Alabama's TREASURED Forests

WINTER · 1985

STATE FORESTER'S MESSAGE

by C.W. MOODY

I recently had a *TREASURE Forest* owner write and ask us to put his daughter on the mailing list to receive the *TREASURED Forests* magazine. "I want her to begin to understand forestry values in hopes that she will continue our *TREASURE Forest*," he said.

I was not surprised by his request since this is the kind of thinking that is expected from a *TREASURE Forest* landowner. I was, nevertheless, impressed with his commitment to forest conservation, not only during his own lifetime but beyond that. It pointed out once again that *TREASURE Forest* owners are special citizens who are an asset to our state and nation and whose impact will be felt many years into the future.

We think so well of this request that we would like to make it easy for other *TREASURE Forest* owners to follow suit. Shortly, each *TREASURE Forest* owner will receive a letter inviting them to submit the names of their children or other likely heirs not living in their household to be added to *ALABAMA'S TREASURED Forests* mailing list. This is our part in helping to educate and motivate a new generation of *TREASURE Forest* owners.

As graphically illustrated above, we know that we can count on *TREASURE Forest* owners doing their part.

Cover Photo by Dr. Hubert Matthews.

Alabama's TREASURED Forests

Volume IV **Winter Issue, 1985** **Number 1**

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Alabama's Treasured Forests is published quarterly by the Alabama Forestry Commission, 513 Madison Avenue, Montgomery, AL 36130. Telephone 261-2525. Bulk-rate postage paid at Montgomery, Alabama. POSTMASTER: Send address changes to: **Alabama's Treasured Forests,** 513 Madison Avenue, Montgomery, AL 36130.

When faced with the reality that life isn't forever, J. R. Crosby decided. . .

The Woods Is The Place To Be!

by CYNTHIA K. PAGE, Editor

J. R. CROSBY REMEMBERS the concern on the faces of doctors and nurses as they executed each precise step, anxiously monitoring the uneven waves of his heartbeat. Feeble waves on the screen grew stronger offering hope that he'd pull through. Every five minutes, they would check on him in intensive care. "He's making it," he heard the nurses remark through the day.

Flashbacks of hasty flights to Alaska, the typical hustle and bustle life of Chicago and Atlanta, and the demand for this Harvard business graduate's expertise at Field Enterprises filled his thoughts as Crosby lay incapacitated for many weeks. "I had time to think," Crosby reflects eight years later. "Part of their rehabilitation includes asking yourself, 'If I only had six months to live, what would I do?' At that time and with my schedule, I don't think I would have made it six months!"

After much soul searching, Crosby and his wife of 40 years, Sarah, reached a decision—go home to Baldwin County and manage the 60 acres of timberland they had inherited from an uncle. Their six children were grown, so what was holding them!

For 30 years they had maintained a house on Mobile Bay, a brief drive from the forest, so a place to live didn't present a problem. The serenity of the forest, however, and the fulfillment which they found there compelled them to build a rustic house on the site enabling them to spend even more time there.

Stockton is a far cry from Chicago or Atlanta. Crosby found that folks in the community welcomed them with open hearts and minds! Everyone was helpful and soon Crosby was on his way to finding himself and his TREASURE.

Wildlife Prompted First Contact

Having the desire to live himself perhaps urged Crosby to see other things live and generate new life. One of his first contacts was Chester Billie, then Wildlife Specialist with the Alabama Forestry Commission and presently working with the Alabama Department of Conservation. Billie educated Crosby on the benefits of prescribed burning not only for wildlife but for timber management.

Besides the natural browse generated by the burning program, Crosby also has several food plots, feeders, and natural foods found in his bottomland hardwoods. His plots contain bicolor, brown top millet, dove proso, and alfalfa. For wildlife to be his secondary objective, he has a substantial population of deer, quail, and fox squirrel.

"Why, I've even got a gopher tortoise, an endangered species!" Crosby says. "The little fellow doesn't bother me, so I don't disturb him either. I just plow around his burrow and sow the plot!"

Also, strategically placed around the house are several bluebird houses made from plans he received from the Conservation Department. Crosby had the Soil Conservation Service lay out a pond which he hopes can soon become a reality. Other valuable assistance came from the Cooperative Extension Service.

Long Live Longleaf!

This is longleaf pine country, and some of the prettiest specimens around are growing on Crosby's land. Jointly, he and his sisters own land in Baldwin and Mobile Counties. He singularly owns 60, but he's

managing a 480-acre tract which comprises the TREASURE FOREST.

Now for those who don't know it, longleaf pine responds well to a good burning program. In fact, young longleaf seedlings can survive a fire where other pine species would be destroyed. This enhances natural regeneration, leaving soil bare and ready to accept seedfall. Crosby doesn't clearcut, which assures him of constant natural regeneration. "I know that paper companies realize more from a clearcut. I just want to always look out there and see trees," Crosby explained.

Forest management hasn't always been easy, as Crosby remembers 1979. Hurricane Frederic had played havoc all along the Alabama coastline and strong winds ripped through his longleaf stands. One disadvantage of this species is the weakness of the branches. Salvage operations were soon underway to avoid danger of insect and disease attacks in the weakened timber.

Since timber is his primary objective, Crosby expects and realizes some income. "As a businessman, it seems odd that timber is the *only* thing that the average layman will sell when he hasn't the faintest idea of *what* he's selling! He knows about what he can expect to get for a car or a house, but timber's a different story. So many landowners would make a great deal more if they would only seek professional guidance from a consultant as I have. It pays!"

His annual prescribed burning program keeps the undergrowth down, thereby reducing the fire hazard. As mentioned earlier, it also encourages natural regeneration and browse for wildlife. In years when seedfall is heavy, however, he postpones burning.

Land Needs "Looking After"

Crosby has learned much about forest management over the past eight years. "I only have temporary custody of this land," he says. "The woods is one of the best places to be. They're going to be here after I'm gone, so why not leave it in better shape than I found it? Being business minded, I can say it's an investment—one that's in everyone's best interest!"

Attention is given to every detail. Plowing is all on a contour. Roadways have been seeded with Pensacola bahia grass to keep them from washing.

Hardwoods were left intact along streams and drains. He cleared one small access path down to the creek and built an observation deck to enjoy the serenity in the bottom.

A ram pump was installed in the creek to force water "uphill" for the garden and future pond. The creek bottom was blasted to allow enough depth to supply a flow to run the pump without another power source.

"The best advice I can give anyone," says Crosby, "is to plan ahead and always *know* what you're going to do next. You see, it's all a trade-off. You can't have everything—you've got to balance things. Think about what effects each practice will have and how you'll deal with those *before* you do anything!"

Rewards Have Been Many

Eight years is quite sometime beyond six months, and Crosby's rewards have been more than he ever imagined. He has not only received the Helene Mosley Award, but also a W. Kelly Mosley Environmental Award.

In October, 1981, he hosted a tour for the National Association of State Foresters, just four years after he came home to Baldwin County. The state foresters were generally impressed with his accomplishments in such a short time.

He has been on television, welcomes showing other landowners his land, and continues to make improvements every year.

In April, 1983, Crosby received the National Arbor Day Foundation's Good Steward Award. The Alabama Legislature even passed a resolution commending him for this award.

His deeds are immeasurable, his zeal for life unequalled, and his understanding of priorities in life quite different than they were 10 years ago.

If you only had six months to live, why not make it count? Crosby expects he'll keep counting up to at least 125!

Herbicides—How Safe Are You?

by GEORGE TALMADGE BALCH, Pesticide Education Specialist, Alabama Cooperative Extension Service

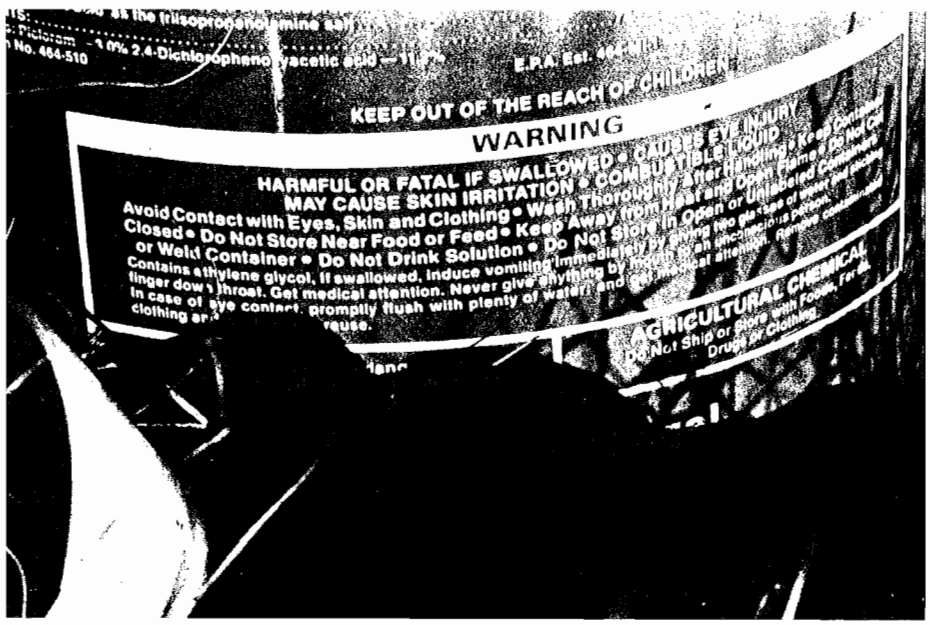
SAFETY IN THE USE OF FOREST herbicides means a lot of different things. What do you think of when a person says to you, "Use it safely"? Such a term is vague—it really has not said anything to an individual with no herbicide experience.

The United States Environmental Protection Agency, known generally as EPA, has as one of its objectives to get individual users to safely use pesticides, thereby avoiding injury to themselves and the environment while controlling the target pest. EPA has been requiring more data from chemical manufacturers on environmental contamination; more residue data if a food, feed or fiber crop is involved; more precise container label directions for the user and a longer data collection process to determine long range effects.

Read the Label

The main source of educational information for the first time user is the container label. The information may not be in enough detail to give all the information a person needs. In such situations, seek additional information from herbicide specialists or local agriculture—forest management authorities.

Herbicide safety is somewhat different from the use of insecticides and other pesticides. Each pesticide has its own particular characteristic. One method of becoming familiar is to sit down and read the container label through at least three times. Make a note of any terms found there that are not understood. For example, TORDON® is a forest herbicide that has been classified as **"RESTRICTED USE PESTICIDE"** by EPA and requires special certification for individual landowners to purchase and use. This herbicide is water soluble which makes it readily available to move in the tree. However, the Dow Chemical Company points out on their label that TORDON® can move with surface water and remain active in the soil a year or more depending upon the rate applied, rainfall and soil type. A high rate has been applied to a kudzu site and a year later soil from the treated area was used to pot several thousand greenhouse plants; results—twisted, dying and stunted plants that were unsalable. TORDON® label warns the user not to move treated soil into untreated areas. The classification of TORDON® as a restricted use pesticide is not because of any hazard to the applicator but because of potential environmental problems from water solubility.



Precautions on labels warn users to not apply near streams. ROUNDUP®, a Monsanto product, uses a 150 feet distance from the site of application to water. Property lines in forest herbicide application have caused problems as individuals attempt to

control hardwood species. Some experts think a 50 foot no-treat boundary is enough safety space. Trees have been purchased from adjoining landowners 40 feet away from where the chemical was applied. Law suits have occurred several miles from treated sites where phenoxy type materials were aerially applied during periods of windy conditions. Complaints to the Alabama Department of Agriculture and Industry on misuse of forest herbicides are usually applicator misuse problems and not that of the chemical itself; for example, a pilot turns over some adjoining landowner's garden, orchard, cotton, watermelon patch or other sensitive crops and either doesn't shut off equipment or has dripping nozzles and there is a problem. However, there are few problems compared to the number of acres treated each year.

Each pesticide label gives the user the toxicity rating of the chemical. The word **"CAUTION"** on the front panel of the label means the product is slightly toxic. The word **"WARNING"** or **"DANGER"** accompanied by a skull and crossbones indicates a highly toxic product. Personal protection and precautions need to be followed more closely as the toxicity of the products used increases. The most toxic product can be used safely without incident.

Dangers to the Applicator

Pesticides enter the body by either skin absorption, inhalation or by swallowing. Skin absorption is the primary source of absorption because of spray particles blowing back onto the person spraying. Long sleeved cotton type shirt, head covering, safety goggles to protect the eyes, and long pants will usually give adequate protection. Special protective clothing should not be avoided if specified on the product label.

Generally, more precaution should be observed and followed during mixing the concentrate into a ready to use spray. Special care in handling the concentrate is warranted because a splash into eyes, or onto the body clothing could cause harm unless proper steps are taken immediately to remove this contamination. This is not as much a problem with the chemical as it is with the solvent which is often a petroleum derived material. For this reason always keep soap, water and a towel near the area where loading of application equipment is to take place.

Safety goggles and neoprene gloves should be worn when handling and pouring concentrates and during application. Hand held, or back pack applicator equipment can be used safely by keeping all connections tight and in good operating condition. The use of power mist equipment may suggest the use of an approved respirator to prevent the inhalation of fine spray particles. A good head covering is needed to prevent head contamination.

Individuals may be very sensitive to a particular chemical. Once this occurs then additional precautions should be observed or a commercial applicator should be employed to apply the chemical. Skin sensitivity is usually some form of rash, redness or whelps similar to an allergic reaction. This is not apt to occur very often with most workers, but if it should happen the label will usually specify a particular first aid treatment such as cortisone ointment. Skin contact with undiluted herbicide should be

removed immediately to prevent magnifying this condition. Liquid type formulations are absorbed faster by skin contact than dusts, granules or wettable powders. A perspiring condition opens skin pores and increases absorption of chemicals.

Personal hygiene should consist of washing hands and face before eating and before using tobacco. Change clothes completely at the end of the work day taking a head to toe bath. In no way should the same clothes be worn all week long. Worn clothes should not be laundered with family clothes.

Eye protection such as goggles should be cleaned daily. In event that eyes should become contaminated with concentrate, most labels will suggest flushing the eye with water for fifteen minutes. This practice is not practical away from a water source. So, rinse eye and contaminated area with clean water and take the person to an emergency room for treatment.

The use of goggles suggested on pesticide labels for eye protection is because of testing by the manufacturer. Drops of the chemical are dropped into the eye of rabbits. If cornea damage occurs and the condition exists for over 24 hours, the manufacturer will suggest the user wear eye protection.

Lung protection needed depends upon the application equipment and herbicide being applied. There are a few herbicides such as dinitro and paraquat with which respirators should be worn. Flaggers marking swath widths for aerial application of herbicides in reforestation operations should wear respirators as these workers work day after day with spray falling all around. Forest canopy intercepts most of the chemical; however, if the container label calls for a respirator to be worn during application, then do it.

Other Precautions

Labels will indicate that the product be stored away from food, feed, livestock and pets. Some chemicals with a particular odor or taste may attract livestock and other animals.

A good reason to store under locked conditions is that of grand larceny. Each year there are reports of herbicides being stolen, so keeping them under lock and key is not a bad idea.

Do not store forest herbicides near fertilizers and other pesticides that are used in the production of certain agricultural crops. Why? Because some are volatile and can contaminate adjoining containers while in storage.

Empty containers can be properly disposed of by triple rinsing and putting them into garbage going to a local sanitary landfill. Triple rinsed containers are considered solid waste by the Alabama Department of Environmental Management.

How do you dispose of a half gallon of left-over herbicide? Most individuals will store this amount to avoid losing the cost of the chemical. However, if the product has lost all label directions and you cannot identify the chemical, then it can be carried or put into a sanitary landfill. If the container(s) are several gallons of material, then call 271-7700 in Montgomery, Alabama. They can properly advise a person on what to do with larger volumes of unusable herbicides.

One final thought—employees that cannot read, or cannot read too well, need instructions on the handling and use of herbicides in relation to their personal hygiene. Contaminated foot wear needs rinsing at the end of each work day. Never let employees pour up a small amount into a drink bottle or canning jar to use at home. These type practices cause problems and liability.

OPTIONS ON PINE MANAGEMENT

All Aged? Even Aged?

by BILL MCKEE, Forest Economist,
Alabama Cooperative Extension Service

LANDOWNERS FREQUENTLY ASK professional foresters how they should manage their timberlands. The answer varies with landowner objectives and condition of their timberland. Forest management falls into two categories—all-aged or even-aged. The decision of which system to employ will depend in part on what the forests are like when management begins.

All-aged management, also called uneven-aged management, is a program of managed, selective cutting that delivers a sustained yield based on the growth rates of a well-stocked stand of all ages of commercial timber. It does *not* mean cutting occasionally as the need for income dictates.

Even-aged management, also called intensive forest management, is a sustained yield program that begins with cutting all the trees in a stand. Then a new crop is planted, thinned regularly and grows until maturity when each acre is fully stocked with trees of the same age. The stand is then ready for another clearcut harvest and management cycle.

This article explains what these management options are and how they work, concentrating on potential timber yield and financial return. As a basis for our discussion, let's analyze all-aged and even-aged management alternatives for an acre of loblolly pine on land of average quality (site class 60 at age 25). We'll assume the stand has a history of selective harvesting. In its present condition, per-acre stocking of the stand is 3.6 thousand board feet (Mbf) of pine sawtimber and 4.3 cords of pine pulpwood. It also contains 200 board feet and 1.3 cords per acre of hardwood sawtimber and hardwood pulpwood, respectively. The stand is currently growing 250 board feet of pine sawtimber per acre per year.

Although this stand is not the best that could result from a history of selective logging, it is typical of some of the better stands that actually exist. Also, we'll assume it is in suitable condition for converting to true all-aged management or to true even-aged management.

NOTE: The Doyle log scale is used to report Sawtimber Volume.

The All-Aged Management Program

In all-aged management, the cutting cycle is an important control. If a ten-year cutting cycle and an annual cut are desired, the property is divided into ten equally productive areas and one area is cut each year. For this discussion, assume a 30 year planning period. Three 10-year cutting cycles will be evaluated.

Studies at the Crossett Experimental Forest have found that 7 Mbf/acre at the end of a cutting cycle is a working optimum. A fully stocked stand is defined as one that contains at least 5 Mbf per acre. For the stand in our example, the initial goal will be to increase the present per-acre stocking from 3.6 to 5 Mbf. Once this goal is accomplished, a harvest of approximately 2.5 Mbf per acre at the end of each 10-year cutting cycle will be sustained indefinitely.

Initially, an improvement cut will be made to remove pines that are badly suppressed, crooked, diseased, fire scarred, or too rough to produce two good logs. All hardwoods will be removed, except those growing along streams. By the end of the first cutting cycle, year 10, our initial objective will have been achieved (FIGURE 1). Harvest cuts will be made by the single-tree or group-selection method. By year 20, our per-acre sawtimber harvest level will be 2.5 Mbf. This level can be sustained indefinitely. Usually 1.6 cords of pulpwood will be cut for each 1 Mbf of logs harvested.

By the end of the 30-year planning period, the per-acre harvested volume of sawtimber and pulpwood will be 6.1 Mbf and 9.8 cords, respectively. In addition, the stand will be well stocked with 5 Mbf per acre of sawtimber and 6 cords per acre of pulpwood.

The Even-Aged Management Program

If the stand in our example is clearcut and converted to an even-aged loblolly pine plantation (FIGURE 2), pine harvests over the 30-year conversion period will be as follows:

- 3.6 Mbf per acre of sawtimber and 4.3 cords per acre of pulpwood from the first harvest;
- 1.6 Mbf per acre of sawtimber and 10.3 cords per acre of pulpwood in thinnings;
- 6.9 Mbf per acre of sawtimber and .7 cords per acre of pulpwood from the final harvest.

For even-aged management, then, the total wood yield per acre over the 30-year period is 12.1 Mbf sawtimber and 15.3 cords of pulpwood. Inventory after the second harvest, of course, is zero, but the management cycle can be started again, using a second or even third generation of improved trees.

By comparison to even-aged harvest volumes, the all-aged example yielded per-acre sawtimber and pulpwood harvests of 6.1 Mbf and 9.8 cords, respectively. In addition, it yielded a final per-acre sawlog and pulpwood inventory of 5 Mbf and 6 cords.

FIGURE 1. Estimated per acre pine harvests for all-aged management regime

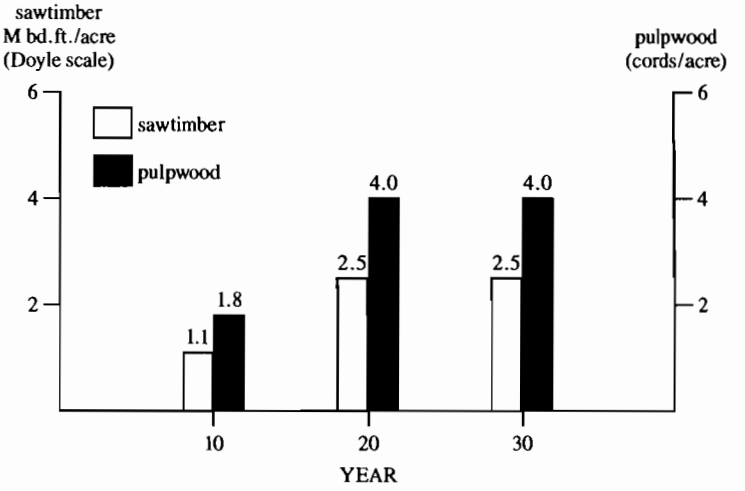
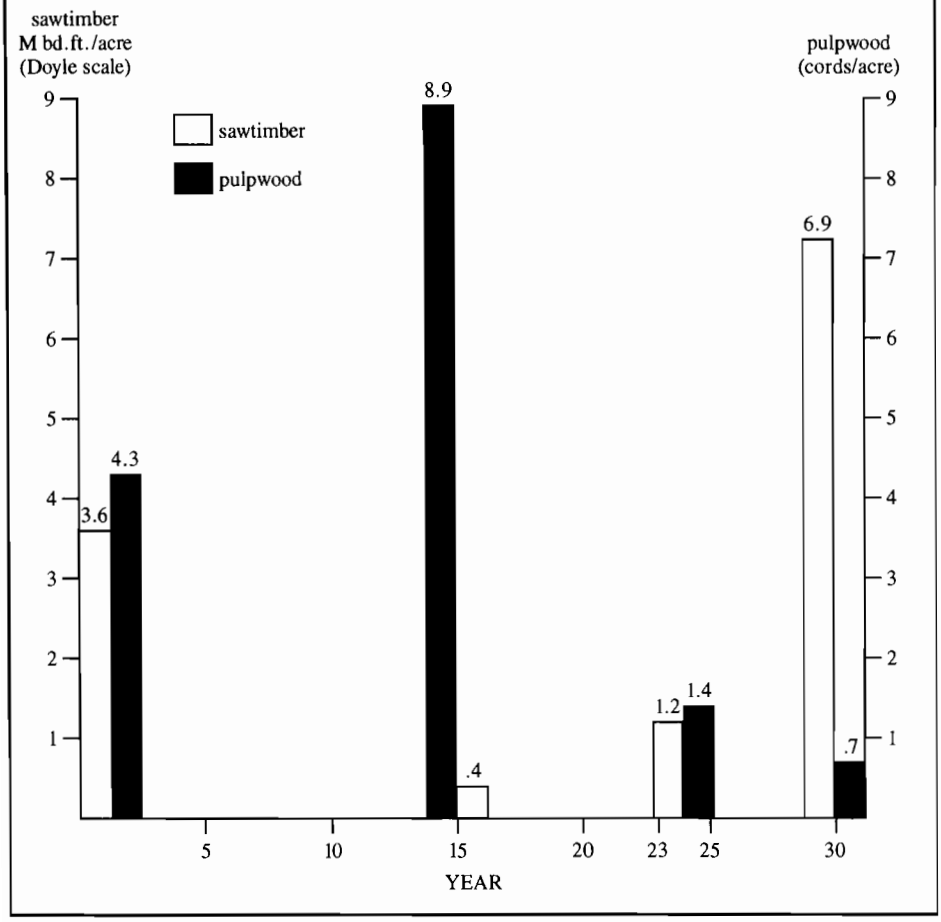


Figure 2. Estimated per acre loblolly pine harvest for even-aged management regime



The total sawtimber yield from conversion to even-aged management is 9% greater than the total sawtimber yield and final inventory from all-aged management. Of course, per-acre costs are also very different. Now let's proceed to a more detailed comparison.

Comparing Yields and Financial Returns

Let's compare the yield and financial returns from the all-aged and even-aged management options, assuming that a 300-acre stand has recently been purchased by someone in the 20% tax bracket. This will allow us to look at realistic financial returns on a specific tract of timberland without being restricted to the single-acre comparison described so far.

If we convert to true all-aged management, according to the figures developed earlier, we can harvest 1.1 Mbf per acre of sawtimber at age 10, then sustain a harvest level of 2.5 Mbf per acre every 10 years thereafter.

Since an annual cut is desired by the landowner, let's divide the 300-acre tract into five 60-acre compartments. One 60-acre compartment will be harvested each year. In other words, it will take five years to cover the entire 300-acre tract. Based on the harvest projections presented in the preceding paragraph, the first 20 years will produce an annual harvest of 33 Mbf of sawtimber. Thereafter, the volume increases to 75 Mbf of sawtimber per year. This yield can be sustained indefinitely.

Now, suppose the 300 acres is converted to intensive, even-aged management. Remember even-aged management requires clearcutting, site preparation, planting, and thinning. Conversion will not be done at once on the entire 300 acres. Instead, the stand will be converted gradually by harvesting and planting one 10-acre block a year for 30 years.

One benefit of harvesting in this manner is that the income curve is smoother than it would be for either all-aged management or total conversion of the 300 acres. (The conversion could be done by blocks of any given size. Usually, commercial timber production is conducted on tracts 40 acres or larger. For the purpose of showing the principle, however, the smaller size block of our example will do.)

When converting by 10-acre blocks, the annual harvest volume begins at 36 Mbf of pine sawlogs and 43 cords of pine pulpwood. It rises gradually each year thereafter, because the remaining timber will continue to grow even though we temporarily leave it in an unmanaged condition.

At age 15, increments of yield from our thinning program will begin. This volume increases at age 23, as the harvest blocks are thinned for the second time. During the 30-year conversion period, a total of 2,328 Mbf of pine sawtimber and 4017 cords of pine pulpwood will be removed from the 300 acres, including clearcut harvests and thinnings. By the 31st year, the 300 acres will be a fully stocked, intensively managed tract, composed of thirty 10-acre blocks in various stages of even-aged management. From then on, the management regime will include clearcutting one block each year, planting another, and thinning and conducting silvicultural practices on several more.

In the 31st year, for example, 69 Mbf of pine sawlogs, and 7 cords of pine pulpwood will be harvested from a second clearcut harvest on our initial 10-acre block. Also, two other blocks will be thinned for an additional 16 Mbf of sawtimber and 103 cords of pulpwood. The total, 85 Mbf of sawtimber and 110 cords of pulpwood, is the annual harvest volume we can obtain indefinitely from our fully converted 300-acre tract.

Yields Compared

On the 300-acre stand, over a thirty-year period we may expect the following:

- — with all-aged management, a total of 1,830 Mbf of pine sawtimber and 2,940 cords of pine pulpwood will be harvested.
- — with even-aged management, converted by 10-acre blocks, a total of 2,328 Mbf of pine sawtimber and 4,017 cords of pine pulpwood will be harvested.

Beginning with year 20, the all-aged system will sustain an annual selective harvest of 75 Mbf of pine sawtimber. The sustained harvest level of the even-aged management system will be 85 Mbf of pine sawtimber per year at age 31. In terms of sustained annual harvest, from age 31 onward, even-aged management gives us 13% more wood than all-aged management.

Returns Compared

Our comparison will be expressed in terms of current dollars, taking inflation into consideration. Let's assume that the annual inflation rate will average 5% over the 30-year period, and the real value (rate of increase above inflation) of sawtimber

relative to other goods and services will increase at an annual rate of 2%. Earnings are expressed as net after-tax income for a landowner in the 20% income tax bracket. Cumulative cash flows associated with each system of management are presented in FIGURE 3.

With all-aged management our after-tax earnings during the 30-year period will average $12,861 per year. Earnings in the 31st year amount to $27,053. With even-aged management, on the other hand, after-tax earnings will average $24,463 per year during the 30-year period. Income in the 31st year will be $30,244. In other words, by the end of our 30-year conversion period, even-aged management will produce 90% more annual income than all-aged management, and the gap will increase each year as wood values continue to appreciate.

Another way of looking at the same result, over our 30-year conversion period, is to compare the after-tax return on investment of our cash flows. This comparison takes into account the fact that money has a time value associated with it. In other words, a dollar spent today or received today is not equal in present value to a dollar spent or received in the distant future. If we include the initial and final values of land and timber and assume a 20% tax bracket, in 30 years we can expect the following returns from all-aged management, from even-aged management, and from an alternative bank account investment:

	After-Tax Rate of Return (%)
All-Aged Management	10.6
Even-Aged Management	10.9
10% Bank Account	8.00

Since the 30-year income from even-aged management is higher, one would think that the even-aged return on investment would be much larger than the all-aged return. By looking at FIGURE 3, you can see that even-aged income year by year is higher than all-aged income over the 30-year period. The crucial fact is that timing of income over the 30-year period has a very profound effect on present value. Income received at the beginning of a planning period will always have a higher present value than income received at the end of a planning period. And it is *present value* that determines our actual rate of return.

All things considered, however, from year 31 and beyond even-aged management will yield both more wood and a higher rate of return than all-aged management. Both of course give better rates of return than a 10% bank account.

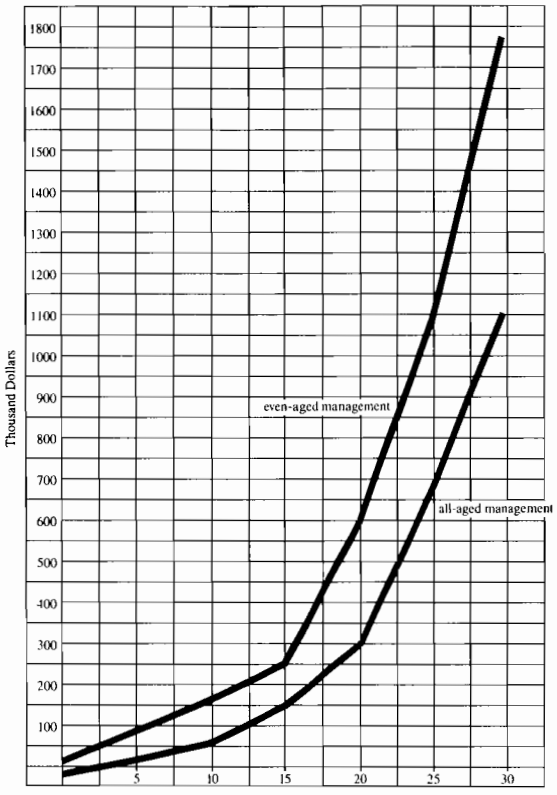


FIGURE 3. Cumulative after-tax cashflows of all-aged and even-aged harvest schedules

Some Management Options

No doubt your land and situation will differ from the example presented. Your needs for capital will also differ.

A variety of options are available in forest management. You might prefer, for example, to produce pulpwood or chip 'n saw logs on a 20-year rotation for faster financial returns with less growth. Even-aged management on some acres may be combined with all-aged management on others. On the other hand, you may prefer not to practice even-aged management. But if you do convert your stand, the figures from our example clearly indicate the potential rewards.

If you own timberland and want forest management assistance, call your County Extension office. Assistance is also available from the Alabama Forestry Commission, Soil Conservation Service, Agricultural Stabilization and Conservation Service, Auburn University Department of Forestry, Tennessee Valley Authority, U.S. Forest Service, consulting foresters, and forest industry landowner assistance programs.

Given the growing demand for wood and fiber, as well as the environmental and social benefits of forestland, the incentives for landowners to practice good forest management are strong.

Thirty Year Management Costs for All-aged and Even-aged Forest Management.

All-Aged:

Year	Activity	Cost ($ per acre)
1	Hardwood Removal	72.00
1, 3, 6, 9, 12, 18, 24, 30	Prescribe Burning	4.00
Annual	Property Taxes and Administration	3.00

Even-Aged:

1	Site preparation and	140.00
12, 15, 18, 21, 24, 27, 30	Prescribe Burning	4.00
Annual	Property Taxes and Administration	3.00

Uneven-Aged Management Of Loblolly Pine

by LOU HYMAN, Chief Forest Management

MANY PEOPLE THINK THAT our Southern pines will only grow in even-aged forests. Of the Southern pines, loblolly is one of the best for plantation management. It also naturally occurs on old fields and cut-over areas in stands that are all about the same age. Even-aged systems can use either artificial regeneration, such as plantations (see, "So You Want a Pine Forest" in *Alabama's TREASURED Forests,* Fall, 1984), or natural regeneration, using the shelterwood and seed tree systems. (See "Plan Before You Cut!" in *Alabama's TREASURED Forests,* Spring, 1983).

Unfortunately, even-aged management is not for everyone. Many small landowners are not willing to wait long periods between timber sale incomes. Many more object to the high cost of site preparation and tree planting. Others object to the tremendous aesthetic damage that can result from major logging operations and site preparations.

Another method of managing loblolly pine stands has been developed in Southern Arkansas at the Crossett Experimental Forest. Silviculturalists there have been testing a forest stand management technique that could be utilized on many forest lands in Alabama. This system develops an all-aged or uneven-aged loblolly forest using a selection cutting method.

Managed uneven-aged stands can be described as stands having trees of many ages or sizes intermingled, singly or in small groups. The selection cutting method involves the periodic cutting of single or small groups of trees. Trees from several size classes would be cut at the same time. Under the selection method, trees are cut for several reasons: reproduction, thinnings, salvages, stand improvement and harvest of mature timber.

Basal Area

The key to successful all-aged management of loblolly is careful control of the basal area of the stand. Basal area is a measure of the density of a forest stand found by calculating the total cross-sectional area of the tree stems at 4½ feet above the ground. It is usually expressed in square feet per acre. Studies have shown that the basal area, the density of the stand, accounts for about 88% of the variation in timber growth between stands.

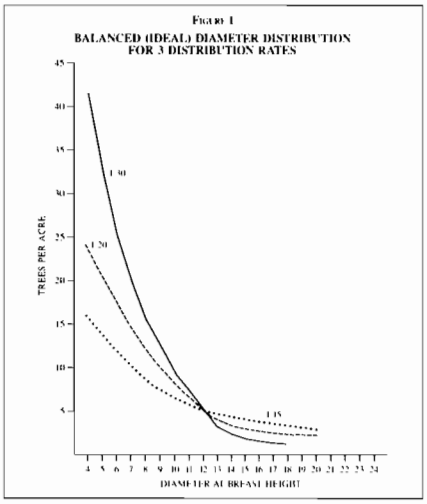
The Crossett study indicated that an ideal target basal area at the end of a growth period would be 75 square feet per acre, of which 60 square feet per acre would be in pine sawtimber. Their studies show that at these levels, the stand would contain about 7 MBF (thousand board feet), Doyle Rule per acre (8.5 MBF, Scribner Rule). On average to good sites, basal area can be expected to grow at a rate of 3 square feet per acre per year.

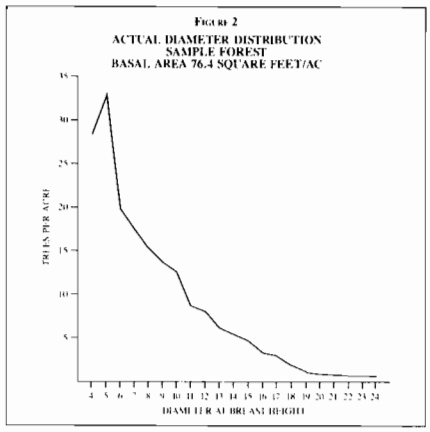
Regulating Timber Cutting

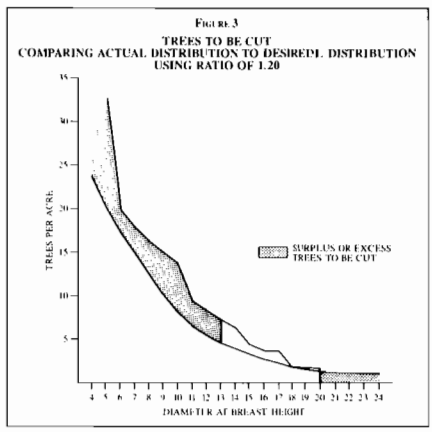
The other key to successful all-aged management is to closely regulate tree cutting. The first step in this regulation is to determine a cutting cycle, or how often trees should be cut from the stand. The actual cutting cycle for a property would be determined based on the basal area and volume growth rate of the stand. On the average, a five year cutting cycle will produce commercial sale volumes and a well regulated all-aged stand. The goal of the cutting would be to reduce the stand's basal area to 60 sq. ft. per acre, with a pine sawtimber basal area of 45 sq. ft. per acre.

The next step is to evaluate the stand as to the distribution of trees by diameter at breast height (DBH) size classes. The ideal distribution of trees follows a "reverse-J" curve, with a rate of 1.15 to 1.30 between 1 inch DBH classes (see FIGURE 1). For 2 inch DBH classes, this ratio would be between 1.32 and 1.69.

To determine the trees to be cut, the first step would be to plot the actual number of trees per acre by DBH for the timber stand (FIGURE 2). This is then compared to the ideal distribution curve. The amount that the actual curve exceeds the ideal curve would indicate the number of trees to be cut. If the actual curve is below the ideal curve at some DBH classes, this "deficit" would be made







up by leaving more trees in the next lower DBH classes (FIGURE 3).

Another step in setting up the timber cut is the selection of a maximum diameter limit. This limit would act like the rotation length in even-aged stand management. The target here is to produce a financially mature tree. The Crossett studies suggest a target DBH of 18-20 inches at the end of a cutting cycle would fit many cases, and suggest a marking limit of 16-18 inches DBH.

In marking the stand for sale, the forester would take the number of trees needing to be cut from FIGURE 3, and compare that to his marking tally as he works. He should also frequently check residual basal area. The marking limit just mentioned should not be considered "written in stone", but as a general guide. Some trees in the 16 or 18 (or larger) inch class are still growing well and might be left until the next cut in 5 years. The marker should also take out any diseased, poorly formed, or suppressed trees. The philosophy must be to cut the poorest and leave the best to grow as much quality log volume as possible.

This system is drastically different from the diameter limit cutting commonly practiced. Such cutting usually removes too much of the growing stock and often amounts to a commercial clearcut. The diameter limit is usually set very low and culls or undesirable trees are left to compete with the scarce desirable growing stock. Too often, culls are all that is left. On the other hand, selective cutting favors a high maximum diameter of trees to leave, providing adequate desirable growing stock. Trees to be cut are selected on the basis of not only diameter, but also form, position, vigor, and quality.

Hardwood Control

The third key element in successful all-aged loblolly management is effective hardwood control. Under the selective system described in this article, the stand would only contain about 100-150 trees above 4 inches DBH depending on the time since cutting, and a similar number below 4 inches DBH. This light stocking could easily be choked by heavy hardwood competition and is relatively low density compared to even-aged stands. Thus an on-going program of hardwood control is needed to make the system work. There are three general methods of hardwood control available to Alabama landowners: prescribed burning, tree injection, and broadcast spraying of herbicides such as VELPAR L.

Prescribed burning is the cheapest but least precise method of control. Fire, however, will also kill young pine reproduction. The key is to time the burns to hurt the least amount of desirable reproduction. It is suggested that a prescribed burn be done just before each harvest (every five years). This will control most hardwood sprouts and will leave some of the quicker growing pine seedlings in the openings.

Prescribed burning will not kill larger hardwoods, however, and usually provides poor hardwood control in openings due to a lack of pine needle fuel. Trees over two inches DBH will require some type of chemical control. Tree injection, which involves cutting the bark of the tree and spraying herbicide into the stem, is a very good method of controlling larger hardwoods. Injecting can be done using several tools such as a tree injector, a hypo-hatchet, or a simple hatchet with squirt bottle. The killed trees can later be cut for firewood or left for nesting sites.

If the stand contains many small hardwood trees, it might be more economically efficient to broadcast the herbicide using a spot-gun and VELPAR-L herbicide.

The amount of herbicide to put out depends on the soil type of the stand. Spot-guns for applying the herbicides are available for lending at the Alabama Forestry Commission district offices.

The purpose of this work is not hardwood eradication, which would be impossible, but hardwood control. Some hardwoods are inevitable in these open irregular stands and are in fact desirable for wildlife food sources and aesthetics. The hardwoods will have to be controlled periodically, though, to prevent the choking out of the pine regeneration.

Developing Understocked Stands

The latest forest survey of Alabama (1982) showed that almost 3 million acres have less than 50% stocking of desirable trees. Of that group, about 924,000 are less than 30% stocked. These very poor stands are beyond rehabilitation and need work to be regenerated into productive forests. The remaining two million acres can be rehabilitated into productive forests using the all-aged system and selective cutting.

The first step in improving the understocked pine forestlands is hardwood management (See "Doing it Naturally" in *Alabama TREASURED Forests*, Winter 1984). This can be done using any of the methods previously mentioned in this article.

The next step is to begin improving the timber stand by cutting, but only cutting a portion of the growth during each harvest. This cutting is necessary to develop and to maintain the distribution of size classes needed for an all-aged stand. The Crossett Studies show that stands with initial basal areas of 30 square feet can reach adequate growing stock levels in about 15 years. The target for this work should be a residual (after cutting) basal area of 60 square feet per acre of which 45 square feet is sawtimber.

The advantage of this system over clear-cutting, site preparing and planting is lower initial cost, shorter time periods between timber sale income, production of saw-timber in a shorter time period, and less aesthetic disruption.

Comparison of Even-Aged and All-Aged Systems*

The system outlined in this article differs greatly from what is commonly considered pine management. The uneven-aged system has several advantages over even-age management. The research staff of Crossett Experimental Forest, Southern Forest Experiment Station, state the advantages of all-aged management:

a. Requires little or no out-of-pocket capital investment.
b. Provides periodic income without interruption for stand regeneration.
c. Is adapted to getting the maximum production out of both understocked and well stocked stands and is suited to small areas.
d. Provides holding reserve of larger timber available to take advantage of high stumpage prices or provides quick access to income when needed.
e. Is aesthetically pleasing and well suited to roadsides, watersheds, and other water influence zones.
f. Does not require costly site preparation.
g. Continually upgrades the stand by favoring fast-growing, high-quality trees.
h. Provides a diversity of habitat needed by many game and non-game animals and birds.
i. Is not vulnerable to complete destruction by fire, biotic, or climatic agents.

Some problems with the system are the complexity of the operation which requires more skill and supervision to manage, its possible inefficiencies for large areas, and possibly lower stumpage prices because of low sale volumes and more difficult logging. In addition hardwood management may be costly and not as efficient as in even-aged stands.

Uneven-aged management is a process that requires training and experience to make it work. The first step in any land management program should be to enlist the help of a consulting forester. These people are trained and licensed by the State and, if trained in the system, can examine your forest to see if this system will work. Consulting foresters can be found in your yellow pages or by asking your County Forestry Commission office for a list.

All-aged management of loblolly pine forests is not for every landowner. It does give a good alternative to the cook-book management systems of even-aged management. There are many ways to develop your TREASURE, choose the one that best fits your needs.

*See comparison chart, page 11.

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Inferior Pines—Recognizing The Problem Is Half The Solution

by ROBERT WIGGINS, Staff Forester, Montgomery

IF YOU'VE ATTENDED ANY landowner meetings lately, no doubt you listened with interest to those tree-farming success stories. Some reported the rewards of professional planning and management, while others spoke of providential gifts received by the unsuspecting landowners (like the one who for a few dollars purchased land with trees on it 25 years ago, and has since harvested $1000 of timber per acre; then there was the gentleman who purchased a 40-acre tract sight-unseen, and a year later sold the timber for four times the price he gave for the land!)

Even for us ordinary folks who reap what we sow, average returns of 12 to 14% (probably above inflation) are realistic expectations from well-managed pine plantations. Nobody knows what the returns will be from planting superior trees, taking advantage of the new technologies to stimulate growth, and adding the effect on price of increasing demand for southern timber as other worldwide sources dwindle!

However, there are some quieter folks around, not so happy with their experiences in tree farming. It's really not too different from other investments. For example, the other day my neighbor shared the story of his recent success in a money market investment, which returned about 40% profit in one year. That was the same period during which I lost about 40% in the stock market.

Now I obviously don't know anything about the stock market, but from years of looking at landowners' timber problems, I've learned a few reasons why timber production is not always profitable. One little-discussed reason is that pines may not grow as expected. Natural disaster and mismanagement of timber sales are more obvious contributors to disappointments, and are more widely discussed than poor tree growth. All these causes work in the same way—that is, to reduce actual timber yields compared with what you expected when you made your investment.

The strongest defense against poor tree growth may not be to prevent it—that's not always possible—but rather to anticipate it and limit investments appropriately. Because *most* land that won't grow trees well won't produce anything else at all, not much thought should be given to what to grow on the land, but simply how much can sensibly be invested in the timber?

Sometimes slow tree growth can be corrected, especially if the problem is cultural (how the trees have been managed) rather than the nature of the soil. Here is a checklist of some causes of poor tree growth and solutions or suggestions to minimize the consequences. Get a professional forester to confirm the diagnosis if there's any doubt.

Causes Of Poor Tree Growth And Possible Solutions

Poor site quality: Heavy, compact clay soils; wet or waterlogged soils; very thin soils; and deep, dry sands are all poor quality soils. Know your soils before investing large sums to grow timber. On poor soils, use low-cost site preparation methods such as fire and/or tree-injection; consider natural regeneration or direct seeding rather than planting, or limit planting density, because stands on infertile soils tend to stagnate.

Ironically, pre-commercial thinning may be advisable if the cost can be kept down. Some waterlogged soils can be made productive by fertilizers. Protect the litter layer and topsoil, especially on sandy flatwoods sites.

Genetically Inferior Trees: If the history of your natural stand is typical, the best trees were all removed during logging operations over the past century, and the small trees left each time included all the genetically inferior trees, not just good, young trees. Such stands should be clearcut, site prepared, and replanted with improved trees. Even some plantations are composed of inferior trees. If this is obviously true, clearcut during the pulpwood stage and start over.

Overcrowding: Evidenced by the pines having skinny, pencil-like trunks with very small live tops, this almost always occurs in natural stands but will occur in planted stands if thinnings are delayed too long. Diameter growth stops long before height growth slows, but stagnation will eventually occur except on very fertile sites. Correct by proper thinning methods, always leaving the best trees and cutting the rest.

Wrong Thinning Techniques in Plantations: Called "high-grading," the practice of cutting the best trees and leaving the rest continues unabated in plantations just as it always has in natural stands. If the best trees are removed in the first pulpwood thinning, or later in an effort to get a little sawtimber, a genetically inferior, slowgrowing stand will again be created.

Weed Competition in Young Pine Stands: Not only weed trees, but brush and herbaceous plants compete with the crop trees for water and nutrients. The use of herbicides can improve crop tree survival and early growth, resulting in an earlier first-thinning opportunity.

Shading by Overtopping Trees: Pines need full sunlight for rapid growth. If you practice uneven-age management, harvest mature pines by group selection rather than individual tree selection, to allow adequate sunlight to reach the forest floor. Remember, those are your future trees trying to grow down there! In even-age management, don't allow leftover unmerchantable overstory trees after a clearcut, or scattered volunteer pines in abandoned fields to remain to shade your planted seedlings. Similarly, remove seed trees in naturally regenerated stands after the new crop of seedlings are established.

Root Disease: May be evidenced by sparse, short needles on pines. Tree growth slows and insect attack is likely. Get professional help for correct diagnosis and recommendations.

Other Pest Damage: Mostly in young stands, growth is often slowed by tipboring insects. Bushy tops are an indication that this is happening. Animals may graze the tops off, too, and wind and ice can break the tops. All these things will slow early tree growth, but the stand will usually survive with only a little height loss.

Why Is Forestry Such a Good Investment?

by DR. FRANK A. ROTH, Forest Management Specialist,
Alabama Cooperative Extension Service

FOREIGN INVESTORS ARE BUYING UP timberland across the Southeast; so are diversified companies like Tenneco, ITT, and Proctor and Gamble; and E. F. Hutton is offering limited partnerships in Southern forestland. Why? Because they all know that forestry is a "darn" good investment. According to Mr. Tom Clephane, a Wall Street analyst with Morgan Stanley and Company, Southern timberland can generate an after tax return on investment of 10 to 15 percent or more. That means forestry investments compare very favorably with other long term investments like IRAs and Certificates of Deposit.

The reason forestry is such a good investment is that trees (particularly Southern pines) increase in value in three ways at the same time: (1) rapid volume growth, (2) value growth with change in product class, and (3) timber prices grow faster than inflation. Let's consider each of these.

The first way trees increase in value is the actual volume growth of 4 to 6 percent each year in a managed stand. Some pines can be harvested at age 14 or 15 with the first thinning in a plantation. And, as we plant more genetically improved, hybrid seedlings, the age for the first thinning will be reduced even more.

The second way trees increase in value is by growing into a higher valued product class. As trees grow from pulpwood size (6 to 8 inches in diameter) to sawtimber size (10 or more inches in diameter) the value per unit volume increases 3 to 4 times. For example (see TABLE 1), a typical loblolly pine 7 inches in diameter and 42 feet tall at age 14 is worth $0.90 as pulpwood at $15 per cord. If we let the tree grow until it is 12 inches in diameter and 64 feet tall at age 28, its pulpwood value will increase to $3.45; but its sawtimber value at $150 per 1000 board feet will be $12.75. By allowing the tree to grow into a higher valued product class we have more than tripled its value per unit volume.

TABLE 1. As pines grow from pulpwood into sawtimber, value increases 3 to 4 times

Age	14	28
Diameter at 4½ ft	7″	12″
Total Height	42′	64′
Pulpwood Value at $15 per cord	$0.90	$3.45
Sawtimber Value at $150 per MBF	—	$12.75

The third way trees increase in value is that standing timber values are increasing faster than inflation. During the 7 year period from January 1977 through December 1983 the compound annual inflation rate, as expressed by the consumer price index, was 8.25 percent. Over this same period pine sawtimber prices increased well ahead of inflation (see FIGURE 1). For example, the statewide average price of pine sawtimber in Alabama increased at a compound annual rate of 11.87 percent from $88 to $193 per 1000 board feet, Scribner scale. This means that pine sawtimber prices experienced a *real* price growth rate of 3.62 percent; that is, 3.62 percent above inflation. Wall Street analysts predict a 2 to 4 percent real annual price increase in Southern pine timber prices to the turn of the century and beyond.

During this same 7 year period pine pulpwood prices increased well ahead of inflation also (see FIGURE 2). For example, the statewide average price of pine pulpwood in Alabama increased at a compound annual rate of 14.40 percent from $7.80 to $20.00 per cord (FIGURE 2). This represents a *real* rate of increase of 6.15 percent when many of the experts were predicting that pulpwood prices would stay even with inflation.

Because of the rising demand for forest products and a large capacity for timber production, the South, including Alabama, could become the "Woodbasket of the World" by the turn of the century. Private landowners who manage their forestland stand to gain a lot in the coming years because forestry in Alabama is a "darn" good investment.

NOTE: All timber prices reported are from Timber Mart-South.

FIGURE 1. Pine Sawtimber Prices
For Alabama From Timber Mart-South

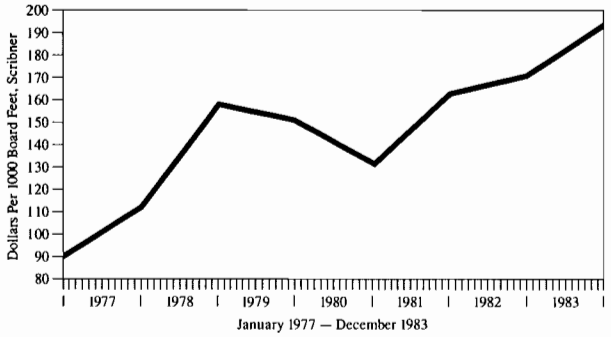
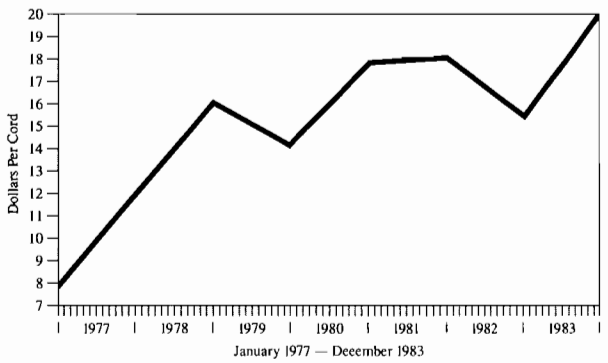


FIGURE 2. Pine Pulpwood Prices
For Alabama From Timber Mart-South



Southern Pine Beetle And Annosus Root Rot Management

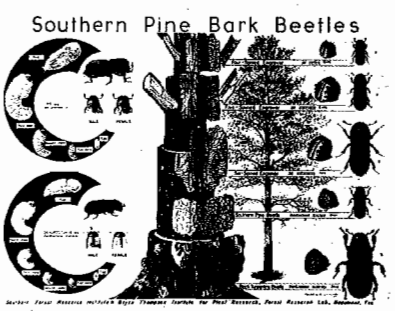
by JIM HYLAND AND BOB KUCERA

WE'VE ALL SEEN IT—THOSE once lovely pine stands that have become little more than dead or dying snags. Lack of proper management causes thousands of productive acres to fall prey to the state's Numer One forest predator—insects and disease! Let's get acquainted with two of the most common pests in Alabama.

Southern Pine Beetle

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

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



Southern Pine Bark Beetles Life Cycles

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

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

Annosus Root Rot

Annosus root rot is another forest pest which affects pines in Alabama. Annosus root rot is a serious fungal disease found commonly in thinned pine stands and less commonly in unthinned stands. It can infect Virginia, loblolly, shortleaf, slash, and longleaf pines and Eastern red cedar in our state. However, it rarely infects longleaf while Eastern red cedar is very susceptible. The disease causes both mortality and growth loss.

The symptoms of annosus root rot are a combination of the following:

1. *Pine stands with dead or dying trees often in clusters or rows.*
2. *A tree leaning or blown over due to a lack of supporting roots.*
3. *Stringy white rot of the wood in the roots and/or butt.*
4. *Sparse crowns with off-color needles, often with abundant cones.*
5. *Resin-soaked areas of roots ahead of discolored, dead, or rotten end sections, which can be observed by digging lateral roots.*
6. *Mortality beginning the second or third year following thinning and continuing for several years.*
7. *Pine stands infested with southern pine beetles often have annosus root rot.*

Annosus root rot symptoms may be confused with those of littleleaf disease which usually occurs on poorly drained clay soils as opposed to the well-drained soils where annosus root rot is most commonly found.

Forest landowners need to be familiar with these two forest pests for obvious reasons. The southern pine beetle, the most destructive insect killer in Alabama and the South, attacks and kills southern pines of all sizes and species. During the last decade SPB has killed $81 million worth of pine timber in Alabama. This was enough sawtimber to build 24,000 average homes. From the individual forest landowner's standpoint it may mean the loss of his pine forest, one that he may have planted to send his kids to college with its income.

Southern Pine Beetle S-Shaped Galleries

Annosus root rot, while not as spectacular, can be just as deadly to a pine forest. An Alabama Forestry Commission Survey of 24 thinned stands infected with annosus root rot showed that about one third of the dollar value of the cruised area was dead or dying from annosus root rot. This can be especially serious in a stand which has been recently thinned. After all, the infected trees were selected as the best to grow into more valuable timber product.

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

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

Low Hazard Stand

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

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

1. *Hazard rate pine stand to assess susceptibility.*
2. *Manage high hazard stands to increase tree growth and reduce risk.*
3. *Detect and control active infestations when they occur.*

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

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

First, to rate a pine stand using this system you need information on pine basal area (BA), total basal area, stand age, and site index. Pine basal area is a measurement of the number of square feet of pine per acre. Generally the higher the BA the higher the hazard. Total basal area is a measurement of the number of square feet of all trees per acre. Generally the higher the percent of hardwood the lower the hazard. Stand age is the average age of stand. This is usually measured by the use of an increment borer. Site index is a measurement of the height pines will grow on a particular site in 50 years. Second, this information is taken at each plot with plots generally 330 feet apart or at the same interval used in taking other Forest management measurements. Third, this information is put into a formula to determine the score. The score is then associated with a hazard class.

The formula for this score is:

Score = 1.8342 (Pine BA) + 0.4085 (Total BA) + 0.705 (Age) + 0.88 (Site Index) − 206.315

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

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

Score = (1.8342 × 110) + (0.4085 × 130) + (0.705 × 27) + (0.88 × 109) − 206.315 = 163.51

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

What Steps Can Be Taken to Reduce the Risk?

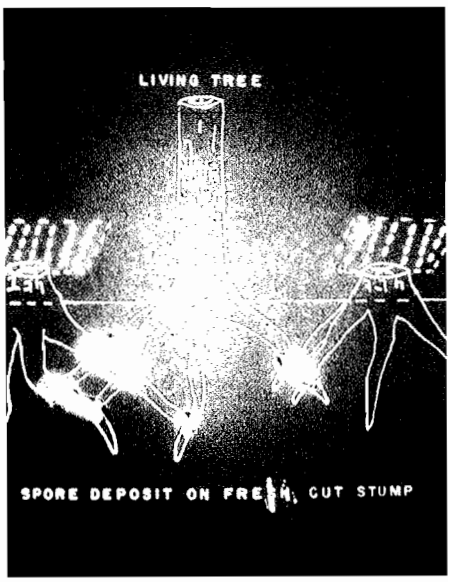
One, thin to reduce the pine density to basal areas of 70-100 ft.²/acre. This will promote rapid tree growth as well as resistance to beetles. On sandy soils use borax to prevent annosus root rot. Low thinning or "thinning from below" is recommended to reduce competition and to remove slow-growing trees,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

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

Three, reduce competition from hardwoods or suppressed pine by using prescribed fire or herbicides. Prescribed burning should be considered as a pest management practice. Burning can be used to eliminate suppressed high-hazard trees from overstocked stands. Stand vigor will be further increased by reducing competition from understory hardwoods and vegetation. Prescribed burning before and after thinning also reduces severity of annosus root rot in the South. Prescribed use of fire, as opposed to wildfire, does not increase SPB activity: it can be a useful tool in reducing losses from pests. Pine release herbicides can be used to control competition from unwanted hardwoods and vegetation. Care should be taken in order to select the proper herbicide for the site to insure the residual pines are not damaged.

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

Pine stands can also be hazard rated for annosus root rot. Annosus root rot can be found in all parts of Alabama, however, vigorous stands on suitable sites suffer less damage. A high hazard site is one on which annosus root rot can reasonably be expected to cause mortality and growth loss of a value greater than the cost prevention. The most consistent and easily used indicator of high hazard sites is well-drained soil. These soils usually consist of 70% or more sand. Hazard rating stands for annosus root rot is most easily done by checking the soil description provided by the Soil Conservation Service. If a soil description is not available, use a tube sampler when sampling for volume and other management considerations and determine whether the soil is well-drained. This is usually indicated by soils having very little clay. The high hazard may be a result of decreased vigor due to periodical water stress which favors infection. The greatest damage occurs in thinned stands as the fungus invades stumps and infects healthy roots through root grafts and contact points. On high hazard sites there are more root contacts through which the fungus can spread. A small amount of infection occurs by spores



Annosus Root Rot Root Graphs

moving through the soil directly to roots, especially when the roots are damaged during thinning.

The basis for prevention of annosus root rot is to maintain healthy stands and to recognize high hazard sites. Trees planted out of their natural range on high hazard sites are more susceptible to annosus root rot.

Silvicultural practices such as planting on wider spacing and thinning before many trees become suppressed or the stand stagnates should help to avoid widespread infection. To be confident that annosus root rot is prevented it is highly recommended that the stumps be treated with borax or *Peniophora gigantea* when thinning in a high hazard area.

Borax prevents spores of the causal fungus from infecting stumps and thus limits its spread through the roots and infection of the healthy residual stand. Ten Mole technical grade borax is available in a granular formulation for manual salt shaker style application. Borax is not recommended if annosus root rot is already present in the roots.

If annosus root rot is present in a stand to be thinned or selectively cut, the stump surfaces should be treated with *Peniophora gigantea. Peniophora gigantea* is a fungus which prevents the disease from becoming established on the stump surface. Unlike annosus root rot, *Peniophora gigantea* does not cause disease, but actually promotes decay of the stump making it an attractive preventive recommendation in seed orchards and residential areas where people don't want stumps around. *Peniophora gigantea* is commercially available in concentrated liquid form to be diluted and sprayed on stumps.

The Alabama Forestry Commission has developed a decision key which guides the user to making the correct management recommendation for annosus root rot. Knowing what annosus root rot is and what a high hazard site is, makes the decision key easy to use and it should be consulted before thinning any pine stand.

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

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

By CYNTHIA K. PAGE

"Go North for your living; go South for your health." -Anonymous

In the early 40's, J. R. and Sarah Crosby were married. Like most young couples they began planning their family—strange that life's beginning can be calculated so precisely, but the certainty that it will end gives us no clue as to the appointed hour.

J. R. Crosby had everything—his lovely wife, six beautiful children (Sarah, Raymond, Martha, Samuel, Ann, and Eleanor), a Harvard business degree, and a highly demanding position with Field Enterprises in Chicago. His expertise was indispensable. Being whisked off to Alaska without notice or to any other place his services were needed routinely filled the hours of his working day. For 35 years he juggled his time between job and family, never suspecting he was overfueling a system about to explode.

Two coronaries later, reality hit as he lay in intensive care. Death was not just knocking at the door, but already had one foot inside! Crosby says now that the solution came in answering, "If I only had six months to live, what would I do?" He and Sarah wasted no time in moving home to Baldwin County and the woods, "the best place to be" in his words.

His life style has changed drastically. His tanned and muscular physique makes it incredible that only eight short years ago he was totally incapacitated! In his case, the *desire* for life has prolonged it. Spryly he skips through the woods showing off all the fruits of his work. He jogs between five to ten miles a week, and fishes or hunts every day except Sunday. He's doing exactly what he wants to do!

Besides the desire to live, he had something else—Sarah! Their marriage was full and exciting, and their love for each other is still strong and obvious. Even though this is "J. R. Crosby's" TREASURE Forest, she has certainly played more than a minor role. Their open display of affection—a kiss on the cheek, her hand on his knee—proves this is "their" TREASURE. Crosby himself sincerely admits, "Sarah is the most thoughtful, giving person I've ever seen."

Both are "giving" people. They've given to their children, to each other and to everyone else who has ever known them. Their house is open to anyone who needs them. They share their TREASURE with others and the benefits that it produces are enjoyed by all their friends and neighbors.

For J. R. and Sarah Crosby, life didn't begin at 40. It began at 63 when it was almost over! They found themselves faced with a decision; they found themselves in a new home; they found *themselves*.

LANDO

LEGISLATIVE ALERT

STATE

by FRANK SEGO, LEGISLATIVE LIAISON, ALABAMA FORESTRY COMMISSION

FORESTRY LEGISLATION WILL BE at center stage when the next regular session of the Alabama Legislature convenes in February, 1985. Lawmakers will be called on to focus their attention on several measures long overdue in bringing assistance to the state's fastest growing industry.

An industry review of the forest wildfire and tree seedling programs of the Alabama Forestry Commission concludes that major improvements are necessary. The forest industry is, therefore, proposing legislation which would double the forest products severance tax and the privilege tax on the processor. In order for this measure to be successful, the Administration and the Legislature must be willing to appropriate a matching amount from the General Fund.

10¢ Per Acre Statewide

In its 1984 review of forestry needs, the industry has noted that a "patch work" source of county funding is far from adequate to support the Forestry Commission's annual budget. The industry is seeking the support of the State Administration for the enactment of a Constitutional amendment which would allow for the collection of a 10¢ per acre service charge on forestlands for fire protection purposes. If this proposal is enacted by the Legislature, it would then have to face the voters in a statewide referendum. Presently, there are 36 counties collecting either 5¢ or 10¢ per acre for fire and insect protection.

In 1983, the Legislative Forestry Study Committee concluded that the total amount of money contributed by counties for programs of the Forestry Commission from all sources, including funds appropriated and those available for local assessments, should be replaced on a continuing basis with a statewide assessment equal to 10¢ per acre. This would replace all funds now being received from county governments and landowner agreements.

What will these two proposals mean to the Forestry Commission and to the total forestry program in Alabama? First, the doubling of the severance tax would generate approximately $1.8 million in additional revenue, which would be matched with an equal amount in General Fund money. Second, the statewide assessment of 10¢ per acre would generate an additional $600,000 bringing a total of approximately $4.2 million in additional revenues to improve Alabama's fire protection and tree seedling programs.

Increased Fire Protection

These legislative measures, if passed in the 1985 session, would greatly enhance the productivity of Alabama's forestlands. Better fire protection would reduce the occurrence of wildfires and decrease the risk now facing landowners who plant tree seedlings.

An increase in the availability of tree seedlings by the Forestry Commission nurseries would enable landowners to replant cutover areas on their private nonindustrial forestlands. Seedling production for the citizens of Alabama has been continuous for over 40 years. The goal of each nursery has been to produce quality seedlings at cost. This had been difficult because of limitations on funds, aging equipment and other factors. The 1983 winter freeze struck so fast that a sizeable portion of the AFC nursery stock was killed without warning.

A quality product that can sustain considerable stress from weather, storage and handling is a necessity for AFC nurseries to meet their goals.

Forest Industry Expansion

What the industry and the Forestry Commission fear most is that current trends may encourage industrial expansion to bypass Alabama in favor of its neighbors in Georgia and Mississippi where the risk of wildfire is lower and the average timber rate growth is higher.

The Forestry Study Committee, being fully cognizant of this, has held meetings with officials of the Alabama Development Office and the Department of Economic and Community Affairs to develop legislation that would encourage future forest industry development in Alabama. This measure also goes before the 1985 Legislature.

EDITOR'S NOTE: You would not be reading this TREASURED FOREST magazine if you did not have an interest in Alabama's great forest resource. You can have a part in its future by making the legislators in your district fully aware of their duty to support this valuable asset. A concerned Administration and an equally concerned Legislature can show the rest of the nation that Alabama is serious about caring for one of its basic sources of wealth. It is something from which every citizen can benefit. By making your voice heard loud and clear, you will be doing your part to insure the continued growth and health of this treasured resource. Think about it!

WNERS

NATIONAL

by J. KENNETH MYERS, U.S.D.A. FOREST SERVICE

THE ADJOURNMENT OF THE 98th Congress in early October left several pending bills unresolved that would have affected Alabama forest landowners. When the 99th Congress convenes in late January 1985, these bills will likely be reintroduced, along with a new calendar of legislation. The Forest Service will be monitoring closely the expected rush of new and introduced legislation for those bills that could affect the forest lands of the nation. Those that would affect the Alabama landowners will be reported in future issues of *Alabama's TREASURED Forests*.

Chief among the bills that "died" with adjournment was the "Soil Conservation Act of 1984," sponsored by Congressman Ed Jones of Tennessee and several co-sponsors. This bill contained a provision designed to protect erosion-prone cropland by prohibiting USDA payments to farmers who grow crops on this land. The Jones Bill also contained a provision that would have established a conservation reserve program to convert erosion-prone cropland to permanent vegetative cover. The program would be carried out through contracts between USDA and the farmer of 7 to 15 years in length in which USDA would share the cost of establishing the cover and pay an annual land rental fee.

The cropland protection provision was also contained in a bill sponsored by Senator Armstrong of Colorado and was known as the "Sodbuster bill." These bills passed their respective houses but languished when House - Senate conferees could not agree on their content. While the conferees were in agreement on the cropland protection provision, the Senate conferees indicated they did not want to establish a new and separate authority for a conservation reserve. They preferred to handle such legislation during consideration of the "Farm bill" legislation that governs the USDA commodity programs when that legislation is considered in 1985.

A bill by Senator Sam Nunn of Georgia also died when the Senate failed to consider it. This bill was called the "Conservation and Forestation Act of 1984," and would have established Conservation Reserve and Agricultural Forestation programs to divert cropland to permanent vegetation cover or to the production of pine trees. The Agricultural Forestation program would have been limited to farmers holding delinquent loans from the Farmers Home Administration or the Small Business Administration. A modification of this bill, directing the Secretary of Agriculture to study the feasibility of the Agricultural Forestation program was enacted into law as an amendment to a 1984 bill making changes to the USDA commodity programs. The amendment provides that farmers that have delinquent loans from the Farmers Home Administration or Small Business Administration to amortize those loans through the planting of trees on croplands. The proceeds from the sale of those trees would be used to retire the farmer's debt. The USDA report is expected to be submitted to Congress in early 1985.

A bill by Senator Howard Metzenbaum to repeal the provisions of the Internal Revenue Code that allow forest landowners to treat income from the sale of timber as a capital gain (and thereby pay reduced taxes on the income) also died with adjournment. The Senator has not indicated whether the bill will be reintroduced.

The Congress and the Administration share a concern about erosion on the nation's farms and the need for strengthened soil and water conservation programs. Through the development of the 1985 Farm Bill, the 99th Congress will be responding to this concern. It is expected that forest landowners will be affected by the outcome of Congress' actions, because tree planting is recognized as an appropriate means of preventing erosion on croplands. Congress will also be starting anew on the Federal Government's budget for Fiscal Year 1986. This action will include consideration of funding for the Federal-State Cooperative Forestry programs and the Forestry Incentives Program. These programs received decreases in funding for Fiscal Year 1985. Any outlook for the 1986 budget must recognize that Congress and the Administration will be looking for ways to reduce spending for domestic programs. The forestry programs are susceptible to reductions.

More About DEER

by RALPH H. ALLEN, JR.

Editor's Note: This is the second part of a deer series reprinted in last quarter's ALABAMA'S TREASURED FORESTS. The original articles appeared in ALABAMA CONSERVATION, November-December, 1976. Much of the information is still valid today.

ALABAMA'S DEER HERD has increased from an estimated 14,000 animals in the fall of 1940 to more than one million animals in the fall of 1975. This is an increase of more than 7,000 percent within a period of only 35 years. To put it another way, for each deer in Alabama 35 years ago we now have more than 70.

The deer population in Alabama is exceeded by only two or three states and each of these states has considerably more land area than does Alabama.

These facts give one a warm feeling of pride, but I hasten to point out that we must not stand on our laurels as we are faced with problems brought on by our large deer population that are far more serious and complicated than the problems we faced in building up the population.

Success No Accident

The success of deer in Alabama is not accidental. It is the result of years of research, planning, and implementation of the Game and Fish Division's deer management program with the cooperation of landowners and sportsmen.

In building a deer herd with the objective of developing a huntable population within the shortest period of time, management requires the protection of antlerless deer. In order to maintain a deer herd in a healthy condition once the population has reached the carrying capacity of the land, management dictates the annual harvest of surplus deer, both antlered and antlerless.

Few major problems developed in building the deer population to huntable numbers. Now that this goal has been reached in most areas of our state, very serious problems have arisen. Most of these problems have resulted from the fact that too many people are unable to recognize the necessity for harvesting antlerless deer in order to maintain the herd in a healthy condition, once the deer population reaches the carrying capacity of the land.

Three Reasons For Problems

In my opinion this problem exists for at least three reasons:

1. Citizens were oversold on the idea of protecting antlerless deer in order to build up a huntable population in the shortest period of time. Now that the problem is over-population in much of our state, many people have not been convinced that the deer herd cannot be controlled by harvesting bucks only. *The TV Bambie Syndrome,* so popular in recent years, has off-set attempts to educate the public to the necessity of controlling the deer herd by the annual harvesting of a reasonable number of antlerless animals or any deer for that matter.
2. The inability of many people to recognize evidence which indicates that a deer population has reached or has exceeded the carrying capacity of the land within the deer's range.
3. The misconception by many hunters that deer can be stockpiled in order to provide better hunting.

History has revealed that man by his very nature is hesitant to "change horses in the middle of the stream." To convince man, almost overnight, that it is necessary to harvest antlerless deer in order to maintain a quality deer herd, especially after years of intensive effort trying to convince him that total protection was necessary in order to develop a huntable population of deer, appears too much to expect in such a short span of time.

Unfortunate Lack of Foresight

It is unfortunate that someone did not have sufficient foresight or knowledge to advise sportsmen, at the same time they were seeking assistance in building the deer herd, that once the herd has reached the carrying capacity of the land that it would be necessary to provide a limited annual harvest of antlerless deer in order to maintain quality deer hunting for future generations.

Contrary to what many believe all vegetable matter observed in the woods and fields cannot be utilized as food by deer. To go a step further, food eaten by deer in one area may not be utilized by deer in other areas.

It is necessary for bacteria within the deer's stomach to break down the vegetable matter eaten in order for this material to be utilized as body nourishment. Different bacteria act upon different plant materials. Vegetable matter not normally eaten by deer, even though it may be high in nutrients, may be of little or no value as food. An excellent example of this is corn and alfalfa, both of which are high in nutrients. In areas where corn or alfalfa are not normally available, bacteria necessary to break down these high quality foods are not present in the stomach, and deer have been known to starve to death with their stomachs full of corn or alfalfa.

Symptoms Apparent Sooner

To the trained observer, symptoms of an over-population are apparent much sooner than to the average hunter or landowner. The trained observer is able to determine the status of the deer population by the amount of browse on certain indicator plants. To the hunter, landowner, and other casual observers, over-populations are not normally apparent until the deer have reached the stage that body weight and antler development are drastically reduced, browse lines become extreme, crop damage extensive and/or deer die-offs are observed. When these extreme conditions occur the deer population is in critical condition as a result of having a heavy infestation of internal parasites and is near starvation.

There are a number of plants that are preferred by deer in Alabama. These plants include smilax, usually called sawbriar or greenbriar, Japanese honeysuckle, blackberry, yellow poplar, red maple, and blueberry. To the trained observer the amount of browse sustained by these plants is an excellent indicator of the deer population on the area.

Weight, Antlers are Key

Deer weight and antler development are also key indicators of deer densities. Until deer exceed the number that the land can adequately support, deer weights and antler development are at or near their maximum. This is because there is sufficient natural food for each deer during all seasons of the year. As deer numbers increase to the point that there is not sufficient natural food for each deer during each season of the year, body weight and antler development begin to deteriorate. To the casual observer this decline is usually not recognized for a period of several years unless weights and antler development are recorded and compared to data from preceding years.

The most revealing method for hunters to determine if insufficient food for the number of deer present is to weigh and age the spike bucks harvested on an area.

Teeth Most Reliable Indicator

Teeth provide the most reliable method of aging deer and very few hunters have taken the time to learn to age deer by this method. For those who wish to learn to age deer by this method, our Department will be happy to supply a simple chart which describes this aging technique.

The average year old buck in an uncrowded habitat should weigh in excess of 120 pounds (live weight) and may have a rack of up to 8 points.

When one year old bucks weigh 100 pounds or less with only small spikes or no antlers visible above the hairline, the area is overpopulated. The less the average weight of bucks in this age class, the more severe is the overpopulation problem.

Bucks Weigh Less

In many areas of our State one year old bucks now weigh considerably less than 100 pounds and are normally without visible antlers. In fact there are many two, three, and even four year old bucks in some areas that weigh less than 100 pounds and carry only small spikes or no visible antlers at all.

In an uncrowded habitat, the two-to-four-year-old buck should weigh in excess of 160 pounds with racks containing eight, ten or even more points.

Each year more and more large herds of deer are observed without a single individual with visible antlers. The logical conclusion by most people is that all of these deer are does, when in reality they are seeing among the does, one, two, three and even four year old bucks which do not have antlers.

We suggest that a hunter who has any doubt in his mind as to the population status of deer in the area where he hunts should learn to age deer and tabulate their weights from year to year.

Deer Will Eat Crops

When natural foods are insufficient to satisfy a deer's appetite, it will utilize nearby farm crops. This is not to say that a few deer even in areas of sufficient natural foods will not take an occasional bite from cultivated plants. What we are talking about is large numbers of deer feeding daily on soybeans, corn, and even cotton. Each year our Department has found it necessary to issue more and more permits to farmers to kill deer in his fields during the crop-growing season in order to protect their crops.

It is unfortunate that such action is necessary. It would be much more desirable for all concerned if these surplus deer could be harvested by hunters during the hunting season, but as long as there is so much widespread opposition to the harvest of antlerless deer, hunters in many areas will continue to be denied this privilege.

A deer which does not have sufficient food to maintain its body in a healthy condition is a ready prey to disease and/or parasites.

Disease, Parasites Hit First

In the North deer in areas of overpopulation most often succumb to starvation during periods of deep snow during the winter. In Alabama, which seldom experiences long periods of deep snow, diseases and parasites usually cause the deer to die before starvation actually occurs. For this reason most deer die-offs in the South occur during the spring and summer rather than during the winter.

In Alabama deer die-offs normally occur over a several months period and with the high rodent population which utilize the bones for their calcium content, many such die-offs often go unnoticed.

Last year a severe die-off occurred in southern Clarke County and its occurrence would probably not have been discovered had it not been for a team of biologists working on a project in the area. Another serious die-off occurred in north Choctaw and south Sumter Counties. There were other die-offs in 1975 as evidenced by the drastic drop in the deer population from the preceding hunting season, but were not observed at the time they occurred.

Die-Offs May Increase

In many areas of the state unless the deer population is reduced to what the land can adequately support, die-offs will increase in occurrence and severity.

Perhaps the most ridiculous fallacy encountered in deer management is the theory that spikes should not be harvested in order to increase the number of bucks with massive racks. What those who advocate this theory apparently do not realize is that antler development is dependent on two factors, food and heredity.

In developing a domestic strain of cattle, certain characteristics considered desirable are sought in the individuals selected for breeding. Those individuals which have inferior qualities are removed from the herd in order that they do not breed and produce inferior offspring. Some deer, regardless of age or the abundance of food, will always have unbranched antlers. If these deer are protected while those deer that have massive racks are harvested, it would be theoretically possible over a given period of time to end up with a deer herd that contains an extremely large number of bucks that will never have anything but spikes.

Minimum of Spiked Bucks

A deer herd in an uncrowded condition will contain a minimum of spike bucks. A large percent of the one year old bucks under these conditions will have three or more points. As the herd becomes over-crowded, many one-year-old bucks will have only spikes, if any visible antlers at all. Each year that over-crowding is allowed to continue, fewer bucks within the two, three and four-year-old age classes will have pronged antlers.

This condition usually occurs as the result of insufficient food and until the deer population is brought into balance with the food supply, the number of bucks with three or more points will continue to decline while those with only spikes will continue to increase.

Food is utilized for growth and body maintenance, and this growth and maintenance takes precedence over the development of antlers. Deer which do not receive sufficient food for necessary growth and body maintenance cannot be expected to develop large antlers. The protection of spike bucks in areas where insufficient food is available will not produce the large racks desired by most hunters.

Accomplishing Opposite Objective

Landowners and hunting clubs that do not permit the harvest of spike bucks in an attempt to increase the number of pronged antlered bucks are, in fact, accomplishing

the very opposite of what they are attempting to accomplish. They are stockpiling scrawny spikes which in turn are consuming much of the available food that could be utilized in developing better racks on other deer. This very same thing occurs when sportsmen and landowners refuse to harvest antlerless deer in an attempt to produce a higher population of large healthy bucks.

Until the deer population is reduced to the point that there is sufficient food for each individual at all times, body weight and antler development will continue to decline.

The only practical way we know to maintain a deer population in a healthy condition is to reduce the population to the point that there is sufficient natural food for each individual animal during all seasons of the year. If this is not done, less useable food will be available each year and our deer will continue to decline in weight and antler development.

Probability Is Slight

We know that some of you are fearful that harvesting antlerless deer will result in an overkill in some areas, but let me assure you that the probability of this happening is very slight. A deer population can more than double itself in a period of less than two years and the problem of an overkill can be corrected by reducing harvest for one or two years at the most. When an overpopulation is reduced by nature through extensive die-offs, it may take up to 25 years or more to re-establish an adequate deer herd. So if there is a gamble, on which side do you wish to place your chips?

A number of hunters are concerned that the harvest of antlerless deer, combined with illegal hunting, will result in the removal of too many deer. To these we hasten to point out that spot lighting and other illegal deer hunting have been going on since game laws were initiated, yet the present problem of overpopulation of deer has continued to increase in spite of illegal hunting. This is positive proof that illegal hunting in Alabama has not been as severe or as great a factor in holding down a deer population as many people believe.

Man can reduce the deer population to within the limits that the habitat can support by an orderly harvest or he can continue with his present protective attitude and let nature do the job through disease, parasites, and starvation.

If man turns the job over to nature, experience has shown that it will take years to develop a huntable deer population again. If man takes on the job, and begins it now, huntable populations of healthy deer can be maintained for years to come.

Ladies and Gentlemen, the choice is yours.

Keeping You Up To Date . . .

Alabama Team Takes 4-H Title

Barry Hughes, the spotlight landowner in *Alabama's TREASURED Forests* Summer issue, was one of the 4-H Forestry Judging Team members from Tuscaloosa County which won first place in the National 4-H Forestry Invitational. Other team members included Tony Gray, Chris Galloway, and Chad Lambert. The Tuscaloosa Team nosed out Georgia by 17 points in competition at Weston, Virginia in August.

Congratulations, fellows!

Foresters Names to Hall of Fame

Three Alabama foresters recently have been inducted into the Alabama Foresters' Hall of Fame.

The three most recent recipients include John M. Bradley, Jr., President and Chairman of the Board of Resource Management Service, Inc.; F. Gordon Comer, Consultant and former Division Vice President of Kimberly Clark Corporation; and William H. "Billy" Stimpson, Chairman of the Board, Gulf Lumber Company.

Selma Salutes Smokey's Birthday

Spunky Squirrel and several other local dignitaries in Selma, Alabama, honored Smokey Bear at his 40th birthday celebration on September 13. Spunky joined his long time fire prevention friend on the campus at Byrd Elementary School where both were presented keys to the city by Selma Mayor Joe Smitherman.

Selma Mayor Joe Smitherman, State Representative Noopie Cosby join Spunky Squirrel in celebrating Smokey Bear's Birthday.

Byrd School Principal Ross Hobbs delivered an inspiring message to 300 youngsters who sat clutching stuffed bears on the school lawn. "Smokey Bear is to fire prevention what the Statue of Liberty is to our country," he said. "We are happy to have this opportunity to honor him on our campus where we have so many lovely trees." Hobbs later pointed out the need for emphasis to be placed on the forest resource in our school system. "Spunky represents urban forestry, and that's what most city children understand. Tying this in to the history of fire prevention and Smokey Bear will strengthen their understanding of the total impact our forests have on their lives."

State Representative Noopie Cosby presented Smokey with an Alabama State Legislature pin. In addition, Bill Jones with the Alabama Forestry Association donated a tree in Smokey's name to Byrd Elementary School. Others present at the ceremony included Dr. Frank Roth, Alabama Cooperative Extension Service; Forest Ranger Jim Bible; Leonard Breeman, Hammermill Paper Company; Councilwoman Rita Franklin; Carl Morgan, City Council President; Councilman Kim Ballard; Mallieve Breeding, Alabama Butterfly Society; Agnes Robertson, Alabama Botanical Garden Chairperson; and Pat Raynowska, President of the Byrd PTO.

Following the birthday celebration, Smokey and Spunky visited each classroom.

WHERE TO FIND FORESTRY TOOLS

by DAVID HOGE, State Lands Coordinator

AS MORE LANDOWNERS BEGIN to manage their forestland, many of them are finding that a lot can be done as a "do-it-yourselfer" (See "Forest Management On A Shoestring" in *Alabama's TREASURED Forests*, Fall 1982). If you are one of these landowners, then you may be asking the question, "Where can I find the tools needed to do the job?" This article will attempt to answer that question.

Forestry tools may at first appear hard to find. For example, you are not likely to find a hoedad at the local Sears store next to the Craftsman tool kit. However, there are several companies which deal almost exclusively in forestry tools which service the Alabama area. These include the following: Ben Meadows Company in Atlanta, Georgia; Forestry Suppliers, Incorporated in Jackson, Mississippi; and General Supply Corporation, also in Jackson, Mississippi. All these companies publish catalogs which list each item marketed. Each catalog has an easy to use index to help in locating items quickly. Blank forms are usually provided with the catalog for ordering by mail and toll-free numbers for ordering by phone.

If suitable equipment cannot be found through these forestry supply companies, adequate substitutes may be found at one of the many agricultural supply centers located across the state. Hardware stores also provide a likely place to find hand tools such as dibble bars or similar tools which can be adapted to serve a specific purpose.

Below is a list of addresses of the above mentioned supply companies for those interested in obtaining catalogs:

- **Ben Meadows Company**
  3589 Broad Street
  Post Office Box 80549
  Atlanta (Chamblee), GA 30366

  Forestry Suppliers, Inc.
  205 West Rankin Street
  Post Office Box 8397
  Jackson, Mississippi 39204

  General Supply Corporation
  Post Office Box 9347
  303 Commerce Park Drive
  Jackson, Mississippi 39206

Local agricultural supply centers and hardware stores can be contacted by using the yellow pages in your telephone directory.

Remember, though, before engaging in any activity that affects the forest, consult a professional forester, whether he be your local county supervisor for the Forestry Commission or a consultant forester, and get his advice. Get a written management plan on your forestland to coordinate your efforts and to reach your stated objective.

Having used his newly acquired forestry tools to accomplish a specific task, the landowner can feel proud in what he, himself, has done.

TREASURE
WHEN MANAGED PROPERLY
ALL THE PIECES FIT

by NEIL LETSON, Treasure Forest Coordinator

STOP FOR ONE MINUTE and think about your forest. Is it a puzzle or a TREASURE? Is it producing what you want it to? Do you know what you want it to produce? These simple questions may seem unimportant or trivial, but to the forest landowner who can answer them, the enjoyment of this forest enterprise will not only be understood but will have a much better chance of being attained.

Let's look at your forest. What's your objective? If you're like the majority of Alabama's 200,000 private non-industrial forest landowners, then you want an income from your land. But, don't stop there! You may also be interested in improving the wildlife habitat on your property. Plus, you might want to increase the recreational opportunities. In managing for these objectives you may have decided to maintain the quality of the soil and water resources while retaining the overall aesthetic appearance of the property.

As you can see, the opportunities that exist on your forest are numerous. It is essential that you sit down and write clearly stated goals of what you want to achieve from your forest and how you are going to get there.

How do you do this? Fortunately there is a way. It involves six steps which can guide you on the way toward establishing a meaningful relationship with your forest land: *Identify your needs, list solutions, select strategies, implement strategies, evaluate, and revise (if necessary).*

Let's look at each of these individually.

Identify Your Needs

Each of us has similar needs. We all require food, shelter and security. We also differ from one another. For example, your two-bedroom house may be too small for your growing family and you now have a need for a four-bedroom house. Your six year old car may be requiring extensive repairs and you have a need to replace it with a newer more dependable model. This type approach also applies to your forestland. Your forest may not be producing all the income it can. It may not be in condition to maintain a healthy and thriving population of desirable wildlife species. The list goes on and on. The challenge for you then is to identify what you need from your forest and to do this in terms that will help satisfy them.

When stating your needs, do two things. Make them precise and measurable. Look at these two statements which describe a forest landowner's needs and see which one is the most useful.

1. "I want more trees on my land."
2. "I have 100 acres of marginal cropland that I want to site prepare and plant in loblolly pine in the next two years."

Obviously the second statement is the most meaningful. It tells us what the problem is and gives us a way to solve it in measurable terms. Also, notice the use of numerical measurements. In forest management, it is often best to use numbers because changes in strategies will occur and are best detected when using easy-to-read numerical measurements.

List Solutions

A solution to a problem takes you from where you are to where you want to be. Several steps can be used to help you list solutions. The first is to determine your goal and follow it with a plan of action. This will list in an orderly and scheduled manner the actions and desired outcomes needed to accomplish your goal. An extension of this includes listing alternatives. These are important because with long-term planning, a necessary part of forest management, even the best plans can go bad and you need to be prepared to adjust your strategies if and when problems occur.

Let's use our examples from above and fit these features into our landowner's situation.

"I will have converted 100 acres of marginal cropland into a loblolly pine plantation, and I will accomplish this by prescribe burning for site preparation and by planting 50 acres of trees on an 8′ x 10′ spacing. Then I will prescribe burn for site preparation and plant 50 more acres of trees on a 8′ x 10′ spacing."

Select Strategies

In most situations, there will be one objective but several ways for achievement. This requires making a decision, which is often the hardest part of forest management. The job can be much easier when you have listed all the alternatives, their cost and expected benefits. On our 100 acres of marginal cropland the landowner really has two choices. He can either convert it to loblolly pine or leave it as marginal cropland. To make the best choice the landowner must weigh the cost and benefits of continuing to cultivate the land in crops against the cost and benefits of planting the land in trees. In most situations across Alabama, a landowner can make more money by growing trees on marginal cropland than by cultivating crops.

Implement Strategies

Once you have decided your objectives and the way you are going to attain it (your

strategy), the next thing is to do it. The best way to carry out your planned activity is to write down a scheduled series of events. When making a schedule, list the time each activity is to occur with a description of each. In our example above, we've done this by saying:

> "I will have converted 100 acres of marginal cropland to loblolly pine, and I will accomplish this by prescribe burning for site preparation and by planting 50 acres of trees on an 8′ x 10′ spacing by March 15, 1985. Then I will prescribe burn for site preparation and plant 50 more acres of trees on an 8′ x 10′ spacing by March 15, 1986."

With our revised example our landowner has a better chance of successfully moving toward his objective. He has a sense of timing, commitment and planning. This will make the job easier, not harder.

Evaluate

Evaluating your progress is essential. How else will you know if you're on track or if you're successful? In our example, let's suppose our landowner fails to order his tree seedlings in time to meet his March 15, 1985 target. He will then be unable to meet his objective. That's another reason for evaluating your progress. It can signal you when you're off course so that adjustments can be made.

Revise

If our landowner is unable to order his seedlings to meet his March 15, 1985 deadline, he can do one of three things. He can change his objectives, change his strategy or quit. By changing his objective, he may decide to turn it back into cropland, or perhaps into a pasture. If he decides to change his strategy, he might decide to direct seed the 50 acres with loblolly pine or wait until next year to order his trees and plant. In most cases, revising your strategy will be the change most likely to occur.

Conclusion

Planning is the most important part of managing your forest. Proper planning means knowing where your forest is, where you want it to be, and how you're going to get it there. Without a plan, it is almost impossible for a landowner to fully achieve this. It's the only way to make your forest a TREASURE and not a puzzle.

Reference

Kaufman, R.A. *Identifying and Solving Problems*, La Jolla, CA; University Associates.

Foresters and Computers, a Natural Combination?

by BONNIE BOYD, Staff Computer Specialist

"My county forester worked up a forest management plan for me in a fraction of the time it took him to work one up for the guy down the road last year." This bit of conversation between two landowners is just one example of how computers are being used in forestry to benefit you, the landowner. State foresters are beginning to use computers in every phase of their jobs, from working up a timber cruise and determining the hazard rating of a stand of trees for various insects and diseases, to locating a forest fire from an airplane. Any tool that will help foresters do their job faster and more efficiently can only benefit the people they work for—the people of Alabama.

The Alabama Forestry Commission **(AFC)** is on the crest of the wave of computer applications in forestry. As with any new development, there are problems associated with computerization with which every manager must be aware. To help solve these various problems, the **AFC** was instrumental in helping to create a clearing house of computer technology information.

The Forest Resource Systems Institute, **FORS** for short, is a private, nonprofit organization conceived as an aid to computer users in forestry. The institute was organized with the goal of meeting a broad spectrum of needs associated with modern computing.

Several services are offered by **FORS** to meet the computing needs of its members. The institute will evaluate computer programs purchased or developed by members to determine how well they work and how easily the programs can be adapted to different computer systems. Any member who wants to buy new computer hardware can ask **FORS** to help determine his computing needs and to help locate the appropriate hardware available in his price range. **FORS** will make arrangements for technical assistance for members who have programs they want developed but do not need a permanent computer staff. **FORS** will also make provisions to train and educate members in their chosen area of computer technology. **FORS** publishes a list of software available to its members. **FORS** will also answer questions about programs it has approved.

Members of **FORS** can expect to benefit in many ways. All members receive a quarterly news report and other publications with articles that not only help the technicians stay abreast of new developments, but provide relevant information to assist managers in making computer related decisions. **FORS** also arranges annual meetings to take care of institute business, offers, seminars and provides a showplace for demonstrations by computerware salesmen. Members of **FORS** may also have the advantage of quantity discount rates when purchasing computerware. Finally, **FORS** provides a forum through which all members have input into decisions concerning future software and hardware research and development.

Any person or forestry related organization can join **FORS** by submitting an application for membership to the Board of Directors for approval and by paying a $250 membership fee. A new member acquires responsibilities along with the benefits offered by **FORS.** Each new member must pick and join a technical committee. There are technical committees for consulting foresters, industrial foresters, state and extension foresters and research foresters. Each committee is depended upon to coordinate service requests from members and determine that committee's software research and development requirements. Members of each committee also have the responsibility of arranging workshops and seminars useful to them.

Each member must also join an interest group for the purpose of electing a board of directors. The eight interest groups include *consulting forestry and related firms, forest industry, forestry extension services, state forestry organizations, university forestry schools,* the *U.S. Forest Service* and the *Tennessee Valley Authority.* All **FORS** members also elect two board members at large, giving a ten member board of directors.

If **FORS** can accomplish half the objectives it has set, the forestry community and society as a whole will profit a great deal. **FORS** truly is an idea whose time has come, making sure that computers and foresters are a natural combination.

Pesticides, Poison, Toxicity, Hazard—What Does This Mean?

by JIM HYLAND, Chief Forest Pest Management

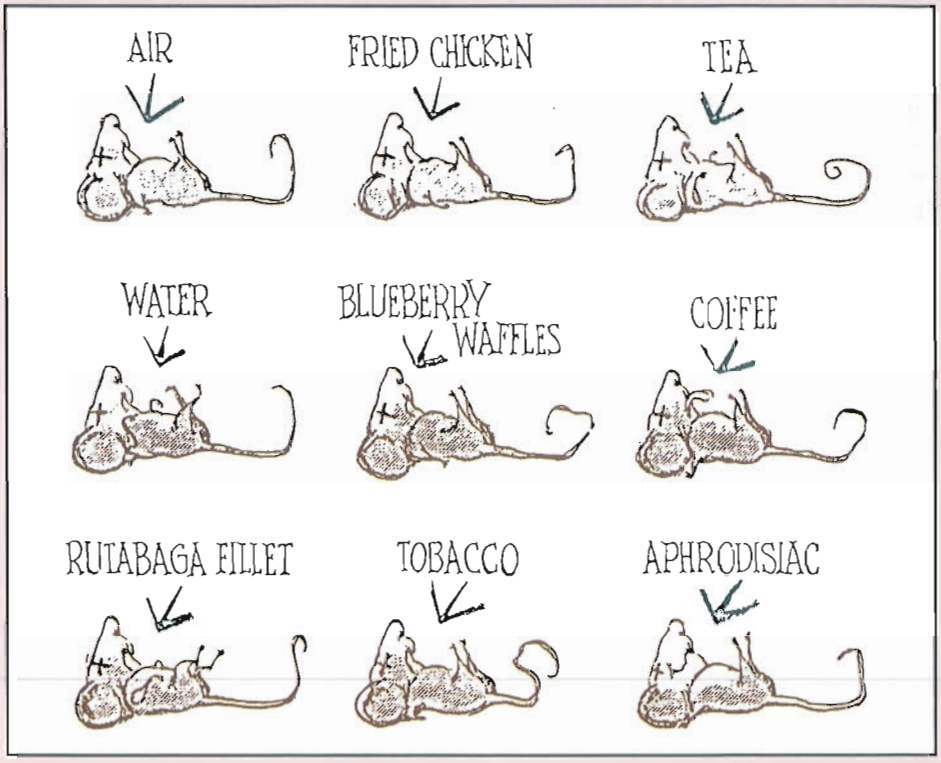
FROM TIME TO TIME THERE is an emotional uproar about chemicals and their effect on the environment. This uproar is understandable, but usually rooted in a misunderstanding or lack of knowledge of the terms "pesticides, poison, toxicity, and hazard."

The word "poison" is defined as any agent, which, introduced into an organism, may chemically produce an injurious or deadly effect. A "pesticide" is a "poison" that is used against a particular pest. The pest could be insects, animals, plants, or diseases. Each type of pesticide is named for the particular pest to which it is injurious: Insecticides—insects; Herbicide—plants; Fungicide—disease (fungi); Rodenticide—rodents; etc.

The terms "toxicity and hazard" are two commonly used terms that are often misused. Below are citings to help distinguish their meanings.

Toxicity

1. *Definition*—the quality or ability of a substance to be poisonous; or, the degree of poisonous of a substance.
2. *Two characteristics of toxicity:*
   a. Toxicity is dose related. That is, the dose taken determines the response of the victim. The more that is taken in, the more serious the response. Nearly all substances are toxic **IF** enough is eaten, inhaled or otherwise taken into the body.
   EXAMPLE: Table salt. Usually it is harmless if eaten in normal, everyday quantities. However, table salt is very poisonous and can cause death if taken into the body in large doses.
   b. Toxicity is constant within strains of similar test animals. For example, if a given quantity of a substance is fed to a group of test animals and 25% of them die, a repeat of the experiment with similar animals will produce similar results.
3. *Toxicity is measured using a concept called* LD_{50}. This is the *Lethal Dose* required to kill 50% of a group of test animals, usually laboratory rats.
4. *LD_{50} values are expressed as parts per million (ppm) or milligrams per kilogram (mg/kg).* That is, an LD_{50} value is the number of milligrams of a substance per kilogram of body weight needed to kill 50% of a group of test animals.
5. *To illustrate the relationship between 1 mg/kg or 1 ppm, the following examples are given.* One mg/kg or 1 ppm is the same as:
   1 inch in 16 miles
   1 minute in 2 years
   1 drop in 16 gallons
   1 penny in $10,000
6. *Examples of LD_{50} values and their use.*
   a. Suppose we feed 100 rats, each weighing 1 kg, a meal containing 25 mg of a poison. If 50% of the rats die, we say the LD_{50} of that material is 25 mg/kg. However, if it takes 40 mg of the poison to kill 50% of the test animals, the LD_{50} is 40 mg/kg.
   b. LD_{50} is measured both orally (poison is fed to the test animals) and dermally (the poison is applied to the skin of the animal.)
   c. The oral LD_{50} of carbaryl (SEVIN) for male rats is about 850 mg/kg. That is, if we would feed 850 mg of carbaryl to a group of 1 kg male rats, we would expect about 50% of them to die. However, if those male rats weighed 2 kg each, 2 × 850 or 1700 mg would be needed to kill 50% of the rats. The LD_{50} for 2 kg rats is still 850 mg per kg of body weight, but since each rat weighs 2 kg, twice the amount is needed to kill 50% of the test animals.
   d. LD_{50} values can be used to estimate the amount of poison needed to kill humans. For example, a 175 lb. man weighs about 80 kg.



Agricultural Age, March 1979.

Using the LD_{50} of 850 mg/kg for carbaryl, 80 × 850 or 68,000 mg would kill 50% of a group of 175 lb. men fed this amount. This amount, 68,000 mg, is the same as 2.4 dry ounces or about 15 level tablespoons.

e. For a group of 90 lb. (40 kg) children, 40 × 850 or 34,000 mg of carbaryl would kill 50% of them. This is about 1.2 ounces or 7.5 level tablespoons.

7. *The lower the LD_{50} value, the fewer the number of mg/kg required to kill 50% of the test group.* Therefore, the lower the LD_{50} value, the more toxic the substance is. See toxicity charts.
8. Generally, *the oral LD_{50} of pesticide is lower than the dermal LD_{50}.* In other words, most pesticides are more toxic taken orally than dermally.
9. *Signal words on pesticide labels reflect oral LD_{50} values of that product.* See TABLE 1.
10. *Toxicity of a substance can affect a person in two ways:*
    a. Acute poisoning—usually a single dose that's large enough to give an immediate response, usually within 12 hours of exposure.
    b. Chronic poisoning—exposure to small amounts of a poison repeatedly over long periods.

Hazard

1. *Definition*—the danger arising out of the use of a substance; or, the gamble or chance that exposure or a poisoning will occur.
2. *Hazard varies according to exposure.* Hazard associated with the use of a particular substance can be reduced by reducing exposure.
3. *The degree of hazard associated with a product depends on the following:*
    a. the toxicity of the active ingredients
    b. concentration of the active ingredients
    c. type of formulation
    d. amount of protective clothing and equipment used
    e. rate of application
    f. frequency of application
    g. methods of application
    h. persistence after application

With all this said are all things poison? Probably. Take the following accounts:

*Carew, John. 1960. **As it looks to me.** Amer. Veg. Grower 8(1). January.*

"Pickles can kill you! Every pickle you eat brings you nearer to death! Amazingly, most intelligent people have failed to grasp the obvious significance of the term 'in a pickle.' Although leading horticulturists have long known that *Cucumis sativus* possesses an indehiscent pepo, the pickle industry continues to expand.

"Pickles are associated with all major diseases of the body. They can be related to most airline tragedies. There exists a positive relationship between crime waves and the consumption of this fruit of the cucurbit family. Nevertheless, more than 120,000 acres of fertile U.S. soil are now devoted to the production of the pickling cucumber and our per capita consumption is nearly 4 pounds. The harmful effects of pickles can be conclusively proven using a method of logic widely acclaimed by certain government officials and commonly observed in TV commercials. Recent surveys have shown . . . that 79.7% of the people involved in traffic accidents consumed pickles within 14 days preceding the crash . . . . That 63.1% of juvenile delinquents come from homes where pickles are served frequently. Perhaps you seek evidence of a long-term nature: of the people born in the year 1839 who later dined on this vegetable, there has been a 100% mortality. All pickle-eaters born between 1839 and 1873 have wrinkled skin, brittle bones, and failing eyesight.

"Even more convincing is the report of a noted team of medical specialists: rats force-fed with 20 pounds of pickles per day for 30 days developed bulging abdomens. If you are a skeptic, try this experiment: buy 5 quarts of pickles from your neighborhood grocer. (You'll be shocked to learn this dangerous food is actually on sale near your place of worship.) Grind the contents to a pulp and place in a bowl. Drop in one live guppy. It will die within four hours! If this sounds ridiculous, compare it with the logic that condemned the entire cranberry industry because of the actions of a few growers."

*Anonymous. 1981. **Weekend Update Looks at Conservation!** San Francisco Chronicle, Feb. 22.*

"The best satire, origins unknown, was reprinted recently by Jack Pickett, announcing the discovery of 'a new fire-fighting agent known as WATER (Wonderful and Total Extinguishing Resource). It is particularly suitable for dealing with fires, and is cheap to produce.'

"WATER is already encountering opposition from safety and environmental groups. One member has pointed out that if anyone immersed his head in a bucket of WATER, it would prove fatal in as little as three minutes . . . it has been reported that WATER is a constituent of beer. Does this mean that firemen could become intoxicated from the fumes when they use it to put out a fire? The 'Friends of the World' say they obtained a sample of WATER and found it made clothes shrink. It shrank cotton, so what would it do to people?

"Here is a problem that requires further study. Meanwhile, use WATER sparingly, if at all."

Now when are pesticides hazardous? It may depend on the beholder or misuser. The use of pesticides for the right pest and target host is sound, the misuse of a pesticide is not sound or wise.

TABLE I. Combined Tabulation of Toxicity Classes

Toxicity Rating	Commonly Used Term	Routes of Absorption: LD_{50} Single Oral Dose Rats mg/kg	Routes of Absorption: LD_{50} Single Dermal Dose Rabbits mg/kg	Probable Lethal Oral Dose for Man
1	Extremely toxic	1 mg or less	20 mg or less	A taste, a grain
2	Highly toxic	1-50 mg	20-200	A pinch, 1 teaspoon
3	Moderately toxic	50-500	200-1,000	1 teaspoonful to 2 tablespoons
4	Slightly toxic	500-5,000	1,000-2,000	1 oz. to 1 pint
5	Practically nontoxic	5,000-15,000	2,000-20,000	1 pint to 1 quart
6	Relatively harmless	>15,000	>20,000	>1 quart

References

Pesticide Information and Safety Manual, University of California Cooperative Extension, 1968.

CALENDAR*

January 7, 1985—Jefferson County 7:00 PM. Annual Covered Dish Dinner of Blanche Dean Chapter of the Wildflower Society. A good opportunity to learn all about Wildflowers on your land. Contact Lillian Nauman, 871-0081.

January 11-12, 1985—Mobile County. Ala. Forestry Assoc. Mid-Winter Meeting in Conjunction with Senior Bowl. Contact Hilton Watson, 265-8733.

January 19, 1985—Blount County 10:00 AM. Alabama Forest Owners Association. Silviculture Tour on Drennen Property. See several cutting regimes including Shelterwood & Seedtree; plus a visit to an active seedling planting operation. Exit I-65 at #287. Go 5 miles on 31 North until you see 2 story log building, Country Jim's General Store. James Still of Drennen Forestry Services will be there and lead the Tour.

January 21-February 3, 1985—Switzerland. A Forestry & Skiing Tour under guidance of Lialott Harberta. Call for trip schedule, (704) 873-5344. Mrs. Harberta operates Forest Care, a silvicultural contracting company in North Carolina.

April 13, 1984—Exhibitors are invited to sign up now for Alabama Forest Owners' Association Meeting at Tannehill State Historical Park. Call Exhibits Chairman Jim Gober at 789-3227.

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

ACTIVITIES

DISTRICT 1

Calhoun County Ranger David Morris has been assisting the Calhoun County 4-H club with a nature study program on the Jim Martin Farm.

Stanley Anderson, Cherokee County, met with the county Rural Development Committee in Montgomery, and was selected for the R.D. Governor's Award.

VRD Certificates were presented to the **Ellisville RCFP** unit.

A two weeks forestry course was taught by **Donald Cole** at Camp Comer.

Stanley Anderson is continuing his work with the Alabama Appalachian Association on the hiking trail from DeSota Falls to Noccolula Falls.

The **Society of American Forester's** convention was held in Quebec City and was attended by **Stan Anderson**.

Larry Parker, Marshall County, worked with the Day Camp in Guntersville for one week at the Civitan Park with disabled children. All the week was filled with fun and learning experiences and was enjoyed by all the campers.

An article on "Organizing for Community Projects" was written and submitted to be published in the **American Forestry Magazine** for Urban Forestry . . . Be watching for it!

Madison County Forester, Chuck Weber, addressed the NE Region Foresters in Albany NY on urban Forestry in Alabama. This meeting was sponsored by the American Forestry Association.

The **Small Woodland Management** course was taught again this year in Huntsville and ran from mid-September until November 10. This course is taught each year in Huntsville by **Chuck Weber**. Any interested persons please contact him at 532-3564.

District One has been developing computer applications to streamline district budget management, billings, and annual and sick leave.

DISTRICT 3

District 3 held an open house at the new district headquarters on October 24. Landowners, legislators, other officials and AFC personnel attended the open house.

District Forester **Wayne Strawbridge** would like to express his thanks to all District Three personnel who worked to have the new headquarters ready for the occasion. District Three would also like to express their thanks to all who attended.

District Three hosted the **State Forester's Monthly Staff Meeting** October 25th. Those attending enjoyed a barbecue chicken lunch.

Tuscaloosa County Forestry Planning Committee held their forest field day on the property of **H.C.** and **Hoyt Montgomery** on October 4. A tour of the Montgomery property began the day and covered proper timber marketing techniques. Stops on the tour stressed long range planning before harvests, using technical assistance available to forest owners, best management practices during harvesting and the use of intermediate thinnings in pine plantations to increase both growth and revenues. A demonstration of the AFC's portable sawmill followed the barbecue lunch. Sponsors of the lunch included **Gulf States Paper Corp., Tuscaloosa County Farm Bureau, Tuscaloosa County Soil and Water District and Jimmy Green,** consultant forester.

Two night meetings were held in Tuscaloosa during October by the **Tuscaloosa Forestry Planning Committee**. The first featured Drs. **Bill McKee** and **Fank Roth,** Alabama Cooperative Extension Service, speaking on forest investments. The second meeting held at night was a slide-tape presentation on pine reforestation. Twenty-two landowners attended the meeting on forest investments and eighteen were present for the presentation pine reforestation.

Fayette County's Field Day began with a presentation on forest investments by Drs. **Bill McKee** and **Frank Roth,** Alabama Cooperative Extension Service. A barbecue lunch sponsored by local industries followed the slide presentation. A tour in the afternoon was conducted to show areas which had been improperly managed or harvested. Thirty-two landowners attended the field day.

Sumter County's Field Day covered low cost regeneration methods and was held on Treasure Forest #292 owned by **Clinton McClure**. Sixty-two landowners attended the field day and enjoyed the meal which was sponsored by local industry. A compass, diameter tape, a biltmore stick, a paint gun and a chain saw were given away as door prizes. Treasure Forest awards were given to **Clinton McClure, Carlisle Jones, Billy Rumley** and **Strother Dearman**. The awards were presented by District 3 Treasure Forest Coordinator **Terry Jacobs** and county forester **Phillip Dubois**.

An exhibit in the West Alabama Fair highlighted the role of the **Forestry Planning Committee** in forestry on the county and statewide level. The exhibit was manned by members of the Tuscaloosa County Forestry Planning Committee throughout the week-long fair.

In celebration of Smokey's 40th birthday, a picture of **Smokey** and **children of District Forester Wayne Strawbridge, fire specialist Ken Elmore** and **RC&D forester Mark Beeler,** along with a birthday cake was run on the front page of the **Tuscaloosa News**. Three local radio stations, **WNPT, WACT,** and **WJRD** all announced Smokey's birthday. **WCFT-TV** covered a birthday party given by Tuscaloosa Parks and Recreation for Smokey. The party was attended by 40 children from a local school.

DISTRICT 5

Clanton passed a tree ordinance creating a Tree Commission.

On October 17, the **Autauga County Forestry Committee** held its annual forestry tour. The 75 landowners and others attending were able to see demonstrations on hardwood production, pine management, Kudzu control, erosion control and the portable sawmill.

Marengo County landowners **Jerry Langley** and **Brooks Butler** received certification as TREASURE Forest Landowners.

On September 19, the **Demopolis Rotary Club** was presented a talk on the "Value of Forestry in Marengo County."

The **Department of Conservation and Natural Resources** approved the use of 40 acres of **Chickasaw State Park,** Marengo County, as a demonstration forest and outdoor learning center.

On October 16, District Five's annual **Fire Cooperators** meeting was held. This year's meeting was hosted by **Gulf States Paper Corp.** at their district shop near Demopolis.

The **Perry County Communities** of **Sprott** and **Oakmulgee Creek** formed RCFP units.

A TREASURE Forest slide program was presented to 30 landowners in **Pine Hill.**

On October 24, Wilcox County landowner **James N. Baker** was presented his Tree Farm certification and sign at **Monroe County's Annual Forestry Tour.**

The volunteer fire departments of **Wilcox County** formed a **County Fire Department Association.**

On October 13, **MacMillan-Bloedel Corp.** sponsored a Volunteer Fire Department Competition at **Thomasville**. Fire departments from **Pine Hill, Camden,** and **West Wilcox** placed in all events, including hose lay, bucket brigade, and diesel fuel fire.

DISTRICT 6

TREASURE Forest status was awarded to **Dr. Carl Jones** on December 10, **Dr. Pittman** on December 11, **Jane Knox** on November 20.

The **Houston County** office shared an exhibit with the **Alabama Department of Conservation** at the 41st annual **National Peanut Festival** held in **Dothan.** The exhibit contained wood products, a videotape on wood

utilization, the large talking Smokey, and live wild animals of Alabama. Over 70,000 people viewed the display. The **Houston County** office entered a truck and tractor unit with Smokey Bear in the **Peanut Festival** parade.

DISTRICT 8

Baldwin County Supervisor John Martin; Ranger **James Travis** presented a fire prevention program to 35 students at **Bay Minette High School**. Fire prevention programs were also presented to 50 young people at **Elberta Baptist Camp** and to campers at **Gulf State Park** in Gulf Shores.

Mobile County Forest Rangers **Jim Wade** and **Major Harris** presented a fire prevention program to 100 young people at **Mobile College Summer Camp** on August 23, 1984.

A demonstration forest tour was conducted by the **Clarke County Forestry Commission** on September 20, 1984, at the property of Treasure Forest Landowners **Vivian and Mary White**. The AFC portable sawmill was demonstrated, and various types of timber harvesting equipment were viewed, including a whole tree chipper. Lunch was provided by **Maurice Paul Pulpwood Company.**

Baldwin County and **District 8** personnel had a fire prevention display set up in conjunction with National Hunting and Fishing Day at **Robertsdale** on September 22.

Patrick Waldrop, Mobile County Supervisor, represented the Forestry Commission at the **Youth Conservation Corp. Appreciation Day** on October 6. Senator **Ann Bedsole** of Mobile was guest speaker.

Baldwin County and **District 8** personnel had a fire prevention display at the Baldwin County Fair October 2-6.

County Supervisor **Patrick Waldrop** and Ranger **Major Harris** presented a fire prevention program to 40 second graders from a Mobile County School on October 16 and also presented a fire prevention program to 50 first graders from the Independent Methodist School on October 18.

Clarke County personnel had a vehicle and Smokey Bear in the National Fire Prevention Week Parade in **Jackson** on October 10.

The **Choctaw County Forestry Committee** hosted a demonstration forest tour on October 18. The Forestry Commission's portable sawmill was demonstrated, **Mr. William May** a consultant forester from Jackson, Mississippi discussed forestry herbicides, and a fire break plowing demonstration was held. Lunch was sponsored by various businesses and forest industry in **Choctaw County**. After lunch a forestry equipment display was held and **Ron True** of Alabama River Woodlands presented a program on Kudzu Control. A chainsaw was given away as a door prize which was donated by Young's Workshop.

Lynn Booth, fire specialist, presented a fire prevention program to 20 pre-schoolers at **Kinder-Care** in Mobile on October 26.

The **Mobile County Fire and Rescue Association** held a fire department competition in **Fowl River** on September 29. Eight departments competed with **Mt. Vernon** winning. County Supervisors **Patrick Waldrop** and **John Martin** acted as judges.

Forest Rangers **Pete McInnis** and **Raymond Skelton** made fire prevention presentations to each school in **Choctaw County** during National Fire Prevention Week.

DISTRICT 9

The Marion County CRD and **Marion County Forestry Planning Committee** sponsored a landowner tour and demonstration at **Mr. V.L. Glenn's** Christmas tree farm. Landowners were able to see Virginia pine Christmas trees in various stages of cultural development, equipment used in the cultural development and hear Mr. Glenn explain his operation.

The **Marion County Forestry Planning Committee** sponsored a cross cut saw competition at their Farm-City activities in Hamilton.

The **Hamilton RCFP Fire Department** recently completed 30 hours of basic fire fighting training sponsored by the AFC.

The **Franklin County Forestry Planning Committee** received the **Outstanding County Forestry Planning Committee** award for District 1 in the Farm Bureau Conference held in Montgomery.

Lawrence and **Morgan County** forestry personnel participated in their local county fairs. Examples of the AFC programs were on display in Decatur and Moulton.

Smokey Bear's birthday was celebrated at **Regency Mall** in **Florence**. Smokey rode into the Mall on a fire truck where he greeted hundreds of children and served his birthday cake to approximately 600 people. The birthday party was held in conjunction with the annual RCFP display and competition organized by **Steve McEachron,** County Forester, Lauderdale County.

District 9's first **"Historical Tree of Alabama"** will be dedicated soon. The weeping Mulberry located at historical Trinity Parrish Church in Florence has been selected to receive this honor. The Weeping Mulberry, already a Champion Tree of Alabama, was featured on the cover of the International Society of Arboriculture—Journal of Arboriculture. The tree was nominated for the Historical Tree status by Louise Bone, District 9 Secretary.

Larry Lee, County Supervisor in **Lawrence County,** and **Howard Swanner,** County Supervisor, **Limestone County,** served as staff members for the annual 4-H Fish and Wildlife Camp held at Lake Guntersville. Students from Morgan and Limestone Counties studied tree identification, hunter safety and wildlife.

Howard Swanner, County Supervisor, Limestone County, was among a group recognized for their leadership at the 4-H Awards Banquet held at Athens State College. Howard received the award for Outstanding County Volunteer Leader.

The **Alabama Forestry Commission, Marion County Farm Bureau** and the **Forestry Planning Committee** sponsored a program on prescribed fire. District Forester **Gerald Steeley** and County Forester **Tony Avery** presented the AFC slide tape program on prescribed fire to 40 landowners.

District 9 AFC employees continue to work towards "bringing back the bluebirds." **Wayne Winsted** along with **Keith McCutcheon** (Wildlife Biologist), the **Northwest Council of Local Governments** and **Youth Volunteers** placed 20 bluebird boxes on the Thomas Wildlife Management area.

The Boy and the Tree

by GEORGE LOWRY, County Supervisor, Fayette County

JONATHAN HAYNES WAS at the Lowrey family reunion. Obviously he's a young man with most of his life before him. He is standing at one of three trees planted by his great-grandfather J. M. Lowrey. The two will never have the chance to meet in this life, and as Jonathan reaches back with his right hand for support from the tree, he touches the one who has been here before. We as individuals and as family members seek support from the past. The whole nation does the same thing on special days, one being the Fourth of July, when we stop to look back. In the case of our nation we can with pride honor those who have already been here before.

The importance is not the tree or the young man, but the attitude which caused the tree to be planted. Should we have a guarantee that we will eat the fruit of the trees we plant or else plant no trees? Mr. J. M. Lowrey did not need assurance, he planted the tree and passed, never having the pleasure of its shade. He hoped others would find pleasure in his work, eighty-four relatives and friends did enjoy the tree's shade and remembered who planted it. Your parents and grandparents may have done similar things for your family, but what about you? The state's forestland is badly neglected because many believe they will not reap the full benefit of their labor.

It is true that many who plant a tree or reforest their property will not rest in its shade. Are we the last people to pass this way, and what of those who shall follow? Is there not pride in doing what should be done? As we look back into our nation's past, imagine where we would be as a people if all those who have passed before had demanded the fruit from their labor. What condition will things be in for your heirs? Will a young man or woman stand where you have stood and will they be better or worse for your having been there before?

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