

ALABAMA'S
TREASURED
FORESTS
SUMMER 2005

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22nd Annual **Alabama Landowner
& TREASURE Forest
Conference**

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Auburn, AL

Make your plans now! - (See pages 16-17)

A MESSAGE FROM . . .



BOB RILEY
Governor, State of Alabama

Alabama farmers, forest landowners, and small rural producers are some of the most productive in the world. Farm and forest products grown by Alabamians help to feed, clothe, and shelter thousands of people both inside and outside our state boundaries.

A new program is available to rural producers of all venues and sizes to help improve their economic incomes as well as help increase tourism dollars for the entire state. Alabama's Agri-Tourism Trail is a partnership between the Alabama Cooperative Extension System, the Alabama Bureau of Tourism and Travel, the Alabama Department of Agriculture and Industries, and the Alabama Farmers Federation to promote the state's rural producers and their products to tourists from around the country.

Currently over 70 rural producers and businesses are participating in the program including u-pick operations, produce stands, pumpkin patches, nurseries, TREASURE Forests, hunting opportunities, riding trails, farm bed and breakfasts, and agricultural historical sites. Specific information about the products and services these rural farmers and businesses provide is available on the Trail's web site (www.alabamaagritourism.com) where tourists

nationally and internationally can see what fresh produce, product, or agri-tourism experience is available during their stay in or their trip through Alabama.

Although this program will bring many benefits to our rural farmers, landowners, and entrepreneurs, one of the greatest benefits to visitors will be the exposure to the beautiful rural areas of our state and our exceptional quality of life. The Alabama Agri-Tourism Trail will showcase the heartbeat of our state – our farms, forests, and rural businesses. 🏡



TIMOTHY C. BOYCE
State Forester

Every summer the media turns our attention to the western region of the United States as raging wildfires burn across the land. We watch as fires consume acres and acres of trees and in many cases, homes and other structures. We shake our heads and say we're glad things such as that don't happen in Alabama.

What they never tell you is that the 13 southern states lead the nation in the number of wildfires, averaging about 45,000 fires each year, and many areas of Alabama have the potential for the catastrophic fires that we see out west.

With our state's population increasing each year, more and more homes are being built in forested areas or in the interface where the urban area and wildlands meet. With this rapid increase in urbanization, the potential for loss of life and property increases with each structure that is built.

According to a newly released publication, *Fire in the South: A Report by the Southern Group of State Foresters*, the status and characteristics of the wildland fire problem in the southern states are changing. The growing fire problem, combined with decreasing state capacity, is providing an environment for problems in the future.

Some of the key findings of the *Fire in the South* report include:

- State agencies are responsible for wildland fire suppression on 94% of the South's 214 million acres of land. The greatest portion of this land is owned by private landowners.
- The 13 southern states produce 65% (almost two-thirds) of the nation's wood fiber. Forest industries in the south employ more than 2.2 million workers and they contribute over \$251 billion to the southern economy each year.
- The South is one of the fastest growing regions in the nation. In 2001 we were home to seven of the nation's ten fastest growing counties.
- Because of changing demographics, traditional firefighting tactics such as prescribed fire and plowed fire breaks are more difficult to employ. With the increasing wildland/urban interface, structural losses and loss of life from wildfire will be a greater risk.

This report, along with the Southern Wildfire Risk Assessment that will be released soon, provides state agencies with valuable information that will assist them in working with counties, cities, and communities in prioritizing and planning in order to provide the best fire protection service that we can with the resources that we have available. Hopefully, we will be able to reduce the potential and severity of wildfires, thus providing a safer environment to work in and raise our families. 🏡

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Cover and overlay: "Pine Glade at Dawn" by W. C. Baggett. Recipients of the *Helene Mosley Memorial TREASURE Forest Award* and the prestigious *W. Kelly Mosley Environmental Award for Achievements in Forestry, Wildlife and Related Resources* at this year's Landowner & TREASURE Forest Conference will receive a framed, limited-edition reproduction of this beautiful depiction of forestry and wildlife. It is the third in a series of paintings commissioned for the Mosley award, all of which were painted by W. C. Baggett.

Persons interested in submitting a nomination for the Mosley award should contact Dr. Kathryn Flynn by email: flynnka@auburn.edu; phone: (334) 844-1036; or write to: Mosley Professor, School of Forestry and Wildlife Sciences, Auburn, AL 36849-5418. The Steering and Selection Committee meets twice a year to review nominations which are accepted year-round.

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Roy and Mary Reeves: *In Love With Their Land*

By *Coleen Vansant*,
Public Information Manager,
Alabama Forestry Commission



Photo by Coleen Vansant

It takes someone special to be a TREASURE Forest owner. They seem to stay a little longer, work a little harder, and love a little more than anyone else – these are the qualities that place them in the elite group they are in. These are the qualities of Roy and Mary Reeves of Randolph County.

“Most people that have land – they love it!” says Roy. Both he and his wife Mary have a passion for their farm and a tremendous sense of pride in the decades of sweat they have put into the improvements on their land. All one has to do to know this, is talk to them about their farm.

Both Roy and Mary were born and raised in South Alabama, coming to Randolph County in 1968 when Roy got the position as president of a local bank. In 1968 they purchased their first land

and began to actively manage 220 acres. They say when they first acquired the land it had been cut over, so their task at hand was to reclaim it by replanting. This was the beginning of their love affair with the farm. Since then, they have added to their property holdings bringing the total acres to 355.

Turning Disaster into a TREASURE

Although they had been good stewards of their land for many years, the couple says they did not begin intense management under the TREASURE Forest concept until 1996. When Hurricane Opal raged through the state the year before, the couple had around 70 acres of timber that was 90% damaged. After salvaging what they could, they were interested in replanting. They were introduced to the

TREASURE Forest program when Alabama Forestry Commission personnel serviced a cost share referral. Roy began going to the Randolph County Forestry Planning Committee meetings where he learned more about TREASURE Forest, along with meeting other landowners that were participating in the program.

“When Opal hit, things changed,” Roy says. “I was doing things in a small way, but had to change and do things in a big way.”

Roy and Mary have three management objectives on their land. The first is timber, the second is wildlife, and the third is aesthetics. The timber on their property is very diverse; they have everything from three-year-old cherry bark oak and sawtooth oak, to mature timber that was part of their first reforestation effort in 1968. Although much of the property is in vari-

ous ages of longleaf and loblolly plantations, Roy says he has 20 acres of mixed even-age timber. He is managing both to see what the pros and cons are for each and determine “which is the best way to go.” The mature pine has been thinned three times.

Roy is currently working to prune his young pine. His goal is to try to get to a 24-foot height. He has done all of the work himself with the help of his grandson Luke. The couple also takes advantage of prescribed burning on the property, and they are currently on a three-year burning rotation in their pine plantations.

They finally got over the impact of Opal, only to be plagued with two natural disasters this winter. A tornado crossed the farm and damaged 25–30 acres of timber, including some large hardwoods in one of the streamside management zones. Also, the ice storm this year damaged many of the young longleaf.

Taking Care of the Farm’s Natural Resources

The Reeves say that when they first purchased the property, there were very few quail and no turkey. Now, after managing intensively they have abundant wildlife. Roy tells of seeing 3 gobblers and 18 hens at one time. A natural gas pipeline cuts through their property and Roy uses this for food plots. He keeps the grass bush hogged, but not all at one time to allow cover for the animals and birds. They have summer food plots with things such as corn, soybeans, peas, grain

sorghum, and sunflowers, as well as winter plots with tasty things such as turnips, wheat, and clover. There is a young orchard of fruit trees including pear, peach, and plum. Cherry bark oak, sawtooth oak, and chestnut have been planted to provide mast during the winter. They say it is very hard to come to the farm now and not see deer, turkey, and quail. Family and close friends hunt on the property.

The prescribed burning and bush hogging helps with the aesthetic quality of the land, and the couple has planted flowers to make it more attractive.

Water quality is very important to the Reeves and they have taken extra measures to ensure that the integrity of the water flowing through their land is preserved. They have around 25 water bars along their roads, plus fire lanes to divert water from the roadways and to prevent erosion. “It’s rough to drive, but you have to protect the soil,” Roy says. “We try to keep the roads in good shape.” In addition, grasses and other plants are also planted in high erosion areas to keep the soil from washing away.

Photo by Coleen Vansant



Diversity of the forest is evident on the Reeves Farm.

They also work hard on their stream crossings to make sure that they are stable. Mary herself laid brick on the ground at one stream crossing to make a secure path for vehicles to cross the water.

Education on the Farm

Using their farm as an educational tool is very important to the Reeves. Over the years, hundreds of people – from school children and boy scouts, to landowners on a farm tour – have visited the property.

For several years Reeves Farm has been the host of “Classroom in the Forest/Forest in the Classroom” where fifth grade students from the local school come to learn about forest management and good stewardship. The children visit different stations including tree identification, fire and prescribed burning, forest management, water quality, and hunting safety. A beautiful nature trail has been built by the couple that includes trees of different species marked with signs. Foot bridges have been constructed so that the



A Fathers Day gift that took three months to find.

children can go from one side of the stream to the other with ease.

Hundreds of boy scouts have visited the farm over the years to camp, learn about nature, and work on their skills. At one time the Reeves place was referred to as the Boy Scout farm. The couple hosts the annual county forestry judging competition and several forestry tours have been held there.

Roy and Mary both agree that educating children is very important. By visiting their farm and learning about good and responsible stewardship, they are hoping that the children will know that it is not bad to cut a tree and the experience will hopefully teach them to be better stewards of the land.

The forest and wildlife management practices also support one of Roy's hobbies – bee keeping. He currently has 20 hives that provide 10-12 gallons of honey each.

Over the past few years Roy has distinguished himself as a leader in the area



Photo by Coleen Vansant

A natural gas pipeline cuts through the property dividing a mature stand and a younger plantation. The open area is planted with seasonal wildlife foods.

forestry circle. In addition to being a former president of the local Forestry Planning Committee, he is currently serving as president of the county Alabama TREASURE Forest Association (ATFA) chapter. Roy also serves as the Northeast Regional Coordinator for ATFA.

One of the things that Roy is the proudest of is the fact that he has done most of the work on the farm himself. He has had two heart bypass surgeries and is on his second pacemaker. "This place has helped me to live longer," he declares. "It's been therapeutic and given me a better quality of life. When I'm working, I'm happy."

A Family Affair

As you travel over the Reeves property you have many opportunities to see that they share it all with the family. Every road and interesting stop on the farm is named for a

daughter, son-in-law, or grandchild. Aside from Reeves Road and Mary's Ford there are interesting places like Leigh's Loop, Seth's Overlook, and Kem's Cutoff.

Roy likes to tell a funny story on himself regarding a couple of signs on his property. Several years ago one of his daughters and grandson gave him a special Fathers Day present. All he was told was that it was green and white, somewhere on the farm, and that he would have to look for it. After three months and a lot of searching, he finally found his gift – two signs that read, "Longleaf Pines Planted by Roy Reeves (Granddaddy) 2000-2001."

The couple has passed on to their children and grandchildren their stewardship ethic and love for the land. Mary and Roy explain that at first, their two daughters did not care that much about the land. But over the years, Roy and Mary's enthusiasm and passion for their farm has rubbed off. Both daughters and their families are now TREASURE Forest owners. "We work to encourage them and teach them. I think they will carry on what they have started," Roy explains. He adds that they have promised that his and Mary's property would be the "Reeves Farm" for a long time.

"We hope in the future that our children and grandchildren will carry on what has been started here," Mary says. "Maybe they don't love it as much as we do, but they will learn to as they get older." 🌱

This young plum tree is just one of hundreds of fruit and nut trees that have been planted on the property.



Photo by Coleen Vansant

The Benefits of “Releasing” Seedlings

By Mac Prince, Staff Management Specialist Southeast Region, Alabama Forestry Commission

Why do we, as landowners/land managers, consider the release of seedlings? There are two main reasons. The first is to let the seedlings outgrow any competing vegetation. The second is to lessen competition between trees of the desired species.

Why don't we just release all seedlings that we plant? The reason to release in the first place is to make the stand more profitable. All the “up front” money spent just makes it take longer to pay off the investment. So, you should weigh the return versus the expenditure. If you spend \$25 per acre to make a return of \$15 per acre, release does not make good financial sense. If you are releasing to make sure you have a well stocked stand, then it does make good sense. If you are releasing to add three additional cords per acre at the first thinning, you need to assess the cost versus return.

What is release? It can be something as simple as mowing between the rows of a plantation, or something as sophisticated as a helicopter-applied tank mix to release natural seedlings.

The most often used method of release is herbaceous weed control used when planting pine seedlings. This is a proven method for improving return on investment and increasing survival numbers. When looking for adequate stocking, the expenditure is warranted and pays its own way.

Many times the question of release comes up when the stand has competing hardwoods. There are several chemicals that will do a good job of releasing the

crop trees. The question is: Will the release pay for itself? First, are the crop trees taller than the competition? If they are a foot or so taller than the competition, then they will outgrow their competition and make a stand which can be cleaned up with fire at a later date. The cost of the release spray will be around \$80 - \$100 per acre. How many cords of pulpwood will it take per acre to pay for the release? At the current price of \$19 per cord, it will take 5 1/2 cords. Will the release increase production the 5 1/2 cords

stand that has hardwood competition. *Velpar* had been used successfully by many landowners with sandy soil applying a grid pattern of treatment, and it is fairly economical. Mechanical treatments can also be employed to good effect. Weed eaters may be used to lower the number of competing trees, regardless of species, but these should be taken care of at a smaller size, if possible.

A mower or drum chopper can also be utilized with good success to lower competition by mowing or chopping in strips,



An example of pine seedlings that have been chemically released.

for repayment to investment, plus interest? If so, then do it. If not, then the decision will need to be made of whether the release is needed to ensure that the stand is viable. If stand viability is the question, then the release is needed, and the stand will just have to be less profitable.

A note on taxes here may be appropriate. Any release that is done before Year 4 must be amortized as a “stand establishment cost.” A release in Year 4 or after can be taken as an ordinary expense. If Uncle Sam is going to pay part of the tab, a release may look better.

There are a number of methods that can be utilized by landowners to release a

leaving about one swath between treated swaths. This method gives your selected trees the jump on the competition. It should be employed where the crop trees are growing “on site.” This method uses the growth rate of the crop trees, pines usually, to allow them to stay ahead of the competitors.

Remember, an acre of land is only going to grow a specific number of cords of wood per year. You can grow

those cords on 500 trees or you can grow them on 1500 trees.

Sometimes a combination of methods used during the rotation can be profitable, such as mowing strips in natural regeneration and releasing with chemicals at a later time.

Release is just another tool to make the timber stand more profitable. The current low pulpwood prices make release for improved production a practice that needs to be analyzed. If you are releasing to help ensure a well stocked stand, it is a viable practice. ♣



How You Can Prevent Forest Fires in the Hurricane Ivan Impact Area

By *Lou Hyman*, Assistant Fire Division Director, Alabama Forestry Commission

When Hurricane Ivan hit Alabama last fall, it damaged an estimated 11.8 million acres of forestland across the state. While a lot of the damage has been salvaged, many landowners still have stands with trees that are blown down or have tops broken out.

As the dead trees and tops dry out, they create increased wildfire hazards. These heavy fuels could cause even a small forest fire to intensify to dangerous levels.

Fire Behavior Problems

In February, 2005, the Alabama Forestry Commission (AFC) brought in a team of nationally certified Fire Behavior Analysts to look at the hurricane damaged area and identify potential fire behavior problems. The team found that storm damage varied greatly within the area, based on timber types and local wind conditions.

The biggest problem they identified was the heavy fuel loading as a result of tree blow-downs. These damaged areas had high fire hazards because of the large

amount of fuel on the ground, which means that a small fire can quickly escalate into a major conflagration. As these tops dry out, they become even more dangerous. In addition, the piled fuels create “fuel ladders” which enable the fires to climb off the ground surface and burn into the remaining tree crowns. Here they can cause severe damage and throw embers across the fire lines, increasing the spread of the fire.

Hurricane damage also creates fire containment problems and obstacles that hamper the building of control lines

around wildfires. The tops and fallen trees slow down the tractor-plows used by the AFC, forcing them to push through the obstacle or go around it. In a forest with heavy brush, these obstacles cause safety problems for the fire fighters by restricting their movements.

As a landowner, there are two ways to reduce the wildfire risk to your forest. One is to reduce the fuel loading and containment constraints, so that any fires would be low in intensity. The other action is to reduce the number of fires that occur.

Fire Mitigation

The first step that you as a landowner can take to reduce wildfire risk is to improve access within your forest. Existing firebreaks and woods roads should be cleared so that fire fighters can use them as a line of defense to stop wildfire. This is especially important around any homes or structures on the property. New firebreaks should be established to break up the property into manageable stands. These also help improve access into the property for recreation and when prescribed burning is done.

The best way to reduce fuel loading is to salvage the damaged timber. Salvage also reduces or eliminates the containment obstacles so that wildfires can be more easily controlled. Many landowners were able to salvage their timber this winter. Although damaged pine trees are not sellable for sawtimber now, harvesting them for pulpwood, even at depressed prices, will bring in some income and reduce the potential for catastrophic wildfires in your forest.

In some parts of the state, local contractors are available to come into the forest and chip up downed trees and tops. The resulting chips can be used for industrial fuel or other forest products, depending on local markets. There are also in-woods mulchers, which grind up the tops and spread the chips across the forest floor where the nutrients can be recycled. Both of these operations reduce the fire hazard by eliminating the heavy available fuel loads and opening up the stands for easy access.

Another way to reduce wildfire hazards is by prescribed burning. The careful use of controlled fire under exacting environmental conditions can eliminate hazardous fuels with minimal damage to

existing stands. Prescribed burning in stands with heavy hurricane damage is dangerous and requires the use of an experienced Prescribed Burn Manager. Burns need to be done during times of somewhat high relative humidity, and may take two or more burns to eliminate all the hazards.

Fire Prevention on Your Farm

The best way to prevent wildfire damage on your farm is keep wildfires out of the forest. The most common causes for wildfires in Alabama are careless debris burning and arson. Surprisingly, lightning causes less than one percent of forest fires in Alabama.

The AFC has guidelines for landowners to use when burning debris so that you can do it safely and not cause further damage or loss to your forest.

Burn one pile of forest debris at a time and keep the piles small (less than 10 feet in diameter). The piles should contain only natural vegetation or untreated wood products. Clear the area around the burn pile of any flammable material, including grass and pine straw. Keep the burn piles at least 50 feet from structures and any forest vegetation. Only burn when the winds are calm or light. It is too windy to burn if trees are swaying, flags are extended, or waves appear on open water.

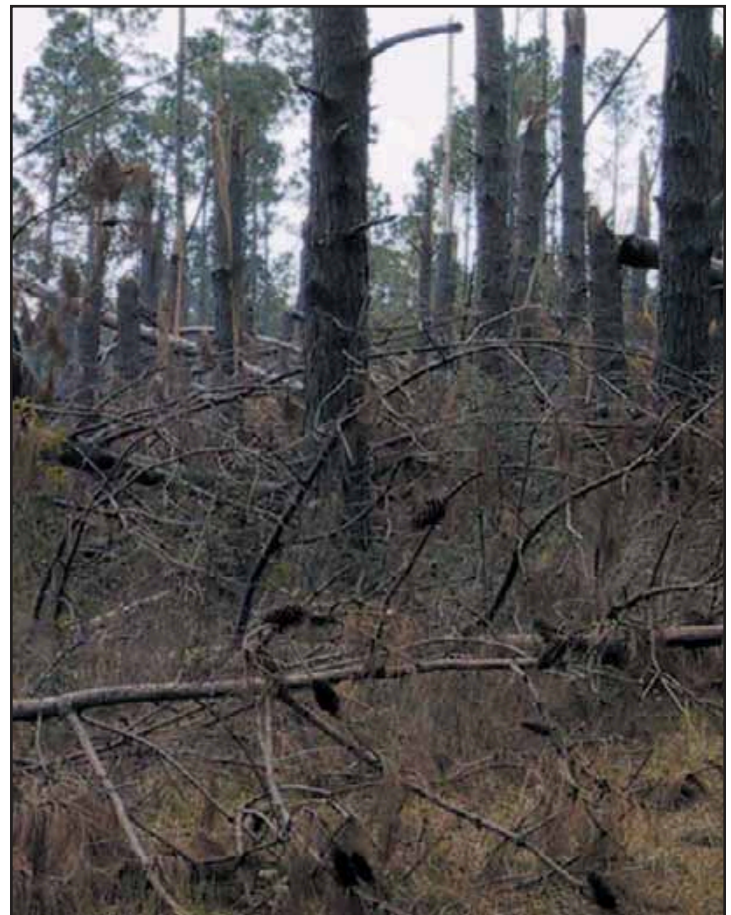
Be prepared to extinguish the fire if it becomes a nuisance. Maintain a connected water hose or at least five gallons of water and a shovel nearby. Attend the fire until it is completely extinguished. Before you burn any large debris piles or more than 1/4 acre of forestland, call the Alabama Forestry Commission for a

burn permit. The number is on the inside cover of your local phone book.

Arson, the intentional setting fire to another person's property, is hard to fully prevent. However, a landowner can do some things to reduce your risk. Maintain good relationships with your neighbors. This eliminates many causes of arson and also increases the number of people looking out for your land. The biggest deterrent to arson is having the community express displeasure at arson incidents. If the community feels that woods arson is bad, community members are less likely to set the woods on fire.

Another arson prevention technique is to reduce access to your land by outsiders. Installing gates on roads and having the main access go past the house will eliminate many arson chances.

No single technique will eliminate all risk for a wildfire on your forest, but by doing hazard mitigation and basic fire prevention you can have a better chance of protecting the TREASURE that is your Forest. 🌲



Containment obstacles - Tops and fallen trees not only hamper the tractor-plows used to build control lines around wildfires, but also cause safety problems for fire fighters.

How to Grow Beetle Bait – Revisited!

By *Jim Hyland*, Alabama Forestry Commission

Over the last 30-some odd years, the Alabama Forestry Commission (AFC) has worked with landowners in controlling Southern Pine Beetle (SPB) infestations and has tried to encourage landowners to take the easy way by preventing the conditions needed to feed the beetle. All pine forest management plans that are produced by AFC foresters include SPB hazard ratings and information on how to prevent attack by beetles. The best way is, of course, when the stand is established to plant fewer pine trees per acre. No more than 500 trees per acre should be planted; 450 would be even better.

What about stands that already exist with 700-900 trees per acre? An SPB prevention thinning project was funded in 2003-2004 to encourage landowners to reduce the SPB hazard rating of their stands. A new SPB Prevention project is being funded for 2005-2006 to encourage that additional stands be rated and the hazard reduced. The acceptance of the idea that SPB damage can be prevented has been a slow concept for some landowners to buy into. There is one issue that keeps recurring: Is it economical to thin a pine stand to reduce the SPB

hazard? The following is a discussion of the importance of SPB prevention by thinning your pine stand, viewed from an economic perspective.

The level of susceptibility of pine stands to attack by the Southern Pine Beetle is a result of the interaction of stand variables such as site index (how productive the site is), age, stocking level (number of trees per acre), site competition, and cultural practices. All of these variables contribute to the single-most important factor in a pine stand's susceptibility to SPB attack: stand vigor. In the absence of injury due to cultural practices or weather, stand vigor is influenced primarily by the basal area present on a given site at a given time.

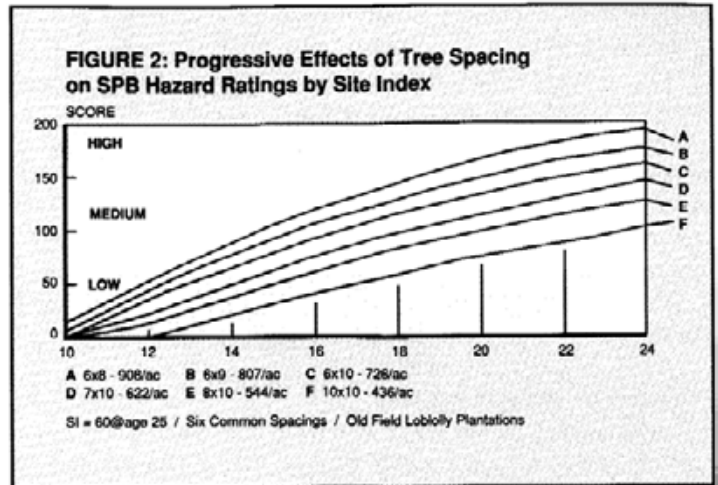
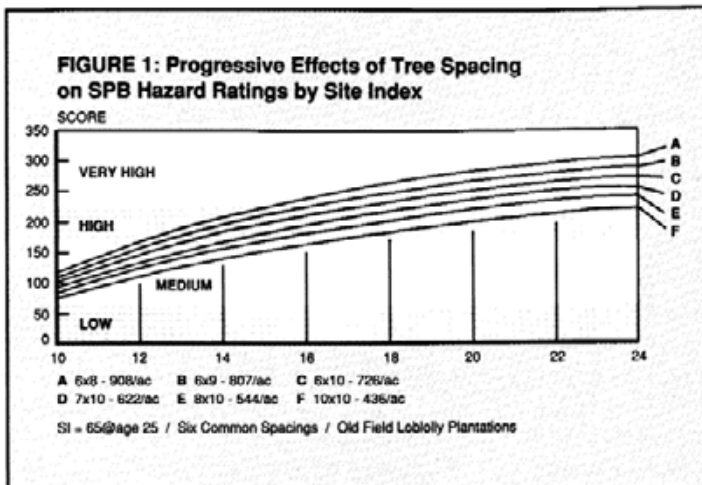
The initial stocking level plays an essential part in determining stand basal area at any time during the stand's rotation. It therefore plays an essential part in the susceptibility of pine stands to SPB attack as the stands progress through time.

Low initial stocking levels can prolong the entry of pine stands into preferred sites for SPB attack. But is it economically feasible, in terms of stand productivity and financial return, to use lower initial stocking levels?

As demonstrated by the graphs of SPB susceptibility in Figures 1 and 2, when initial stocking levels increase, the following can be observed: 1) stands enter hazard categories at earlier ages relative to stands on the same site but at lower initial stocking levels, and 2) the degree of hazard within a certain hazard rating is more pronounced than for stands on the same site at the same point in time.

These two occurrences relate, on the ground, to a higher risk of attack by the SPB as initial stocking levels increase. Likewise, the severity of infestations can be more pronounced in stands of higher initial stocking levels due to the more widespread occurrence of trees susceptible to attack. For a forest landowner, this could lead to unplanned activities detrimental to the overall profitability of the stand.

For example, on highly productive old field sites where the SPB hazard reaches concerning levels at early ages, an infestation can occur before trees are of merchantable size. Therefore, the landowner could be forced to salvage (at a reduced stumpage price) or cut and leave the infested portion of the stand in order to control the outbreak. Furthermore, the





situation could dictate a complete pre-commercial thin in order to reduce the risk of further loss. Often this is not a desired cultural practice within the financial framework of a forest landowner, particularly when cash flow is considered.

By using lower initial stocking levels in appropriate situations, the chance of this type scenario occurring can be greatly reduced. This reasoning makes a very good argument for using low initial stocking levels in reducing SPB hazard of stands, but is it economically feasible?

ECONOMIC FEASIBILITY

Economic feasibility is based not only on the product you are growing, but also the landowner's management objectives (pulpwood company feeding a mill, a Tree Farmer, a sawmill company, a multiple-use landowner, a TREASURE Forest, or a combination of any of these). In this article we are using pulpwood production and chip-n-saw as objectives. Comparisons were made using the Mississippi B SPB Hazard Rating System (Nebaker and Honea 1984) and YIELDplus with SMART version 2 (TVA, 1990).

As seen in the comparisons, for instance, where fiber production is the objective, higher initial stocking levels make the best use of most all sites on shorter rotations with no merchandising possible or planned at the time of harvest. This results from the higher yield in terms of cords produced per acre over the rotation. However, based on economic

indicators, when product merchandising is implemented, certain sites perform better at lower initial stocking levels.

Table 1 is the comparison of different number trees per acre, rotations, products, and economic indicators. For simplicity, we will use Annual Equivalent Value (AEV) as a factor to determine if lower spacings are economical.

Although in most instances the economic indicators support the use of the higher initial stocking levels for pulpwood rotations, the AEV offers a more graspable interpretation of the difference between the initial stocking levels in terms of profitability. The AEV expresses the Net Present Worth (NPW) in terms of annual per acre payment (in 1990 dollars). This figure can be used in more comprehensible fashion. By comparing the difference in AEV between the various initial stocking levels for the same set of circumstances, with the difference in SPB hazard between the same initial stocking levels, an idea of the validity of using one initial stocking level over that of another can be more readily evaluated.

For example, in Table 1A the AEV for 908 trees per acre for a 25-year pulpwood rotation with no chip-n-saw market is \$18 per acre. The AEV for 436 trees per acre is \$19. Comparing this benefit to the difference in SPB hazard rating (Figure 1) for the 25-year period, we see that another benefit afforded by 436 trees per acre over 908 trees per acre is

(Continued on page 31)

TABLE 1. ECONOMIC COMPARISON OF SIX COMMON TREE SPACINGS						
Pulpwood Rotations of 20 and 25 Years with Product Merchandising						
Old-Field Loblolly Sites						
Site Index: 65 @ Age 25						
A. Pulpwood and Sawtimber Product Merchandising						
Trees/Acre	Age 20			Age 25		
	NPW	AEV	IRR	NPW	AEV	IRR
908	\$255	\$21	13.2%	\$264	\$18	11.7%
807	\$248	\$20	13.4%	\$252	\$18	11.9%
726	\$247	\$20	13.7%	\$256	\$18	12.2%
622	\$246	\$20	14.0%	\$262	\$19	12.5%
544	\$244	\$20	14.3%	\$267	\$19	12.8%
436	\$241	\$19	14.7%	\$267	\$19	13.2%
B. Pulpwood, Chip-n-Saw, and Sawtimber Product Merchandising						
Trees/Acre	Age 20			Age 25		
	NPW	AEV	IRR	NPW	AEV	IRR
908	\$413	\$33	15.4%	\$421	\$30	13.4%
807	\$407	\$33	15.7%	\$405	\$29	13.6%
726	\$405	\$33	16.0%	\$397	\$28	13.7%
622	\$397	\$32	16.3%	\$385	\$27	13.9%
544	\$383	\$31	16.5%	\$371	\$26	14.0%
436	\$368	\$30	16.7%	\$361	\$26	14.4%

*Note: All values are per acre.
NPW: Net Present Worth / AEV: Annual Equivalent Value / IRR: Internal Rate of Return*

Selling Your Timber in Today's Market

By *Walter E. Cartwright*, Assistant Director Forest Management Division
and *Bruce Springer*, Director Forest Management Division, Alabama Forestry Commission

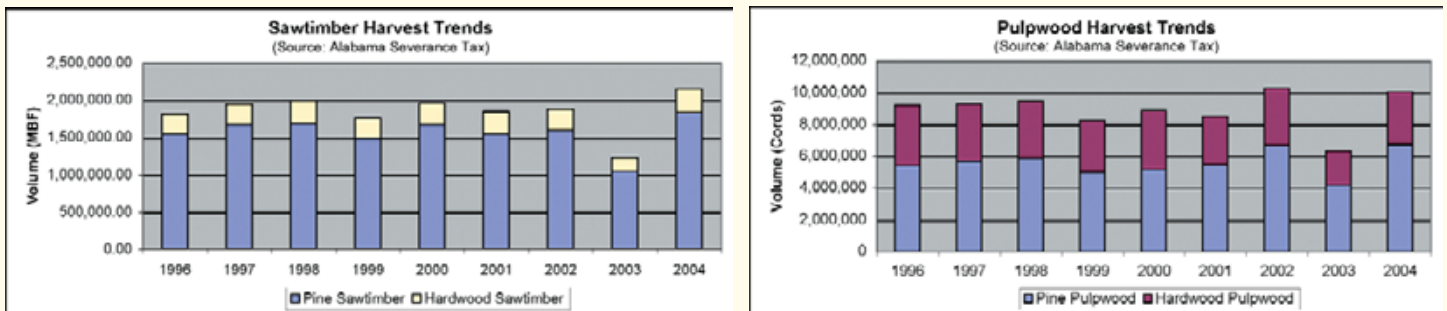


Figure 1 - Alabama Harvest Trends for 2004

Markets for all timber products have been on a roller-coaster ride for most landowners. Hurricane Ivan timber salvage flooded markets, but sawtimber prices were partially offset by good markets for lumber, plywood, and engineered wood such as oriented strand board. Pulpwood markets have been especially bad, due again to oversupply and poor local and international markets for pulp. This article will explain those trends, track stumpage prices over the past year, and provide landowners with a tool to assist them in selling timber in today's market.

Also included in this article are locations of the major wood using industries in Alabama that purchase timber from landowners, information on how to contact timber buyers, and how to contact forestry vendors that can help get your property site prepared and reforested after harvest.

Combined harvests of all four major timber products (pine sawtimber, hardwood sawtimber, pine pulpwood, and hardwood pulpwood) increased by approximately 67% during 2004, with sawtimber harvests reaching a nine-year high (Figure 1). The forest industry responded well to improved domestic and international markets by increasing production levels, buying and storing hurricane-salvaged wood utilized in supplying

materials to rebuild homes and businesses that were destroyed by four major hurricanes in the United States and the Caribbean.

Alabama harvests of pine sawtimber in 2004 were approximately 1.8 billion

board feet, while hardwood sawtimber was 313 million board feet. Sawtimber accounted for 34% of the total volume harvested. Pulpwood harvested in 2004 increased significantly to approximately

(Continued on page 14)

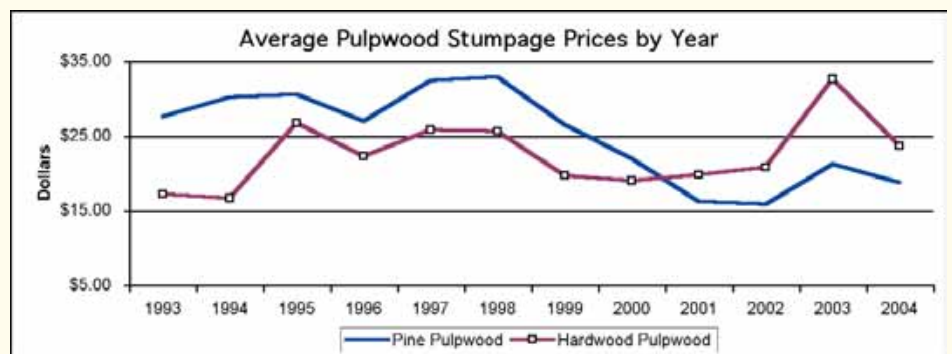
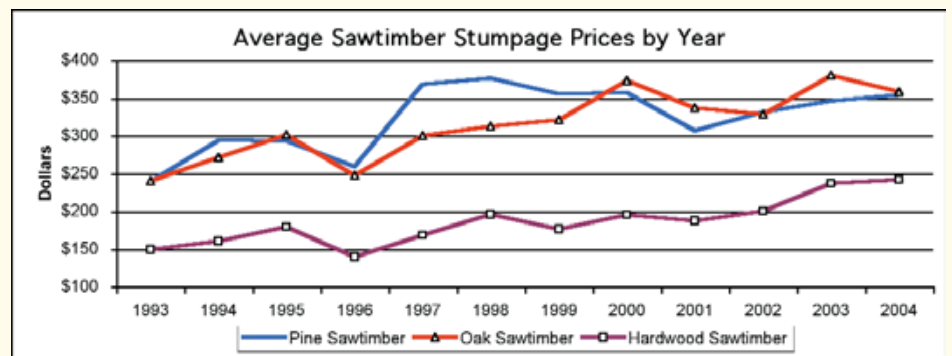


Figure 2 - Alabama's Price Trends by Timber Products

Source: Timber Mart-South Price Report

Alabama Wood Based Industries

T E N N E S S E E



PULP & PAPER

- Alabama Pine Pulp Co., Inc. - Monroe
- Alabama River Newsprint Co. - Monroe
- Alabama River Pulp Co., Inc. - Monroe
- Boise Cascade, LLC - Clarke
- Bowater, Inc. - Talladega
- Georgia-Pacific Corp. - Choctaw
- Gulf States Paper Corp. - Marengo
- International Paper Co. - Autauga
- International Paper Co. - Dallas
- International Paper Co. - Lawrence
- MeadWestvaco, Corp. - Russell
- Smurfit-Stone Container Corp. - Jackson
- Smurfit-Stone Container Corp. - Escambia
- Weyerhaeuser Co. - Wilcox

VENEER, PLYWOOD

- Browder & Son Veneer Co., Inc. - Clarke
- Cahaba Veneer, Inc. - Bibb
- Capital Veneer Works, Inc. - Montgomery
- Chattahoochee Veneer - Barbour
- Georgia-Pacific Corp. - Monroe
- Georgia-Pacific Corp. - Talladega
- H.E. Browder Veneer Co. - Crenshaw
- Howell Plywood Corp. - Houston
- International Paper Co. - Butler
- International Paper Co. - Chilton
- Mannington Wood Floors - Sumter
- Scotch Plywood Co. - Clarke
- Wallace Wood Products, Inc. - Marengo

OSB/FLAKEBOARD & PARTICLEBOARD

- Giles & Kendall Co. - Madison
- Louisiana-Pacific Corp. - Cullman
- Norbord Alabama, Inc. - Chambers
- Temple-Inland Forest Products - Monroe

HARDWOOD SAWMILL

- Buchanan Lumber Co. - Pickens
- Buchanan Lumber Co. - Montgomery
- Lewis Bros Lumber Co., Inc. - Pickens
- Linden Lumber Co., Inc. - Clarke
- Linden Lumber Co., Inc. - Marengo
- Miller & Co., Inc. - Dallas
- Seaman Timber Co., Inc. - Shelby
- Sterling Lumber & Supply Co., Inc. - Coosa
- Wellborn Cabinet, Inc. - Clay

SOFTWOOD SAWMILL

- Boise Cascade, LLC - Clarke
- Bowater Lumber Company - Shelby
- Dudley Lumber Co. - Lee
- East Alabama Lumber Co. - Chambers
- Gulf States Paper Corp. - Hale
- Georgia-Pacific Corp. - Fayette
- Gulf Lumber Company, Inc. - Mobile
- Harrigan Lumber Co. - Monroe
- International Paper Co. - Butler
- International Paper Co. - Chilton
- International Paper Co. - Lee
- International Paper Co. - Mobile
- Jachin Lumber Co., Inc. - Choctaw
- Jasper Lumber Co., Inc. - Walker
- KyKenKee, Inc. - Tuscaloosa
- Littrell Lumber Co. - Morgan
- M.C. Dixon Lumber Co. - Barbour
- McShan Lumber Co., Inc. - Pickens
- MeadWestvaco, Corp. - Russell
- Pate Lumber Co., Inc. - Pickens
- Rocky Creek Lumber Co. - Monroe
- Scotch Lumber Com. - Clarke
- Swift Lumber, Inc. - Escambia
- T R Miller Mill Co., Inc. - Escambia
- Thomasville Lumber Co. - Clarke
- Weyerhaeuser Co. - Lamar
- Weyerhaeuser Co. - Wilcox

Figure 3 - Major Wood-Using Industries in Alabama

Map produced by and used with permission of the Alabama Power Company;
data supplied by the Alabama Forestry Commission.

Selling Your Timber

(Continued from page 12)

6.7 million cords pine and 3.3 million cords hardwood. Pulpwood accounted for 66% of the total volume harvested, and was partly the result of salvaging sawtimber-sized hurricane-damaged timber as pulpwood.

Figure 2 shows Alabama's price trends by timber product from 1993 to 2004, as published by Timber Mart-South. Sawtimber prices rose slightly during 2004 and continue to remain strong the first quarter of 2005 as a result of a strengthening economy and a historically high level of housing startups. Pulpwood showed some price declines in 2004 but has since increased by roughly 15% during the first quarter of 2005. Unit prices rose slightly in north Alabama and decreased slightly in the southern half of the state. However, with the oversupply of hurricane-damaged timber, the slight

drop in south Alabama was not significant.

When you decide to sell timber, the first step is to locate potential buyers of your timber. Figure 3 shows the locations of major wood-using industries across the state. A directory of forest industries may be found on the Alabama Forestry Commission's website at www.forestry.state.al.us. You may also call your local county forester for a list of timber buyers and/or forestry vendors, or print a list using the Commission's website.

A wealth of other information is also available on the Commission's website for landowners to use in managing their property, such as Management Information Sheets. You should review the Management Information Sheets under the Harvest, Regeneration, and Site

Preparation subheadings prior to selling your timber. The "Selling Timber" sheet should be extremely helpful when beginning the process to sell your timber.

Alabama Forestry Commission employees in each county are available to provide you with specific stand management recommendations, direct you to other technical and financial assistance programs, and even provide direct services such as prescribed burning and fire lane construction. ☝

References

- Forestry Resource Report, 2003.* Alabama Forestry Commission.
- Stumpage Price Mart and F.O.B. Mill Price Mart, Timber Mart-South.* The Daniel B. Warnell School of Forest Resources, The University of Georgia, Athens, Georgia. Website address: www.tmart-south.com.



Memorial

Mr. Elliot L. Salter, age 70 of Luverne, Alabama died on January 29, 2005. He was one of the first landowners to serve on the State Forester's Outreach Advisory Council, and he was a devoted community volunteer and mentor for other minority landowners. He always led by example and held several tours on his property to demonstrate Best Management Practices. Because of his land ethic and work, he was one of the featured landowners in the Alabama Forestry Commission's *Minority Outreach* brochure.

This Crenshaw County resident had retired as Systems Manager of Bailey Controls Systems. He attended Alabama A&M University, Lakeland College, and the Baptist Bible Institution. He was a deacon of Star Hope Missionary Baptist Church and a Third Degree Master Mason.

Elliott Salter lived a life of deep convictions and loved his family and friends immeasurably. During his lifetime he met and influenced many people, all the while assisting his neighbors. Mr. Salter is survived by his wife, Georgia; two sons; four daughters; six grandchildren; and his father, Jesse L. Salter, Sr. ☝



Elliott Salter, a silvopasture practitioner, and the AFC's Dana McReynolds inspect his goat herd.

Visit the AFC website at
www.forestry.state.al.us



Alabama's Agri - Tourism Trail

By *Coleen Vansant*, Public Information Manager, Alabama Forestry Commission

Managing a forest or farm to make it provide income for your family is one of the primary goals of most landowners. In the business we're in, this mainly involves growing a crop of trees, which we all know is a long term investment. For those landowners who have other forestry-related crops or attractions on their land, there is now a program in Alabama that may interest you.

Alabama's Agri-Tourism Trail can provide forest landowners an opportunity to raise capital while dealing with tourists in a farm setting. The program is a partnership between the Alabama Cooperative Extension System, the Alabama Department of Agriculture and Industries, the Alabama Farmers Federation, and the Alabama Bureau of Tourism and Travel.

The Agri-Tourism program is designed to improve the income and economic health of small farms and rural communities. Categories and activities that may be of interest to forest landowners include: Direct Sales (agriculture-related crafts, farmers' market, u-pick operations); Outdoor Recreation (camping, fishing, bird watching, game/wildlife preserves, horseback riding, nature walks, trail rides, photography, shooting sports; even sea-

sonal activities such as hunting); Educational Experience (farm tours, school tours, etc.); Entertainment (special events, festivals, fairs, etc.); Accommodations (farm/ranch vacation, farm stay, guest ranch, farm skills, farm work conference facility); Miscellaneous (guide/outfitter operation).

According to Extension Tourism Specialist J. Thomas Chesnutt at Auburn, the Agri-Tourism Trail was patterned after other similar programs existing across the United States. In the future, the partners of the program hope to provide workshops that address things such as pricing, liability, and other concerns a rural entrepreneur might have. Chesnutt stressed that this program is not for anyone who does not want to deal with tourists.

When a farm is included on the trail, the operation will be listed not only on the Alabama Agri-Tourism Trail webpage (www.alabamaagritourism.com), but also the national agri-tourism site (www.farmstop.com) as well.

Many of our state's tourists and visitors enjoy purchasing locally-grown or -made products while they are visiting other states. The Agri-Tourism Trail website will give people a chance to find the

products or rural experiences they want, plus all of the details including days and hours of operation, website addresses, directions, and products and services grown or offered.

How to be Listed on the Trail

Any farm, rural business, or other operation interested in generating income while inviting visitors to your property can submit information for the Alabama Agri-Tourism Trail. There is no fee to be listed on the Trail. All you have to do is complete the application form (available on the agri-tourism web page). Photographs are welcome and desired. You can send any photo by e-mail or regular mail.

To remain on the Trail, you must submit written confirmation via e-mail or regular mail, that you are still open to tourists and that the information currently on file regarding your attraction, service, or activity is correct.

The Extension System requests that you submit applications on-line if possible to speed up the process and reduce errors. If this is not possible, you may mail applications and photos to Alabama Agri-Tourism Trail, c/o Extension Tourism Specialist, 218 Extension Hall, Auburn University, AL 36849. ☎

22nd Annual Alabama Landowner & TREASURE Forest Conference October 6 - 7, 2005

Auburn Hotel and Conference Center
Auburn, Alabama

Thursday, October 6

- 9:00 am Registration opens
- 10:00 am Buses leave hotel for Auburn University School of Forestry & Wildlife Sciences
- 11:15 am Box Lunch
- 11:30 am Buses depart for field day. Hosted by former Alabama Chief Justice C. C. "Bo" Torbert. Highlights of tour include:
- Forestry/Herbicide – *Michelle Isenberg, BASF*
 - Pond Management – *Barry Smith, American Sport Fish*
 - Invasive Species Management – *Dr. James Miller, USDA Forest Service*
 - Forest Floor Mulching Machine Demonstration
 - History of Property – *Honorable C. C. "Bo" Torbert*
- 6:45 pm Awards Banquet followed by Dessert Social

Friday, October 7

- 8:00 am Indoor program sessions
- The Forest Biorefinery – *Dr. Harry Cullinan, Auburn University*
 - Wood Bowl Carving – *Dr. Robert Parker, TREASURE Forest Landowner, Retired*
 - Quail Initiative – *Stan Stewart, AL Dept Conservation & Natural Resources, Div of Wildlife & Freshwater Fisheries*
 - Invasive Species Control & Cost Share Programs – *Sarah O'Sullivan, AL Forestry Commission*
 - AU School of Forestry & Wildlife Sciences Update – *Dr. Graeme Lockaby, Auburn University*
- 12:00 pm TREASURE Forest Association Luncheon

TREASURE Forest Association SILENT AUCTION

Don't miss this year's annual silent auction sponsored by the Alabama TREASURE Forest Association. Bids will be received on items until break on Friday during indoor sessions. Items awarded to high bidder will be announced during the luncheon.

22nd ANNUAL ALABAMA LANDOWNER & TREASURE FOREST CONFERENCE

October 6-7, 2005 Auburn, Alabama
Auburn Hotel and Conference Center

Name of Attendee(s):

1. _____
 2. _____
 3. _____
 4. _____

Tour on Thursday

Yes No
 Yes No
 Yes No
 Yes No

Lunch on Friday

Yes No
 Yes No
 Yes No
 Yes No

Company _____
 Address _____
 City _____ State _____ Zip _____
 Email _____

Bus transportation will be provided for the tour. No personal vehicles can be driven.

CATEGORY OF ATTENDEE (mark category of each attendee)

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

I am attending the conference and enclosing:
 \$75 pre-registration x _____ attendee(s) = _____

*NOTE: Registration includes tour & lunch, banquet on Thursday; indoor sessions and lunch on Friday.



CONFERENCE INFORMATION

- Thursday, Oct. 6: Registration will begin at 9:00 am in the lobby of the Auburn Conference Center
 Thursday, Oct. 6: Buses will depart for the lunch and tour at 10:00 am from the parking lot of hotel. **Please dress appropriately and wear comfortable shoes.** Buses will return to hotel in time to change clothes for the banquet.
 Thursday, Oct. 6: Banquet begins at 6:45 pm followed by a dessert social to honor award winners.
 Friday, Oct. 7: Indoor sessions begin at 8:00 am; a separate agenda will list meeting rooms and topics.
 Friday, Oct. 7: ATFA Luncheon begins at 12:00.

Pre-registration fee is \$75 per person if postmarked before September 30.

Registration fee for conference after September 30 is \$85.

No refunds will be made after September 30.

Mail upper portion of form and fee payable to "Alabama Forestry Planning Committee" to:

Fran Whitaker, Alabama Forestry Association, 555 Alabama St., Montgomery, AL 36104

Phone: (334) 265-8733 Fax: (334) 262-1258 email: fwitaker@alaforestry.org

EXHIBIT SPACE IS AVAILABLE. Contact Bill Jones or Fran Whitaker at (334) 265-8733.

HOTEL INFORMATION

Room Rate: Auburn Conference Center \$89

Please specify that you are attending the TREASURE Forest Conference when making your reservations.

Hotel cut-off date is September 7, 2005.

Auburn Hotel and Conference Center
241 South College Street
Auburn, Alabama 36830
(800) 228-2876 or (334) 821-8200

Battling the Japanese Beetle

By Coleen Vansant, Public Information Manager, Alabama Forestry Commission

Keeping beautiful and healthy lawns, pastures, trees and gardens is hard enough when you have to battle the normal nuisances that Mother Nature sends our way. Too much rain, drought, and a host of different insects and diseases keep us constantly digging, spraying, and picking to keep our plants beautiful and productive. In the past few years many residents of Alabama have had to take on a foe like no other – the Japanese beetle.

The Japanese beetle was first discovered in the United States in Riverton, New Jersey in the summer of 1916. As its name implies, it originated in Japan and came into this county on plants shipped from overseas. It has spread rapidly across the nation with more than one-half of the continental United States reporting infestations from Maine to Florida, the Great Lake states, and westward to Oklahoma and Kansas. It feeds on more than 400 species of broad leaf plants that include ornamental plants, shrubs, vines, shade and fruit trees, garden, and row crops. The beetle grubs feed on plant roots – primarily turf (lawns, golf courses, parks and pastures) – and many other plants and crops. The Japanese beetle spreads at a rate of 5-10 miles per year.

According to the California Department of Food and Agriculture Plant Quarantine Manual, in July of 2004 the Alabama counties of Autauga, Chilton, Colbert, Cullman, Elmore, Fayette, Montgomery, and Walker were listed as infested with the Japanese beetle. Data from the National Agricultural Pest Information System shows that infestations are in Alabama from Lauderdale County down to Tuscaloosa County, and from Jackson County south to Montgomery, Lee, and Macon Counties. The only areas of the state not

infested are the Black Belt and extreme south Alabama.

The Japanese beetle is brilliantly colored, oval, and less than 1/2 inch long (about the size of a dime). Its body is metallic green with coppery wings. Many people say it resembles a very small June bug. Its distinguishing characteristics are



Photo by Coleen Vansant

five tufts of white hairs projecting from under the wing covers on each side, and two patches of white hairs at the tip of the abdomen.

Adults feed in the daytime from early June to Labor Day, eating leaves as well as flowers. The beetles eat the leaf tissue between the veins making the affected leaf look like lace. They are gregarious in nature and are often found feeding in masses on a few plants, allowing other nearby plants to remain un-infested. They can skeletonize the leaves of a host plant and damage mature fruit. Adults are good flyers and can easily go from plant to

plant for feeding and into previously non-infested areas.

During feeding period, females stop eating the plants from time to time to burrow 2-3 inches into the ground and lay eggs. She repeats this cycle until 40-60 eggs have been laid. By midsummer, the eggs hatch and the young grubs begin to feed. Each grub is about an inch long. In late autumn, the grubs burrow 4-8 inches into the soil and remain inactive all winter. This insect spends about ten months of the year in the ground during the larval state. In early spring, the grubs return to the top and feed on roots until late spring, when they change into pupae. In about two weeks, the pupae become adult beetles and emerge from the ground. In Alabama and other southern states, this life cycle takes about a year. In northern states it takes up to two years. Newly infested areas commonly have very heavy infestations for the first four to six years.

Control – There are no quick fixes to get rid of the Japanese beetle. Scientists with the United States Department of Agriculture (USDA) recommend an integrated pest management (IPM) program that includes cultural, chemical, mechanical, and biological strategies.

Habitat Modification – Since the eggs and young grubs are very susceptible to dry soils, do not irrigate during the time the eggs and first larvae are developing. If natural rainfall occurs, this tactic will not work. You can also modify habitat by planting trees, shrubs, and plants to which the beetle is not attracted (see accompanying sidebar).

Hand picking – In areas where infestations are not severe or if adult beetles are only affecting individual species of plants, you can hand pick the beetles from the plant. They can be destroyed by putting them in a bucket of soapy water where they drown.



Japanese beetles eat the leaf tissue between the veins making the affected leaf look like lace (above and right).



Photos by Coleen Vansant

Natural Control – Several parasitic wasps, especially *Tiphia popilliavora* and *T. vernalis*, have been imported and are known to be established in several eastern states. Unfortunately, they do not seem to be reliable in reducing the Japanese beetle populations below damaging levels. The Tiphia wasp seems to be more effective in southern states.

Many species of birds eat adult beetles. Moles, shrews, and skunks feed on the insect in the grub stage.

Chemicals – Adults can be controlled by spraying susceptible plants with insecticides. Over-the-counter pesticides available for this include acephate (Orthese), carbaryl (Sevin), and several pyrethroids: bifenthrin, cyfluthrin, deltamethrin, lambda-cyhalothrin, permethrin, and others. Be sure to read the label and follow all of the manufacturer's application and safety directions. During heavy adult activity periods, you may have to spray every three to ten days. For grubs, granular products containing the active ingredients trichlorfon or carbaryl can be used. You

can refer to Alabama Cooperative Extension System publication ANR-500-B, *Alabama Pest Management Handbook, Volume 2* for more recommendations on grub control in home lawns. A copy of this publication is available from your local Extension office.

Traps – Both easy and inexpensive, traps are a good way to reduce beetle populations and curtail the laying of eggs. Because traps actually attract more beetles than they capture, be sure not to put them near your garden or favorite plants. They should be placed at the borders of your property, away from plants they could damage. Traps are most effective when many of them are spread over an entire community. Again, keep in mind that they can attract thou-

sands of beetles in a day and only a portion of them are actually caught. Sometimes traps in a home landscape can actually increase problems rather than reduce them. Be sure to keep them away from susceptible plants.

You can see maps, data, and other facts on Japanese beetles in Alabama by visiting: www.ipmcenters.org/northcentral/jbeetle/Alabama.htm. This will give you the site for Japanese Beetle Watch: Alabama. ♣

Plants Resistant to Japanese Beetle

Ash	Hydrangea	Poplar
Boxwood	Juniper	Redbud
Burning bush	Lilac	Red maple
Cedar	Magnolia	Red oak
Clematis	Mulberry	Spruce
Dogwood	Northern red oak	Sweet gum
Forsythia	Pine	Yew
Holly (most all)		

For a more complete list of resistant plants visit:
www.ag.auburn.edu/landscape/STGOOctober00.html

Plants Susceptible to Japanese Beetle

Many fruit trees (apple, crab apple, plum, apricot, cherry, peach)	Rose
Birch	Rose of Sharon
Black walnut	Running beans
Corn	Sassafras
Crepe myrtle	Soybeans
Grape	Virginia creeper
Japanese maple	Willow
Okra	Zinnias
Pin oak	Perennial ryegrass (affected by larva)
	Tall fescues (affected by larva)

Resources:

- <http://www.pueblo.gsa.gov>
- <http://www.ivyhall.district96.k12.il.us/4th/kkhp/1insects/japbeetle.html>
- <http://www.ohioline.osu.edu/hyg-fact/2000/2504.html>
- <http://www.ag.auburn.edu/landscape/STGOOctober00.html>
- <http://www.ipmcenters.org/northcentral/jbeetle/>
- <http://www.aces.edu/pubs/docs/A/ANR-1250/>

Things to Consider Before Planting Your Seedlings



Photo by Elishia Ballentine

By Craig Frazier, Manager, E. A. Hauss Nursery

For the 2005-2006 planting season, the Alabama Forestry Commission's E. A. Hauss Nursery has both bareroot hardwood and longleaf pine for sale. Seedlings start selling on June 1st. There are fourteen different varieties of hardwoods available, and the longleaf is a first generation seed source. Whether you are planting a few seedlings in the backyard or planting several acres, there are a few things to consider when planting your trees.

Bareroot vs. Containerized

There are several ways you can purchase seedlings. A bareroot seedling is grown in beds in fields, and when they are ready to be out-planted they are lifted or pulled up out of the ground and their roots are exposed (as in photo above). Another type is a container-grown seedling where the plant is grown in a container of some sort. In this situation, the seedling produces a root ball where the root system is contained in a ball of soil. This leaves the root system undisturbed when pulled out of the container. There are also seedlings that are grown in the ground and removed with a large spade or transplanter. The spade lifts a

ball of soil along with the root system out of the ground and then a type of material is wrapped around the root ball to maintain it during transport before planting.

When to Plant

If you are planting a bareroot seedling, you need to wait until seedlings are in their dormant state. Winter is the time of the year when most plants become dormant, when the growth of the seedling slows down and the bud of the seedling is hardened. The seedling can better handle the process of transplanting from the nursery to the forest since there is very little growth activity.

At Hauss Nursery, we receive a lot of calls in the spring for tree seedlings, mainly because people see plants and trees for sale at Wal-Mart, Lowe's, and Home Depot, etc. These are potted trees or container grown seedlings. Although you can plant these in the spring, they still need to be watered until the root system has a chance to establish itself. Even these potted trees will do better when planted in the fall and winter months because they are in the dormant state as mentioned earlier. When planting in the spring, not only will the root system be trying to grow but also the top will be growing as well, putting the tree in a

stressful state if it gets dry. By planting in the late fall or winter months, you give the seedling time to get the root system established without having to support height growth at the same time.

Choosing the Right Species

Remember to choose a tree or trees that will successfully grow in the area that you want plant it. Different species have different habitats in which they will thrive. Some things to consider are whether the site is a dry site or a wet site. Another has to do with your location, whether you live in North Alabama or South Alabama.

Seedling growth will depend on several factors. Rainfall, soil fertility, soil type, tree species, and whether the species is planted in an area that it will thrive. For example, slash pine can be planted in sandy dry sites, but that is not where they thrive. They prefer wet-natured sites such as flatwoods and swamps.

If you are in need of forest management advice, or for more information on how to plant tree seedlings or where you can obtain tree seedlings, contact your local Alabama Forestry Commission county office or the Commission's E. A. Hauss Nursery at 251-368-4854. ☎

Tree Seedlings Available from AFC's E. A. Hauss Nursery 2005-2006 Season Prices

LONGLEAF PINE SEEDLINGS

	<u>Price per 500</u>	<u>Price per 1000</u>
1st Generation	\$45.00	\$70.00

HARDWOOD and WILDLIFE Packages

Crab Apple	Cherrybark Oak	Sawtooth Oak	Persimmon
Chinese Chestnut	Nuttall Oak	Shumard Oak	Chickasaw Plum
Dogwood	Overcup Oak	White Oak	Yellow Poplar

(Please order in multiples of 25, 100, 500, or 1000)

Prices:	\$15.00 per 25	\$35.00 per 100	\$135.00 per 500	\$200.00 per 1000
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Ordering Information

- **TO PLACE YOUR ORDER** - Call Hauss Nursery at 251-368-4854 or your county Alabama Forestry Commission office. OR visit our website at www.forestry.state.al.us where you can print out an order form and fax it to 251-368-8624. You will receive an acknowledgment within five to seven working days.
- **UPON RECEIPT OF ACKNOWLEDGMENT** - Remit a 10% non-refundable deposit if your order is for more than 50,000 pines or 10,000 hardwoods. Remit full payment for all other orders.
- **PAYMENTS** - All payments/deposits are due within 30 days of the acknowledgment date. We accept credit cards and checks or money orders payable to the Alabama Forestry Commission. For proper credit, please note your customer ID number on your payment. We do not accept cash.
- **AVAILABILITY** - Orders are available for delivery during December, January, and February only.
- **HAUSS NURSERY PICK-UP** - Schedule your delivery at least two weeks in advance by calling 251-368-4854.
- **UPS DELIVERY** - Orders of less than 30,000 hardwood seedlings are shipped via UPS or are available for pick-up at Hauss Nursery. UPS charges (available upon request) are based on the number of seedlings shipped per order.
- **COOLER DELIVERY** - All pine seedlings and orders of more than 30,000 hardwood seedlings may be shipped to our cooler locations in Opelika and Tuscaloosa. Schedule your delivery at least two weeks in advance, then call your cooler location to verify delivery.

4165 Ross Road • Atmore, Alabama 36502 • Phone: 251-368-4854 • FAX: 251-368-8624
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Precision Forestry

By David Mercker, Extension Forester, The University of Tennessee

Precision agriculture is a concept that is accepted and practiced on row crop acreage, particularly throughout the Midwest where land is well suited for tillage. Precision agriculture uses satellite technology to guide the application of fertilizer/herbicides/lime etc. at precise rates, varying throughout the field depending on the soil characteristics. This method makes best use of these soil additives, assuring that no area receives too much or too little. Each acre is treated uniquely, as though there are a series of small fields all falling within one larger field, working together for maximum profit.

Though not commonly practiced in forestry, this same “precision” management concept can be applied. Most privately owned forests have considerable habitat diversity. Site factors, such as soil, will vary according to position on the slope (ridge tops and upper slopes are less productive than mid and lower slopes). Slope aspect, or direction the slope faces, also has a measurable impact on productivity (south and west slopes are less productive than north and east slopes).

Further, past practices within a forest often result in an assortment of tree species, varying in age and in different condition. For example, if portions of the forest were previously exposed to livestock pasturing, ground fire, timber harvesting or even row cropping, these areas will have different attributes than other portions of the forest that were not exposed.

Too often, a generalized broad-brush forestry prescription is made and implemented in forests when instead, due to its diversity, the forest needs “precision forestry.” Many private forests are more a conglomerate of small, unique stands, falling within the larger forest tract. Each of these smaller stands should, based on both economics and ecology, be managed with careful analysis of what it indicates is needed.

For example, a 75-acre hardwood forest tract may have 20% of its acreage with poor quality trees, previously mismanaged and without good economic potential. This area could be regenerated (clearcut) to create young growth and early successional habitat. An additional

50% of the acreage might have fine quality, middle-aged sawtimber, needing to be thinned to gain some monetary return and to energize the remaining trees so that they’ll be ready for a follow-up harvest 15-20 years hence. The balance (30%), simply too young for commercial harvest, is overstocked thus experiencing suppressed growth. Here an owner could implement “crop tree release” by deadening weed trees with a chainsaw, thereby assuring a future forest with well-spaced, highly desirable crop trees.

In the Southeast, we are experiencing an increase in the number of forest landowners, with each owning smaller acreages. This situation is ideal for precision forestry. With precision forestry, essentially all crop trees are allowed to reach their economic maturity, rather than be sacrificed (harvested) too early. Plus, precision forestry creates great diversity in habitat, age structure, and species . . . conditions highly desirable for those landowners who consider the other uses of their forest (recreation, wildlife, and aesthetics) equally important! 🌲



Is Your Home Firewise?

By *Gerald Steeley*, Wildland Urban Interface Specialist, Alabama Forestry Commission

Remember when folks either lived in town or out in the country? Things seemed much simpler then. Houses were mostly concentrated in the cities and towns, with the few homes scattered about the rural areas of the country. Back then, wildland fires were generally not considered much of a threat to homeowners. The city fire departments took care of house fires within their jurisdictions. Those in the rural areas were either put out by the state forestry agency, local citizens, or were allowed to burn themselves out. Farmers knew how to clear around their barns, fences, and homes, and how to use their plows to make fire breaks to protect themselves from woods and field fires.

Around the 1970s, the United States began to see evidence of a large migration of people from the urban areas to the rural areas. This migration resulted in vast areas of Alabama and other regions across the nation with homes in the interface – the area where fuel feeding a wildfire changes from natural (wildland) fuel to man-made (urban) fuel. In 1985 disastrous wildfires swept the country, destroying more than 1,400 homes and claiming 44 lives in the U.S. This disaster shocked fire officials into realizing that the expansion of people into suburban and rural areas seriously complicated the duties of both the urban and wildland firefighters.

This migration of homes into the woods and other wildlands made the fire problem worse in at least three ways:

- 1. Increased frequency of fires because more people means more

fires – 93% of wildland fires in the South are caused by people.

2. Fires are more severe because the natural vegetation that contributes to privacy and scenic beauty provides a ready trail of fuel, leading any fire right up to the combustible fuels of the home itself.

3. It takes much more time to set up the complex logistics necessary to control a major situation that requires a multi-jurisdictional fire attack.

During extreme wildfire events, wildfires can spread out over several hundred

(Continued on page 24)



Is Your Home Firewise?

(Continued from page 23)

or even thousands of acres, simultaneously exposing numerous structures to flames and firebrands. These events usually occur during periods of high winds and low humidity with dried fuels, and often in difficult terrain and drought conditions. Under such circumstances, it is difficult for firefighters to provide fire protection for each individual home when multiple structures are affected.

Homeowners must accept some responsibility for taking actions to protect their homes *before* a wildfire occurs. Understanding how homes ignite during wildland-urban fires provides the basis for appropriately assessing the risk factors involved. Around each home is an area called the “home ignition zone.” This area, which includes the home and the radius surrounding the home within 100-200 feet, determines the home’s ignition potential from a wildfire. Because this home ignition zone is controlled by the homeowner – not the fire services, only the homeowner has the authority and responsibility to take action to reduce the likelihood of a devastating fire. A homeowner may think that a garden hose will be sufficient to wet down the roof and surrounding area when a wildfire occurs, but he or she may not understand that in a raging fire a water hose is virtually ineffective. Steps must be taken before an incident occurs to defend a home from damage or destruction from wildfire.

For this reason a program called “Firewise” may help a landowner plan and execute a fire prevention plan around the home. Firewise is a cooperative effort among federal, state, and private agencies and organizations to promote fire safety in the wildland-urban interface. The Firewise goal is that homes should be designed, built, and maintained to withstand a wildfire without the intervention of the fire services.

During a wildland-urban fire, a home ignites from two possible sources: (1) directly from flames (radiation and convection heating), and/or (2) from firebrands (lofted embers) accumulating directly on the home. Highly ignitable homes can ignite during wildfires without fire spreading near the structure. This occurs when the intense heat from a for-

est fire creates strong winds that drop burning firebrands far in advance of the flames (1/2 mile or more). This blizzard of firebrands collects on and directly ignites flammable home materials, or ignites adjacent flammable materials that then ignite the house.

Wildfires do not spread by flowing over the landscape, like avalanches and tsunamis. Each location along the path of a wildfire must meet the requirements for

combustion – that is, a sufficiency of fuel, heat, and oxygen (otherwise known as the fire triangle). In a fire situation the home is the fuel and the surrounding vegetation becomes the heat source. Oxygen is not a limitation with exterior ignitions.

We see many instances on the news each year of dozens of homes in a subdivision being destroyed and only a few escaping the catastrophe unscathed. The

Wildfire Risk Assessment *for* Southern Homeowners

This risk assessment is organized into two major components: *The Fuel Component* and *The Structure Component*. The fuel component assesses the vegetation around a home. The structure component identifies hazardous characteristics of a home’s design and building materials. During a wildfire, the fuel and structure components work together to affect the home’s survivability. That’s why both components must be assessed to determine the wildfire risk of a particular home.

A. Fuel Component

Select the most appropriate point rating for each of the two fuel factors (natural plant community and defensible space) and multiply the points together to determine the fuel component score. Refer to plant community descriptions in Appendix A if you need clarification on which surrounds your home.

1. Ratings for the major plant communities of the southern United States: Points

Very Low Fire Hazard	0
Cultivated agricultural lands	
Low Fire Hazard	1
Hardwood forest (e.g., oaks, hickories, maples, poplars)	
Mature pine plantations that are open underneath trees (few shrubs)	
Seasonally flooded swamps (e.g., cypress or bay swamps)	
Moderate Fire Hazard	3
Pine savannas (low density pines with grasses underneath)	
Grasslands	
Seasonal marshes	
High Fire Hazard	4
Pine forests with shrubs <6 feet tall	
Young hardwood forests with dense shrubs	
Recently logged forests with downed woody debris	
Other plant communities dominated by shrubs <6 feet tall	
Very High Fire Hazard	5
Dense shrubs >6 feet tall; may or may not have trees above the shrubs	
Total points for natural plant community around your house	_____

2. Defensible Space Points

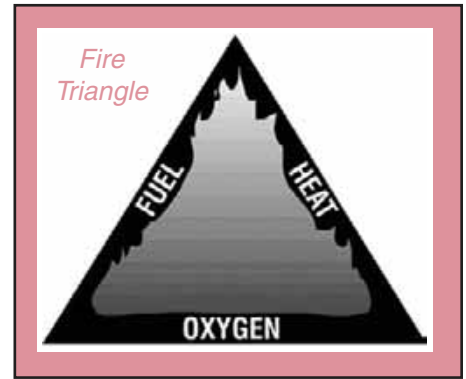
>100 feet of defensible space	1
60-100 feet of defensible space	1.5
30-60 feet of defensible space	2
<30 feet of defensible space	4
Total points for defensible space	_____

A. Fuel Component Total: multiply points from 1 and 2: $\frac{\quad}{(1)} \times \frac{\quad}{(2)} = \frac{\quad}{\quad}$

reason is that the requirements for combustion – the fire triangle – were not met at the homes that remained undamaged. One or more elements of the fire triangle were not present. A California study shows that houses with nonflammable roofs and a vegetative clearance of 10 to 18 meters had an 86% survival rate. Raised homes (mobile homes and modular homes) without skirting are more vulnerable to wildfire because firebrands (hot embers) can be blown under the floor, increasing the possibility of ignition. Also, mobile home occupants are twice as likely to die from a fire as occu-

pants of other one or two-family residences.

Saving homes from wildfires requires a fundamental change in our way of thinking. Landowners cannot depend on fire services to protect their homes in catastrophic fire situations where multiple structures are threatened. Each homeowner must take the responsibility to ensure that his or her property is defended in the event of a wildfire. Accompanying this article is a **Wildfire Risk Assessment** guide that you as a homeowner can conduct to determine the level of risk for loss to your home. After



doing the assessment, if your rating falls in the high or very high risk category, you should take an active role in eliminating the contributing factors. Contact your county Alabama Forestry Commission office or local fire department, rangers, or firefighters to assist you in identifying practices that can be achieved on your property to lower your rating and make your home Firewise. You can also get information from the resources listed below.

Don't wait until you smell smoke to act. Begin now making your home Firewise. 🏠

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B. Structure Component

Check only the highest rated factor in each list that describes a structural characteristic of your house or surrounding area. Then record the points from the highest rated factor that you checked as the subtotal for that group of factors (only one factor per group). If none of the listed factors are represented on your property, then your rating for that group will be zero.

1. Firebrand Ignition Factors (Check only the highest rated factor):	Points
Wood shingles or shakes on roof (Class C or not rated)	5
Wood deck	3
Open or combustible soffits	3
Open space under house without skirting	3
None of the above	0
Total points for Firebrand Ignition Factors (maximum 5 points)	_____
2. Other Indirect Ignition Factors (Check only the highest rated factor):	Points
Slopes >30%	2
Wood fence (connected to house)	2
Adjacent house or outbuilding <50 ft. from house	1
Stacked firewood and/or propane tanks <30 ft. from house	1
None of the above	0
Total points for Indirect Ignition Factors (maximum 2 points)	_____
3. Heat-Related or Direct Ignition Factors (Check only the highest rated factor): *Include these factors ONLY if you have <100 feet of defensible space*	Points
Wood siding	3
Vinyl siding or soffits	2
Single paned, non-tempered glass	2
None of the above	0
Total points for Heat-related Ignition Factors (maximum 3 points)	_____

B. Structure Component Total; add points from 1-3: $\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$
(1) (2) (3)

Combine the Fuel and Structure Components to determine your overall wildfire risk rating.

Overall Wildfire Risk Rating:

A. Fuel Component Total _____ + **B. Structure Component Total** _____ = _____

Interpreting your overall risk rating:

< 5 = Low Risk 5-8 = Moderate Risk 9-13 = High Risk >13 = Very High Risk

Field-Expedient Methods of Time and Direction

or,

“How to Find Your Way Out of the Woods”

Part 8 in a Series by *Douglas A. Smith*, Alabama Forestry Commission, Retired

If you have been following this series of articles on distance, direction, and maps, you have been exposed to skills that allow you to use a variety of applications to help you navigate and measure. The approach described here offers the same answers but in a different, more fun way. These methods may not always be practical for your situation, but they are fun to study and try. They seem to have an extra appeal for youngsters.

Suppose you are out on a sunny day, don't have your compass, and want to determine north. Try the “Shadow-Tip Method” and the “Watch Method.”

The shadow-tip method is a four-step process, and can also be used to approximate time. Step One requires sticking a stick or branch vertically into the ground. The area around the stick should be fairly level where a distinctive shadow can be cast. Mark the

shadow tip. (The first mark is always the west direction compared to any other marks.)

Step Two, wait 10-15 minutes until the shadow tip moves a few inches. Mark the new position of the shadow tip.

Step Three is to draw a straight line through the two marks to obtain an approximate east-west line.

In Step Four, stand with the first mark (west) to your left, then the other directions are simple. North is to your front, east is to the right, and south is to your rear.

The standing view is one way to orient yourself. Another way is to draw a line perpendicular to the E-W (east-west) line, and the new line will approximate N-S (north-south). See Figure 1.

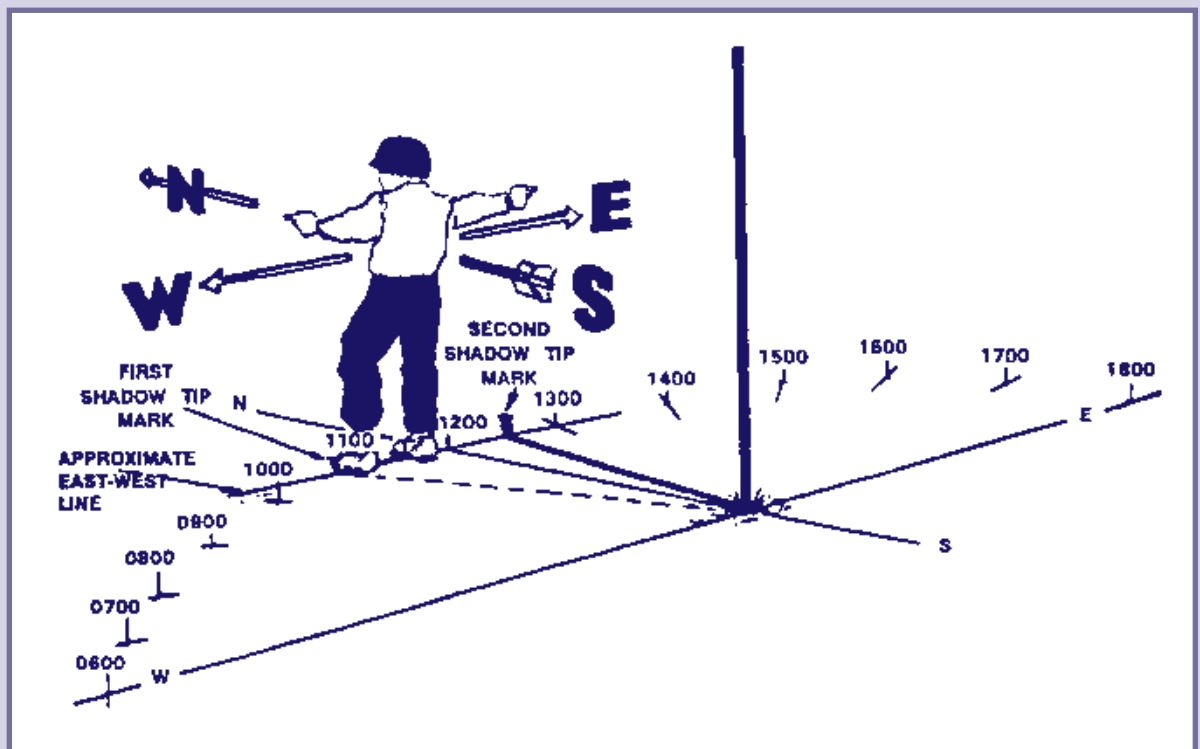


Figure 1. Determining direction and time by shadow.

Still uncertain which way is west? Remember that the first shadow-tip mark is always west, anywhere on earth.

The shadow-tip method can also be used to approximate time. (See Figure 1.) To find the time of day, move the stick to the intersection of the N-S (north-south) E-W (east-west) line. The west part of the E-W (east-west) line indicates 6:00 a.m. or 0600 hours and the east part is 6:00 p.m. or 1800 hours. (These examples use military time, or 24-hour days. Midnight starts a new day. The following twelve hours are 1 through 12. The next twelve hours are 13 through 24.)

The N-S (north-south) line becomes the noon line. A twelve-hour grid now exists with noon at the center. All you need to do is divide the remaining areas into six equal parts and mark the hour on the ground. Follow the shadow of the stick to an hour mark for an approximate time.

Note: The shadow clock is not a time-piece in the ordinary sense. The time is closest to conventional clock time at mid-day, but the spacing of the other hours varies compared to locality and date. It is not intended for use in polar regions (above 60° latitude in either hemisphere).

If a shadow forming a direction can become a watch, how can a watch determine direction? In the north temperate zone only, the hour hand is pointed towards the sun. (Those of you with digital watches are out of luck). A south line can be found midway between the hour hand and 1200 hours, standard time. If on daylight savings time, the N-S (north-south) line is found between the hour hand and 1300 hours. If there is any doubt about which end of the line is north, remember that the sun is in the east before noon and the west after noon.

The system for the south temperate zone is similar, but the 1200 hour dial is pointed at the sun, and north is halfway between 1200 and the hour hand. See Figure 2.

Lower latitudes present problems not covered in this article.

The shadow and watch methods obviously require daytime and sunlight. So what about *night*, when the stars are out? The stars offer another opportunity for

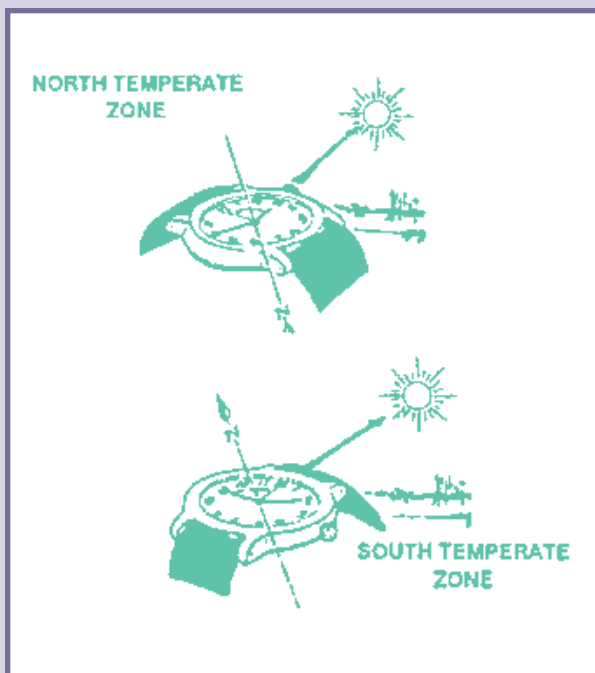


Figure 2. Determining direction by using a watch.

determining direction, but the process is too complicated to be covered in this article. However, one star does have particular significance.

Star clusters, or constellations, that we see depend partly on where we are located on the earth, the time of year, and the time of night. The night sky changes with the seasons and from hour to hour. But there is one star that is in almost exactly the same place in the sky, all night long, on every night. It is the North Star, also known as the Polar Star, or Polaris.

The North Star is less than 1° off true North. The north end of the axis of the earth points towards the star. The North Star is part of what is known as the Little Dipper, and is the last star in the handle. If you have trouble locating the Little

Dipper, maybe you can find the Big Dipper which, in turn, will help you find the North Star. (If you cannot find either dipper, you may need to do additional research.) Upon locating the two big stars at the end of the Big Dipper bucket, draw an imaginary line to connect them. In your mind, extend the line away from the bucket opening, five times the length of the original line. You have located the North Star. See Figure 3. There are many stars brighter than the North Star, but none are more important because of its location. (The Southern hemisphere uses the Southern Cross constellation for a directional guide.) After some practice, you will be able to find the star without going through a procedure.

Often it is cloudy and you can't see the sun or stars. Become part of the technical generation and use GPS, Global Positioning System. It is a system of navigational satellites that work in conjunction with your portable unit to precisely determine location. Most of the articles in this series have suggested sharing what you have learned with a youngster. When learning to operate a GPS, maybe you should ask a youngster to explain it to you. 🗺️

Editor's Note: Doug Smith's earlier articles in this series on direction and map reading may be found in the following previous issues of Alabama's TREASURED Forests: Summer 2002, Winter 2003, Spring 2003, Summer 2003, Fall 2003, and Spring 2004.



Figure 3. Determining direction by the North Star.



Beating the Heat in the "Sunny South"

By *Coleen Vansant*, Public Information Specialist, Alabama Forestry Commission

Many people refer to the states below the Mason-Dixon Line as the Sunny South, but for those of us who live here, we just call it "hot." Living in the South in the summer has many rewards and benefits – scorching summer heat and breath-taking humidity are not included on the list.

Because of the extremely hot and muggy summer months, we are susceptible to heat-related illnesses. Although very preventable, many people become ill or die annually as a result of extreme heat. According to the Center for Disease Control, from 1979 to 1999 excessive heat exposure caused 8,015 deaths in the United States. During this period, more people in this country died from extreme heat than from hurricanes, lightning, tornadoes, floods, and earthquakes combined. In 2001, 300 deaths were caused by excessive heat exposure.

Heat-related illnesses occur when our bodies are unable to compensate and properly cool themselves. The body normally cools itself by sweating but under some conditions sweating isn't enough, causing the person's body temperature to rise rapidly. Several things can affect the

human body's ability to cool itself during extremely hot weather. In high humidity, sweat will not evaporate as quickly, preventing the body from releasing heat quickly. Other risk factors include age, obesity, fever, dehydration, heart disease, mental illness, poor circulation, sunburn, certain prescription drugs, and alcohol use.

Most people do not realize that even exposure to short periods of high temperatures can cause serious problems. Heat-related illnesses can occur by doing too much on a hot day, spending too much time in the sun, or even staying in an overheated place. Two of the most serious heat related health conditions are heat stroke and heat exhaustion.

Heat Stroke

Heat stroke is the most serious heat-related illness. It occurs when there is excessive fluid and salt loss in hot or humid conditions, leading to general dehydration and exhaustion. The body's ability to cool itself shuts down, causing the body temperature to rise rapidly. The natural sweating mechanism shuts down. Under these conditions body temperature may rise to 106° F or higher within 10 to

15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not provided.

Some of the warning signs of heat stroke include:

- An extremely high body temperature (above 103° F, orally)
- Flushed, hot and dry skin (no sweating)
- Rapid, strong pulse
- Throbbing headache
- Dizziness
- Nausea
- Confusion
- Unconsciousness

If any of these signs occur, you could be dealing with a life-threatening situation. Immediately call 911 and begin cooling down the victim.

Ways to cool down the victim:

- Get the person to a shady area.
- Cool them rapidly using whatever methods you can. Examples: immerse the victim in a tub of cool water; place them in a cool shower; spray the victim with cool water from a garden hose; sponge them with cool water; or

wrap the victim in a cool, wet sheet and fan him or her vigorously.

- Monitor the body temperature and continue cooling the body until the victim's temperature drops to 101-102° F.
- Do not give a heat stroke victim fluids to drink. Cool the body from the outside.
- Get medical assistance as soon as possible.

Heat Exhaustion

Heat exhaustion is not as serious as heat stroke, and it usually develops after several days of exposure to high temperatures or inadequate/unbalanced fluid replacement. This illness is the body's response to an excessive loss of the water and salt contained in sweat. People most prone to heat exhaustion are the elderly, those with high blood pressure, and persons who work or exercise in a hot environment.

Some of the warning signs of heat exhaustion are:

- Heavy sweating
- Dry tongue and thirst
- Cold, clammy skin with an ashen pallor
- Muscle cramps
- Tiredness
- Weakness
- Headache
- Nausea or vomiting
- Feeling faint, dizzy, or weak

When a person is suffering from heat exhaustion, their pulse rate will be fast and weak, and breathing will be fast and shallow. The skin may be moist and cool. If untreated, heat exhaustion can progress to heat stroke. If the victim has heart problems or high blood pressure or if the symptoms are severe, call 911 for medical services immediately. If these conditions do not exist, you should assist the victim in cooling off.

Cooling measures may include:

- Move person to a cool place.
- Loosen tight-fitting clothing or remove extra layers of clothing.
- Drink cool, non-alcoholic beverages.
- Rest.
- Take a cool shower or bath.
- Apply cool wet cloths to the body.

You should limit physical activity until the symptoms disappear.

The best preventative measure against heat-related illnesses is to stay indoors where there is air conditioning. But for those who work or have activities requiring you to be outside in the summer heat, there are measures you can take that will aid the body's cooling mechanisms to prevent a heat-related health crisis.

Drink plenty of fluids – In hot weather you should increase your fluid intake regardless of your activity level. While doing outdoor activities or anything in a hot environment, you should drink two to four (16-32 ounce) glasses of cool fluids each hour. Don't drink liquids that contain caffeine, alcohol, or large amounts of sugar – these can make you lose body fluid.

Replace salt and minerals – This can be done by drinking sports drinks. If you are on a low-salt diet, you may want to avoid sports drinks.

Wear appropriate clothing and sunscreen – Wear lightweight, light-colored, loose-fitting clothing. If you go outdoors, protect yourself from the sun by wearing a wide-brimmed hat, sunglasses, and an SPF-15 or higher sunscreen.

Plan outdoor activities – Limit your outdoor activities to the morning and evening hours. Consider postponing outdoor sports events for the sake of both players and spectators. If you do work or play outside, take frequent breaks in a shady place and drink plenty of liquids.

Water – one of the best defenses against heat-related illnesses.

Photo by Coleen Vansant

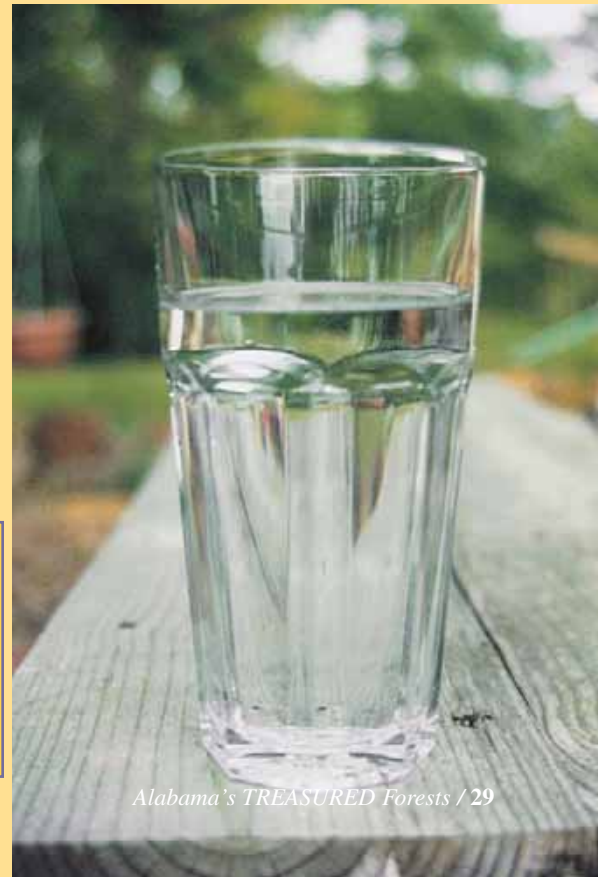
Pace yourself – The best rule is to start slowly and pick up the pace gradually. If exertion in the heat makes your heart pound or makes you gasp for breath, stop and get into a cool area or shade.

Use a buddy system – Partners can keep an eye on each other. Check on co-workers and have them check on you. If you are planning to work outside in the heat alone, let someone know and schedule a check-in time with them. Keep your cell phone close by.

Monitor those at high risk – Those at high risk include infants and children up to four years old, people 65 years old or older, overweight people, people who overexert during work or exercise, the physically ill (especially with heart disease or high blood pressure), and people who take certain medications.

Use common sense:

- Avoid hot foods and beverages and heavy meals – they will add heat to your body.
- Drink plenty of fluids.
- Dress in cool, loose clothing and shade your face with a hat or umbrella.
- Limit your exposure to the sun during mid-day hours.
- Do not leave infants, children, or pets in a parked car. ☹️



Resources:

- http://www.bt.cdc.gov/disasters/extremeheat/heat_guide.asp
- <http://www.orthoinfo.org>
- <http://www.disastercenter.com/guide/heat.html>
- <http://kidshealth.org>
- <http://www.drreddy.com/heat.html>

Field Borders: Giving Bobwhites the Edge

By *Stanley D. Stewart*, Division of Wildlife and Freshwater Fisheries,
Alabama Department of Conservation and Natural Resources

Alabama's bobwhite quail population is now only about 20% of what it was in the mid 1960s, when sharp population declines began throughout the southeastern United States. Various factors are involved in the decline of quail, but the most important is a great deficiency of habitat where breeding bobwhites can nest and raise chicks. About 80% of the quail in a population die each year. With such high mortality, a successful breeding season is critical for bobwhites to restore their numbers from one year to the next. Successful breeding is measured by nesting success and chick survival, which depend on the availability of nesting cover and brood habitat.

In Alabama, ideal nesting sites are composed of standing broomsedge mixed with briars, legumes, and other broadleaf weeds. Adult bobwhites will construct nests at the base of broomsedge clumps, using the dead grass blades for nesting material. The mix of standing broomsedge and broadleaf plants conceals the birds and nests from predators while affording the birds open travelways to and from the nest. After the nests hatch, the broods of young chicks must have an abundance of insects for growth and survival. Flightless chicks are very vulnerable to predators and require plant covers that conceal them as they move and feed. Ideal habitat for the broods consists of annual broadleaf weeds, especially ragweed and partridge pea. Annual weeds are rich in insect life, and their foliage forms a canopy that hides quail broods.

Such natural plant covers are very deficient in current landscapes that are dominated by thick wood, intensive agriculture, mowed hayfields, and grazed pasture. Quail cannot flourish without an abundance of natural grasses and weeds that provide nesting cover and brood habitat.

Agricultural field borders offer an excellent location to begin installing bobwhite reproductive habitat in today's



landscapes. Field border zones – at least 30 feet wide, that remain uncropped and are allowed to volunteer in natural weeds and grasses – provide quail with nesting cover and brood-rearing habitat in agricultural environments. In North Carolina, farms with field border habitats on less than 10% of the field areas contained four times as many quail nests as farms without field border systems. The border covers are also valuable for other wildlife, including various grassland birds that are experiencing population declines similar to the bobwhite. Naturally vegetated field borders trap sediments, pesticides, and excess nutrients generated by farming operations, helping to minimize agricultural pollution. Managed field border zones are being shown to be more worthwhile for achieving overall farm conservation than to farm them for minimal crop yields.

Field border habitats should be managed with a rotational system of late winter-early spring disking. Disk one-fourth to one-third of an established field border system each year, in convenient segments. A segment, for example, may be one side of a field. Rotate disking to an adjacent segment each following year. With this regime, most of the field border

cover remains standing each year, but is managed in weed and grass stages perpetually useful to quail for nesting and raising broods. Field borders with Bermuda grass or other exotic grass encroachment will require herbicide treatments to remove the grass so that natural plant growth is not hindered.

Field border habitats of natural grasses and weeds will increase quail populations on farm lands because they supply critical reproductive habitats that are deficient in today's landscapes. Field border systems will not cure all problems associated with the loss of quail, but in locations where they are being used they are giving bobwhites the edge they need to shift from declining to increasing populations.

For more information, please contact Stanley Stewart, Wildlife Biologist, Division of Wildlife and Freshwater Fisheries, 64 North Union Street, Suite 584, Montgomery, Alabama, 36130. ☎

Quail Management Information for Landowners

The Alabama Wildlife Federation recently held three regional short courses entitled "Managing for Bobwhite Quail in Alabama" which was attended by professional foresters, wildlife biologists, and conservationists from across the state. This training was made possible in part through funding provided by the Forest Land Enhancement Program, administered by the USDA Forest Service and the Alabama Forestry Commission. All attendees were provided copies of the following publications to be distributed to landowners interested in providing early successional habitat for quail and other wildlife habitat management on their timber lands: *Ecology and Management of Bobwhite Quail in Alabama* by Stan Stewart; *Landowners Guide to Native Warm Season Grasses in the Midsouth* by Dr. Craig Harper, UT Extension; and *A Guide to Managing Northern Bobwhites and Other Birds Associated With Early Successional Habitats* by the Alabama Wildlife Federation. To receive assistance, contact your local Alabama Cooperative Extension System, Alabama Forestry Commission, or the Wildlife and Freshwater Fisheries.

Stan Stewart's book is also available by downloading it from Conservation's web site at www.outdooralabama.com/hunting/game/quail.cfm or by calling the Wildlife Section at (334) 242-3469.

How to Grow Beetle Bait - Revisited!

(Continued from page 11)

reduced SPB hazard throughout the rotation. This information should offer few questions as to the most suitable stocking level to use.

In Table 1B, comparing the same two initial stocking levels but implementing an existing chip-n-saw market, we see that 908 trees per acre has an AEV of \$30 per acre while 436 trees per acre has an AEV of only \$26 per acre. Immediately the increased revenue leans towards the use of the higher initial stocking level. By referring to the SPB hazard rating (Figure 1) for the two stocking levels we see again the lower hazard afforded by the lower initial stocking level.

IS IT WORTH THE RISK?

The question to be asked is whether or not the increased risk of SPB attack and potential value loss is worth the potential increased revenue. More precisely, is \$4

per acre per year worth the added risk associated with the higher initial stocking level? In relevant terms, \$4 per acre per year is roughly less than the loss of ten, 5" DBH, 30-foot pine trees. Questions such as these must be evaluated by the prescribing forester and landowner.

The sawtimber rotations reveal the same total volume (total cords produced per acre over the entire rotation) trend as does the pulpwood rotations. The only exception is that although total volume is less in the lower initial stocking levels, the volume in MBF per acre produced increases as the initial stocking level decreases. For old-field sites under the rotation and parameters used in this comparison, the advantage of using lower initial stocking levels is expressed through all of the economic indicators and compounded by the lower SPB hazard ratings for the periods preceding the first thinning at age 15.

Cutover sites, however, are not as pronounced, yet are relatively constant with the middle range of initial stocking levels providing the better of the economic indicator levels. Again, the economic indicators compared with the related SPB hazard can offer insight in making the proper initial stocking level decisions.

SUMMARY

Initial stocking levels play an important role in the level of susceptibility of stands to attack by the SPB. Low initial stocking levels can reduce the rate at which stands progress into preferred sites for SPB attack. Although higher initial stocking levels often produce more pure volume (cords, tons, etc.) per acre, the true economic feasibility must be evaluated for each site and management objective. This, combined with an evaluation of the progressive effects of initial stocking levels on the level of susceptibility of stands to SPB attack, can allow for accurate decision making.

Low initial stocking levels can offer lower risk during the pre-merchantable phases of stand development, lower levels during the merchantable phases, and under the proper site conditions can offer greater financial return. ♣

REFERENCE:

"How to Grow Beetle Bait,"
by Jim Hyland and Tim Gothard,
Alabama Forestry Commission,
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Summer 1992.

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Honeylocust

(Sweet Locust, Three-thorned Acacia, Thorn Tree)
(*Gleditsia triacanthos*, L.)

By Coleen Vansant, Information Manager, Alabama Forestry Commission

Known best for its thorny bark and branches, the honeylocust is a broad, flat-topped tree growing 60-80 feet tall with a trunk of 2-3 feet in diameter. The bark is black, rough, and divided into narrow flat plates. The long forked thorns are about 2-3 inches long on the branches and trunk. This tree has a life span of about 120 years.

The leaves are 7-8 inches long and pinnately and bipinnately compound. The leaflets are oval, shiny dark green above, dull yellow-green below, and 1-1 1/2 inches long. Bipinnate leaves have 4-7 pairs of pinnae, each with as many as 28 leaflets.

Honeylocust can have male and female flowers on separate trees or on the same tree, although most have flowers of both sexes. Flowering can begin as soon as 5-10 years.

The fruit is a twisted brown, leathery, flat pod 5-10 inches long. After frost the pods have a sweet juicy pulp that tastes like honey. Because of the pleasant taste, livestock and wildlife forage for them. The young pods are edible for humans when cooked and taste like uncooked peas. The pod twists and re-twists like a corkscrew scattering the seed in winter.



The tree grows in rich soil along streams, bottomlands, and mountain slopes. It also grows well on limestone or high pH soil. It demands plenty of sunlight and is tolerant of transplanting, heat, drought, air pollution, and salt. Honeylocust grows all over Alabama but

is most prevalent in north Alabama. Its habitat extends from Pennsylvania west to southern Minnesota and southwestern South Dakota. It grows as far south as Florida and westward to Texas.

The wood of the honeylocust is very hard, very heavy, strong, stiff, and high in shock resistance. It is hard to work with tools and does not glue well. It has good nail-holding ability but has a tendency to split. It is quite resistant to decay and does not have a characteristic odor or taste.

Honeylocust wood is used for general construction, interior trim, furniture, and cross-ties. It has become a desirable ornamental tree and it trims easily into a hedge. Historically the wood was used for fence posts, wheel hubs, farm implements, and furniture. The sharp spines were used as pins.

The Alabama Champion honeylocust grows in Baldwin County. It is 114 inches in circumference, 56 feet tall, and has a crown spread of 60.7 feet for a total point value of 185.17. The National Champion is found in Frederick County, Maryland. It has a circumference of 236 inches. It is 114 feet tall and has a crown spread of 93 feet. Its total point value is 373. 🌳



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