff Specialist

Alabama's forests as we know them today are a product of fire. Indians burned the land for a variety of reasons and then the early settlers continued the use of fire to clear land for building houses and establishing pastures. This practice continues even today as people set wildfires to accomplish objectives.

The problem with this practice is that wildfires cost all of us money in suppression costs, danger to firefighters, loss of forest products and economic loss of manufactured goods that may have been derived from these products.

Fire also produces a different ecosystem or environment than would evolve without its presence. This fire ecosystem includes plants and animals that could not survive without its existence. Although the Alabama Forestry Commission (AFC) is committed to the elimination of wildfire in Alabama, it is not committed to changing the fire ecosystem. To keep the valuable fire climax forest that exists in Alabama today and to extract the greatest value from this resource, the AFC recommends the use of "controlled or prescribed" fire and at the same time continues its battle to eliminate "wildfire."

Prescribed fire can be used to combat the likelihood of wildfires occurring as well as to provide many other benefits. Carefully prepared forest management plans are encouraged by the AFC for all 21 million acres of forested land and the four million acres of watershed in the state. These plans indicate the best use of fire in each stand. Using these plans, foresters can "prescribe" fire to enhance the various aspects of the resource. Where a wildfire might considerably damage the forest, a prescribed fire will strengthen its value. The AFC has developed a program for the internal certification of individuals who can make the prescriptions for the fire and also assist in conducting the burn.

Eliminating wildfires, however, is not as simple as prescribing fire. More than half of the wildfires in our state are deliberately set. Many others are caused by lightning, carelessness, and a number of other reasons (see chart).

During the past year, 1982, approximately 95,685 acres of Alabama forests

were burned by 5,054 wildfires. Over one-half of these fires occurred during the first three months with 46% occurring during March, the driest month during winter/spring 1982. Between February and March, 1982, southwestern Alabama experienced greater numbers of fires and fire losses. Drying winds and moderate temperatures increased fire danger during the dry period. The situation became critical on February 25 when a fire alert was issued for Macon, Bullock, and Russell Counties in addition to a previous fire alert issued for Mobile and Baldwin Counties. Fortunately, the advent of a storm system over Alabama provided cool temperatures and rain to reduce the fire situation to a more manageable size on the next day.

Firefighters experienced fatigue and worked overtime; however, fire situations remained manageable during the year. The AFC is spread thin over the state with one-man fire suppression teams being available to suppress most wildfires. Many times a firefighter cannot get to a

fire immediately. The fire will burn longer because the firefighter is the only one available in the county. This increases the damage caused by that fire and the danger to the firefighter, since the fire will become larger as time passes.

Fortunately there were no major equipment breakdowns during 1982. Early in May equipment repair restrictions were in effect. By the fall fire season in October, repairs were completed under emergency procedures. Additionally, the last three months of 1982 were wet. This held off the potentially dangerous fall fire season that would have taxed equipment and personnel. The equipment profile shows much of the fire fighting equipment to be aged. This equipment requires much more maintenance than should be required for fire fighting emergency equipment.

Alabamians lost less from wildfire during 1982 than they have lost during any year since 1975 (1979 had about the same losses as 1982). Citizens of the state reported most fires with a large number also being reported by AFC aircraft. The accompanying charts depict greater detail for 1982 and comparisons with other years.

You can help reduce wildfire losses by being careful with your fire, reporting wildfires promptly, and supporting Alabama Forestry Commission fire management efforts in your county. ♣

Summary by Cause

Cause	No. of Fires	Acres Burned
Lightning	19	471
Campfire	36	580
Smoking	406	3,617
Debris Burning	1,387	16,952
Incendiary	2,557	68,377
Equipment Use	141	1,718
Railroad	111	1,267
Children	150	1,299
Miscellaneous	247	1,404
Totals	5,054	95,685

Summary by Size

Size (Acres)	No. of Fires	Acres Burned
¼ or less	325	48
¼ - 9	3,112	9,220
10 - 99	1,480	42,264
100 - 299	109	17,249
300 - 999	22	11,147
1,000 - 4,999	4	5,080
5,000 +	2	10,677
Totals	5,054	95,685

A Comparison of 1982 Fires With That of the Past 10 Years

Year	No. of Fires	Acres Burned	Average (Acres)
1972	6,082	83,127	13.7
1973	4,671	67,171	14.4
1974	5,425	119,077	21.5
1975	3,342	42,185	21.6
1976	7,609	151,668	19.9
1977	8,488	256,779	30.3
1978	9,603	344,946	35.9
1979	5,035	87,582	17.4
1980	6,153	122,321	19.9
1981	10,208	302,291	29.7
1982	5,054	95,685	18.9

ENERGIZING THE MIDDLE STORY

A NEW SOLUTION TO AN OLD PROBLEM

by JOHN D. MARTIN, Forester, District 7

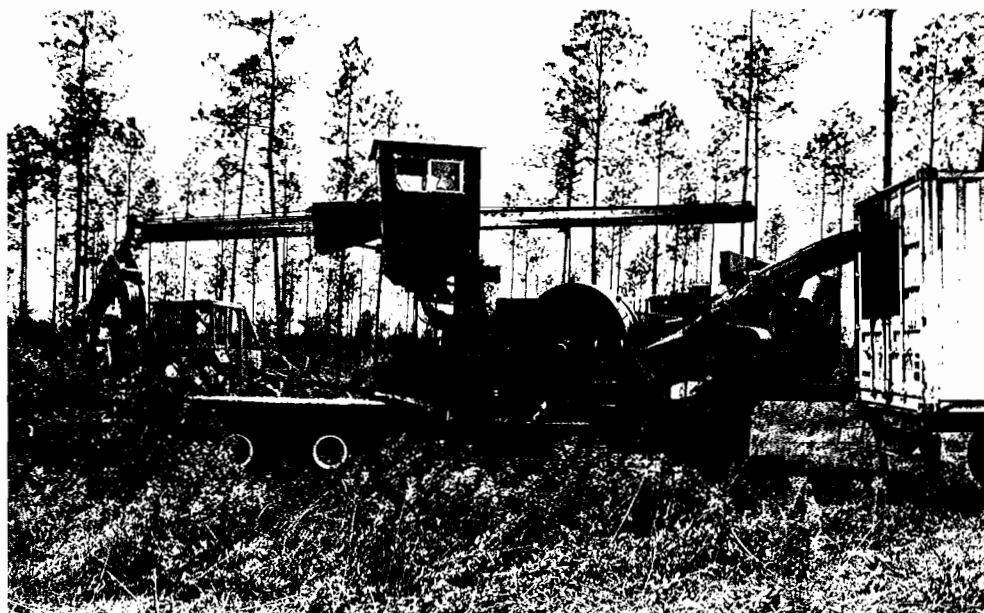
Competition from undesirable species is a constant problem in forest management. Throughout the Gulf Coastal Region, this competition is often in the form of scrub hardwoods invading sites best suited to the growing of pine. The best of these scrub hardwoods are of low value with the majority being cull.

Utilization of this wood has not been economically feasible and removal is often a major investment cost in growing timber. Recognizing the opportunity to reduce the investment costs of forestry and utilize this wasted wood resource, a new company, Forest Energy Systems Incorporated, based in Brewton, Alabama, has developed a whole tree chipping operation that does just that.

Many hardwood species, more tolerant to shade than the pines, will become established beneath a pine overstory. Once established they develop into a dense understory occupying all available growing space. This dense understory of scrub species becomes a multiple problem.

Competition for water reduces growth of desirable species. Regeneration of desirable species is inhibited by the dense understory. As access becomes increasingly difficult, recreational uses of the forest, such as hunting, camping, and hiking, are lost. Even wildlife find mobility reduced and seek a more open habitat. Aesthetically these forests are unalluring and detract from the landscape.

Methods of controlling competition have consisted mainly of prescribed burning, chemical treatments, and cleaning or liberation cuts. Fire is very economical and effective if a control burning program is initiated before undesirable species become established. Unfortunately there are hundreds of thousands of acres in Alabama where scrub hardwoods are too



large to be controlled with fire.

In these stands more costly timber stand improvement (TSI) operations, such as chemical injection, are necessary. Although it is desirable to harvest all merchantable trees, logging costs commonly exceed returns on low value hardwoods making utilization impractical.

Often the non-merchantable hardwoods are left standing after the final crop tree harvest. These areas must then be mechanically site prepared before a new stand can be established. This site preparation is not only expensive, but may disturb the soil and lower site productivity.

Forest Energy Systems, Incorporated, conceived and headed by Patrick Jarvis, offers an appealing alternative approach to the removal of hardwood competition on pine sites. Mr. Jarvis had been an industrial forester with Container Cor-

poration for the past eight years. In August of 1982, with the backing of Reichhold Chemicals, Inc., of Pensacola, he founded Forest Energy Systems, Incorporated. The company's aim is to provide a method of removing undesirable competition that makes it practical to utilize the woody biomass as an economical source of fuel or as raw material for the manufacture of gums, chemicals, and other products.

The operation consists of three feller-bunchers, two skidders, one whole tree chipper, and a fleet of closed-top trailers — a total investment of more than \$700,000. This operation can be taken into a stand to clean out a middlestory of invading hardwoods as a form of TSI or can be used as a type of site preparation ahead of or behind a logging operation.

For it to be practical to take an operation of this scale into an area, Mr. Jarvis

has estimated that he must be able to remove close to 20 tons/acre of woody biomass. Typically all undesirable species 8 inches butt diameter or less, along with cull trees up to 18 inches butt diameter are felled and skidded to a "loading site." Here, the whole trees, limbs, leaves all are fed into the front of the chipper and chips are blown out the rear to large trailers to be transported.

Since starting operations in August, Forest Energy Systems has completed over 1,500 acres. They supply Reichhold Chemicals, Inc., with 1,000 tons of wood chips per week, although the majority of their production is shipped to Container

Corporation's pulp mill in Brewton as an economical source of fuel to heat their boilers. Presently they are engaged on a multiple tract operation for the Huxford Trust located in Escambia County, Alabama.

The benefits of whole tree chipping or "energizing" as it has been called, are many. Removal of undesirable species in the middlestory opens up a stand improving access for recreational uses. Silvicultural and managerial operations such as inventory, marking, thinning, and harvesting are made easier and less costly. Removal of inhibiting vegetation allows for natural regeneration in shelterwoods.

Growth of desirable species is increased by releasing them from competition. Future site preparation needs are reduced or eliminated, lowering costs and protecting soils from operations such as bulldozing and windrowing. Since the "energizing" operation is provided at no cost to the timberland owner, investment costs of TSI are greatly reduced.

Whole tree chipping operations of this type may turn the costly problem of controlling scrub hardwood competition into an economical and renewable solution to the rising costs of fossil fuels. This is not only a benefit to the timberland owner and industry, but to every one of us. ♣

STATE UNIVERSITY TURNS TO WOOD ENERGY

by MIKE HINSON, Chief, Forest Product Development

Over the last six years, officials at the University of Montevallo. (UM) Montevallo, Alabama, have watched natural gas costs climb fivefold, from under \$90,000 in 1975 to \$450,000 in 1981. Although the university closed off rooms and buildings during harsh weather to dramatically cut energy use, the utility bills continued to mount until officials were forced to take more drastic measures or face financial disaster.

The light at the end of the tunnel was seen when a \$1.2 million loan from the U. S. Department of Housing and Urban Development permitted the construction of a new steam plant which converts woodchips, sawdust, and bark byproducts from a nearby sawmill into steam for all-weather heating and cooling. The plant, which began operating in early September, 1982, provides 100 percent of all heating needs and 60 percent of the cooling needs for campus buildings. Estimates by the university administration are that this technology will save at least 30 percent on fuel bills in its first full year.

Four years ago, when officials first considered an alternate energy source to replace the old boilers (which dated back to 1931 with few improvements made since that time), they sponsored two independent tests to determine the feasibility of wood-fired boilers. "Both studies were almost identical in recommending this system," says L. H. Floyd, executive director of the university's physical plant.

Shelby timberman Jim Seaman initiated the idea of the steam plant, accord-

ing to Floyd, after he had used the discarded processed wood waste in his lumber business for a number of years. The system uses a blend of hard and soft woods which are ground to pieces 1½ inches or smaller and burned in the new boiler at a rate of 10,000 pounds an hour.

The processed wood waste has been a thorn in the side of lumbermen for years. They've paid to have it hauled from their sites because it has been worthless, until now. But there's a change in the wind for the university and its new found, low bid supplier Cahaba Pressure Treated Forest Products Inc., of Brierfield, about eight miles southwest of Montevallo. The timber firm is owned by the Stephens brothers—Edward, Joe and Kermit. The Brierfield timber firm has five, one-year contracts that started in October with UM and is required to have 800 tons of the processed wood waste fuel in stock at all times.

The fuel is stored in a 56 foot high concrete silo that holds 250 tons of the processed wood waste. From there it is dropped onto a drag chain conveyor and dumped into a metering bin. From the metering bin the fuel drops into a spreader where it's air blown at about 300 degrees so that it will burn more efficiently. The fuel then is blown into a horizontal fire tube boiler and carried through ducts where the residue is dumped into a "dry collector." A day's worth of burned material collects there in the form of a charcoal fine powder, some of which can be used as fertilizer for the golf course. The

remainder of the residue goes through a heat exchanger and is sent through an induced draft fan out the boiler stack. But the only smoke coming out of the stack is a fine white smoke when it first starts up since the powder residue was funneled into the containers for disposal.

The new system also created two new full-time operator jobs with the creation of an extra shift per day. The boilers will be running 24 hours a day, seven days a week, and will produce 900 tons of air conditioning and all the heat and hot water on all but two of the campus buildings.

The university has completed laying of an eight-inch steam line between the facility and the campus with the assistance of a half-million dollar Department of Energy grant. "It's no telling how much we'll save energywise with the replacing of our pipes that have been corroding with age over the years," Floyd said. "We're just being a good steward for the university and the state."

The university has done a lot to conserve energy and has been awarded by the state and recognized nationally for its innovative concepts in energy efficiency.

Woodchip-to-energy recycling will be an economical energy alternative for the future. There is a new impetus to rethink our energy resources and turn to throw-away products that can provide economical heating at low cost. From woodchips to peanut shells, there are a number of previously-untapped resources which offer great potential. ♣

STUMPED?

ASK US ABOUT IT!



Q. I'm interested in hunting cottontail rabbits, but my land doesn't seem to be in a good area for them. What can I do?

A. There are many things a forest landowner can do to encourage cottontail rabbits. This must include, though, all of the habitat needs of the animal such as food, cover, water and an adequate living space. Some management techniques landowners may consider include creating suitable habitat by plantings, leaving open areas and encouraging natural plant succession in open lands. Food plots can also be planted and natural foods maintained. Any activity must be protected from wildfire or abusive grazing. To get full technical assistance, contact any wildlife biologist with the Department of Conservation and Natural Resources Fish and Game Division.

Q. What is the Stagnation Index and how will it affect my control burn?

A. This is a combination of several factors which include horizontal wind speed, relative humidity, vertical wind speed and precipitation. These are used to determine temperature inversions in the air near the ground. When temperature inversions occur, smoke cannot escape from the area. This produces a buildup of smoke plus a smoldering fire. The higher the stagnation index number, the greater the possibility of a temperature inversion and a smoke problem. When prescribe

burning, always know what wind speeds and relative humidities are required to keep the stagnation index low.

Q. When should I harvest my timber?

A. When considering a timber sale on your forestland, several points should be remembered and used as a guide. Base the sale on forest (tract) measurements made by a competent forester. Be ready for the sale through planning and preparation. Time your sale with market demand and your financial needs. And finally, when making a sale, use it as a tool in accomplishing your goals, needs and desires.

Q. I have insects and diseases on my trees. Who do I call to tell me what they are and whether to eliminate them?

A. The first place to call is the County Forestry Commission Office. Most of our county rangers have taken training on identifying the common pests that attack trees. If the county forester cannot identify the problem, he will call in a district staff forester who in turn may call the pest management staff in Montgomery or send samples to the diagnostic lab in Montgomery. As far as eliminating the pests, you cannot. The pest has been put here for a purpose and only the good Lord can eliminate it. You can, however, control the pest for the short term and manage the pest on the long term.

Q. Will fire cause pine trees to get bark beetles?

A. No and maybe! There are in forestry two types of fires—wildfire and prescribed fire. Prescribed fire is a management tool used to increase the vigor of pines by eliminating some of the competition. A more vigorous tree is less susceptible to bark beetles. Things that could cause "trees to get bark beetles" are crowding of the pines, site/soil factors, slowing of growth or damage. Wildfire may in a few cases cause damage to a pine that could lower the vigor and allow bark beetle attack. Wildfire in other cases may thin out stands and make the remaining trees less susceptible.

Q. I'm interested in trying to control our beaver population. We have 1200 acres and are constantly fighting beavers and poachers; therefore, we're even apprehensive about using trappers. After reading your spring issue 1983, article on beavers, we would like to check into the Conibear 330 trap. Can you supply me with any info?

A. Each district has a beaver management coordinator who will be glad to assist any landowner with his beaver management. These people are: District 1 - Alvie Lemley; District 2 - Rick Hofmeister; District 3 - Philip DuBois; District 4 - Tom Cambre; District 5 - Larry Brooks; District 6 - Wayne Craft; District 7 - John Martin; District 8 - Chester Billie; District 9 - Clayton Schwind; District 10 - John Waites. These coordinators can be contacted through the district office. ♣

Have you got a question on trees or do you have any tips that would be of interest to other forest landowners? If so, we want to hear from you. Write us in care of Stumped?, Alabama's TREASURED Forests, 513 Madison Avenue, Montgomery, AL 36130.

TOLL-FREE FARM HOTLINE ESTABLISHED

MONTGOMERY—Agriculture and Industries Commissioner Albert McDonald has announced the establishment of a toll-free hotline for Alabama farmers and consumers to contact his department. The

hotline number is 1-800-321-0018.

McDonald said the hotline will be available for use by individuals having business to conduct with his department and to any citizen having problems, complaints, questions or suggestions concerning any of the areas over which the Department of Agriculture and Industries has jurisdiction. In addition to promoting Alabama agriculture, the Department of Agriculture and Industries acts as a regulatory authority over a variety of agriculture-related industries ranging from chemicals and pesticides to food and drugs.

McDonald pointed out that one exception to the hotline's use would be the issuance of livestock and poultry market reports, stating "We simply don't have the facilities or manpower to give out market reports over the hotline."

A specially trained operator will receive the incoming hotline calls and refer them to the appropriate authority who will then return the call as promptly as possible. Logs will be kept to record each call that comes in and to indicate how the call was responded to. McDonald promised to closely monitor the system and to become personally involved when necessary. ♣

Heredity has helped in other areas and now . . .

FIGHTING FUSIFORM WITH GENETICS!

by RAY COVIN, Tree Improvement Specialist

One of the most damaging forest tree diseases in Alabama is fusiform rust. (See Bob Kucera's article in the Spring Issue 1983 of *Alabama's TREASURED Forests* for more specific information pertaining to fusiform rust). Although fusiform rust is a serious problem in areas with a high incidence of the disease, encouragement can be found in the knowledge that some individual slash and loblolly pine trees possess a natural or genetic resistance to the disease. This resistance trait is not total so the tree will not be immune to the disease, but its infection rate will be greatly reduced when compared to pine seedlings currently available for planting.

Rust resistant trees are quite rare. Several thousand trees must be tested in order to locate forty or fifty resistant trees for inclusion in new rust resistant seed orchards. Tree improvement workers throughout the South have actively searched for these resistant trees for the past ten to fifteen years and now at last, enough of these rust resistant trees have been located for the establishment of rust resistant seed orchards.

In 1981 the Alabama Forestry Commission (AFC) began developing a new thirty acre rust resistant slash pine seed orchard at Geneva State Forest. This new orchard will incorporate the best rust res-



Scion or small branch taken from the top of a rust resistant slash pine tree. The scion will be used for grafting into a rootstock at the new rust resistant seed orchard.

sistant trees developed by the AFC along with the best selections from other organizations having tree improvement programs. Organizations contributing outstanding trees to this new orchard include the Georgia Forestry Commission, Florida Division of Forestry, Scott Paper Company, Container Corporation of America, International Paper Company, Union Camp Corporation, ITT Rayonier, Georgia Pacific, Buckeye Cellulose Corporation, and Brunswick Pulp Land Company.

The rust resistant seed orchard is being established by taking cuttings from the rust resistant tree and grafting them onto slash pine rootstocks already growing in the seed orchard. Once grafted, the new tree will possess all the characteristics of the parent tree. In this case, all the trees in the orchard will be highly resistant to fusiform rust. In eight to ten years, seedlings produced from this seed orchard will be nearly free of fusiform rust disease.

The AFC is planning to establish fusiform rust resistant loblolly pine seed orchards in the very near future. If the project is successful, Alabama landowners may no longer have to battle this disease!



The new rust resistant seed orchard being developed at Geneva State Forest. All timber has been cut and the area site prepared for planting.



The scion or branch from the rust resistant tree grafted into the rootstock at the seed orchard. This newly grafted tree will possess all the traits of its parent.

Treat Others to Your Favored Place

TRAILS CAN BE FUN

by LOUIS HYMAN, Chief, State Lands

On a recent holiday, my dog took me for a walk at Cooters Pond near Prattville where I live. We explored a relatively new trail in the park. The path wound along the edge of the bluff overlooking the Alabama River. We strolled beneath a mature oak canopy and admired the dogwoods just past blooming and the buckeyes with their bright red columns of flowers. The trail took us to a spot where we could overlook a pretty waterfall, although my dog was more interested in the squirrel in a nearby oak tree. The calling of some wood ducks as they lifted off the pond below added to the enjoyment of the scene.

Our walk back was along an old woods road which had been graded to make a footpath about 6 feet wide. Even though this route was within 20 yards of our outland trail at times, it presented a different ambience. We wandered under majestic loblolly pines and yellow poplars and admired the oak-leaf hydrangeas. We returned to the trailhead surprised to find that we had only been gone 20 minutes.

For many landowners, the main way that they enjoy the woods is by walking through them. Trails serve many purposes. They can be used for recreation, like the trail at Cooters Pond; they can be used as firelanes; they can be used as wildlife openings; and they supply access for timber inspections or logging.

The first step in setting up a trail system on your property is to evaluate the trails that you already have. Do they fit in with the natural features of the tract? Are these special features or areas you wish to show off? These features can include bluff areas or overlooks, pond sites, wildlife openings, waterfalls, unusual trees or land features, old house or mill sites, abandoned mines, or just pretty stands of trees that you enjoy visiting. A good trail

system should give access to all such features.

The best trail design is the closed loop layout, beginning and ending at about the same location. You should avoid a "connect the dots" layout. Instead mark out the trail so that it will make relatively easy walking. Side loops can be attached to give access to worthwhile subjects off the main path. Avoid straight lines. Trails with curves and forks at frequent intervals inject an atmosphere of remoteness and exploration to the visitor. Post signs at trail junctions showing the way to important features. Trail names can be developed and posted to aid the visitor in finding his way. The side trails give the visitor the option of how much time he wants to spend in the woods.

Trail construction need not be an elaborate production. The right-of-way for the main trails should be about eight to ten feet wide, and overhanging branches should be cleaned to a height of ten feet. On side trails a narrower pathway of four to six feet is good enough. Construction can be done mechanically (by bulldozer or bushhog) or by hand. Mechanical construction should be done carefully to prevent damage to adjacent trees and sensitive areas. Hand clearing is more expensive but less damaging.

Always install erosion control measures on any slope or near creek beds. Water bars, slightly raised mounds of soil that channel rain water off the trail at an angle, should be installed. A table showing how often they should be placed is shown in Figure 1. Where possible, trails should follow the contours of the land. An average grade of ten percent is about the best for comfortable walking. Steep trail slopes are not only hard to walk up, but they also have more erosion problems. The maximum trail slope should be

20 percent (that is a one foot rise for every five feet traveled) and only for short stretches.

On wet sites, or over sensitive areas, boardwalks can be constructed to aid access and minimize damage. These boardwalks can be made of a variety of materials. It is recommended that only preservative treated wood (such as "wolumanized" lumber) be used for longer trail life.

The surface of the trail can vary. Unless the trail is also used as a firelane, a light layer of litter would give the most soil protection. Wood chips or pea gravel can also be used to cover trail beds. It is not recommended to pave trails unless very heavy use is expected. For many people the presence of concrete or asphalt takes away from the "natural appearance of the woods."

The trails you build should show off the good features of your properties, but should do so in an unobtrusive way. Woodland openings, such as food plots or meadows, are excellent places for observing wildlife. It is best if the trail just skirts the opening, using natural cover to help "hide" the visitor from any wildlife. An observation blind of simple wood panel or woven wood slats also provides good locations for wildlife observation.

Forest management areas should also be included. Signs can be erected showing what work was done at a site. Thinning areas and even small clear-cuts are interesting to the visitor. Scenic overlooks can be enhanced by building a simple gazebo at the site with benches. This structure invites the visitor to rest and admire the view. It also provides a point of shelter from sudden summer thunder storms.

Trails serve many purposes and can improve your enjoyment of your woodlands. They are less bother to build than it seems, and their use will go for longer than you think. ♣

FIGURE 1
RECOMMENDED DISTANCES
BETWEEN WATER BARS ON
WALKING TRAILS

Trail Grade	Distance
2%	250 ft.
5%	135 ft.
10%	80 ft.
15%	60 ft.
20%	45 ft.
25%	40 ft.
30%	35 ft.
40%	30 ft.

1983 FOREST FESTIVAL AWARDS PRESENTED AT BANQUET

by ANITA BENTON, Assistant to Editor

The ninth annual Alabama Forest Festival has come and gone, and in its wake are many memories — hard work, happy times, fun, and a feeling of accomplishment in that for one day many people in the State of Alabama paused to realize the importance of our forests.

One of the bright spots of the festival was the time set aside at the awards banquet on Friday night to recognize those people who have made tremendous contributions to forestry in Alabama.

The Roy B. Morgan awards are presented by the Forestry Commission to recognize employees in three areas. The recipients are chosen from nominations submitted to a committee composed of past Roy B. Morgan awardees. This year's winners are as follows: Harold P. Taft, Personnel Officer, Montgomery Headquarters — Forester of the Year; Joe B. Barton, Bibb County — Ranger of the Year; and Frances Sanderson, Miller Nursery, Autaugaville — Employee of the Year.

Helene Mosley awards recognize the most outstanding TREASURE Forest landowners in the state. One winner is chosen from each of the Cooperative Extension districts and receives a plaque and \$500. This year's Helene Mosley award winners are Mr. and Mrs. Bruce Owens, Dallas County; Mr. and Mrs. Albert Rumph, Bullock County; and Mr. and Mrs. Dorsey Taylor, Marion County. An overall state winner is chosen from these three and receives an additional \$500. This year's state winner is Mr. Bruce Owens.

In addition to these awards, the Alabama Forest Festival Committee recognizes individuals who have made outstanding contributions in several areas. The first, Communicator of the Year, recognizes an individual or a company for support of forestry through use of the media. Mike Breedlove, Editor, *The South Alabamian*, was designated as this year's recipient for keeping readers of *The South Alabamian* well informed on forestry news and issues; for editing a special section highlighting the economic contribution of forestry to Alabama; and for encouraging landowners, through his articles, to better manage their woodlands.

Another area is Legislator of the Year. This year's recipient is Rick Manley of

Demopolis. He has made many efforts to secure passage of bills that are favorable to forestry in the state, and he was especially helpful in gaining passage of the current use bill.

The Business Leader of the Year Award is presented to an individual in industry who has demonstrated leadership in the forestry field. Robert B. "Bob" Frese was selected as Business Leader of the Year for 1983. Mr. Frese was a consultant on the preliminary work that led to Alabama River Pulp Company's mill being constructed at Claiborne; he initiated a landowner assistance program for non-industrial private landowners; and he spearheaded a fund raising drive for a survey aimed at the replacement of the Claiborne-Murphy Bridge across the Alabama River.

A special category was set aside by the Forest Festival Committee to recognize individuals who did not fit in any of the other categories. This category is an optional category and will only be awarded when the Committee feels that the individual nominated is truly deserving of recognition. This year's award went to Mrs. Ann Wright, who has served as chairperson of the Mobile Tree Commission for the past five years. She has worked diligently to see that the urban forest has its rightful place in Mobile's environment. Under her guidance, 24,000 redbuds, yellow poplar, pine, sycamore, sweetgum, and red maples were given away last Arbor Day. Mobile's reputation as the City Under the Trees and the citizens' awareness of the Urban Forest has been greatly enhanced by the efforts of Mrs. Wright. ♣

BARROW RECEIVES ENVIRONMENTAL AWARD

by BILL CHESTNUTT, Union Camp Corporation



Art Arnold, Union Camp Forest Supervisor, Butler County; G.M. "Mack" Barrow; and Dr. Harry Larsen, Auburn University.

G. M. "Mack" Barrow of Chapman, Alabama, has received the W. Kelly Mosley Environmental Achievement Award in recognition for his outstanding service to Butler County forest landowners in the protection of forest lands from wildfires.

A five hundred dollar cash award and certificate of appreciation were presented to Barrow at a March 17, 1983, ceremony in the Union Camp Woodlands office in Chapman.

Barrow, a Crenshaw County native, is currently employed as Senior Crew Foreman in the Alabama Woodlands Region of Union Camp Corporation at Chapman.

He has been with Union Camp since 1967 and in his present job has a major responsibility in fire protection on the company's 210,000 acre Chapman Forest, which is located in Butler and surrounding counties.

In making the presentation of the award, Art Arnold, Union Camp Forest Supervisor in Butler County, praised Barrow for his dedication.

"Mack is on call virtually 24 hours a day," Arnold said. "He is available on weekends, in good or bad weather, on holidays and vacation. . . anytime the forest is threatened by fire. . . no matter who owns the land, Mack is willing to respond to the call," he said.

"Mack belongs to a group of employees. . . forestry aids and technicians. . . who play a significant role in environmental enhancement, but who often go unrecognized. It seems to me he epitomizes the role of the unsung hero," Arnold said.

The W. Kelly Mosley Environmental Awards program is administered by Auburn University through a gift from Dr. W. Kelly Mosley of Atlanta, Georgia, an Auburn alumnus, and the William and Mary Franklin Foundation. ♣

Southern Landowners Have Lost Millions of Acres to This Oriental Vine That Steals Their Land! They Are Ready to —

KUDZU

by JIM HYLAND, Chief, Forest Pest Management

One of the largest “landowners” in the state is a thief! He doesn’t pay taxes. He grows an annual crop on each acre, but he doesn’t have a list of his landholdings. His land area expands each year. He has stolen many acres of land from Alabama landowners but few people do anything to stop him except complain. This thief works like most con men by gaining the confidence of the landowner. “I will save your land for you,” he says. Before you know it the land is his. This thief is kudzu!

Almost everyone living in the Deep South today knows that kudzu can be a pest. Its rapid growth can choke out trees and rapidly overrun fields and pastures. In general, it is very difficult to control once it becomes established. However, few people know that kudzu was once regarded as a good friend and was planted throughout the South for seemingly very good purposes. It was so popular in the 1940’s, that kudzu clubs were formed to expound its virtues. In fact, kudzu festivals were held and kudzu queens were crowned.

The Plant

The secret of kudzu’s early success was that it grew extremely fast, even on

eroded and poor soils. This was partly due to its nitrogen-fixing capability from being a legume. It is not uncommon to find vines that grow 60 feet in a summer, with daily growth of up to one-foot per day in the spring. The plant produces pretty purple flowers in mid-summer which seldom produce pods with seed. Filled pods are found most frequently above five feet high on draped trees. The plant spreads almost entirely by the vines that sprout from root nodes. Each new rooted node is capable of forming an independent plant.

Kudzu roots can be big, long, and woody; 6-12 inches, 3-8 feet long in diameter, and weigh up to 400 pounds. Such a root system can make the plant very difficult to control.

History of Kudzu

Oriental cultures have recognized the value of kudzu for more than 2,000 years. Of the ten species of kudzu known throughout the world, all are native to China, Taiwan, Japan, and India. The species naturalized in the southern United States is *Pueraria lobata* (Willd.) Ohwi. This species originated in China and moved to other cultures by way of Japan and Korea. The early Chinese made a root

tea which they used for treating fever, influenza, dysentery, and even insect bites. Cloth and paper were made from kudzu vine fibers as early as 1665. Japan imported the plant during the 1700’s to make cakes from the root starch. The Japanese have continued using kudzu as a food ingredient and today, it is a million dollar business. It is harvested for use as an extract powder to thicken sauces, to flour fried foods, and in making cakes and candies. In 1976, 40,000 packets of kudzu powder were imported and sold in this country. An American harvesting and processing plant has been considered by entrepreneurs.

Kudzu first appeared in the states in 1876 at the Japanese pavilion of the Philadelphia Centennial Exposition and again at the New Orleans Exposition in 1883. Thus, this oriental vine has grown in our country just over 100 years. Kudzu was first used as an ornamental vine to shade porches and courtyards of many southern homes. Its fragrant flowers and rapid growth made it somewhat desirable. By the turn of the century, kudzu was being sold extensively through mail-order catalogs to a growing market. By 1905, southern farmers with depleted pastures found they could provide supplemental summer grazing for their livestock.

The real heyday for kudzu began in the

1930's when the depression, the boll weevil, erosion, and low prices for farm products caused abandonment of many farms in the South. To heal the scarred land, the newly created Soil Conservation Service (SCS) provided millions of kudzu plants which were quickly planted by farmers and the Civilian Conservation Corps (CCC) throughout the South. Government incentives provided as much as eight dollars per acre for farmers to plant their land with kudzu.

In 1943, Channing Cope of Covington, Georgia, founded the Kudzu Club of America, which eventually boasted of 20,000 members. Cope's numerous writings on the "miracle vine" brought him the title of the "Father of Kudzu." Because of the absence of disease or natural insect enemies, kudzu spread rapidly through the South. It thrived because of the mild winters and long hot summers. Nothing seemed to deter its growth.

In the 1950's, the need for more grazing land prompted unsuccessful attempts to eliminate kudzu. In 1953, the U.S. Department of Agriculture removed kudzu from the list of permissible cover plants under the Agricultural Conservation Program (ACP). By 1962, the SCS began to limit recommendations for kudzu plantings and finally in 1970, listed it as a weed.

Today, an estimated two million acres of forestland in Alabama, Georgia, Mississippi, Tennessee, and the Carolinas are infested with kudzu. Although less robust in other areas, kudzu is found as far north as central Kentucky, Virginia, and Maryland, and as far west as eastern Texas and Oklahoma. It has even been reported in the states of New York and Washington. Today, only a small percentage of this coverage provides beneficial erosion control on precipitous slopes.

It should be pointed out that kudzu does serve some useful purposes and the idea of utilizing it for additional benefits has merit. Some useful ideas for kudzu are as follows:

- 1) Vines can be burned in combination with coal to make electricity in power plants. Kudzu has approximately one-half the heating value of coal, is low in sulfur content, and is a fast-growing renewable resource.
- 2) Kudzu is rich in protein and phosphorus and supplies a nutritious fodder for livestock even during droughts.
- 3) Kudzu can be harvested and used on gardens as a mulch or compost, thereby improving the production of many gardens.
- 4) A company in Atlanta is duplicating

the oriental process of paper making. Kudzu fibers yield a long-lasting, mold-resistant, and non-fading paper for artists.

If these uses were developed and the uncontrolled spread could be limited, then kudzu would be more favorably reviewed.

Control

Kudzu can be controlled by a persistent application of the right method. Every root crown on an area must be killed or all control efforts will be nullified within a short time. A stronger effort is required for older patches and around the tree-draped borders where roots grow largest, which are most resistant to control.

Grazing and mowing can be effective control measures in certain situations. Both require vine or tree cutting around tree-draped borders. Grazing also requires fencing to surround the infested area which should also have a watering place for cattle. Fencing should encompass the entire patch or excluded crowns must be controlled by other means. Close grazing for two successive years eliminates kudzu when 80% of the vegetable growth is continuously consumed. Kudzu provides a good quality forage but yields are low at approximately two tons/acre/year. Cattle grazing has been effective with claims that goats and hogs are faster at control since more of the roots are consumed. Close mowing every two months for two growing seasons or re-



Grazing fenced areas can be an effective control practice.

peated cultivations are also effective. Rolling or dissected terrain often precludes these measures. Grazing, mowing, tillage or prescribed burning can also prepare areas for more efficient herbicide applications. However, tillage and prescribed burning should not be used on steeply sloping lands where erosion is a risk.

Use of Systemic Herbicides

To be successful in controlling kudzu with herbicides you need to (1) identify control situations, (2) prepare the site, (3) use effective herbicides, (4) use proper application, and (5) use follow-up applications.

There are generally four kudzu control situations that need to be identified in order to select the proper herbicide. (Figure 1). When the application is near sensitive crops and away from streams you

General Situations and Herbicide Recommendations

Herbicide	Rate/Acre
Kudzu in open patches near sensitive crops and away from streams:	
TORDON 10K Pellets*	40-50 lbs
GRASLAN Pellets	20-30 lbs
SPIKE 40P Pellets	15 lbs
Kudzu in open patches away from sensitive crops:	
TORDON 101*	2-3 gal
BANVEL	2 gal
BANVEL 4WS	2 gal
SUPER BRUSH KILLER	1 gal
Kudzu near streams:	
BANVEL	2 gal
BANVEL 4WS	2 gal
SUPER BRUSH KILLER	1 gal
Control of tree-draped kudzu in pine:	
OUST WEED KILLER	12 oz
Proper application of herbicides on kudzu is double spray passes using 80-100 gallons water/acre.	

*Restricted-use herbicide.

want a herbicide that will not drift onto non-target plants. On areas that are tree draped you want a herbicide that will kill the kudzu but not the tree. Some herbicides can be applied near streams safely. On open patches the main restriction is whether equipment can be operated on the area.

At present, there are several agricultural herbicides registered for forest and noncrop lands which help eradicate kudzu. Herbicides that contain picloram (TORDON 10K, TORDON 101, and AMDON 101) are very effective, because picloram is active in both soil and foliage. In the soil it kills the roots directly. Because picloram remains active in the soil for more than six months, planting a new crop on the site should not be scheduled for at least nine months after the last herbicide application. Dicamba products (BANVEL, BANVEL II, BANVEL 10G, WEED MASTER, and ACME SUPER BRUSH KILLER) are also effective for controlling kudzu. Some of these products can be applied safely next to streams. If field crops are planted nearby, picloram and dicamba herbicides are best applied in early spring before susceptible crop plants emerge. But remember, TORDON is a restricted-use herbicide which can only be applied by landowners on their own land, or under the direct supervision of state-certified applicators. Permits to purchase these herbicides may be obtained from your county agent, who can also supply information on safe use.

Small kudzu patches may be herbicide-treated with small hand sprayers for liquid sprays or by scattering pellets by hand. Larger patches may be treated using tractor-mounted agricultural sprayers or fertilizer spreaders. Areas with deep gullies, vegetation, or other objects that prevent machine operation will have to be treated by hand. Control burning of patches before chemical treatment enhances control and makes application easier and safer. Foliar sprays should be carefully mixed according to instructions on the herbicide label and applied according to specified rates. Double passes at right angles, applying half the mixture one way and half the other, are the best way to get the most control from the first treatment. Needed follow-up spot treatments can be applied if surviving crowns are scattered more than 20 feet apart. All herbicide treatments require follow-up to kill surviving kudzu stolons that resprout, and follow-up over two or three years may be necessary to completely eradicate kudzu from a particular area. However, the treatment job will be smaller with each succeeding season.

The newest herbicide labeled kudzu control on noncrop lands is OUST WEED KILLER. The initial tests indicate that at least two applications are required to control kudzu. This herbicide offers the advantage of doing little damage to sprayed pines. It is suggested that some on-site testing be conducted prior to application because actual application rates are not yet well defined.

With all herbicides, labels should be thoroughly read and understood before using the product. All label restrictions, including those pertaining to avoidance of drift to other plant and animal life, and the contamination of food and water should be followed.

Kudzu is a persistent pest that can be eradicated only with an equally persistent application program. Timber with kudzu

should be harvested when possible before treating, and vines should be cut with a machete or chain saw. Little is known about seeds that may be in the litter and sprout after control. However, use of prescribed burning in early spring can clear the dead vines and may kill such seeds.

Even though kudzu is a land thief he can be captured and sentenced to death. In this way the landowner can reclaim his land to use a part of his Treasured Forest.

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- Edwards, M. Boyd, and James H. Miller, "Kudzu: Where Did It Come From and How Can We Stop It?", 1982.
Edwards, M. Boyd, and James H. Miller, "So You Want To Get Rid of Your Kudzu," 1983.

TAKE A NATURE BREAK AT THE TUSKEGEE RANGER STATION

by JAMES HUNT, Ranger,
Tuskegee Ranger District,
USDA Forest Service

An interest in nature is one of the few human activities which can endure for a lifetime. Certainly, nature is not remote—it is abundant and readily available, as close as your own backyard or a national forest. The Tuskegee National Forest's Ranger Station, located about nine miles northeast of Tuskegee, is favored by many nature lovers. Forest personnel are available at most times to help direct the public to their point of interest or to assist with environmental programs and investigations. Available slide programs focus on the Bartram National Recreation Trail, the Tsinia Wildlife Viewing Area, and practical applications of multiple-use land management. Films on Smokey Bear, Woodsy Owl, wildfire, and safety are also on-hand.

The ranger station is located near the two mile marker on Highway 186, from the Wire Road exit off I-85. The forest facility is open Monday through Friday, 7:30 - 4:00, except for national holidays. So, whether your journey is one of discovery or rediscovery, come visit and use the facilities of the Tuskegee National Forest.

There is a variety of birds and other wildlife at Tsinia Wildlife Viewing Area, a unique and special area developed for



the forest visitor on the Tuskegee National Forest. Tsinia, a 125-acre area nestled in Macon County, is open all year for wildlife viewing and other recreational treats such as photography, hiking, and nature study. Tsinia, once extensively roamed and used by Creek Indians, is a Creek Indian word meaning "peeping or viewing".

Bartram Trail, Alabama's first National Recreation Trail, can usually be hiked in one day. Shorter hikes are possible, for those not desiring to walk the entire trail, because of the parking lots located at different points. Year around hiking is possible. Maps are available at the Ranger Station. For further information write or phone:

District Ranger
Rt. 1, Box 204 AA
Tuskegee, Al. 36083
phone: 204/727-2652

ALABAMA FORESTRY COMMISSION DIRECTORY

C. W. Moody, State Forester, 513 Madison Ave., Montgomery 36130, 832-6587

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John C. Kummel, Director, Administrative Division, 513 Madison Ave., Montgomery 36130, 832-6650

Richard Cumbie, Northern Regional Forester, 513 Madison Ave., Montgomery 36130, 832-3716

Alvin Downing, Southern Regional Forester, 513 Madison Ave., Montgomery 36130, 832-3552
Box 178, Brewton 36426, 867-5368

DISTRICT 1—Samuel Gravel, District Forester, 528 Courthouse, Huntsville 35801, 532-3566; **Calhoun County**—David Morris, 110 East Ladiga, Jacksonville 36265, 435-6245; **Cherokee County**—Stanley Anderson, Box 342, Centre 35960, 927-3163; **DeKalb County**—Donald Cole, Box 744, Ft. Payne 35967, 845-1331; **Etowah County**—Philip M. Smith, Route 3, Box 248B, Attalla 35954, 538-2535; **Jackson County**—Mike Banzhoff, Room 50, Jackson County Courthouse, Scottsboro 35768, 574-3217; **Madison County**—Charles Weber, 528 Courthouse, Huntsville 35801, 532-3568; **Marshall County**—Larry W. Parker, Box 262, Guntersville 35976, 582-4212.

DISTRICT 2—Barton Williams, District Forester, 1225 Forestdale Blvd., Birmingham 35214, 798-3227; **Blount County**—Zed Armstrong, Box 814, Oneonta 35121, 274-2231; **Cullman County**—Darrell G. Johns, Rt. 6, Box 96-G, Cullman 35055, 739-3530, Ext. 315; **Jefferson County**—Phearthur Moore, 1225 Forestdale Blvd., Birmingham 35214, 798-2310; **Shelby County**—Daryl Lawson, Box 768, Columbiana 35051, 669-4133; **St. Clair County**—Charles G. Hamilton, Box 563, Pell City 35125, 338-2819; **Walker County**—Charles Tidwell, Box 1209, Jasper 35501, 384-6344; **Winston County**—David Frost, P.O. Box 595, Double Springs 35553, 489-5014.

DISTRICT 3—S. Wayne Strawbridge, District Forester, Box 2323, Tuscaloosa 35403, 345-1786; **Fayette County**—George W. Lowrey, Box 546, Fayette 35555, 932-6223; **Greene County**—Earnest H. Edmonds, Box 556, Eutaw 35462, 372-4614; **Hale County**—Landre Tomlinson, Box 417, Moundville 35474, 371-2202; **Lamar County**—James A. Terrell, Box 426, Vernon 35592, 695-7530; **Pickens County**—John C. Sutton, III, Box 247, Carrollton 35447, 367-8232; **Sumter County**—Donald W. Wedgworth, Box 143, York 36925, 392-4751; **Tuscaloosa County**—W. A. Moore, Box 2323, Tuscaloosa 35403, 345-1786.

DISTRICT 4—Ernie O. Moore, District Forester, Route 2, Box 100, Henderson Dr., Dadeville 36853, 825-9284; **Chambers County**—Floyd Clanton, Box 501, Lafayette 36862, 864-8163; **Clay County**—Earl H. Smith, P.O. Box 566, Ashland 36251, 354-2471; **Cleburne County**—R. Glenn Berry, 206 Hunnicut St., Heflin 36264, 463-2876; **Coosa County**—Ralph Woolley, Rt. 1, Box 34, Weogufka 35183, 245-6227; **Randolph County**—J. Stephin Nix, P.O. Box D, Wedowee 36278, 357-2178; **Talladega County**—Clyde Atkisson, P.O. Box 561, Talladega 35160, 362-4848; **Tallapoosa County**—Thomas V. Cambre, P.O. Box 451, Dadeville 36853, 825-9284.

DISTRICT 5—H. C. Lucas, District Forester, Box 631, Selma 36701, 872-2384; **Autauga County**—Harold K. Cleveland, Rt. 4, Box 25, Prattville 36067, 361-0576; **Bibb County**—Joe B. Barton, Box 278, Centreville 35042, 926-4917; **Chilton County**—Tobie W. Mayfield, P.O. Box 223, Clanton 35045, 755-3042; **Dallas County**—James R. Bible, Box 631, Selma 36701, 875-7131; **Marengo County**—James A. Black, Box 473, Linden 36748, 295-5811; **Perry County**—David Pearce, Box 482, Marion 36756, 683-8537; **Wilcox County**—Paul A. Wingard, P.O. Box 329, Camden 36726, 682-4421.

DISTRICT 6—Marion D. Monk, District Forester, Box 61, Ozark 36360, 774-5139; **Barbour County**—Donald VanHouten, Box 163, Clayton 36016, 775-3496; **Coffee County**—Wayne Roberts, P.O. Box 413, New Brockton 36351, 894-6734; **Dale County**—Horace B. Hancock, Box 61, Ozark 36360, 774-8112; **Geneva County**—Ronnie Hickman, P.O. Box 687, Geneva 36340, 684-2876; **Henry County**—Kenneth L. Blalock, Sr., Box 351, Abbeville 36310, 585-2403; **Houston County**—Frank McAliley, Box 477, Dothan 36301, 677-5454; **Pike County**—John Wayne Craft, Box 167, Troy 36081, 566-3436.

DISTRICT 7—Larry R. McLennan, District Forester, Box 178, Brewton 36426, 867-5368; **Butler County**—Brandon Burkett, Box 216, Chapman 36015, 376-9114; **Conecuh County**—Victor Howell, Rt. 2, Box 404, Evergreen 36401, 578-3226 or 578-1850; **Covington County**—W. A. Hardage, Box 451, Andalusia 36420, 222-4041; **Crenshaw County**—Tim Money, Box 182, Luverne 36049, 335-5712; **Escambia County**—Robert Knowles, P.O. Box 178, Brewton 36426, 867-5275; **Monroe County**—Gary Cole, P.O. Box 538, Monroeville 36460, 564-2543.

DISTRICT 8—David Frederick, District Forester, Rt. 1, Box 346-F, Bay Minette 36507, 937-7771; **Baldwin County**—Robert E. Dismukes, Route 2, Box 39, Loxley 36551, 937-5651; **Choctaw County**—Charles Quinn, Rt. 1, Box 232-H, Toxey 36921, 459-2928; **Clarke County**—Mike Hinson, Box 628, Grove Hill 36451, 275-3283; **Mobile County**—Patrick Waldrop, Route 1, Box 558, Semmes 36575, 649-1380; **Washington County**—Otis Evans, Box 267, Chatom 36518, 847-2972.

DISTRICT 9—Gerald T. Steeley, District Forester, 1212 Waterloo Rd., Florence 35630, 767-1414; **Colbert County**—Danny Deaton, Box 322, Tuscumbia 35674, 383-4376; **Franklin County**—G. E. Thorn, Route 2, Box 129, Vina 35593, 332-2460; **Lauderdale County**—Steve McEachron, Box 361, Florence 35630, 764-4382; **Lawrence County**—Larry S. Lee, Box 14, Moulton 35650, 974-8168; **Limestone County**—Howard Swanner, Box 164, Athens 35611, 232-7940; **Marion County**—Tony Avery, Box 561, Hamilton 35570, 921-3843; **Morgan County**—Roger Nichols, 302 Chestnut St., Hartselle 35640, 773-2114.

DISTRICT 10—David L. Duckett, District Forester, 2181 Federal Drive, Montgomery 36109, 832-6580; **Bullock County**—W. J. Green, Box 392, Union Springs 36089, 738-3040; **Elmore County**—Lynn Justiss, Route 1, Box 128, Titus 36080, 567-5486; **Lee County**—J. B. Coker, Box 502, Opelika 36801, 745-6824; **Lowndes County**—William C. Davis, Box 206, Hayneville 36040, 548-2402; **Macon County**—Benny Faulkner, Rt. 1, Box 204, Tuskegee 36083, 727-3783; **Montgomery County**—F. Bruce Johnson, 2181 Federal Dr., Montgomery 36109, 832-6580; **Russell County**—Melvin Phelps, Route 2, Box 4-N, Seale 36875, 855-3302.

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