

Alabama's TREASURED Forests



SPRING ISSUE 1983

STATE FORESTER'S MESSAGE

by C. W. MOODY



Alabama is an outstanding state in many ways. The spirit of cooperation which exists among government agencies and private organizations with forestry interests is one of our outstanding qualities.

In this issue you will read of the good work of the Alabama Forestry Planning Committee over the years. This is made possible by the desire to work together for the good of Alabama which exists from the highest to the lowest levels in our forestry agencies and organizations.

In this letter I would like to share with you a thrust which is ongoing at this time and could not be included in the above mentioned article.

Because of the economy, orders for forest tree seedlings are not up to levels of previous years. The Alabama Forestry Commission was left with several million tree seedlings unsold as of February 1. There were two alternatives: plow the trees under or devise some system to get them planted. Since the determination that the trees could not be sold was made on February 1 and trees would have to be out of the Commission's nurseries and planted by mid-March, time was of the essence.

Through preexisting relationships developed by past cooperative efforts, the Alabama Forestry Planning Committee rose to the occasion! When presented with the problem, the Committee resolved that the seedlings should be provided to Alabama landowners to be planted on marginal cropland. This is consistent with the national need to reduce farm surpluses and reduce soil loss. In recognition of the current financial plight of farmers, the Committee determined that these trees should be provided and planted with minimum cost to the landowner.

The Alabama Forestry Commission agreed to contribute the seedlings free. The Soil Conservation Service agreed to identify marginal cropland and take orders for the trees. The Extension Service agreed to publicize the effort in finding willing landowners. Other planning committee agencies, the Alabama Forestry Association and the Alabama Farm Bureau pledged their support in publicizing the effort, delivering the trees and helping get them planted. This state level agreement has been translated into preexisting County Forestry Committees in each of Alabama's sixty-seven counties where all these interests are working together to get the trees planted at minimal cost to landowners. More than six million trees had been obligated by February 17. Because this is a major project which must be accomplished in a short time, there have been some problems and I am sure there will be more. Our past cooperative efforts, however, will cause problems to be minimized and cooperation will be maximized. The job will be done. Alabama landowners will benefit from this effort and future generations of Alabamians will have more trees to meet their needs.

That's the way we do it in Alabama!!

Sincerely,

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

C. W. Moody
State Forester

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

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COVER: Waterfall at Choocolocco State Forest near Anniston.

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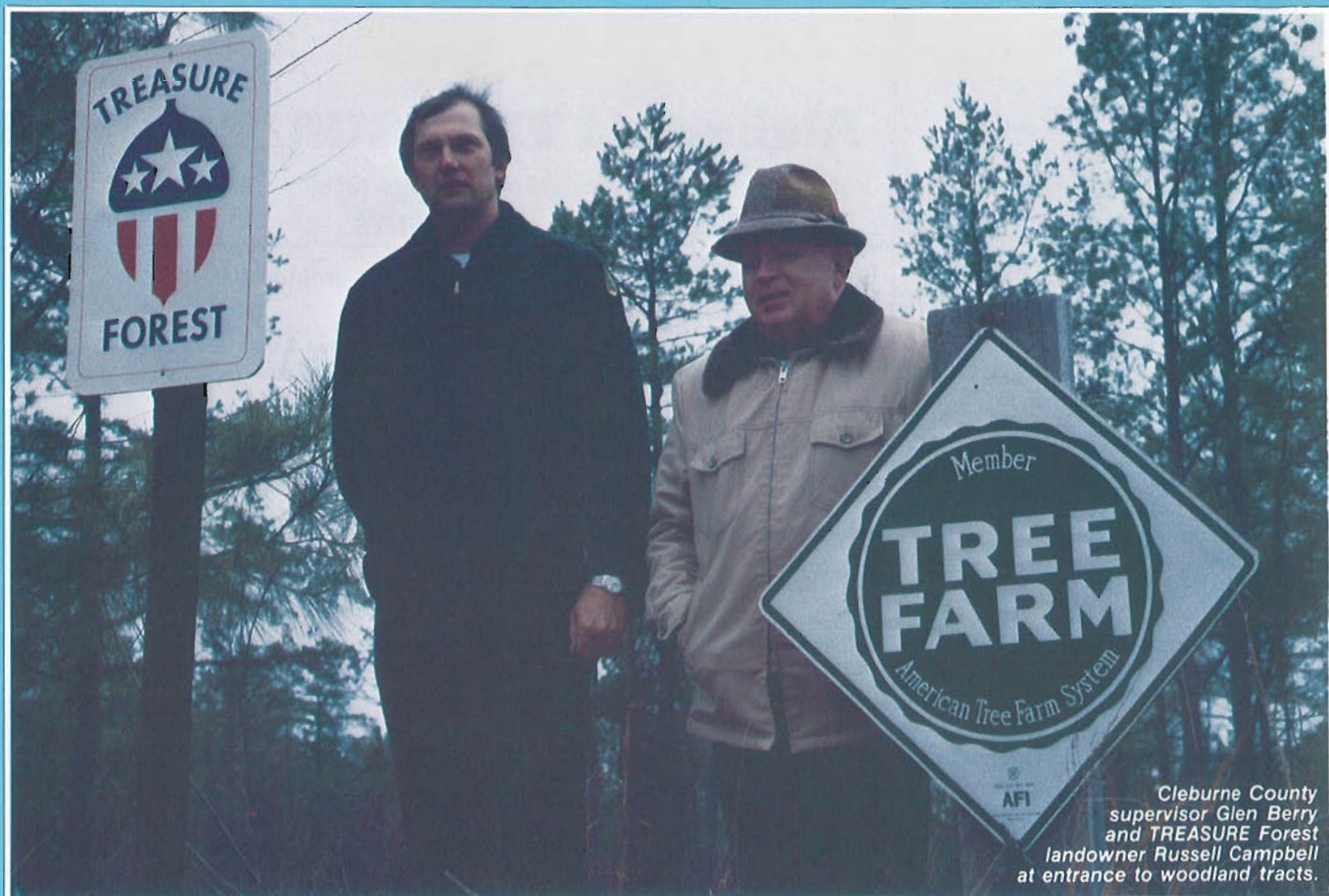
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Cleburne County supervisor Glen Berry and TREASURE Forest landowner Russell Campbell at entrance to woodland tracts.

Utilizing public assistance available to all forestland owners in Alabama, this Cleburne County retiree has turned the old family farm from row crops to growing loblolly.

RUSSELL CAMPBELL'S RED CLAY HILLTOPS ARE TURNING GREEN

by CHARLES E. CLINE, Contributing Editor

RUSSELL CAMPBELL, recipient of the 1980 Helene Mosley TREASURE Forest Award, tells people, "I have done nothing any Alabama landowner cannot do! There's public assistance out there . . . available for the asking. Government agencies have people with the skills required to develop (management) plans for owners of woodlands. They also know where and how owners can benefit by participating in cost-share programs intended to encourage the planting of trees and installing

other sound land management practices. Those fellows want to help landowners! It is their job to help landowners! All a fellow has to do is make use of those programs available."

Russell Campbell is one who knows whereof he speaks. He estimates government subsidies have borne approximately 60-70% of the cost of turning his 435 acres from row crops to timber production. He himself was a career government employee, having retired as postmaster at the Heflin post office in 1976, thus closing a military/civil service career that covered more than 40 years.

Three Generations of Row-Croppin'

Mr. Campbell's maternal grandfather began farming the tract in south central Cleburne County in the early 1860's. Ownership has remained in the family for three generations—more than 100 years.

Typical of the greater southern Appalachian region, Cleburne County is 85% forestland. It is comprised of many rolling hills that usually slope not too gently to bottoms with flowing streams. The soil is red clay laced with shale and mica. Even in the bottoms, top soil is usually

thin and on the highlands it disappeared many years ago.

Such is the Campbell tract. In 1948 when Russell Campbell returned to Cleburne County from military service (U.S. Army), where he had served since 1935, the family farm was still being used for row crops. It continued to be so used for another ten years.

"I went to work at the post office," Mr. Campbell said, "but my sisters and brothers moved out of the county. It was sometime in the middle 1950's, I suppose, when I first realized that I was the one who must look after the old home place."

The first public agency to assist Mr. Campbell in formulating a plan for his land was the Soil Conservation Service (S.C.S.). Cost sharing was provided through the Agricultural Stabilization and Conservation Service (A.S.C.S.). Agency personnel prepared a plan which encouraged the landowner to phase out row crops and allow the land to go back to woodland. Phasing out was begun in 1958, but no actual tree planting was done until 1970.

Corporate Examples

In the meanwhile, Georgia Kraft Company and Kimberly-Clark Corporation had acquired abandoned farmlands adjoining the Campbell tract.

"I would travel to the farm, stand on a bare hilltop and look over into K-C's and Georgia Kraft's planted loblolly stands. At one point not more than 300 yards from where I'd stand there was a fine plot of young trees planted just five years earlier on a site just like the one where I'd stand. I couldn't take it! I had to plant mine too!" the landowner said.

He did his first planting in 1970, using seedlings purchased from Kimberly-Clark's forest nursery at Childersburg. Troy Brown, Route 2, Heflin, an entrepreneur who has done much tree planting on Kimberly-Clark's company lands, contracted with Mr. Campbell to do that first planting. Both arrangements developed into confident and long-standing relationships. Over the 12 planting seasons which have passed since 1970, a total of 250 acres of the Campbell tract has been planted to loblolly. Eighty percent of the seedlings have come from the K-C nursery (the rest was purchased from the State) and all the planting has been done by Mr. Brown's crews. In recent years, planting has been done by Mr. Brown's son-in-law, Ed Blair, a member of the Heflin City Council.

Forestry Association Formed

Cleburne County is in the Alabama Forestry Commission's District 4, supervised by District Forester Ernie O. Moore, whose base is at Dadeville. In 1976, when Mr. Moore was seeking landowner support to form a forestry association in Cleburne County, Russell Campbell was among the first to step forward.

"With 85% of the county's land area in woodlands, Cleburne County landowners needed all the Alabama Forestry Commission could offer," Mr. Campbell recalls. Cleburne County Forestry Association membership now comprises more than 50 landowners.

One of the significant benefits to accrue from the association's formation was the assignment of a county forester by the Alabama Forestry Commission. Glenn Berry moved to Heflin and one of the first landowners to avail himself of Mr. Berry's service was Russell Campbell.

"We walked over my place together," Mr. Campbell said, "and Glenn pointed out things about my land that I'd never noticed before."

Using data gathered in field work done in February, 1978, by Mr. Berry, the Alabama Forestry Commission (AFC) delivered to the landowner a WRAP (Woodland Resource Analysis Program) on June 26, 1978. The 70-page computer printout contained detailed recommendations for management of each of 13 compartments identified in Mr. Berry's survey.

The individual blocks vary in size from four to 100 acres. The median is 22.5 acres. The 100-acre plot, and two others of 30 and 15 acres respectively, were already in loblolly plantation as products of the earlier plantings. No change was recommended. Fifty acres of bottomland would remain in its natural state—a mixed hardwood stand with yellow poplar being the dominate species. Another area was sufficiently stocked with a natural stand of loblolly so that no treatment was recommended. The stand, approximately 25 years old, will eventually be clearcut and replanted.

Treatments Recommended

To meet objectives set forth in the WRAP plan, all the remaining blocks required treatment. Typically, most included mixed stands of poor quality oaks and pine, some of the latter being short-leaf of sufficient quality to warrant saving until it reaches marketable size.

Two blocks totaling about 55 acres

were designated to be harvested, treated with a prescribed burn, then planted. These harvests produced less than 300 cords of merchantable pine pulpwood.

Two blocks totaling approximately 70 acres required site preparation (chemical injection) and prescribed burning ahead of planting. Mr. Blair's crews did the injection work, as well as the planting, during the 1978-79 season. Some of the controlled burning, prescribed to reduce fuel on the forest floor, was accomplished during the same period. All planting was done by hand.

Beetles Disrupt Program

During the summer of 1979 evidence of a southern pine beetle attack appeared in three blocks. The "spots" were such that Mr. Berry suggested clearcutting a 15-acre area lapping into three blocks. This was accomplished in 1980. The land was then prescribe burned and planted. VELPAR was tested on a one-acre demonstration area divided into one-quarter acre plots treated with different applications.

The beetle attack brought about a necessity to revise the WRAP plan and this was accomplished in 1982.

"The revision," Mr. Berry said, "was mainly in the printed document itself. It was made to conform to work done on the beetle-damaged area. Also, we used the revision as an opportunity to produce a new document that is more concise and easier to comprehend than the original."

Forest practices recommended by the original plan were not changed; and except for work remaining to be done on the 15 acres mentioned above, the plan has been completed. Improvements other than those described include 3.8 miles of firelane and certain boundary markings to identify property lines. The firelanes, literally loop trails installed with a motor grader, provide access to all parts of the tract. The landowner expects normal traffic and periodic maintenance with a "bush-hog" to keep the trails open.

A Demonstration Forest

The Campbell tract has been the location for three area forestry demonstrations in as many years. All-day "feed 'em and lead 'em" tours have attracted hundreds of forest landowners from Cleburne and neighboring counties. Other landowners see that Russell Campbell's red clay hills are turning green. They are encouraged to mimic his use of services available to all via the public agencies!

CHANGES IN ESTATE TAXATION LAW BENEFIT FOREST LAND OWNERS

*Economic Recovery Tax Act of 1981 gives relief
from federal estate and gift taxes which were
especially burdensome to timberland owners*

by WILLIAM K. CONDRELL, General Counsel, Forest Industries
Committee on Timber Valuation and Taxation

EDITOR'S NOTE: This article is re-produced by special consent of Mr. Condrell and FOREST FARMER magazine where it first appeared in July/August, 1982, issue.

In what has been described as one of the most far-reaching revisions to the Internal Revenue Code since its beginning in 1913, the Economic Recovery Act of 1981 (ERTA) provides substantial tax relief for all individuals and businesses in the United States. Included are provisions bringing a measure of relief from federal estate and gift taxes, which have been especially burdensome to many timberland owners.

Under the new law, taxpayers have an increase in unified credit to \$192,800, which effectively raises the exemption equivalent to \$600,000. Prior to ERTA the sum of an individual's cumulative lifetime gifts, other than those qualifying for annual gift tax exclusion, and bequests at death could equal a combined amount, or exemption equivalent, of \$175,625 before he would be subject to the unified gift and estate tax. This was accomplished by providing each taxpayer with a unified credit of \$47,000 which could be used to offset any gift tax or estate tax that might otherwise be owed. The new increase is phased-in over a six-year period as follows:

Year	Unified Credit	Exemption Equivalent
1982	\$ 62,800	\$225,000
1983	79,300	275,000
1984	96,300	325,000
1985	121,800	400,000
1986	155,800	500,000
1987	192,800	600,000
and thereafter		



Marital, Gift Deductions

There is also an increase in marital deduction. Under prior law, a taxpayer's estate generally could deduct bequests that the decedent made to his surviving spouse to the extent of the greater of \$250,000 or one-half his adjusted gross estate. ERTA now permits deductions on everything the decedent leaves to his surviving spouse or gives to her during his lifetime.

While this amendment clearly suggests two methods of avoiding the estate tax entirely—leaving all of one's estate to one's surviving spouse at death or giving it to her during one's lifetime—this will not necessarily produce the best tax result. When the surviving spouse dies, presumably unmarried, the estate might bear a very high estate tax. In fact, total estate tax in this case might be higher than the total occurring if the first decedent had paid some estate tax and left less than all his property to his spouse.

Moreover, many wills presently provide that the surviving spouse is to receive an amount equal to the maximum

marital deduction. Congress, being mindful that many persons with such a provision in their wills would not want their spouses to receive their entire estate, provided that this new provision will not apply to wills executed before September 12, 1981. If the will is amended, however, to clarify that the surviving spouse is intended to receive the entire estate, or if the state in which the decedent resides adopts a statute construing the provision in the will to entitle the surviving spouse to the entire estate, the increased deduction will be available.

In addition, the new law provides an increase in annual gift tax exclusion from \$3,000 per donee to \$10,000 per donee. This exclusion is available for each donee, and applies separately to a husband and wife. Under ERTA a couple can, for example, give each of their children and grandchildren \$20,000 each year free from gift tax, while under prior law only \$6,000 of such gifts could have been made without incurring tax liability. Moreover, under ERTA unlimited gifts are permitted for the educational expenses or medical expenses. Because of the increased exclusion, a program of annual gift-giving now offers a meaningful opportunity to reduce one's taxable estate.

ERTA also reduces maximum estate and gift tax rate from 70 percent to 50 percent. When combined with cumulative lifetime gifts other than those subject to the annual exclusion, this change affects estates valued in excess of \$2.5 million. This is important because, in the future, such estates may be common. For example, a couple whose net worth today is \$250,000 would be worth over \$2,500,000 in 25 years, assuming an annual increase in their net worth of 10 percent. In these times of high interest rates and inflation, such a growth rate may be considered modest.

Current Use Valuation

An amendment of particular interest to timber owners involves evaluation of property by current use instead of "fair market value." Current use valuation provided, and after ERTA continues to provide, an exception to the general rule that property is valued for estate tax purposes at its fair market value. If requirements for its application are met, real property will be valued for estate tax purposes to reflect current use of the property rather than its fair market value.

Current use valuation was designed to mitigate hardships that might otherwise result if real property used as a farm or in a trade or business was included in a decedent's estate at fair market value, despite the fact the decedent's heirs continued to maintain the farm or trade or business. Without the current use valuation, for example, a decedent's estate might be required to pay higher taxes on the family farm because of its potential use as a shopping center. Because of artificially high estate taxes, this type of valuation often resulted in forced sale of family farms and other closely held businesses on death of the owner. Congress responded to this problem and adopted current use valuation in 1976.

To qualify for current-use valuation under ERTA, a taxpayer must have 25 percent or more of adjusted gross value of his estate consisting of real property. This requirement has not changed. Under prior law, however, IRS had not considered timber as real property, making this requirement very difficult to meet. The problem that existed prior to ERTA may be illustrated as follows:

Decedent's estate includes only timberland. The fair market value of the land alone is \$1,000,000, reflecting its potential as a shopping center site, while its value as timberland is merely \$500,000. The timber growing on the land is valued at \$9,000,000. Thus, the fair market value of the estate is \$10,000,000, of which the land alone represents merely 10 percent.

Under prior law this estate would not qualify for current use valuation since adjusted value of qualifying real property (the land alone) was not 25 percent of adjusted value of the gross estate.

Under ERTA this situation is changed. The decedent's representative may make a special election to include value of standing timber with real property in qualifying for current use valuation.

Were this election made in the above

illustration, the 25 percent requirement would be satisfied since 100 percent of the adjusted value of the gross estate—the land and the standing timber—would consist of eligible real property. As a result of the special election, value of the timberland would be included in the gross estate at \$500,000, rather than at \$1,000,000.

Current use valuation is subject to several limitations. First, reduction in the taxable gross estate resulting from current use valuation cannot exceed \$600,000 for property owners dying in 1981. This limitation has been increased by ERTA from the \$500,000 previously applicable, and will increase further to \$700,000 for persons dying in 1982, and to \$750,000 for persons dying in 1983 and thereafter. For example, were the above illustration changed so that fair market value of the land became \$2,000,000 while its value as timberland remained \$500,000, and the special election were made for a person dying in 1983, the land would be included in the gross estate at \$1,250,000 although current use valuation would indicate a value of \$500,000. The limitation indicates that the reduction cannot exceed \$750,000 (i.e., \$2,000,000 - \$750,000 = \$1,250,000).

Second, if any timber is cut during a 10-year period commencing on the date of decedent's death, the estate tax saved by the election would be subject to recapture by the IRS; that is, the savings could be taken back by the government. Amount of recapture will be equal to the lesser of (1) amount realized on the timber sale; or (2) amount of additional estate tax that would have been paid if both the timber and its underlying land had been sold.

This special recapture rule, which is extremely complex, is significantly more onerous than the recapture rule that applies to property other than timberland. Potentially, the recapture tax may work a substantial hardship on heirs of a deceased timber owner. It is hoped that this provision can be ameliorated in the near future to place timber and timberlands under general recapture rules.

Other Changes

Most significant of other changes under ERTA is a reduction in capital gains rate for individuals from a maximum of 28 percent to a maximum of 20 percent, with reductions below the maximum resulting from the three-year individual tax cut. ERTA also revises depreciation rules to the more liberalized accelerated cost recovery system. ♣

Now Here's a Scam that Could Take More than the Shirt Off Your Back!

If it sounds too good to be true, it probably IS! This is a lesson learned recently by several prospective timber buyers and absentee landowners in Alabama and Georgia. We're talking about a simple case of "land fraud."

To make a long story short, the scam began a little over a year ago when the suspect (John Doe) obtained a birth certificate of a deceased man. This made it relatively simple to obtain a driver's license with an assumed identity. After establishing a land investment company in this name, the rest was easy.

Using the Forestry Commission's published list of landowners, Mr. Doe identified those who live out of state. He then had a title search completed on the property. (Heirs would only get in the way.)

Timber companies were approached about purchasing the timber and/or land. Mr. Doe had become quite proficient at recording deeds and taking care of other little details. Fortunately, someone realized that the deal offered sounded "shady." At the final closing, however, Mr. Doe gave them the slip and ventured into Georgia with the same game plan where he was caught by the Feds. He's now out on bond and awaiting extradition to Alabama.

Would that the story ended here and they all lived happily everafter! Those landowners whose land was sold now must pay to have fraudulent records set straight! The whole scam probably would have worked since landowners have no way of knowing that anything is wrong until their taxes due notification stops coming. (Who misses taxes!) It's a good idea to periodically check records and also to ask neighbors to keep an eye on your timber.

In so far as buyers go, be thorough and check every possible detail. Most of all remember, if it's too good to be true...! ♣

The rodent with the flat tail may be friend or foe, depending on landowner's view; but understanding him is essential to woodland management, regardless!

LEAVE IT TO BEAVER

by JIM HYLAND, Chief, Pest Management

Alabama forest landowners should manage their forestlands in such a manner as to maximize their woodland's contribution to Alabama and America. These landowners realize that there are many uses for forestland that are compatible with each other, such as outdoor recreation, timber, watershed, aesthetics, forage, environmental protection and wildlife, and they manage their lands in such a way that these uses are enhanced.

These landowners are, in effect, practicing multiple-use. Multiple-use can be defined as the management of all the various renewable surface resources of forestlands so that they are utilized in the combination that most appropriately meets the needs of the landowner and, at the same time, enhances other values.

This same multiple-use should be considered when the opportunity arises as beaver management. Beaver management is managing the "beaver resource" so that it can be utilized in combination with other uses that meet the objectives of the landowner, and, at the same time, enhance other values.

The "beaver resource" can be the animal, the pelt, the pond, the water, the dam, or the habitat in general. A balance of these areas would then be considered good beaver management.

Description

The beaver is the largest North American rodent (the same group of animals in which squirrels, rats, and mice belong). It has a broad, flat tail, webbed hind feet, short ears, and rich brown fur. Mature beavers average between 30 and 40 pounds live weight, although in extreme cases they may reach 75 to 80 pounds. The beaver's tail is used as a rudder to aid in swimming and is slapped against the water surface as a danger signal. Contrary to popular belief, it is not used for carrying mud during dam and lodge construction. The beaver has four large front teeth (incisors) which enable him to cut large trees and aid him in feeding. These teeth grow very fast; in fact, they would be six to eight inches long in one year if they were not continuously worn down through gnawing.

Food

Beaver are true vegetarians—they eat only plant material. Their diet in Alabama consists primarily of bark, twigs, and leaves of hardwood trees, such as sweetgum, cottonwood, willow, alder, and poplar. They also eat the roots, stems, and leaves of aquatic plants. Beaver will

also feed on agricultural crops such as corn, soybeans, fruit trees, and pines when they are readily available. Beaver store food to eat during the winter in severe northern climates; however, they rarely make food caches in Alabama.

Family Units

Beaver breed in the winter and have a gestation period of four months. The young are usually born in March and April. After about one month they will accompany the mother around the pond and feeding areas. The young are driven from the lodge to fend for themselves when they are about two years old. The female reaches sexual maturity at about two-and-a-half years and will breed once each year thereafter.

Beaver numbers are usually highly overestimated. On the average a beaver colony consists of two parents, two juveniles, and two kits. Only one litter is born each year; two kits are a common litter although as many as eight have been reported. Therefore, a colony of beaver rarely consists of more than six to eight individuals. Typically in Alabama, watersheds that have established beaver colonies will contain about ten to eleven beaver per mile.

Dams and Ponds

Beaver modify their environment to suit their way of life. By damming a small stream, they flood bushes and trees which serve as their primary source of food. Since beaver can remain under water for a long period of time, ponds serve as a ready escape from enemies. As a result, about the only enemy of the beaver is man.

A colony will maintain from one to eight dams, the number depending on stream conditions and how many years the colony has been in the area. When the food supply gets low, the dams are either built larger or more dams are constructed so more food will be flooded.

Dens

Beaver build one of two different kinds of dens—bank dens or lodges. Bank dens are dug into stream banks under tree roots or other suitable spots. Lodges are built with sticks and mud in shallow water areas. Beaver dens are entered from below the water level, but their living quarters are above the water on dry ground.

All lodges in a pond may not be active. Active lodges can easily be recognized by fresh cuttings and mud placed on the lodge by the beaver.

Benefits

As beaver populations increase, they modify the water courses to suit their way of life. These modifications create conditions that are both beneficial and harmful to man. Beaver ponds create excellent habitat for other wildlife, particularly waterfowl. Beaver ponds slow runoff from drainage areas and, in many cases, aid in controlling erosion. During drought, beaver ponds create water holes for livestock and wildlife.

A benefit of trapping beaver is that it not only is recreational but also provides supplementary income to the trapper.

Benefits to Wildlife

Many species of wildlife are benefited as a result of alteration of the landscape by beaver for their own purposes. The major benefits of a beaver pond complex come from the creation of standing water, edge and plant diversity, all in close proximity. The open water areas provide habitat for birds, waterfowl, other aquatic fur bearers and fish.

Field trials conducted in Alabama,

Mississippi, and Georgia have demonstrated that many beaver ponds can be developed into attractive duck feeding areas for less than six dollars per acre. The demand for leasing hunting rights to sportsmen in such areas is high. Landowners have obtained as much supplemental income as \$1,000 per year for a 27 acre planting of millet in an 85 acre beaver pond here in Alabama.

The general procedure for converting beaver ponds is as follows:

1. There must be at least an acre of shallow water (2 to 30 inches deep) and the majority of standing trees in the pond should be dead.

2. Break the dam in the form of a narrow, deep "V" at the existing channel from mid-June to the end of July.

3. Permit the water to drain from the pond area. When the swift flow of water has become slack enough to work in with ease (usually takes several hours in a five to ten acre pond), construct and install a "three-log drain."

4. Sow Japanese millet seed on exposed mud flats at rate of 20 lbs/acre. It is important that the ground be moist (ankle deep mud is best). Do not use any substitute for Japanese millet seed. Others will not grow under beaver pond conditions.

5. Check drains about once a week to see if they are functioning properly until millet is one foot in height. Remove drains after millet matures (45 to 50 days).

6. Drain the pond each summer so that the Japanese millet seed can germinate and grow. In most ponds the original seeding of millet provides enough hard seed so that further seeding is not necessary over a three-year period.

Most of our southern beaver ponds provide excellent brooding areas for wood ducks. The vast majority of these ponds have a good stand of such plants as buttonbush and cypress which provide hiding areas for young ducklings and nearly all contain a covering for floating duck weeds that harbour large numbers of small invertebrate animals. Thus, beaver ponds make excellent places for the erection of nesting boxes.

Aesthetics

The aesthetic and public relations value of a beaver pond complex are potentially immense. Because every school child has heard of and can identify a beaver, it represents to many a starting point in the concept of "nature" or "wildlife". The public sentiment relates to the beaver's intelligence and engineering skills.

The public can identify and relate to a peeled stick, the stump of a cut tree, a dam and the pool it holds, a lodge, or the sight of a beaver swimming on the surface in late afternoon. The beaver pond is an ideal area to observe a variety of wildlife activity.

Wildlife agencies can accrue public relations benefits simply by identifying, marking with an explanatory sign, and maintaining strategically located and observable beaver ponds. To a segment of the public, activities and physical presence of a beaver pond can represent a bit of peaceful wilderness, often within the city limits. It is an ideal place to introduce and gain public support for management concepts.

Food Resource

Beaver meat is good to eat if properly processed. Nutritionally, it contains 20.3 percent protein and is comparable to most red meat protein sources. In a series of taste panel comparisons, "beaver burger" had slightly less overall acceptability than venison or beef burgers. It was considered good barbequed, fried, or baked, the first two being preferred slightly over the last. Substantial numbers of carcasses throughout North America are wasted, or are not used for human food. Based on current harvest figures and an approximate yield of 8.1 lbs. of meat per carcass, the continental beaver population could provide 2,900 metric tons of meat annually. At one dollar per lb. the annual value would be approximately \$6.4 million!

Recreation

An important benefit of the beaver is the recreation provided by tending a beaver trap line and processing the fur taken during the harvest. Beaver also provide an opportunity to learn and teach woodsman'ship, animal track and sign reading, and pride associated with well-handled pelts. In addition, the beaver, through its habitat modifications, provides habitat for other furbearers that also provide trapping recreation.

Some people removed from rural environments often do not understand relationships among wild animals and their habitats. These people may not accept consumptive use of any animal in such a way that causes its death. However, most people who have lived in close association with rural settings look at furbearer populations and their perpetuation rather than the fate of individuals. To these people, trapping is not only acceptable

but also a valuable recreational endeavor, because it occurs in a natural setting and is a diversion from the confusion of the metropolitan sprawl.

Most trappers generally agree that regardless of the species of furbearer they are attempting to take, the thrill and anticipation of tending a trap line is a very enjoyable and pleasant experience. Most look forward at the end of the summer to the first frost, the first ice, and the time for setting traps, knowing that they could make greater financial gains in any number of endeavors. Nevertheless, they will not engage in trapping without some profit incentive.

Damage

Following the continent-wide restocking programs that took place during the 1950's, wildlife administrators began to receive increasing numbers of beaver damage complaints. In the Southeast, beaver damage problems were noted in the late 1940's and increased to the point that in 1967 a symposium was devoted to the seriousness of problems and how to cope with them.

Beaver damage varies by type, magnitude, and region. Based on a survey of states and provinces, the three most common beaver complaints in order of decreasing importance were flooding of roads, fields, and pastures; damage to timber by flooding and cutting; and damage to dikes, ditches, and dams. The first of these occurs nation wide, the second is most serious in the Southeastern United States, and the last is primarily a problem of arid Western states.

The importance of timber damage in the Southeastern states was recognized soon after beaver were restocked. Their populations increased dramatically during the 1950's, and timber damage now far exceeds other types of complaints. Timber damages were reported by 67 percent of the respondents to landowner questionnaires in Alabama and 90 percent in South Carolina. Recent estimates of beaver-caused timber damage (in millions of dollars) were 1.8 in Arkansas, 2.2 in Alabama, and 3.1 in Georgia.

The magnitude of the timber damage in the Southeastern states is related to tree value and the relatively flat terrain along stream flood plains. A beaver dam 12 to 15 inches in height there floods proportionally larger areas than it would in regions with steeper topography. If the root systems remain inundated for one or two growing seasons, a proportionally larger number of trees die.

Control of Nuisance Beaver

As damage increased, pressure mounted from various groups for control. Research was then undertaken to develop techniques that would control beaver damage. The control techniques researched included poisonous baits, anti-fertility agents, and various trapping techniques. Since hunting and heavy trapping had caused drastic declines in beaver populations in the early 1900's, researchers suspected trapping to be a good approach to control. It was found that the most practical way to control beaver was by trapping with the Conibear 330 trap.

The Conibear 330 trap has many advantages:

1. It is more humane because it kills quickly.
2. It is more effective than conventional traps.
3. It is more adaptable than conventional traps because it can be placed in sets that take advantage of the beaver's natural habits.
4. Fewer traps are required for effective beaver control.

Anyone seriously considering beaver trapping should have hip boots or waders, a pair of setting tongs, a small hatchet or axe, some rolls of wire and wire cutters. With this equipment, some traps, and written permission from the landowner, you are ready to go to the field.

November to March is the best time to trap beaver because they are more active then. Trapping success is reduced during flooding because it eliminates many good sets.

Conibear traps are effective in two or three major types of sets. One set involves placing a trap at an active crossing on top of or immediately below a beaver dam. If the dam is new, which is characterized by an abundance of freshly peeled limbs and brush, the trap may be placed in the crossing on top of the dam. In such situations the trap blends well with the shaggy appearance of the dam. Conibear traps work well when placed in crossings below older dams, which are usually characterized by rooted vegetation in the accumulated mud and organic matter.

In another type set, Conibear traps placed in shallow runways between bank dens, lodges, and feeding areas are very productive. Since beaver generally swim from one area to another on the surface, position the trap with its top two to three inches above the surface. The trigger mechanism should be beneath the water with the prongs sticking upward.

Wire traps to a secure stake and, in

streams that are subject to high runoff, run a piece of wire from the trap ring to a substantial tie on either bank, preferably downstream. This arrangement will prevent the loss of traps during high water and occasionally may prevent the loss of a trap and beaver to wild dogs.

Although some trappers set Conibear traps with their hands, it is not recommended. Setting tongs are very helpful, particularly in cold weather. They are used both for setting traps and for removing the beaver.

Three Conibear traps per beaver colony used properly for two weeks during two consecutive years will control or eliminate beaver from a watershed. During the two weeks of the first year, most adults and a few young beaver are caught. The second year of trapping is usually less productive because removal of most of the adult females during the first year results in lowered reproduction. The second year of trapping will usually remove the maturing juveniles and the adults missed during the first year. This technique has been proven effective and is recommended for controlling beaver on small watersheds.

Where to Get Help in Trapping Nuisance Beaver

There are generally two ways to trap beaver; either do it yourself or call on a professional trapper to assist you. Although the landowner may want to "do it himself" he can use the services of the Alabama Fur Takers Association to solve his problem. This Alabama-based group has members throughout the state that can solve a nuisance beaver problem. For the names of trappers near you contact Larry Johnston, Public Relations, Alabama Fur Takers Association, Route 2, Tallassee, Alabama 36078.

Pet or Pest? Friend or Foe? It is up to you as the forest landowners to make that decision and manage your beaver resource in the best method that will enhance your overall forest resource. ♣

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Progeny Testing Program Will Measure Quality of Improved Seedlings

by RAY COVIN, Tree Improvement Specialist

How much improvement can a landowner expect from the Alabama Forestry Commission's (AFC) improved pine tree seedlings? This is a frequently asked question for which there is no definite answer. When pressed for an answer, we say that based on other similar genetic programs, we conservatively anticipate an improvement growth rate of between 10-15% and an additional improvement in that same range for quality. The final answer can only be obtained through progeny testing (another word for offspring).

Progeny testing involves collecting seed from each family in the seed orchard along with several check lots of regular nursery seed, then outplanting each family and check lot in a scientifically designed test. These tests are designed so

that any difference shown by the individual families can be attributed to genetics.

At the end of the test period which can run as long as 20 years, these tests will ascertain the best families genetically and how much improvement they show when compared to regular nursery seedlings.

Alabama is a varied state in regard to soils, weather, and other conditions that may affect the growth of trees. These varied conditions necessitate progeny testing the improved seedlings on a variety of sites at several different locations throughout the state.

Whenever possible, the tests are planted on lands owned by the AFC or other government agencies, but where suitable land is not available from government agencies, planting sites must be leased from private landowners. These

Progeny test being planted at Stauffer Nursery. Dividers are being placed across the nursery bed to keep the family lots of seed separate.



Loblolly pine progeny test seedling growing on lands leased from Union Camp Corporation in Crenshaw County. This fast growing seedling was four feet tall at the end of its first growing season.

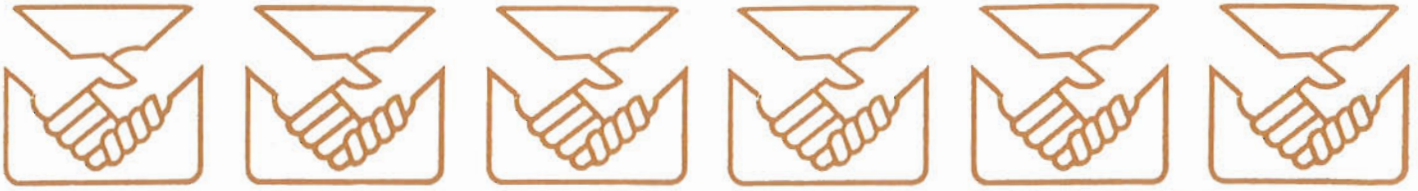
leases allow the AFC to plant, measure, and analyze the progeny test seedlings at regular intervals. The typical lease is for a period of 20 years and is made at no cost to the AFC. The landowner retains ownership of his land and the trees planted in the test.

The Commission has 20 progeny tests planted at various locations throughout Alabama. The oldest of these tests was planted in 1976 on lands leased from Container Corporation in Conecuh and Escambia counties. Considerable growth data is now being obtained and analyzed from these tests.

The most recent progeny tests were planted during January, 1983, in Macon, Covington and Escambia counties. Land for these tests was leased from Dudley Lumber Company, Scott Paper Company, and Container Corporation respectively. There are still several areas of the state where the Commission must establish additional progeny tests. The Commission plans to continue establishing progeny tests each year-until its improved seedlings are fully tested throughout Alabama.

The Commission's ultimate goal is to furnish along with its improved seedlings information outlining the degree of improvement expected from its seedlings when planted on specific locations. Seed orchard progeny testing should enable the Commission to reach its goal in a few years.

TEAMWORK IN FORESTRY WE'RE ALL IN IT TOGETHER!



Alabama Forestry Planning Committee — unique example of coordinating and planning for action

Co-Authors:

LARKIN H. WADE, Head, Extension Natural Resources,
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You have heard the word “cooperation” used many times. The usual situation is like Mark Twain’s statement on the weather. Everybody talks about cooperation, but nobody does anything about it.

The Alabama Forestry Planning Committee (AFPC) represents a unique approach to the problem of coordinating forestry activities within a state. It is unique because it is successful. In Alabama, as elsewhere, a large number of federal, state, and county agencies have authority to tackle forestry problems. Whether these agencies “work together” and how they cooperate with each other and with private forestry interests are important.

Nationally and in the states, the American people have demanded action to perpetuate the forest resource and its variety of products. This demand has been reflected not only in establishment of agencies, but also in the great body of legislation which permits or requires federal-state-local-private cooperation. Ninety-five percent of forestland in Alabama is privately owned—75% by non-industrial landowners and 20% by industry. So private industry is inevitably concerned with how agency programs are coordinated.

Alabama’s forestland covers 21.3 million acres, 66 percent of the state. These

forests constitute a renewable resource and can be biologically managed to produce significantly improved benefits to the state. The potential remains to be realized. The greater challenge is in the proper management of 16 million acres of commercial forestland in the non-industrial private sector. This acreage, the land held by 200,000 small private owners, is producing only half its potential. Alabama’s forests must become fully productive to meet the increasing demands of its people.

Because of this situation, the AFPC was organized on April 5, 1971. The aim of the AFPC is to increase the values derived from the forest resources of the state by more effectively coordinating and delivering forestry programs being offered to small, private landowners.

The first action taken by the AFPC was to appoint an “Ad Hoc” Committee to review efforts to provide tree planting and site preparation services for small forest landowners.

The AFPC is a “memorandum of understanding” which meets every six months. The committee believes this is better than a formal agreement.

It is the product of growth and evolution rather than conceived creation. It is designed to provide a healthy atmosphere where the public forestry agencies—state, local, and federal—can examine and co-

ordinate their various programs.

Agencies Comprising the Committee

The Planning Committee is comprised of the following state and federal agencies having forestry responsibilities at the state level:

- Alabama Department of Conservation and Natural Resources
- Alabama Department of Education, Vocational Division, Agribusiness Education
- Alabama Forestry Commission
- Alabama Soil and Water Conservation Committee
- Alabama Cooperative Extension Service, Auburn University
- School of Agriculture, Forestry and Biological Sciences, Auburn University
- Alabama Agricultural Experiment Station, Auburn University
- USDA-Farmers Home Administration
- USDA-Forest Service
- USDA-Soil Conservation Service
- USDA-Agricultural Stabilization and Conservation Service
- Tennessee Valley Authority

Principles of Organization

Guiding principles of the AFPC are as follows:

1. Government has a concrete and identifiable role to play in forestry. Therefore, only government agencies are invited to become members of the Planning Committee. Agency activities are coordinated with industry, environmentalists, and others, through its subcommittees. This allows the development of government positions and thrusts concerning ongoing matters in forestry in Alabama, whether controversial or otherwise.

2. Commitment of the various agency heads is essential. The principal chief administrative officer for each agency, whether state or federal, is the attending and voting member.

3. There is more work to be done in forestry than can possibly be done with all the resources of all agencies committed to the task. This leads to the strong need for coordination. Since there are not enough resources to meet the needs, members strive to eliminate duplication and cross purpose in programs. This causes agency programs to be complementary. Natural competitiveness and provincialism of the various agencies is recognized and dealt with. It can not be eliminated.

4. The Alabama Forestry Commission is the lead agency in forestry in Alabama. That matter is determined by the statutory role played by the Alabama Forestry Commission.

5. Other agencies each have important roles in meeting Alabama's forestry needs. Each agency is convinced of this fact and is a cheerleader for the various agencies whose programs deal with forestry in the state.

6. Two regular meetings a year are held.

7. The only officer is a chairman, the state forester.

8. Formal action is by consensus. Despite some experiences elsewhere, this is a workable doctrine.

For the past 12 years these have been the basic operating rules. Meetings have been held regularly in January and July. Attendance has been high.

The range of problems and opportunities handled on a cooperative basis have been numerous.

Pilot Projects and Expanded REAP: The four-county pilot project in 1971 demonstrated that forest improvement practices could be carried out if cost-sharing funds were made available. One of the first major thrusts of the Planning Committee was to accelerate the 1972 REAP (Rural Environmental Assistance Pro-

gram, now FIP). Around \$1.25 million of REAP funds were committed that year. This was astounding in the light of the fact that the year before only \$150,000 had been committed. Success with this effort assisted in birthing the Forestry Incentives Program (FIP) in its present form.

Southern Pine Beetle: In 1973 the committee battled the southern pine beetle. Meetings were held in each county in Alabama with southern pine beetle activity. At the epidemic's end, half of all the killed timber had been salvaged.

Landowner Aggregate: Efforts to form a landowner aggregate in 1973 met with only limited success. The sponsoring agencies did not establish a true cooperative framework and the remaining agencies withdrew support. Lessons were learned. Relationships evolved.

TREASURE Forests:

In August, 1974, the AFPC adopted the TREASURE Forest Program in concept, and began field testing the program. In July, 1975, the first four TREASURE Forests were certified. The property of W. Kelly Mosley in Marengo County, known as Pineland, was the first TREASURE Forest to be certified.

Forestry was under siege at that time by the environmentalists. Clearcutting was being attacked at every turn. Monoculture was grabbing the headlines. The environmentalists were in their heyday. Foresters were becoming villains. Endorsements for the TREASURE Forest Program were solicited and received from environmentalists and industrialists, as well as many others. In so far as the public agencies were concerned, forestry was on the offensive again.

"TREASURE" is an acronym for:

Timber	The TREASURE
Recreation	Forest Program seeks to
Environment	identify, verify, and
Aesthetics	publicly recognize for-
Sustained	est landowners who are
Useable	managing their lands
REsource	for all the uses to which
	the land is best suited.

Landowner Conferences:

In 1975 the Alabama Forestry Association Third Forest Committee and the Forestry Planning Committee co-sponsored ten landowner conferences. These generally coincided with Forestry Commis-

sion district boundaries. The major objectives of the meetings were to inform and motivate landowners in the practice of good forest management, specifically encouraging participation in the Forestry Incentives Program during 1976.

Educational and Service Efforts: In 1976 the Planning Committee initiated efforts to coordinate its educational and service programs. It appointed two special committees, one for service and one for educational efforts. An exhaustive inventory of educational and service programs was undertaken. Subsequently, the first coordinated educational and service plans of work were developed. Coordinated plans for each year since have also been developed.

Demonstrations: The AFPC agreed to jointly sponsor educational demonstrations patterned after the Mosley TREASURE Forest educational demonstration. In fiscal year 1977, one demonstration was developed in each of the ten Alabama Forestry Commission districts.

The educational demonstration must either be on a certified TREASURE Forest or the demonstration must strive to meet the standards of the TREASURE Forest program. The Alabama Cooperative Extension Service serves as the coordinator and catalyst for this effort. TREASURE Forest educational demonstrations use the TVA Woodland Resource Analysis Program (WRAP) for making management plans.

There are 30 demonstrations across the state. The demonstration properties are used in county educational programs. They provide an outdoor classroom to illustrate the forestry practices that landowners can use in making their woodlands more productive.

Helene Mosley Memorial: The Helene Mosley Memorial TREASURE Forest Awards were initiated in 1978. Criteria which guide the selection of the recipients are the same as those which govern the TREASURE Forest program. One additional criterion used is the educational value and use of the TREASURE Forest.

The awards consist of a \$500 stipend made annually to the outstanding TREASURE Forest landowner in each of the three Alabama Cooperative Extension Service districts, or similar areas. One of the three is judged to be the best in the state and receives an additional \$500 stipend.

State Planning: In 1979 the AFPC agreed to serve as the coordinating entity for the development of the RPA (Resources Planning Act) Plan in Alabama. The as-

sumptions, the inventory, and the assessment were subsequently published as outputs of the Planning Committee.

Hurricane Frederic Recovery: The AFPC in 1979 joined the Governor's Forest Disaster Recovery Council in expediting salvage operations and restoring forestland to its pre-Hurricane Frederic condition.

Statewide Forest Regeneration: Also in 1979 a tree planting program of the National Association of Conservation Districts (NACD) was later expanded to include industrial and consulting foresters. It was renamed the Alabama Forest Regeneration Committee and its efforts in tree planting and prescribed burning in 1981 and 1982 were co-sponsored by the AFPC.

County Forestry Committees: A decade after its beginning, the AFPC in 1981 requested that their agency counterparts with county offices meet on a needs basis to identify, receive and handle important forestry problems and issues. The purpose of the county forestry committee is to facilitate coordination and cooperation of efforts that require input from several agencies like its parent committee.

Secretary's Certificate of Appreciation: The Secretary of Agriculture presented a Certificate of Appreciation to the member agencies of the Planning Committee in 1981. The Secretary's representative lauded the Alabama group for its innovative and coordinated leadership in effectively delivering service and educational programs in forestry to the people of Alabama. The Secretary praised the committee for its high standards, and said it had set a model for other forestry planning committees in the nation.

Finally, do not misinterpret the above information as an indication of total harmony. The AFPC is a voluntary effort that exists for the purpose of achieving better cooperation, minimizing program overlap, and supporting mutually satisfactory undertakings. Total resources dedicated to forestry work are inadequate; cooperative efforts are, therefore, imperative.

The center-stage controversy in forestry is how to use the forest resource and subsequently renew it. Both use and renewal are critical for all our resources. We must find a way to use and renew our forest resources, or we are in trouble. The Alabama Forestry Planning Committee is helping. And the results of cooperation over the past 10 years is encouraging. ♣



IT IS YOUR FOREST! TAKE A STAND TO MAKE IT GROW!

by REI BOYCE, Alabama Forestry Association

A Tree Farm is an area of privately-owned forestland dedicated by its owner to the growing and harvesting of forest crops. These tree growing units also provide watershed protection, better food and habitat for wildlife and opportunities for outdoor recreation. They may range in size from a small farm woodlot to a vast industrial forest.

Certified Tree Farms are enrolled in the American Tree Farm System sponsored by the nation's forest industries through the American Forest Institute. Because the merits and objectives of the program are recognized and endorsed by both government agencies and private forest industry, their foresters work together in assisting forest landowners to qualify their lands for Tree Farm certification. In some states, nearly all the work is done by industry foresters. In other states, government and extension forestry personnel carry most of the work load. There are no charges for Tree Farm services or materials. In Alabama, the Alabama Forestry Association is the statewide sponsor for the Tree Farm Program.

The Tree Farm Program is now active in all 50 states. If you want to develop your property as a Tree Farm, a forester will advise you what steps are needed. Tree Farm standards are high, but any woodland owner can begin wise management practices which, within a few years, can bring his property up to a point where it will qualify as a certified Tree Farm. To qualify for Tree Farm certification, the woodland must be (1) privately owned; (2) managed for the growth and harvest of repeated forest crops; and (3) adequately protected from fire, insects, disease and destructive grazing. Harvesting practices must be of a type that assure prompt reforestation with desirable trees.

In most states individual wood-using companies assign foresters to assist local woodland owners with management planning, protection programs, planting and harvesting. They may even provide seedling trees at cost, or on a matching basis.

In some cases, a forest products company may provide free forest management

services and forest products marketing assistance to forest landowners who become Tree Farmers in its operating area. Such arrangements are called Tree Farm Families. In Alabama, most paper companies have landowner assistance programs to serve these needs.

Of course, there is more to becoming a Tree Farmer than asking for woodlot inspection and hanging out a Tree Farm sign. Intent and performance of the woodland owner are important. No property can be certified as a Tree Farm until it has been carefully inspected by a professional forester assigned by the Tree Farm Committee. Inspections are made without charge.

After certification is approved, the new Tree Farmer receives a certificate signed by the State Tree Farm Chairman and a representative of the American Forest Institute. He also receives a free Tree Farm sign to mark his property and let others know that he is a Tree Farmer. Tree Farmers also receive periodic mailings on new forestry developments from the American Forest Institute. Certification may be withdrawn if the Tree Farmer does not maintain management standards.

Why does it pay to become a tree farmer? With land prices and taxes soaring to new highs throughout the nation, no landowner can afford to own idle or lazy forest lands. Tree farming is the means of putting forestland to work growing maximum crops of high-quality forest products.

Tree farming is not a get-rich-quick proposition, but income from forestland can be doubled or tripled by the adoption of good forest management practices under the Tree Farm concept. These practices will also increase the value of the property and tree farming operations can be conducted so as to destroy neither the scenic beauty of the forest nor the recreational opportunities.

For additional information, please write to Mrs. Rei Boyce, Alabama Forestry Association, 555 Alabama Street, Montgomery, AL 36104. It pays to become a Tree Farmer! ♣

The Alabama Forestry Association (AFA) is a statewide trade association supported entirely by membership dues from forest-related industries and forest landowners. The primary objectives of the Association are to gather and disseminate information regarding Alabama forestry, to cooperate with the Alabama Forestry Commission in the promotion of its program, to promote fair and reasonable legislation regarding forest lands and forest products, and to define goals and policies of the forest products industry to create a better public understanding.

When originally chartered by the Alabama Forest Products Association in 1949, the Association was primarily composed of lumber manufacturers. Shortly thereafter, the pulp and paper manufacturers joined in; then, every segment of the forest industry in Alabama was united within this organization. Membership was still, however, rigidly restricted to producers or manufacturers of forest products.

With a sharp foresight into the future, the Association's Board of Directors amended their bylaws in 1971 to broaden its membership base to include individuals and companies who depended on a forest base. This change expanded the already vast membership in the organization and allowed the Association to give its members a stronger voice and a greater influence in matters affecting their interests. To reflect this broader membership base and to conform with the organization's new structure and objectives, the name of the Association was changed to the Alabama Forestry Association.

Today, the Alabama Forestry Association is looked upon as the "Voice of Forestry" in Alabama. It has been a primary force in uniting the thinking and efforts of those representing the various segments of the forest industry and in transposing those views into action. It also provides its members with an opportunity to exchange ideas and gain useful information while enhancing the image of timber growers and processors and performing related activities.

Guided by a 21-member board of directors, the AFA Executive Vice President and the five-member staff handle many diversified areas in a constant effort to enhance forestry in every aspect.

The Association's role in governmental affairs continues to increase in importance both at the state, as well as the federal level with Alabama's Congressional Delegation. Much important legislation for the betterment of forestry in the state has been introduced in the State Legislature, while, at the same time, legislation which could have been detrimental

ALABAMA FORESTRY ASSOCIATION

—Who Is It?

—What Does It Do?

by REI BOYCE, Alabama Forestry Association



to forestry has been suppressed with the efforts of a strong legislative committee.

Communications is another area that has required a reassessment of the Association's objectives. A special industry communicators' task force was formed earlier in the '80's to assess communications needs and to develop objectives for the industry. It is increasingly evident that the traditional low profile no longer meets today's industry needs and the Association is gearing up to strengthen its communications capabilities.

The Association is very active in many areas of education for Alabama's citizens. Several thousand FFA students have a better understanding of forest conservation through their participation in the annual FFA Forestry Judging Contest. State and industry foresters cooperate with local vocational agriculture teachers in providing practical experience in the classrooms. Competition prize money is provided by AFA.

Because of its dedication to the promotion of wood and wood products, the Association provides scholarships and awards for students of Auburn University's School of Architecture and Fine Arts. The awards are a part of a forest industry educational program designed to acquaint future architects with the availability and versatility of wood products for construction purposes. Included in the program is a student tour of forest industry plants engaged in the manufacturing of wood material and components used in the building industry.

AFA also cooperates with the Department of Forestry at Auburn University in preparing classroom lectures by forest industry personnel. During the quarter, several classes are scheduled which are taught by a graduate forester working in the industry. His discussion is mainly centered around his particular aspect of forestry and his day-to-day responsibilities. It gives the students a good handle on what to expect in the different phases of the industry.

Through the Alabama Forestry Foundation, the Association sponsors a week-

long Teacher Conservation Workshop each year at Auburn University for science and humanities teachers throughout the state. The week-long short course on natural resources is filled with classroom lectures as well as on-the-ground field trips. It is designed to give teachers a better insight into forestry and its future. Because of this workshop, teachers pass on the information they have received during this week to thousands of students for many years.

Scholarships for forestry students are also available through the Alabama Forestry Foundation at Auburn University and Patrick Henry Junior College.

In cooperation with the Alabama Forestry Commission, the Association offers a \$500 Forest Fire Reward on a continuing basis for information leading to the conviction of any person who maliciously sets fire to the forests. This has been a very effective program in reducing arson in many areas of the state.

As state sponsor of the Alabama Tree Farm Program, the staff coordinates the reinspection of already certified Tree Farms and inspects new Tree Farms that qualify to be certified under the program. There are approximately 2,200 tree farms in Alabama. When this program began nationwide, the first Tree Farm certified in the United States was certified in Brewton, Alabama. Each year, an Outstanding Tree Farmer of the Year is selected by a committee of nominations submitted from each district. Awards are presented to the winner who has done the most to promote forestry and has accomplished a major portion of his Tree Farm goals for that year.

Now, more than ever, forestry is big business in Alabama! In the future, it will be even more important as the state's number one manufacturing industry. The Alabama Forestry Association plays a major role in forestry in the state. If you would like more information on the Association or would like to become a part of the "Voice of Forestry," please write to the Alabama Forestry Association, 555 Alabama Street, Montgomery, AL 36104. ♣

FUSIFORM

The Rust That Destroys Pine Trees

by BOB KUCERA, Water Quality Forester

One of the most damaging forest tree diseases in Alabama is fusiform rust. Loblolly and slash pines are by far the most affected tree species.

Fusiform rust develops on pines when a spore of the fungus *Cronartium quercum* f. sp. *fusiforme* is blown onto the newer growth. The spore germinates and grows into the branch or stem and causes the tree to form an elongated gall or canker. These infected areas may grow for many years until they eventually girdle and kill the branch or stem, or they may become inactive.

From late March to mid-April, active galls on pine produce an abundance of orange spores. The bright orange galls are very obvious at this time. The spores are blown in the wind and infect newly formed oak leaves, especially on the black oaks such as water oak, willow oak, and laurel oak. In turn, the fungus produces spores on the oak leaves which complete the cycle by infecting pines from late April through the middle of June. The timing of this process will vary from year to year and in different geographic areas, beginning earlier if the temperature is higher.

The economic damage caused by fusiform rust is from mortality, loss of product value, and the disruption of management plans. Individual trees may have rust galls or cankers on the main stem, on the branches, or both. Branch cankers within 12-18" of the stem are likely to grow into the stem and become stem cankers. Main stem cankers may girdle and kill the tree. This is more probable on smaller trees and virtually assured on trees leaving a nursery with fusiform rust. Stems with cankers are weak and susceptible to wind and ice breakage. They will catch fire and stay afire, either killing the tree or reducing its value due to the charred wood and bark which is undesirable in the pulping process. Cankered stems have a greatly reduced sawtimber value. Stands which are heavily infected may need to be thinned earlier and more often with greater logging expenses. The residual sawtimber volume may be low per acre and command a lower price.

Fusiform cankers may become infected by the pitch canker fungus *Fusarium moniliforme* var. *subglutinans*. Black turpentine beetles

(*Dendroctonus frontalis*) and coneworms (*Dioryctria* spp.) may infest the rust cankers. These secondary agents aggravate the tree's weakened condition.

In areas with a high incidence of fusiform rust, the disease becomes a major factor to be considered in stand management plans. State seed orchards and nurseries are developing and growing disease free and resistant seedlings. Also, universities, the forest industry, and the U.S. Forest Service are pursuing research for more effective fusiform rust prevention and control management strategies and technology. Management foresters, aware of local rust hazards and the landowner's objectives, can apply prevention and control procedures.

The strategy for management of fusiform rust must be developed on a site-specific basis and be compatible, or integrated, with consideration of other diseases, insects, and landowners' objectives. The following rust hazard ratings and recommendations were made at the "Symposium for Management of Fusiform Rust in the Southern Pines"

Rust Hazard Ratings

Throughout these recommendations reference is made to the *rust-hazard rating* of an area or stand. We used the following guidelines.

Rust hazard rating	Percent of trees with stem galls or potential stem galls*
Low	less than 25
Moderate	25-50
High	greater than 50

*A potential stem gall is a limb gall which could in the near future extend into the stem.

RECOMMENDATIONS

I. AVOIDING FUSIFORM RUST IN YOUNG STANDS

A. Management of the Site

• 1. In areas of low rust hazard with few or no oaks, precautions should be taken to prevent conversion of the site to a high hazard one through increase or invasion of susceptible oak species (water, laurel, and willow oaks; see Section I-C).*

*When recommendations are repeated, reference is made to those sections where the recommendation receives primary emphasis.

• 2. On sites of moderate to high or potentially high rust hazard, the following precautions should be taken: • (a) Susceptible oak should be suppressed and reinvasion of oak should be prevented. Do not employ site preparation practices which favor oak invasion (see Section I-A-2-b). • (b) Site preparation should be continued when it is required for planting and survival of pine and aids in suppression of oak. Even though enhanced pine growth results in increased incidence of rust, it is counter-productive to recommend against site preparation, except for practices which might favor invasion of oak, e.g., windrows which are not completely burned. • (c) Fertilization practices which predispose young pines to infection in the presence of infected oak should be delayed until trees are eight to ten years of age and thus less likely to develop lethal stem galls.

B. Management of the Pine Hosts

• 1. Do not plant rust susceptible pines on high-hazard sites. Regeneration of high-hazard sites should be accomplished with one or more of the following sources of resistance to fusiform rust. Species should be favored within their own natural range, and seed sources should be well adapted to the site. Resistant genotypes should be mixed in time and space (see Sections I-B-4 and I-D-4).

• (a) Resistant species, e.g., longleaf, shortleaf, or sand pines. • (b) Resistant natural or artificial hybrids or shortleaf or longleaf with loblolly or slash pines. • (c) Resistant seed sources of loblolly pine, e.g., east Texas or Livingston Parish, Louisiana, sources. • (d) Resistant loblolly or slash pine seed obtained from

(1) Seed orchard clones whose progeny show resistance to rust in artificial inoculation tests or when planted in high-hazard field experiments.

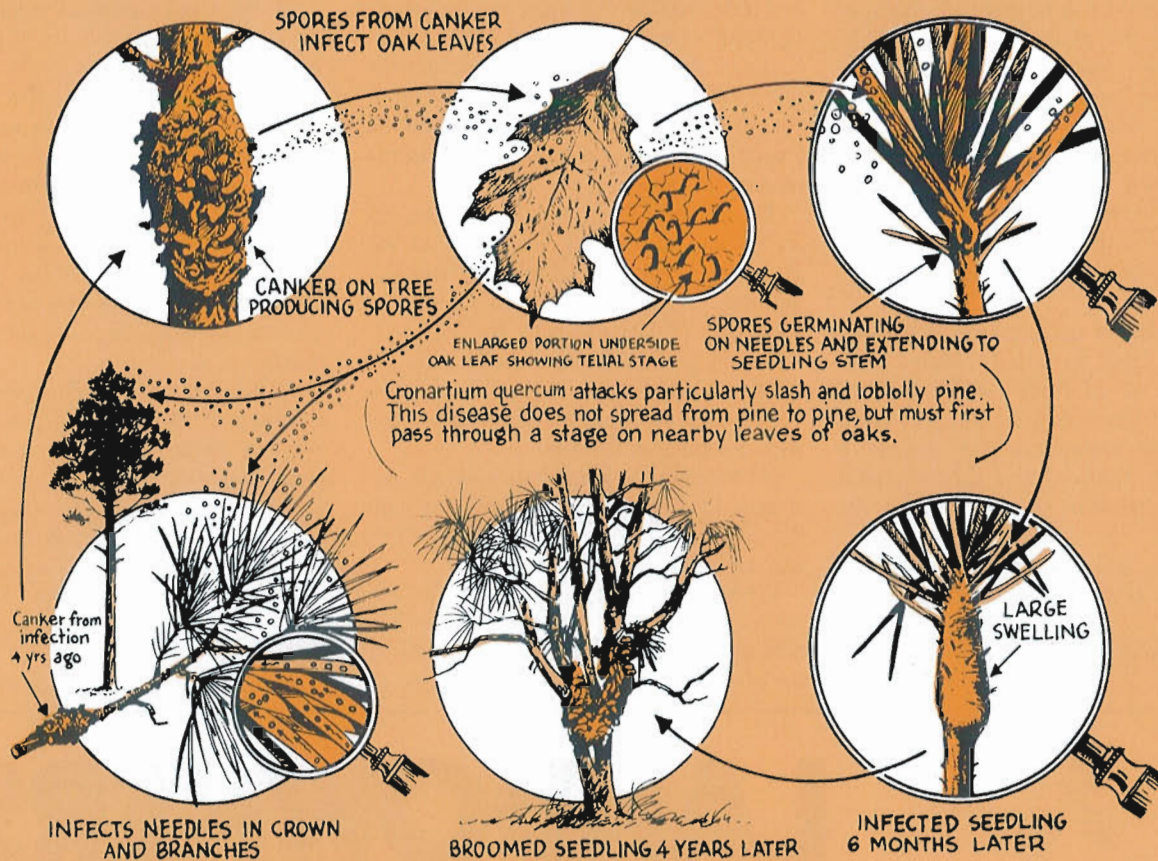
(2) Rust-free trees in seed production areas established in heavily infected stands which were rogued (rust-free) to remove rust-infected trees.

• 2. If an adequate number of rust-free (rust-resistant) trees are available for use as seed trees, consideration should be given to a shelterwood regeneration system in high-hazard areas. This system has several advantages • (a) Using a rogued and possibly resistant seed source. • (b) Creating a microclimate unfavorable for rust development in the understory seedlings, and • (c) Avoiding costs of artificial regeneration, especially in small or isolated stands. Disadvantages are the length of time required for regeneration and lack of control of stocking densities. Oak invasion which is likely in some areas might be controlled by prescribing burning (see Section I-C-1-d).

• 3. Do not increase planting density to compensate for rust-infected trees unless this is coupled with timely sanitation thinnings to remove trees with sporulating galls. This practice should be avoided because it frequently results in an increase in the amount and variability of inoculum of diseased trees and, in the long run, is counter-productive. Just as important, planting densities which exceed maximum carrying capabilities often leads to additional problems (including pest problems) later in the rotation.

• 4. Plantations should be harvested and regenerated in blocks organized in a "checkerboard" fashion so that adjacent stands differ in age by 12 to 15 years. This will increase functional diversity by creating an uneven age distribution

LIFE CYCLE OF THE FUSIFORM RUST FUNGUS



among stands. New plantations should be established adjacent to older plantations which are beyond the age (10 years) of maximum percent infection and, due to limb pruning and mortality, have fewer sporulating galls resulting in less inoculum production on nearby oak.

C. Management of the Oak Hosts

1. When practicable and not in serious conflict with other important uses of the forest, susceptible oaks, e.g., water, laurel, and willow oaks, in and immediately adjacent to pine plantations should be suppressed. Even though spores which infect pine can be transported long distances by wind (the actual distance is not known), infected oaks account for most of the infection of surrounding pine. Oak suppression can be accomplished by • (a) Felling and poisoning residual oaks when pines are harvested. • (b) Spraying oak sprouts and seedlings with a silvicide. • (c) Using very intensive mechanical site preparation, coupled with burning (preferably in the summer), prior to planting. • (d) Repeated prescribed burning (preferably in the summer) subsequent to plantation establishment.

D. Management of the Pathogen

These recommendations are to prevent an increase in the amount of inoculum and, possibly, in more virulent varieties of *C. Fusiforme*.

1. Avoid movement and planting of rust-infected nursery stock, especially from distant nurseries and on sites with abundant oak.
2. Inoculum should be reduced in young plantations (two to ten years of age) in sanitation thinnings to remove trees (often unmerchantable) with sporulating stem galls and trees with many sporulating branch galls. Pruning of sporulating branch galls also reduces inoculum, but there is some evidence that wounds may be colonized by the pathogen. For this reason, pruning should not be done when basidiospores are prevalent (normally February-June).
3. Susceptible oak should be suppressed whenever practicable (see Section I-C).
4. Rust-resistant seed (loblolly or slash) should be deployed to multiple genotype mixtures in time and space rather than in uniform blocks of one or a few genotypes. This increases functional diversity and could impede the possible buildup of virulent strains of the fungus.
5. Rust-free stands in high-hazard areas should be managed on long

rotations (see Section II-A).

6. Do not increase the planting density to compensate for rust mortality (see Section I-B-3).
7. Burning infected stands to remove limb galls is not recommended because of damage to the residual trees with stem infections (see Section II-4).

II. MINIMIZING DISEASE LOSSES IN RUST-INFECTED STANDS

A. Adequately stocked stands which are located in high-hazard areas, but have escaped significant rust infection for at least eight years, should be managed for poles or sawtimber. This will increase growth of healthy trees, increase uneven age distribution among stands (see Section I-B-D), and avoid potential losses to young seedlings.

B. Stands with less than 25 percent of the trees with lethal stem cankers (greater than or equal to 50 percent of the stem circumference girdled) may be grown to pulpwood rotation without sanitation for rust. Longer rotations may require a sanitation thinning (removal of all stem-cankered trees).

C. Stands with 25 percent of the trees with lethal stem cankers should be sanitation thinned. If this thinning would result in inadequate stocking, the stand should be clear-cut and regenerated with resistant seedlings (see Section I-B-1), or, where appropriate, regenerated by a shelterwood system (see Section I-B-2).

D. In control burning stands, care should be taken to avoid igniting resinous stem cankers. This precaution is especially important in stands with 25 percent stem cankers, because igniting these cankers can result in charring and possible death of the trees.

E. Infected portions of trees removed in clear-cuts or sanitation thinnings should be utilized for tall oil, turpentine, and in certain kinds of pulp.

Another aid in fusiform rust management is the "Integrated Pest Management Decision Key" published by the U.S. Forest Service.

Fusiform rust was an obscure and unimportant problem sixty years ago. It has increased to today's epidemic proportions and is still increasing. The information which is now available can be applied on a site specific to minimize problems and allow profitable pine management. Future research and applications of knowledge in practice on a regional basis will return fusiform rust to the category of a minor problem.

The LEGISLATIVE ALERT column has received a number of inquiries concerning the goals and accomplishments of the Alabama Legislative Forestry Study Committee.

Act No. 79-711 (1979 Regular Session) by then Rep. John M. McMillan of Stockton and Rep. Jimmy Warren of Castleberry created the Forestry Study Committee with the responsibility for making a complete study of the state's forestry needs.

The legislative act set forth three specific goals. They were to 1) make a thorough study of all facets of the forestry program; 2) develop a needs assessment based on the findings; and 3) publish a report of its findings and recommendations and distribute it annually to the public.

The study was to include, but not be limited to, problems related to forest fires, their occurrences, causes, acreage burned, damages and whether legally or illegally set. Another thrust of the study

was to be resource management practices and industrial development as it relates to the state's forestry program. Still another focus of the study was to determine the effects and impact of both state and environmental legislation and regulations on forestry practices and landowner prerogatives and options.

The Study Committee also expressed an interest in forestry education at the university level. The Committee was unanimous in its belief that a change in status from "Department" to "School" should be given priority consideration for Auburn University.

Goals developed by the Committee were adopted as follows:

(1) Monitor the wildfire situation in Alabama, making annual comparisons with the adjacent states of Mississippi, Florida, Georgia and Tennessee.

(2) Make periodic evaluations of the productivity of forest lands and determine how yields can be increased on lands of the private, non-industrial landowners in-

cluding minority landowners.

(3) Seek out means of acquainting the public with the desirability of good forest management as a process for increasing productivity of forest stands.

(4) Alert state agencies supervising state-owned lands that stewardship, management and accurate record keeping are essential to the welfare of the state.

(5) Consider ways of increasing productivity of the state's forest resource by accelerating the utilization of logging residues and residues from wood processing plants.

(6) Record changes in resource information as it affects growth, drain, ownership and impact on related uses of forest lands including wildlife, water yield and quality, recreation and aesthetics.

(7) Conduct periodic studies of industrial development and its dependency on forest productivity, or have such surveys made by agencies conducting economic studies.

(8) Encourage forest nursery produc-



LANDOWNERS' LEGISLATIVE ALERT

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

The adjournment of the 97th Congress on December 23, 1982, brought no action on pending legislation that could affect forest landowners. Those bills described in the fall issue of *Alabama's Treasured Forests*, and which dealt primarily with providing financial incentives for forest landowners, "died" with the conclusion of the Congress.

The 98th Congress, which got underway January 3, 1983, could consider these bills again if they are reintroduced by their sponsors. At this early stage, it

does not appear that this Congress will consider much forestry legislation of direct interest to private landowners. The first few months will probably see Congress focus on the budget, employment, and Social Security reform. What time is left will probably be spent examining several environmental laws, with major revisions possible.

The 97th Congress did approve an appropriations bill for the Department of Agriculture for fiscal year 1983 (10/1/82 to 9/30/83), one item of which authorized \$12.5 million for the Forestry Incentives

Program. This amount represents an increase over what the President had requested for the program. It recognizes Congress' support of this cost-share program and of reforestation and timber stand improvements on privately-owned nonindustrial forest lands. Appropriations for other Federal/State cooperative forestry programs, those that provide resource protection and technical assistance benefitting forest landowners, did not fare as well; several programs received a cut in funds.

tion of stress-free, quality seedlings to supply the needs of landowners who plant abandoned lands or regenerate following harvest.

(9) Promote the use of prescribed burning as a means of protecting the forest from wildfire, thus improving its value as range for wildlife.

(10) Support a move to establish a School of Forestry at Auburn University.

Accomplishments of the Study Committee will be enumerated in the next issue of Alabama's TREASURED Forests.

Sen. Reo Kirkland of Brewton has served as chairman of the Committee since October, 1980. Rep. Jimmy Warren is vice chairman. State Forester C. W. Moody serves as secretary. Members of the Committee represent forestland ownership, forest industries, education and forest-related interests. Three members are selected from the Senate by the lieutenant governor. Three are chosen from the House of Representatives by the speaker. Eight members are appointed by the governor. ♣

An editorial comment . . .

Forestry Incentives Program Saved

Alabama's U. S. Senator Howell Heflin has long been a supporter of forestry not only in our state but all across the nation. Once more, his efforts were instrumental in securing funding for the Forestry Incentives Program in 1983.



Senator Heflin

Through this program, many Alabama landowners will be able to cost-share the expenses of reforestation, thus enabling our forestland to meet future demands. In his recent newsletter, Senator Heflin pointed out, "The money spent on the Forestry Incentives Program is money wisely invested in our nation's future. This is so because wood is basic to our nation's economy. . . . I have fought for effective forestry programs during my four years in the United States Senate, and shall continue to do so. It is essential that we protect future generations from wood shortages by providing them with ample supplies of wood products for home and industrial use."

We in forestry in Alabama appreciate this legislative support and challenge landowners in our state to take advantage of the opportunities provided by the FIP program.

STUMPED?

ASK US



ABOUT IT!

Q. *I'm interested in growing Christmas trees. Where do I get information on where to start?*

A. Christmas tree production in Alabama has grown from just a few growers to a level which produces almost half of the market needs of the state. The Alabama Cooperative Extension Service has been actively involved in promoting this enterprise and is a good source of information for prospective growers. Check any of their county offices for help. Two publications of interest are "Christmas Tree Production in Alabama", Circular 70, published by the Alabama Cooperative Extension Service and "Growing Christmas Trees in the South", General Report SA-GR 5, published by the U.S. Forest Service.

Q. *There is a very large white oak on my land. I've heard that there is a program that recognizes big trees. Can you tell me about it?*

A. The Alabama Forestry Commission sponsors the Champion Tree Program. This program identifies, locates, and recognizes the largest tree of its species in Alabama. Anyone can nominate a possible champion by contacting his local Alabama Forestry Commission office. To date there are 126 state champions.

Q. *This summer, I plan to cut 40 acres of pine. Instead of clear-cutting and planting, I would like to leave some of the larger trees to seed in the area naturally. What is the best way to do this?*

A. Proper seed tree regeneration requires leaving enough mature cone-bearing trees of good quality, preparing the seed bed, and controlling competing vegetation. Contact a forester to get the best results from this method.

Q. *Where does the Alabama Forestry Commission get its fire-weather forecast and is it available to the public?*

A. The National Weather Service in Birmingham provides the fire-weather forecast for all of Alabama. Using computer technology, this data is used when prescribed burning and controlling wildfires. The public can get this information by calling the local Alabama Forestry Commission district office.

Q. *Are wildfires still the problem they used to be?*

A. Yes! If you look back over twenty years, there is a small reduction in the number of acres burned due to improved technology. However, wildfire is even more of a problem today. The number of fires and their potential is not decreasing. Our forests are being managed more intensely and are more productive. They are also being used more intensely and for more varied reasons. The demand and price for forest products continues to increase but the acreage of forests to meet these demands is on the decrease.

Q. *Wildfires don't always kill timber. Why?*

A. Larger trees are harder to kill. Pines, as they get larger, develop thick bark that isolates the live cambium layer from the heat of the fire. Needles are vulnerable but are higher and generally out of reach. Even though not killed outright, trees can be damaged and growth retarded. They are weakened and may die later as a result of insect attack, drought, or windthrow due to partially killed root systems.

TAKE NOTE: In last quarter's column, a statement was made that "a professional forester must be registered with the Alabama Board of Registered Foresters" if he practices forestry in Alabama. The statement may be correctly applied to those who deal with the general public, representing themselves to be "foresters." However, any person who holds a degree in forestry may practice his craft on corporate-owned properties as well as on lands owned by state and federal agencies, or may engage in educational endeavors. There are other fine points in the law, but for practical application these are the major exceptions.—Editor ♣

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

Forest regeneration is important to you *now*. If you are preparing to sell some of your timber, *now* is the time to plan for regenerating the forest—before any trees are cut.

Many landowners have been led to believe that when a forest is cut or harvested, a new stand of trees of good quality, will grow back in its place, requiring no effort on the landowner's part. **Hog Wash!**

When trees are harvested without planning for regeneration, the landowner can be virtually guaranteed that low-quality hardwood trees will take over. Briars, weeds, kudzu and honeysuckle seem to sprout everywhere and choke the forest site. This land becomes a problem to the landowner instead of being productive.

Forest regeneration is the restoring or renewing of a forest after it has been harvested or destroyed. Regeneration can be accomplished either artificially or naturally.

Artificial regeneration is accomplished by planting seedlings or seeds. Natural regeneration of a pine forest is achieved from seeds provided by parent trees on the site or nearby.

Successful natural regeneration requires careful planning before the mature trees are harvested. Otherwise, high-quality pine stands are not likely to occur.

Natural regeneration has both advantages and disadvantages. Advantages of natural regeneration over artificial regeneration are:

- Establishment costs are lower
- Less labor and heavy equipment required
- Natural stands look nicer to many landowners
- Wildlife is often more varied in natural stands
- Soil erosion does not generally occur
- Root systems develop early

Disadvantages of natural regeneration include:

- Genetically improved seedlings cannot be used
- Little control over number and spacing of new seedlings
- An adequate seed crop may not be produced each year
- Volume yields of natural stands may be less than planted stands unless intensive forest management is practiced.

To ideally plan for natural pine regeneration, a landowner should sit down with his forester several years before harvesting the timber. Early planning by a forester will give the landowner many more

Do You Wish to Use Natural Forest Regeneration?

PLAN BEFORE YOU CUT!

by TOMMY PATTERSON, Chief, Productivity Section

options of timber selling and choices of natural regeneration methods. Having the options available can save or gain hundreds of dollars for the landowner.

When to Consider Natural Regeneration

To be a candidate for natural regeneration, a forest must meet four basic requirements:

(1) *A seed source must be available on the site.* Mature, cone-bearing trees about 30 years old are required. Seed fall usually occurs from August through December. Adequate seed crops occur at least every three to five years.

(2) *The ground must be prepared to receive the seeds.* Pine seeds will not germinate or survive unless they fall on bare mineral soil. The litter layer (leaves, needles and twigs covering the ground) must be reduced to a shallow depth. This reduction is normally accomplished by prescribed burning in advance of the harvest. Several burns may be needed if the litter layer is deep. Careful planning of the burns is necessary.

(3) *Adequate moisture must be available.* Moisture is necessary in early spring and throughout the summer if the seeds are to germinate and develop root systems. A summer drought can severely limit seedling survival.

(4) *Competing vegetation must be controlled.* Pine seedlings must have full sunlight to survive. Undesirable trees, shrubs, and vines cause shade and compete for moisture and space. A series of prescribed fires before seed fall can control these problems.

Which Method to Select

There are four general methods of natural regeneration. Your forester can help

you decide which method best meets your objectives.

The most familiar method of natural regeneration is probably the *Seed Tree Method*.

This system removes most of the trees in one cut, leaving only a few scattered trees over the area to produce seed for the new crop. For successful regeneration using seed trees, select and mark the *best* trees to be saved. They should be vigorously growing, cone bearing trees with full crowns, straight stems and few low branches. In dense stands, it may be necessary to remove some of the trees surrounding the seed trees two or three years before the regeneration cut to stimulate seed production. Along with the prescribed fire, the logging operation itself will help by stirring up the ground, preparing it to receive seed. During the logging operation, special effort may be needed to protect the seed trees from damage. After the seed trees have completed their job of establishing a young stand beneath them, they may be removed to provide additional income. This removal usually occurs two to five years following the initial cutting. Use of the seed tree system results in an even-aged forest.

The following table will assist you in determining the number and size of seed trees required for successful regeneration.

Minimum Recommended Number of Pine Seed Trees Per Acre

*Diameter in inches	Loblolly and Slash	Shortleaf	**Longleaf
9	—	—	—
10	12	20	55
12	9	14	38
14	6	12	28
16+	4	12	21

*Measured 4 1/2 feet above ground.

**Shelterwood

Source: Williston and Balmer. "Managing for Natural Regeneration." 1974.

Closely associated with the seed tree method is the *Shelterwood Method*. In the shelterwood system, the new stand of trees is established under the shelter of older trees. This method is used for species that generally do not compete well with other vegetation when growing in direct sunlight and for those species like longleaf pine with heavy seeds that do not travel far from the source tree. Two cuts are commonly made, sometimes three. The first cut stimulates seed production by the remaining trees, stirs up the ground to prepare the site and lets in some light. Usually enough mature trees are left to shade the area at least part of each day. Seedlings begin to establish themselves beneath the older trees as a result of the first cut. The next cut or cuts remove the remaining mature trees, completely releasing the young stand. An even-aged stand is the result. Though loblolly and shortleaf pine may be regenerated with this method, it is used most often to regenerate longleaf pine.

A third method of natural regeneration is referred to as the *Clearcut Method*. Clearcutting is the removal of all trees larger than an inch or two in diameter from a specific area. For tree species that are most intolerant of shade, this is a very practical regeneration method. Not only does the process eliminate all growth-suppressing shade, but the intensive logging activity exposes mineral soil, thereby improving conditions for seed germination and rapid early growth. Pine seeds fall from August through December. The idea behind the clearcut system is to site-prepare (using prescribed fire or chemicals) before seedfall with harvesting accomplished after seedfall.

A determination of the potential seed crop must be made before site preparation. A survey of the cone crop can be made in the spring or summer before the planned harvest.

From the scenic viewpoint, clearcutting is indeed drastic. For the first few years after clearcutting there is no conspicuous forest present. A closer look, however, will reveal an infant stand of trees making maximum use of the full sunlight. The size, shape, and location of clearcut areas should be planned to blend naturally with the landscape. Clearcutting produces an even-aged stand.

The fourth and final method of natural regeneration we will discuss is the *Selection Method*.

In the selection method, the forester selects trees individually (or in small groups) for cutting. Such a cutting could be made each year, but usually the interval is five years or more. Trees to be cut

must be selected carefully to avoid degrading the forest. Trees of various sizes are removed and utilized with this method. Special emphasis is also given to removing diseased and poorly formed trees and undesirable species to reduce crowding and hence stimulate growth on the remaining trees. "Save the best, cut the rest" is a phrase appropriately associated with the selection method.

To encourage pine reproduction with the selection method, enough trees must be removed to create openings for sunlight and the remaining trees must be capable of delivering seeds to these openings.

This system maintains the forest in an uneven-aged condition with trees of various sizes. Rather than undergoing a brief period of regeneration, as in the other three methods, the forest is continually

being regenerated. This system has a very pleasing visual impact.

Before You Cut

Forest regeneration can be very costly or very inexpensive depending upon how well you have planned to the time of harvest. The type of harvest used should be given much consideration.

Even though some of the ideas and principles of cutting methods appear simple, a professional forester should assist you throughout the planning process.

Check with your forester before selling timber to be sure you are aware of the latest techniques and programs concerning harvesting and reforestation.

Now you know how you can keep your forestland productive.

Pass the word!

How To Prune Trees

by BARRY LAWRENCE,
Urban Forester, Ozark

With the dormant season here, and before spring buds again, now is the time to prune shade trees. Many homeowners think the only way to have trees pruned is by an expert. This is not usually the case. One of the best ways for a homeowner to keep his trees healthy and to minimize damage from decay is to prune trees properly throughout their life span. Pruned properly, a tree will add great value and enhance the appearance of the home.

Some important tips to remember when pruning include the following:

—Start pruning early and continue throughout the tree's life. This will help prevent splitting later in life when the branches are burdened with fruit, flowers, and heavy limbs.

—Prune only when you have enough time to do the job properly. The old saying, haste makes waste, holds true in this instance.

—Remove all broken branches as soon as possible after the injury occurs. This will speed up the recovery of the tree. Prune back either to the trunk or to the next vigorous branch.

—Remove dead, broken, or diseased branches anytime you find

them. Cut the dead branch back to the callus collar (bark growth near joint of main trunk), but do not remove the living collar.

—Prune living branches as close to the trunk as possible. However, do not cut the branch collar. Make the cut slightly outward and downward and smooth.

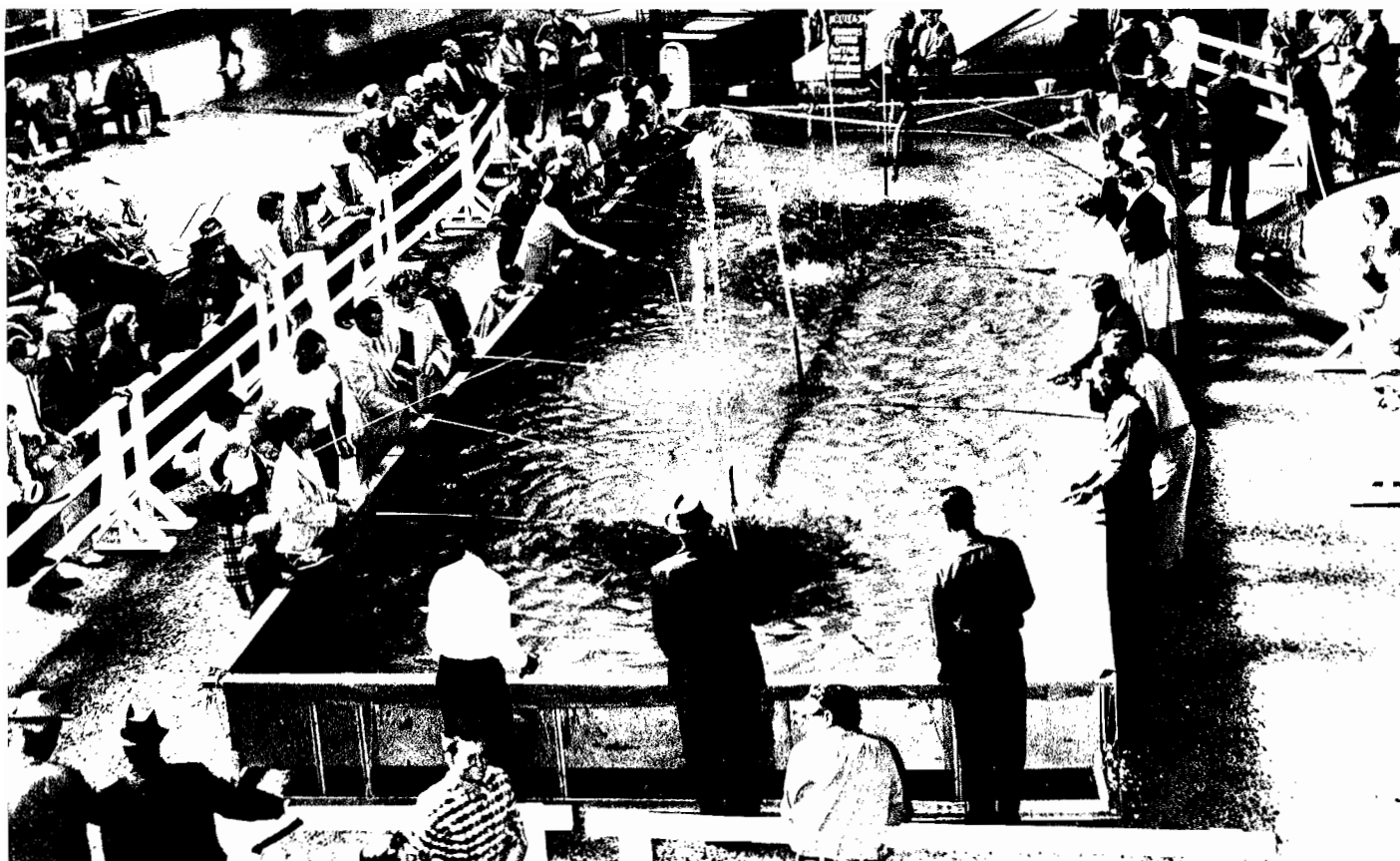
—When pruning, priorities of cutting should be broken, weak, and diseased branches first, dead branches second, and healthy branches last.

—Apply a thin coat of wound dressing only if you feel it will help the appearance of the tree. The dressing is for cosmetic purposes only.

—After pruning, the tree needs to maintain its vigor so that its recovery will be hastened. This can be accomplished by watering, fertilizing, thinning of less valuable plants around it, and most important, establishing and continuing a maintenance program.

By following the above steps homeowners can prevent major disaster to shadetrees and maintain a healthy stand of trees around the home.

For further information on this or other shadetree problems contact your local forester.



Ninth Annual Forest Festival —Something for Everyone



Where can you go and have more fun than you've ever had without spending any money? The Alabama Forest Festival—that's where!

This year's event (the ninth annual!) is set for April 16 at Garrett Coliseum in Montgomery from 9:00 a.m. to 5:00 p.m. More than 140 arts and crafts exhibitors will be inside the coliseum and at various locations in the grove. The kids will take delight in the pine cone toss, nail driving, sawdust scramble, bingo, and many, many more games and contests. What does every youngster enjoy? Fishing! At the "catch 'em and keep 'em" trout fishing stream there's fun galore!

You can also watch a smile spread on little faces as they get a real "bear hug" from Smokey or as Woodsy Owl bends down to "give a hoot." Too good to be true, you say? That's not all!

The bluegrass sounds of Southbound

Glory; Mason, McLaurine, and Sims; and several other well known groups will surely set your toe to tapping. If you prefer quieter entertainment, there's another stage inside where you'll hear gospel music, a barber shop chorus, folk music, or Master's Muppets.

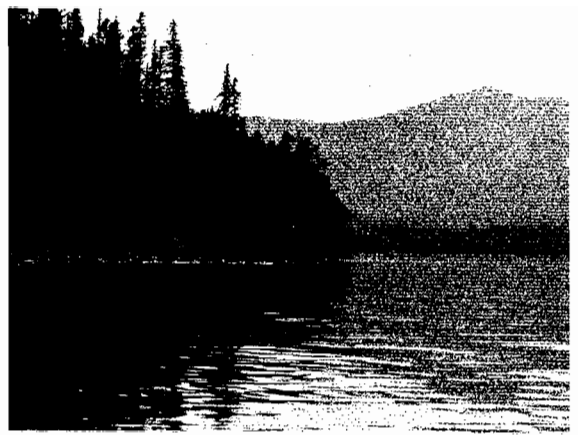
Maybe you're an action person; then action you'll get! The Alabama Log Run starts at 8:30 a.m. with the 10,000 meter run, and at 9:45 a.m. there's the Two-mile Family Fun Run. Volunteer fire departments will be competing to see who's best in the bucket brigade, hose lay, and obstacle course. If you still want action, you can watch the chain saw and cross cut competitions.

Exhibits demonstrating forestry and conservation techniques will also be on hand along with equipment displays and a helicopter water drop.

What are you waiting for? Mark the date and make your plans! It's exciting, it's fun, and it's free!

Water Quality is Affected by Quality of the Woodland

by JOHN P. TYSON, JR., R. C. & D. Forester



Some of the good things in life that we derive from our forests are intangible and their effects on our society are easily measured; others are not. It is not difficult to measure the contributions to our economy that are made by the sale of sawtimber each year. The benefit that we derive from having adequate amounts of good quality water, on the other hand, is hard to measure. This makes it difficult to say exactly how much it is worth to our society to develop and maintain forests that are high in watershed value.

Everyone agrees that sufficient amounts of good quality water are essential. But then we ask, how much can a forester really influence this through forest management on the land that drains into a specific stream? The best answer to this is that, while we probably can't totally control the water dislodged by a drainage, we can affect it. The Southeastern watershed forester is attempting to influence the water coming from the forest in two primary ways. He wants the water to be of good quality, and he attempts to influence positively the timing of the water yield from the forest.

The first of these objectives is largely self-explanatory. Good quality water is clear and clean. Since the main pollutant going into streams from forested areas is silt, a good watershed forest is one that holds the soil in place and allows little erosion.

Timing of water yield is a little more difficult to explain. What it really means is that we want the stream flow to remain as consistent as possible year round. We don't want to have floods in February and dry stream beds in October. The forester wants the rain that the forest receives to enter the soil and reach the stream over a period of time and at a constant rate as subsurface flow rather than rushing along the ground's surface and all reaching the stream at the same time.

The forest acts in several ways to preserve water quality and to regulate the

timing of water yield. We might even say that the forest extends its influence over water at three different levels: in the tree tops, in the layer of leaves and twigs lying on the forest floor, and in the soil beneath the trees.

A raindrop's first contact with the forest comes when it reaches the crown of a tree. Raindrops or precipitation that falls into the canopy of a forest will follow one of two courses. It may cling to the foliage of the trees and gradually be absorbed back into the atmosphere by evaporation and never reach the soil at all. Most of the precipitation, however, will continue down through the top, striking again and again against leaves and limbs. These repeated collisions slow the spread of other falling moisture and it reaches the litter layer at the base of the tree at a slower rate of speed than when it entered the canopy.

This slowing of the raindrop's speed is the first beneficial watershed effect that the forest exerts. By slowing the speed of the falling rain, trees cause water to strike the ground with less force than it would in an open area. Soil compaction is less than would be the case on open ground. The less compacted the soil is, the more readily it can absorb moisture.

When the rain drop reaches the ground at the foot of the tree, the first thing that it encounters is the "litter layer." This is the spongy mass of dead leaves and twigs, in varying stages of decomposition, that carpets the soil under the forest trees.

The litter layer affects the watershed properties of the forest in two ways. It can absorb and hold, for short periods of time, a tremendous amount of moisture. This moisture is allowed to slowly drain downward into the soil. Because the water is presented to the soil slowly, much more of it enters the ground than would be the case had it arrived on bare soil as direct rainfall. The litter layer also acts to hold the surface soil in place

during heavy rains. This, of course, means that less silt ends up in the stream.

As the water leaves the litter it reaches the forest soil and in this area the forest exerts its last effect on the watershed. The forest determines to some extent how readily moisture can enter the soil by affecting the porosity of the soil. A loose, porous soil is the most receptive to rain, and a good stand of forest trees can help to develop and maintain a high degree of porosity in its soil.

Organic matter from rotting leaves and timber is constantly being incorporated into the surface layers of the soil. The incorporation of organic matter into the soil has a highly desirable effect on soil porosity. Tree roots also have a tendency to break up the soil and, as they die and decompose they leave small tunnels that can channel water down into the deeper layers. The high concentration of organic matter in the top soil also attracts earth worms, moles, insects and other forms of burrowing animal life that contribute favorably to soil porosity.

Once the water is below the soil's surface the watershed forest has largely made its contribution toward providing us with good water. The water in the soil moves slowly along beneath the surface of the ground until it reaches the stream. A portion of this water may be taken up by the roots of the trees and is used by the plants themselves. This moisture, of course, does not reach the stream but is returned to the atmosphere through the process of transpiration. This transpired moisture will later fall back to earth as rain.

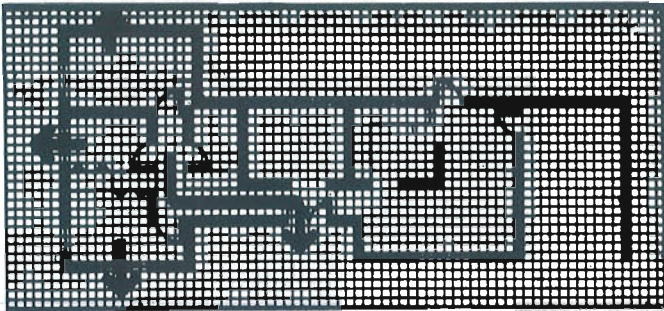
We could sum it up by saying that a good watershed forest is one with firm heads in its canopy, one with a well developed litter layer, and one with loose, porous soil. Understanding this is an important step in managing your land for good water quality.

HOUSE FIRES!

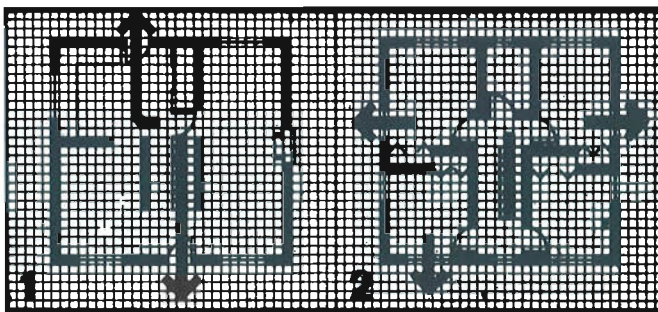


by RAY TUCKER, R.C.F.P. Coordinator

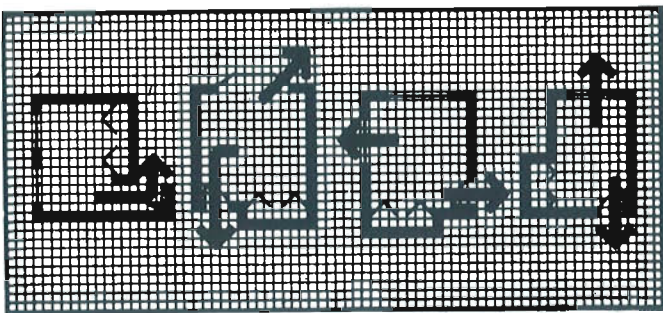
Sample floor plans.



House on one floor.



A two-story house.



Floor plans for each of four bedrooms.

Diagrams courtesy of the National Fire Protection Association

“Apathy”, what a small seemingly insignificant word! It is, however, the single most important reason accidental fires in the home have a place to start and ultimately cause property damage, injury, or even death. Experience shows that most of us are guilty of having a feeling that “Sure people have fires, but it won’t happen to me. I’m careful.”

Let’s take a moment and analyze fire and see if we can afford to be apathetic about it. A fire simply defined is “excessive heat buildup.”

We all have some heat in our homes every minute of every day. Some examples are ambient temperature, light bulbs, stoves, heaters, and dryers. We take for granted these things will function in their normal way, forever. They won’t! Allow a hypothetical case—You are ironing a shirt and the telephone rings. In your haste to answer it you leave the iron flat down on the shirt. When you return in 5 to 10 minutes you find the shirt scorched or on fire. Why? “Excessive heat buildup.”

Every item known to man that is combustible (will burn) has an ignition temperature. When this temperature is reached the item will burst into flame. It is also important to know that ignition temperatures are lowered when the material or item is exposed to even a limited amount of heat over a long period of time. For example, paper goods stacked in close proximity of a hot water heater: ordinary paper will ignite at 500°F. Exposure to heat causes the moisture in the paper to be depleted thereby lowering the ignition temperature to 475°F, 400°F, 325°F, etc. The longer the exposure the more susceptible to fire the paper becomes. Soon a fire hazard that has existed for, sometimes years, suddenly bursts into flames for no apparent reason.

During fire inspections, I found that the most common excuse for not wanting to correct a fire hazard was “that’s been like that for years and nothing’s happened!” Remember, just because nothing’s hap-

An Unspoken Fear of Rural Residents

pened doesn't mean it's *not* going to happen in the next minute or the next year.

Here are some additional fire facts, according to the National Fire Protection Association, of which you should be aware. There are over 1800 house fires a day in the U.S. The majority of them occur between the hours of 6:00 p.m. and 12 midnight. The following is a list of fire causes in fatal house fires:

1. 39% careless smoking
2. 26% heating & cooking appliances
3. 14% lighters and open flames
4. 13% misuse of electricity
5. 6% hot objects
6. 2% undetermined

Keeping excessive heat buildup, ignition temperature, and the other fire facts in mind, it makes good common sense to stop being so apathetic about fire and to deal with the question, "What can I do to be better prepared to deal with an unwanted fire *when* it strikes my home?"

Fire department personnel answer this question by "pre-planning." This means that before a fire has occurred in a building, they have gone to the property and looked at the construction of the building, the occupancy load, the location of entrances and exits, the most logical places for a fire to start, and the size and shape of the building to better determine how much water, equipment, and personnel would be needed to suppress a major fire.

What I suggest is we all take a tip from the professionals and "pre-plan" our own homes but in a slightly different manner. Since preservation of life is our most important goal, let's develop a fire escape plan for our home, discuss the plan and practice it with all family members.

I know some of these steps sound silly and useless, but believe me when a fire is going on any one or all of them could mean the difference between *life* and *death*. ♣

Floor Plan

1. Draw a floor plan of your home on (preferably) a piece of graph paper.
2. Show two exits from each bedroom and show a meeting place outside the house.

Discuss procedures with your family.

1. Sleep with bedroom door closed. It will hold back smoke.
2. Your smoke detector will sound an alarm to wake you and your family.
3. Test the door. If hot, don't open it. Use alternate exit. If cool, brace your shoulder against the

door and open it cautiously. Be ready to slam it if smoke or heat rushes in.

4. Crawl on floor if you encounter heat or smoke.
5. Get out fast.
6. Go to the outdoor meeting spot so you can see that everyone is safe.
7. Don't go back in for personal items. People have died returning to a burning building.
8. Call fire department from a neighbor's phone.
9. Simulate exit drill once a year, just for practice.



activities

District 1

David Morris, Calhoun County Supervisor, conducted a Treasure Forest Program December 17 at the **Alabama Hermitage**. **Gerald Willis** was presented an award by **State Forester, C. W. Moody**. Thirty or more people attended the program.

Chuck Weber, Urban Forester for District 1, was invited to speak at the **Second National Urban Forestry Conference** sponsored by the American Forestry Association. The National Conference on Urban Forestry was co-sponsored by the Alabama Forestry Association, USDA, Forest Service, Extension Service, and others. Chuck's presentation was on development of tree ordinances. A copy of the conference report can be obtained upon request.

Weber has also been instrumental in organizing a group in **Huntsville** to formulate and pass an urban forestry ordinance for that city. The ordinance has gained wide-spread recognition through several of the municipal journals and other publications.

In December, **Philip Smith, Etowah County Supervisor**, held a forest field day at **Ballplay**. Hiwassee Land representatives explained cutting and burning procedures, and the ASCS office explained their FIP program.

A public hearing was held in **Scottsboro** in December. President of the Jackson County Association of Volunteer Fire Departments, **Jimmy Copeland**, presented his fire insurance savings tax proposal to a special CRD meeting. Also, present was chairman of Jackson County CRC Committee, **Mr. Helms**, and **Ben Richardson**, Representative of the 23rd District of the Alabama House and various other interested persons.

District 4

Tom Cambre, State Hardwood Specialist, met with Union Camp's Hardwood specialist February 15-16 in **Prattville** and **Greenville** to look at their Hardwood program and discuss possibilities for improvement.

District 4 has a TREE CITY U.S.A. County Forester **Guy Slayden** (Tallapoosa) has been working to have **Dadeville** certified as a Tree City. The official certification arrived in mid-February!

Dupont representative **Rom Kellis** conducted a meeting at District 4 Headquarters on February 9 at 2:00 P.M. The demonstration was the use of VELPAR L as well as the gun necessary for the application. Approximately 30 landowners and agency/cooperator representatives attended.

District 4 packaged about 3000 seedlings for Arbor Week programs in their seven county area. These seedlings went to civic groups and Camp ASCAA.

District 6

On January 25, 1983 the **Houston County Prescribe Burning Committee** along with the **Houston County Forestry Association** sponsored a prescribe burning tour. All interested landowners gathered at the Houston County office of the AFC at 9:00 for coffee and donuts. After the informal gathering a short orientation was given on the purpose of the tour prior to boarding the bus.

The first stop was a 20 acre stand of natural pine that had been burned once before. The purpose of this burn was for hardwood control and to open up the

stand for better visibility.

The second stop on the tour was a 55 acre planted pine stand that had a one time burn on it. The purpose for this burn was for hardwood control and hazard reduction.

The third stop, 40 acre planted pine stand, was primarily for hazard reduction, because it was in an area of high arson fires. This was also a first burn.

The fourth stop was to look at a second burn area. The purpose for this was for hardwood control, aesthetics and hazard reduction, due to a recent logging operation. Lunch was catered to the field and served on the grounds next to the prescribe burn area.

After lunch the tour resumed with a stop at a demonstration plot. An actual burn was carried out on an eight acre plot. As the burn was in progress, the entire procedure was explained from beginning to end. After the burn was completed we returned to the AFC office for a wrap-up and question and answer session.

Approximately 30 people participated in the tour. Everyone was impressed and willing to try prescribed burning on his own property.

District 8

A Demonstration Forest Tour was held January 11, 1983, on the **Mack Vines' farm in Baldwin County**. The tour was planned and held by the Baldwin County Forestry Planning Committee. Some of the topics that were discussed included

- Growing of Christmas Trees
- How to Conduct a Timber Sale
- Fuelwood Utilization
- Prescribed Burning

J. R. Crosby of Baldwin County and **Vivian and Mary White of Clarke County** were nominated to receive the

Fire Detection— “The Fustest with the Mostest”

by RALPH R. WILES, Chief Pilot

The above oft-quoted lines were originally spoken by a famous cavalry commander and well apply to the problem of forest fire detection in Alabama.

With limited forces for either a task before a cavalry commander or a fire suppression organization, early discovery

will dictate the amount of equipment and personnel required.

To meet the Alabama Forestry Commission's (AFC) desired goal of limiting fire size to ten acres or less, the airplane pilot, the tower lookout, or the public must discover and accurately report the

wildfire soon after ignition. Following the report, suppression crews must arrive quickly, suppress the fire, and be prepared for the next call. If any of these elementary requirements are not met, the penalty for being late with inadequate equipment and personnel will result in a large time-consuming fire with no forces remaining to be sent to new fire starts. With every large fire suppressed, it will obviously be necessary to put out many small fires to meet a ten acre average.

The second goal in fire control is to discover the wildfire within thirty minutes of ignition. This discovery time goal is

calendar*

Helene Mosley Award for the fine job of stewardship they have done on their lands. Mr. Crosby has been selected as one of the six finalists in the state and the selection committee will visit his property in the near future for a first hand look.

Rom Kellis of DuPont Chemical Company held a training session on the use of VELPAR L, a forestry herbicide. The meeting was held at the Forestry Commission's District Office in **Bay Minette**. The meeting was attended by AFC personnel, industrial foresters and landowners.

District 9

Louise Bone, I & E Coordinator for District 9 has received notification that her application for a grant from the W. Kelly Mosley Awards has been approved. The support grant will be used to help finance a **Nature Awareness Camp** to be held at the **Bear Creek Center, Hodges, Alabama**. The camp will be for 4th - 6th grade students to be selected by their teachers on the basis of interest. This camp is sponsored by the Garden Clubs of Alabama and the Alabama Forestry Commission, assisted by TVA, the Northwest Alabama Council of Local Governments, the Wildflower Society and others. This is the second year the camp has received funds from the W. Kelly Mosley Awards.

Danny Deaton, Colbert County Supervisor coordinated an outstanding group of cooperators who placed exhibits in Southgate Mall during the Arbor Week Festival on February 24-26. Tennessee River Pulp and Paper Company, Champion Paper Company, Homelite Chain Saw Co. Martin Stove Company, and several landscape companies had displays.

Lauderdale County held its "Free Tree Spree" on February 21, 1983, at the First National Bank of **Florence**. The

Bank has purchased 10,000 dogwood seedlings to be given to customers and homeowners for landscape purposes. A planting brochure designed by the Alabama Forestry Commission was given to each homeowner.

Stephen McEachron, Urban Forestry Coordinator for District 9 and **Danny Deaton, Colbert County Supervisor** will assist the **Tuscumbia Civitan Club** in a tree planting program in Spring Park, Tuscumbia, Alabama. The Civitan Club has donated \$750.00 for this project.

District 9 employees, accompanied by **Mrs. Hammie Stamps** of the Florence Garden Club and **USFS employees** held a plant dig in the **Bankhead National Forest**. The Alabama Forestry Commission has special permission from the USFS to remove native shrubs and wildflowers to use in landscaping the District 9 office site.

District 10

Lowndes, Montgomery and Macon counties held prescribed burning meetings in January with landowners and sister-agency people, both to plan and instruct for pine beetle demonstrations. These meetings were attended by about three dozen in all counties except Montgomery where the number was greater. Very successful demonstrations were held on U.S. Forest Service land in Macon County on February 8, and on the Thomas property in South Montgomery County later that same week. Attendance at each burn was good. **Lee County** is holding a forest landowners' fieldday later this spring. This has been an annual event now for several years. District 10 will have a **TREASURE Forest owners' fieldday** during the early summer. ♣

April 7—Marshall County, 10:00 a.m., Water Quality and Best Management Practices. Do forestry activities muddy the waters? Contact Larry Parker, 582-4212.

April 8—Jefferson County, 6:30 p.m., Alabama Forest Owners' Association Annual Meeting - Covered Dish Supper. Guest speaker will be Bealie Harrison, 1982 Tree Farmer of the Year. Program to take place at Vestavia Civic Center. Contact Sandra Jones, 823-6186.

April 15—Annual Forest Festival Awards Banquet, Lampliter Dinner Theater, Montgomery, 6:00 p.m. For tickets and information contact Allane Wilson, 832-6587.

April 16—Alabama Forest Festival! 9:00-5:00, Garrett Coliseum, Montgomery. For more information contact Cynthia Page, 832-6610.

April 18 - 21—Duke University, Symposium on "Nonindustrial Private Forests: A Review of Policy and Program Studies."

April 27—Huntsville, technical session for employees of the Alabama Forestry Commission and other interested persons. Contact District One Headquarters, 536-5911, ext. 246.

Late April—Date not yet confirmed. Demonstration Forest Tour, Mobile County. Call Pat Waldrop, 649-1380.

May 17—Houston County Forestry Association in Houston County sponsors session on Hardwoods, 7:00 p.m., Western Steer in Dothan. Guest speaker is Tom Cambre. Call Franklin McAiley, 677-5454.

June 16—Marketing Seminar for Tennessee Valley RC & D, Fort Payne, 7:00 p.m. Call Donald Cole, 845-1331.

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

obviously tied to the size of the fire. Late discovery, long travel time, fast burning, and high hazard days combined lead to large fire size.

Any fire suppression organization can be taxed by a fire problem beyond its suppression capability. This was evident recently in a Western state where over a hundred homes were destroyed in an area protected by one of the best-equipped fire control organizations in the United States. Whether it is due to multiple or uncontrollable fires, we cannot cope with a catastrophic situation.

The airplane helps to prevent the catas-

trophy and, when the suppression forces become committed, continues to help hold down the losses.

Managers today have the patrol aircraft operating before the fire begins. If a fire occurred last night, the pilot is aloft at dawn to check those fires for catchout. He then patrols to detect the fires at ignition as near that time as possible so forces can quickly suppress that fire and be prepared for further action. If and when the fire situation reaches the point when all available forces become committed, the patrol pilot assigns his fires even closer priorities than before. There are decisions: Do

these fires threaten homes, churches, schools, valuable property (pine plantation or scrub)? How much can it burn before confinement by barriers? When will the next unit be available? Where is the unit in distance away?

Financing does not allow the "mostest" in fire control and it is questionable as to whether it would be justifiable for these rare catastrophic situations.

Considering that nearly nine thousand smokes and over three thousand wildfires have been detected, Alabama Forestry Commission aircraft are finding the most and with the least. ♣

PRESCRIBED BURNING— USEFUL TOOL PRESERVES FOREST NUTRIENTS

by PAUL S. FRAN



The forest floor is an important part of the forest. A large part of the nutrients present in the forest are contained in the forest floor. Leaves, branches, bark, fruit, and even fallen trees in various states of decomposition form the forest floor. This rotting material frees nutrients for the use of growing forest vegetation. Since fire burns the forest floor, an awareness of the effects of fire on the forest floor can be useful to forest managers and landowners.

Organic matter in the forest floor and surface layer of mineral soil contains most of the nutrients available to growing vegetation, a large number of absorbing roots of growing forest vegetation, and microorganisms. This is particularly true of sandy soils. Burning organic matter increases concentrations of mineral elements in the soil. The amount of relative increase depends on the amount of the nutrient present in the soil prior to the fire. Some nutrients are vaporized as the organic material burns and are not released into the soil. Since the decomposition of organic matter releases nutrients slowly, whereas burning organic matter releases nutrients rapidly, the difference in the effect of the two processes on the nutrient cycle is related to the fate of the nutrient once it is released. Very hot fires may temporarily sterilize the soil. This will reduce the action of microorganisms in nutrient cycles and in the relationships they have with forest vegetation.

A hot fire can destroy all the organic matter at the soil surface. Obviously, if this occurs, there will be no more forest floor until vegetation can be re-established. In the interim, wind and water erosion may be increased, removing all or part of the nutrient-bearing surface layer of mineral soil. In addition to erosion, some nutrients in the soil, notably nitrogen and sulfur, may be vaporized and lost to the atmosphere as a result of the fire. Nitrogen and sulfur are frequently the limiting nutrients in an ecosystem. Another way nutrients may be lost to the ecosystem is through leaching or washing away. With the entire forest floor removed, including the many roots which would be available to absorb nutrients, many nutrients can be lost through such erosion.

The problem seems to be the intensity of the fire. If the forest floor is not completely consumed by the fire, the harmful effect on the forest nutrient cycle will be less. Fire intensity is related to the amount of fuel available as well as fuel

arrangement, fuel moisture content, and atmospheric instability. Of these factors, fuel availability and fuel arrangement can be controlled by the forest manager.

Control of fuel by the forest manager can be accomplished in many ways. Not all the possible methods are feasible, however. Certainly it would not be feasible to cut, rake, and carry off the fuel build-up in a forest by hand or even by machine. The best method of fuel control in our forests is usually the prescribed burn. With this method, the forest manager can predict the result of the burn prior to conducting the burn. By varying the prescription, results may be obtained as desired to fit the purpose of the prescribed burn.

When a fire burns according to prescription, the forest floor is not completely consumed. Enough of it remains to continue protecting the soil and feeder roots of forest vegetation. Thus nutrients released by prescribed burning can be absorbed by undamaged roots. Raindrops can be cushioned by the remaining forest floor so they do not cause erosion and microorganisms can continue to function. After several years of forest management including the use of prescribed burning, the forest can be safe from wildfire. There will not be enough fuel available for intense wildfires to develop and remove the nutrient-rich forest floor.

Although fire itself does not appear to have direct adverse effects on forest nutrients, intense wildfires can have indirect adverse effects by setting the stage for erosion, leaching, and interruption of the action of microorganisms. A method of reducing the intensity of fires so no damage occurs is the use of prescribed fire to control fuel build-up. The Alabama Forestry Commission has a roster of trained personnel who can evaluate your forest and for prescribed fire and make a fire prescription for your forest. If you desire, this individual will also conduct the burning for a small fee. ♣

Related Readings

Mobley, H. E. et. al. 1978. *A Guide for Prescribed Fire in Southern Forests*, USDA Forest Service Southeastern Area S and P.F.-41. 41 pp.

Prichett, W. L. 1979. *Properties and Management of Forest Soils*, John Wiley and Sons, New York, x+500 pp.

Richter, D. D. et. al. 1982. *Prescribed Fire: Effects on Water Quality and Forest Nutrient Cycling*, Science 215:661-663.

Wells, C. G. et. al. 1979. *Effects of Fire on Soil*, USDA Forest Service Gen Tech Rep VO-7. iii+34 pp.

When Prescribed Burning Is Used as a Forestry Tool

“TAME” FIRE CAN AID OUR FORESTS

by HUGH E. MOBLEY, Chief, Fire Prevention & Control

Smokey the Bear has no quarrel with the use of prescribed fire in the forests—when it is used by trained and experienced foresters or forest technicians for a specific purpose and under specific conditions.

Smokey is a specialist—a forest fire prevention specialist. He is the right arm of the forest resource manager in making the public aware of the problem of wildfires and how to prevent them. The scourge of the forest is the terrific loss from wildfire, and Smokey is dedicated to eliminating this loss. His energies are directed toward the public, especially children, in motivating us to be more careful with fire in or near our forested lands.

Prescribed burning has been an indispensable tool of forest resource management for over twenty years. It is a scientific prescription designed to cure an ailment of the forest. This burning, however, is under carefully controlled conditions, with moist soil, cool temperatures, and light winds, resulting in a fire that consumes only the undesirable understory and debris without damage to the timber, soil, or other resources.

The custom of setting wildfires, plus careless wildfires, is a real problem in the South. We average over 100,000 wildfires and over 4 million acres burned each year in the United States. Over one-half of these wildfires, and almost one-half the acres burned, are in the South—over TWO MILLION acres every year! Much of this loss is because people do not realize the damage done by wildfires. Many of the trees die later. Many trees slightly weakened by wildfire may later be attacked and killed by insects.

Prescribed burning is a desirable and economically sound practice on most pine sites of the Southeastern states. In many cases, prescribed burning is the only practical solution to reducing hazardous fires, thus helping Smokey in reducing the damage from wildfires. Evidence indicates that elimination of prescribed burning would cause a six-fold increase in the acreage ravaged by wildfires each year in many areas of the South.

Prescribed fires are also useful in wildlife habitat improvement. Prescribed burning (using fire under exacting conditions) substantially increases the quantity and quality of several forage plants utilized by deer, turkey, and quail. To improve wildlife habitat, both the size and distribution of patterns of burning sites need to be carefully planned to insure the proper balance between the burned and unburned habitat. Some areas are not adaptable to the use of “tame” (prescribed) fire.

Foresters use great care in planning the use of prescribed fire. They make sure that the temperature, humidity, wind, and other weather conditions are just right. Prescribed burning is a complex tool and should be used only by those trained and experienced in its use. Proper analysis, diagnosis, preparation, and execution are needed for each and every area.

We can stick with Smokey the Bear and still use prescribed burning to reduce the dangerous accumulation of fuels and enhance the beneficial uses of our forest resources. However, Smokey reminds us to please help prevent forest wildfires and leave the prescribed burning to the experts. ♣



EDITOR'S UNDERSTORY

by CYNTHIA K. PAGE

"No, that's not snow," the reassuring voice piped in with the slightest hint of a chuckle at my stupidity. Of course, my eyes told me differently. I thought surely that our expedition had gone astray and we had ventured near the North Pole. However, overalls hanging out on porches to dry indicated that we were simply in rural Alabama.

As I stepped out of the car, I couldn't suppress an "I told you so" as the powdery white snow flurried in circles around us. Warmth came quickly enough, though, as Russell Campbell extended his hand and cheerily said, "You must be Cynthia!" Standing before us was a cherub-like man, about 5'3", one of the very few adults that I can look face to face. His brown eyes sparkled through a squint caused by a broad smile that slightly raised his round, rosy cheeks. With the snow, freezing temperatures, and imagining a beard, you might could picture jolly St. Nick!

After some conversation, I decided that Mr. Campbell must be nearly the same age as the legendary gift-giver anyway. He didn't look 60, much less 70, so surely he had the feline attribute which afforded him the pleasure of nine lives! He's already on number three. He's retired military, retired postal worker, and retired on social security.

As I watched him telling about his land, I noticed that his right foot was constantly patting, indicating an energy that could not be quieted! Reared in Birmingham, he always knew that he'd have to take over the farm someday, and he did. Now his career is looking after the "ole home place" which is about 15 miles from his city home in

Heflin. There's no farming there now, just a Tree Farm and a Treasure Forest covering 421 acres!

As I watched him hiking around in a 30° temperature (no telling what the chill factor was), I was amazed at his stamina. "Younger people than he" were pulling up collars and shoving hands into pockets. He showed us where the pine beetles were responsible

for a cut, and he pointed proudly at his young pines which covered a clay hill. A big supporter of the WRAP (Woodland Resource Analysis Program) Plan, he says that it's nice not to have to depend on the land for his livelihood, even though he expects to reap some benefits. "We don't 'spect to get rich," says Campbell, "we're just gonna have some fun and take care of the resource at the same time." He avoided the question of age as if it didn't present a problem at all. As an indication, when asked about planting trees, he responded, "Why, I'm in no big hurry. If we don't plant this year, we'll plant next year!"

Even though he spoke with genuine affection for his children, you somehow got the impression that this project was exclusively his. And, when he's finished with this one, he's talking gold and mica mines!

As we drove away, that energetic little man stayed in my mind. Who knows, by the time I'm 70, he'll probably be in his seventh life, planning, dreaming, and doing!



ALABAMA FORESTRY COMMISSION DIRECTORY

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

DISTRICT 1—Samuel Gravel, District Forester, 528 Courthouse, Huntsville 35801, 536-5911, Ext. 246-247; **Calhoun County**—David Morris, 110 East Ladiga, Jacksonville 36265, 435-6245; **Cherokee County**—Stanley Anderson, Box 342, Centre 35960, 927-3163; **DeKalb County**—Donald Cole, Box 744, Ft. Payne 35967, 845-1331; **Etowah County**—Philip M. Smith, Route 3, Box 248B, Attalla 35954, 538-2535; **Jackson County**—Mike Banzhoff, Room 50, Jackson County Courthouse, Scottsboro 35768, 574-3217; **Madison County**—Charles Weber, 528 Courthouse, Huntsville 35801, 536-5911, Ext. 246-247; **Marshall County**—Larry W. Parker, Box 262, Guntersville 35976, 582-4212.

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

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

DISTRICT 4—Ernie O. Moore, District Forester, Route 2, Box 100, Henderson Dr., Dadeville 36853, 825-9284; **Chambers County**—Floyd Clanton, Box 501, Lafayette 36862, 864-8163; **Clay County**—Earl H. Smith, P.O. Box 566, Ashland 36251, 354-2471; **Cleburne County**—R. Glenn Berry, 206 Hunnicut St. 36264, 463-2876; **Coosa County**—Ralph Woolley, Rt. 1, Box 34, Weogufka 35183, 245-6227; **Randolph County**—J. Stephin Nix, P.O. Box D, Wedowee 36278, 357-2178; **Talladega County**—Clyde Atkisson, P.O. Box 561, Talladega 35160, 362-4848; **Tallapoosa County**—Guy Sladen, P.O. Box 451, Dadeville 36853, 825-4244.

DISTRICT 5—H. C. Lucas, District Forester, Box 631, Selma 36701, 872-2384; **Autauga County**—Harold K. Cleveland, Rt. 4, Box 25, Prattville 36067, 361-0576; **Bibb County**—Joc B. Barton, Box 278, Centreville 35042, 926-4917; **Chilton County**—Tobie W. Mayfield, P.O. Box 223, Clanton 35045, 755-3042; **Dallas County**—James R. Bible, Box 631, Selma 36701, 875-7131; **Marengo County**—James A. Black, Box 473, Linden 36748, 295-5811; **Perry County**—David Pearce, Box 482, Marion 36756, 683-8537; **Wilcox County**—Paul A. Wingard, P.O. Box 328, Camden 36726, 682-4421.

DISTRICT 6—Marion D. Monk, District Forester, Box 61, Ozark 36360, 774-5139; **Barbour County**—Donald VanHouten, Box 163, Clayton 36016, 775-3496; **Coffee County**—Wayne Roberts, P.O. Box 413, New Brockton 36351, 894-6734; **Dale County**—Horace B. Hancock, Box 61, Ozark 36360, 774-8112; **Geneva County**—Ronnie Hickman, Rt. 2, Box 536, Hartford 36344, 684-2876; **Henry County**—Kenneth L. Blacklock, Sr., Box 351, Abbeville 36310, 585-2403; **Houston County**—Frank McAliley, Box 477, Dothan 36301, 677-5454; **Pike County**—John Wayne Craft, Box 167, Troy 36081, 566-3436.

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

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

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

DISTRICT 10—David L. Duckett, District Forester, 2181 Federal Drive, Montgomery 36109, 832-6580; **Bullock County**—W. J. Green, Box 392, Union Springs 36089, 738-3040; **Elmore County**—C. R. Carpenter, Rt. 4, Box 70, Wetumpka 36092, 567-5486; **Lee County**—J. B. Coker, Box 502, Opelika 36801, 745-6824; **Lowndes County**—William C. Davis, Box 206, Hayneville 36040, 548-2402; **Macon County**—Benny Faulkner, Rt. 1, Box 204, Tuskegee 36083, 727-3783; **Montgomery County**—F. Bruce Johnson, 2181 Federal Dr., Montgomery 36109, 832-6580; **Russell County**—Melvin Phelps, Route 2, Box 4-N, Seale 36875, 855-3302.

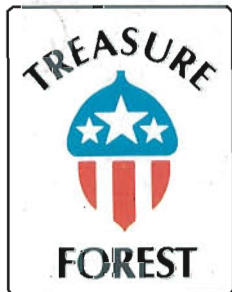
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