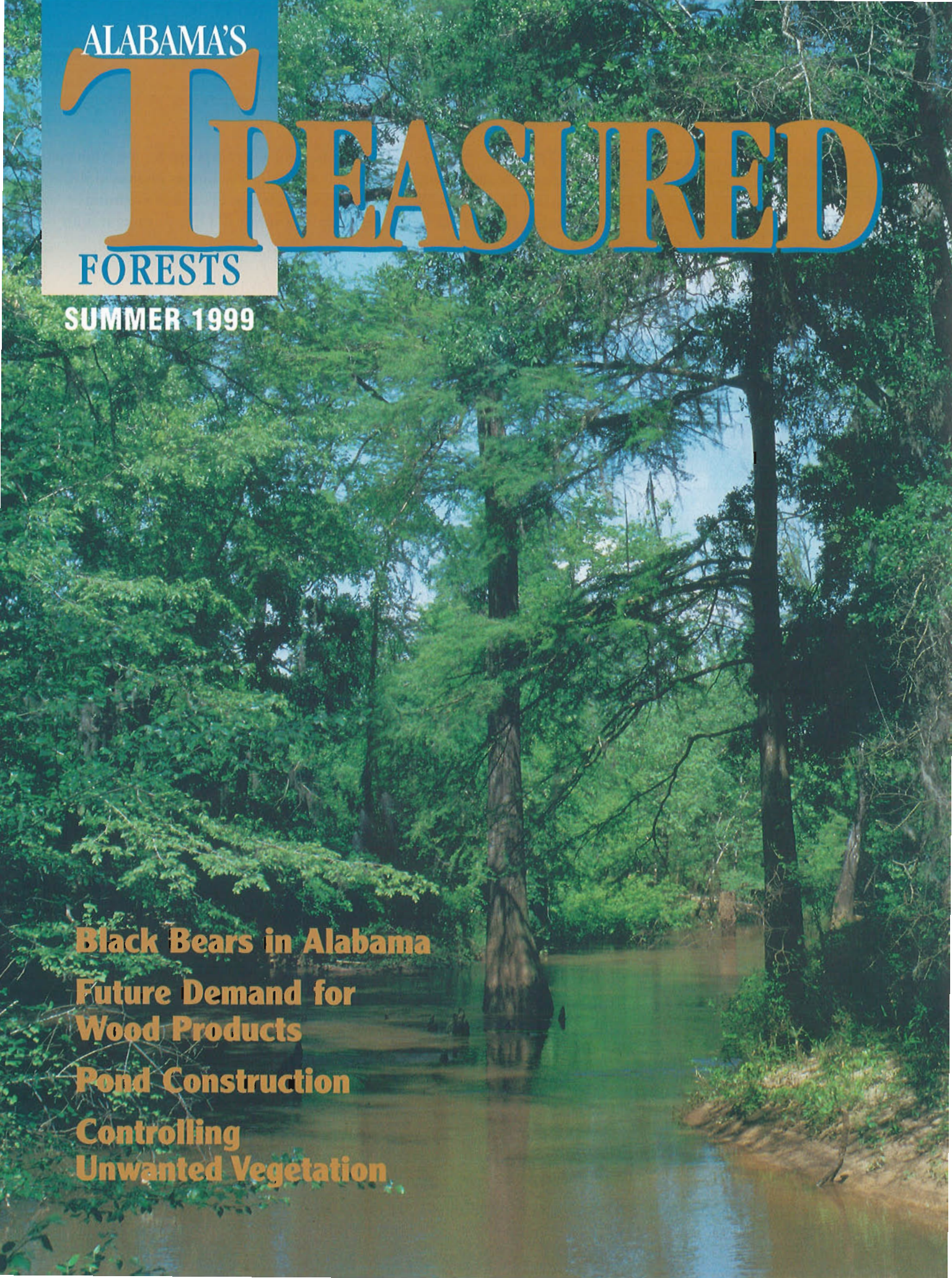
ALABAMA'S TREASURED FORESTS

SUMMER 1999



Black Bears in Alabama

Future Demand for Wood Products

Pond Construction

Controlling Unwanted Vegetation

STATE FORESTER'S MESSAGE

By TIMOTHY C. BOYCE, State Forester

Years ago, upon my wife's insistence, I wrote a poem for the Alabama Forestry Association's magazine. It's about a tree farmer and exemplifies my feeling towards TREASURE Forest landowners and their strong stewardship of God's great resource, our forest. I'd like to share it with you here.

I knew an old tree farmer who now has passed away,
But when I stopped to ponder, I can hear him say

Trees are made for people and oh so much, much more
Drag you up a chair, while I open up the store

I've seen him gaze for hours up one old tall pine tree
And turning with a grin he'd say, "This here tree belongs to me."

He roams from hill to holler to watch his ole trees grow
And when he starts to plant them, he's sure they're in a row

He loves the sparkling water and keeps it clear and cold
And he's never nipped a bottle, so I've heard it told

He's also very careful with all the birds and bees
And if you really knew him, you'd know he loves more than just trees

When he cuts his timber he always does it right
And you know he shares his money with his children and his wife

He's a doctor, he's a lawyer, he's really quite a scholar
But that really doesn't mean much, when he sits alone in his holler

He's a man we're all quite proud of and we see him every day
And he knows trees mean our future, that's why he works so hard this way

He'll always help a neighbor and from his old wood store
He'll give away tree seedlings, 10,000 or maybe more

He loves the wild turkey and gazing at the deer
He's even planted flowers around the bluebird house this year

He's a man of many wonders and friendly as can be
I guess you know how important he can be to you and me

He guards our national treasure for that we owe him more
But all he really asks of us is to visit him at his store

I often sort of wonder why he does all this hard work
But if it weren't for our trees, the world would go berserk

I'll never forget that morning, the day he passed away
He's given us a future, for that we cannot pay

Sincerely,

Timothy C. Boyce
State Forester

ALABAMA'S TREASURED FORESTS

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

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COVER: A baldcypress marks the spot where Smiley Creek runs into the Conecuh River in Pike County. This scenic view is from the TREASURE Forest of Johnny and Beverly Taylor. Read more about the Taylors on pages 4-6. Photo by Kim Gilliland.

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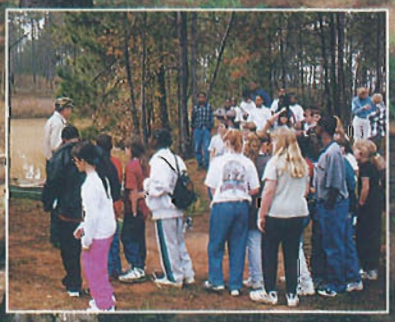
Making Something Out of Nothing

By KIM GILLILAND, Editor



Fifth graders visit the Taylor TREASURE Forest.

Johnny and Beverly Taylor stand near pines that were planted on open cropland just three years ago.

In 1989 the *Troy Messenger* newspaper featured an article about the TREASURE Forest Program. Among those reading the article was Beverly Taylor. "I was just fascinated," she said. Beverly and her husband Johnny had purchased some land several years earlier but had little success growing trees on the property. In fact, almost no growth at all had occurred on much of it. Reading the article let her know there was help available for people who owned forestland. She picked up the phone and called the Alabama Forestry Commission office in Pike County.

After consulting with Forest Ranger Wayne Craft and Forester Barry Lawrence, the Taylors had a 10-year management plan developed. "I don't know what we'd have done without them," Johnny says of Wayne and Barry. "They gave us some really good advice." Wayne brought them some back issues of *Alabama's TREASURED Forests* magazine, which was how the Taylors began to learn about forest management.

Beverly also remembers reading about the Helene Mosley Memorial TREASURE Forest Award in an issue of the magazine. "That stands for what I believe in," she thought, and secretly hoped to achieve the recognition one day. The Taylors were certified as TREASURE Forest landowners in 1994 and were selected as the Helene Mosley southeast regional award winners in 1998.

The Taylors have several tracts of land, one of which is in Crenshaw County and has been in Johnny's family for many years. Along with four tracts in Pike County, they manage around 1,000 acres for timber, wildlife and recreation. The land they purchased was unmanaged and what some would consider worthless. But today the timber is growing, the wildlife is abundant and their forestland provides a wealth of recreational opportunities.

Converting to Timber

When they first started buying land it was with the intention of farming it.

Beverly had grown up with a farm background and that was really all she knew. They grew peanuts and corn and had cows and were basically "weekend farmers." This wasn't a moneymaking enterprise, however; in fact, they lost money. After learning about forest management they started converting some of that open farmland to pine trees.

Today there are still a few small tracts that will eventually be planted to trees. This slow conversion has led to many different age classes of trees, something that will be beneficial to wildlife. Johnny says that after they started managing their forestland, the wildlife just flourished. "It all goes hand in hand," he said. "When you do a good job with your timber, you do a good job with your game."

Purple martin houses have been erected near the pond.

Thinning Leads to Growth

There was already an established pine plantation on one tract of land they purchased, but the crowded trees were competing for sunlight, moisture and nutrients. Upon consulting the Forestry Commission for advice, the Taylors found that their trees needed thinning. After thinning, which gave the remaining trees additional space, the stand quickly started growing. Today these are some of the largest trees the Taylors have.

There was also another reason to thin their pines; Ips beetles had infested two acres. "We saw what can happen because of too much crowding," Beverly said. The infested trees were cut, piled and burned as recommended by the Forestry Commission.

Erosion Control

A major obstacle to establishing and managing their forestland was erosion. Deep, wide gullies were scattered around their property. Cost-share practices such as the Conservation Reserve Program helped convert this eroded land to trees. Terracing was also a major project to slow the flow of water across the land.

The rolling hills on most of their property are a constant challenge, Johnny explains. Every tree and food plot planted will help in the erosion control effort. Roads are also grassed to help hold the soil in place.

Adopt-A-School

The Taylors have adopted the fifth grade class at Goshen Elementary, which is only a few miles from their TREASURE Forest. The location makes it easy for the children to make a field trip to the forest and for the Taylors to visit the school. When the classes come to the Taylor TREASURE Forest they are taken on a tour and learn about water quality, timber management, wildlife and more. The Pike County Forestry Planning Committee also assists and professionals from Auburn University are sometimes instructors during the tours.

The experience for the kids doesn't end after the field trip, though. When they return to the classroom they are asked to write an essay about what they learned. The Taylors have the opportunity to review all the essays and award several of the children with $50 savings bonds during a recognition ceremony at the school.

With her background as a former teacher and principal, Beverly wholeheartedly believes that children benefit from visiting the TREASURE Forest in many ways. They are exposed to different perspectives, regard aspects of nature in new ways and learn to express their experience in writing. She keeps a scrapbook of the many thank-you letters received from students, teachers and parents as a result of their involvement in adopt-a-school. "We enjoy sharing this place," Beverly said.

Recreational Opportunities

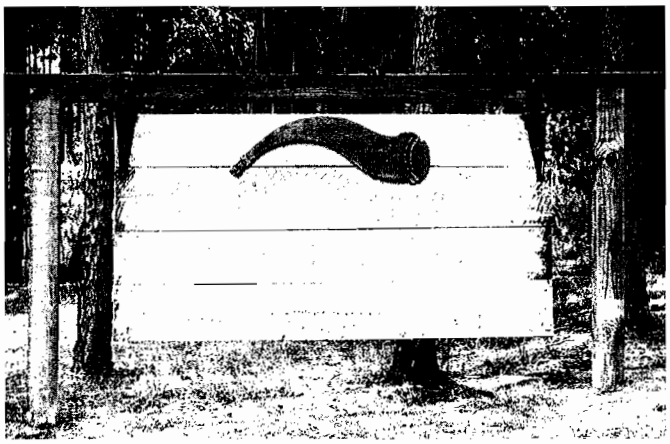
Although the Taylors lease some of their land for hunting, the majority of recreational activities that take place are for family and friends. The Conecuh River, Smiley Creek and Banks Creek provide lots of fishing and swimming, as well as a relaxing atmosphere for group events. A cabin was built several years ago on the bank of the river, and it's the perfect spot for cookouts and gatherings. The cool hardwood bottom is filled with oaks, magnolias and cypress trees. In the spring the wildflowers pop up along the roadsides, with white Easter lilies being the first to appear.

Easter lilies carpet the damp hardwood bottom in the spring.

Four years ago the Taylors built a large pond across the street and down the hill from their house. It is stocked with bass and bream and provides excellent fishing. Looking at it from their front porch brings a feeling of accomplishment to them both. It's just one more example of how their determination paid off. "I knew it would be a long-term thing," said Beverly. "We wanted to do the best with the land that we had." Their biggest accomplishment, Johnny says, is having turned undesirable land into desirable land. It was not an easy transition, but the Taylors have shown that with good advice and hard work you can make something out of nothing.

Editor's Understory

By KIM GILLILAND, Editor



A homestead land grant signed by President William McKinley in 1897 hangs in the foyer of Johnny and Beverly Taylor's home. There's a story behind the land grant and the home, both of which show how much the Taylor's value the heritage of their family and state.

Johnny explains that he is the third "John Taylor" to own the land referred to in the document signed by President McKinnley. His grandfather, the first John Taylor, was the first owner of the 160 acres in Crenshaw County. He married a woman from Oklahoma who was one-half American Indian. Her name was Mary Cleghorne. Sadly, according to the 1913 obituary (framed and hanging in the Taylor's hallway), John passed away at age 42, leaving his widow Mary to care for five sons, four daughters and an unnamed infant around two months old. This infant daughter was finally named "John" after her deceased father. Johnny Taylor was eventually named after her. An interesting aside is that his Aunt Johnny, as she was called, also married a man named John, thus adding to the confusion of many!

As time passed, Aunt Johnny purchased the homestead acres from her brothers and sisters. In her later years she lived beside Johnny and Beverly on their property in Pike County near Goshen. Through her generosity, they have several artifacts from the Cleghorne side of the family. The most unusual is an animal horn that was used by Sam Cleghorne, Mary's father and Johnny's great-grandfather, for communication. Engraved on its side is the name "Cleghorne," which adds to its value as a family heirloom. The Taylors keep it with a quilt that was woven by Mary Cleghorne and dyed brown with walnut hulls. Old photos are also treasured mementos of this part of their family history.

Before Aunt John died, she requested that Johnny and Beverly purchase her land in Crenshaw County so that it would stay in the family and remain officially in the name of John Taylor. Today Johnny and Beverly's daughter lives on that tract of land, which is part of their TREASURE Forest. The Taylors are thankful for the pioneer spirit of their ancestors and for the privilege of being caretakers of any land, particularly this special place. In appreciation of this rich heritage, the Taylors named their farm "Cleghorne Taylor TREASURE Forest" and use the horn shape as a symbol for their property.

Although their home in Pike County is new to the Taylors, it was actually built in 1912 in the town of Clio in Barbour County. Several years ago the Taylors began purchasing old homes and restoring them. This not only brings in income, but it allows the Taylors to have a part in preserving some of our state's architectural history. One particular house, though, found a special place in their hearts. It would become their retirement home.

They had the perfect spot for it, too, but it took some doing to get it there. The house was literally sawed in half and moved 50 miles to Goshen, even spending one night in a farmer's field. You wouldn't guess its origins, though, because it looks like it was built for the top of the knoll where it sits today. Some modifications were made, but the original glass, heart pine floors, mantels and pocket doors are still in place.

The home is a perfect gathering place for their family and friends. One of their most enjoyable hosting jobs was when the board of directors of the Alabama TREASURE Forest Association held one of their meetings at the Taylor's house and farm. Beverly serves as a director for the southeast region of the ATFA. Johnny is a county leader, so they are both heavily involved in TREASURE Forest activities.

The Taylors are passing along their stewardship principles to their three children, David, Jamie and Amy. David and his wife Michelle have just purchased 200 acres near Johnny and Beverly. David has seen what his parents have accomplished and hopes to begin turning his property into productive forestland by planting trees this winter. Jamie and wife Shannon have bought 20 acres as well. Amy and husband Scotty Chandler live on the Cleghorne property in Crenshaw County.

All three children have participated in tours held on the Taylor TREASURE Forest. They were also present when their parents received the Helene Mosley Memorial TREASURE Forest Award at the Landowner Conference in March of this year. That was the culmination of many years of hard work, but it was time well spent, say the Taylors. "If we can teach our own children to be good stewards of the land," Beverly says, "it will have been worth it."

The Demand for Solid Wood vs. Fiber

By **KEN MUEHLENFELD,** Director, Forest Products Development Center, Auburn University

The markets for forest products and the timber on which they are based have always been volatile. However, recent market trends have been especially perplexing and troubling to both product manufacturers and timber growers alike. While the U.S. economy continues its record-breaking expansion into the ninth year with a nearly ideal combination of low interest rates and low inflation, prices for many forest products have been very weak. In response to these conditions, prices for timber have fallen over the past year in most producing regions of the United States, including Alabama. What are the causes, and more importantly, where do we go from here? What does it all mean for timber growers?

International Market Weak

First of all, we should understand that the domestic demand for forest products, particularly solid wood products, has actually been quite good. With low interest rates and a strong economy propelling housing starts to their highest level in 20 years, the demand for lumber and structural panels in the United States has been strong. Other solid wood demand sectors such as repair and remodeling and industrial markets have also been expanding. In fact, record consumption levels for both lumber and structural panels were reached in 1998. But while U.S. demand for solid wood products has been strong, demand elsewhere in the world has been weak. This weakness has been particularly evident in Asia, which has been a hugely important market for the U.S. forest products industry. The well-publicized economic problems in Pacific Asia have dramatically affected the volume of lumber and panels being exported from both the United States and Canada. Greatly compounding the problem of weak international demand is the fact that the U.S. dollar has been very strong, making U.S. lumber and panels expensive on the world markets.

Canadian Imports Affect U.S. Market

At the same time that international demand is weak, the supply of lumber and panels on the U.S. market has been very strong. Record U.S. production levels for both softwood lumber and structural panels have combined with a flood of imported product from Canada. The result has been record volumes of product available to U.S. consumers. So even though demand has been good, there has simply been too much supply of product on the market to support favorable prices for producers. These conditions have squeezed margins for producers and the effects have found their way into the timber markets. While timber prices escalated sharply during the 1990s, the recent price pressures have been downward due to a decreasing ability on the part of manufacturers to pay the high wood prices reached in recent years.

If there is one single factor that can be pointed to as having the greatest impact on conditions in the U.S. solid wood products markets, it would have to be the enormity of imports from Canada. Both lumber and structural panel imports were up sharply in 1998, and both achieved record levels. While Canada typically has sold a great deal of lumber into Pacific Asia, the recent weakness in these markets has forced Canadian producers to look elsewhere for sales. Consequently, much of the wood that would have gone to Asia, given better market conditions there, has instead been channeled to U.S. markets. In the case of structural panels, a huge build-up of Canadian oriented strandboard (OSB) capacity has been the driving force for increased sales to the U.S. in recent years. It should be pointed out that Canada's forest industry has been built largely to serve the U.S. market. Canada's production capacity for both lumber and structural panels far exceeds its domestic demand. For wood products manufacturers and timber growers in Alabama it is easy to become alarmed and upset at the extent of Canadian imports. U.S. consumers, however, have benefited substantially from broader product selection and lower prices, at least in the short term.

Pulp and Paper Markets

The markets for pulp and paper have also been weak during recent years; however, the problems in this industry are probably more serious and complex. While the U.S. demand for paper and paperboard has continued to grow slowly, international markets have been very weak. Again, the weakness has been especially pronounced in Pacific Asia. Unfortunately, Alabama has been a major supplier of market pulp and paper products to this region, and consequently, Alabama's pulp and paper industry has been especially hard hit by poor economic conditions in certain Asian countries.

For the U.S. pulp and paper industry, however, the problems go deeper than the current economic slump in Asia. A nagging problem of over-capacity in North America has plagued the industry for many years and has served to keep prices low and the financial performance of producing companies generally unattractive. Not only has capacity been over-built in North America, but more recently internationally, with the emergence of certain Latin American and Asian countries as major players on the world market. The markets for pulp and many paper grades are truly international, with production in Brazil, Indonesia, Sweden, or wherever, affecting markets for producers here in Alabama.

Further compounding the difficulties for pulp and paper producers in the U.S. South is the fact that the region has lost its low-cost producer status in market pulp and in certain paper grades. Countries like Brazil in Latin America and Indonesia in Pacific Asia have emerged on the scene as the world's low-cost producers for pulp and some important paper grades. Major producers in these countries now have newer mills, lower wood costs and lower labor costs. In addition, they generally are not burdened with the very expensive investments in pollution control equipment that are mandated for U.S. producers. While the U.S. pulp and paper industry is already among the cleanest in the world, recent new regulations imposed by the Environmental Protection Agency will require U.S. producers to invest somewhere between $3 and $4 billion in additional pollution control equipment in order to comply. A number of companies have chosen not to make these enormous investments in non-productive equipment at marginal mills, and have opted to shut them down instead.

Continued on page 20

THREATENED & ENDANGERED SPECIES

Leafy Prairie Clover

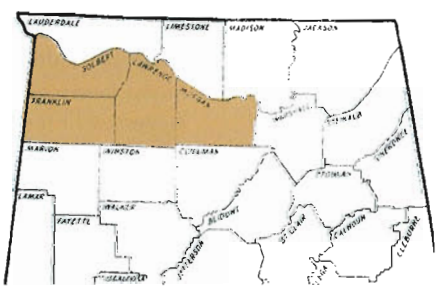
By **JAREL HILTON,** Director, Alabama Natural Heritage Program℠

Dalea foliosa, the leafy prairie-clover, is a rare member of the bean family and is restricted to cedar glades, barrens, and calcareous prairie habitats in Tennessee, Alabama, and Illinois. Since it was first observed more than 138 years ago, known occurrences for leafy prairie clover have declined by 45 percent due to habitat destruction, overgrazing, and habitat loss from encroachment by woody species. Because of its rarity and decline, leafy prairie clover was listed as endangered by the U.S. Fish and Wildlife Service in 1991. This species is listed as endangered in Tennessee and Illinois, and is considered globally imperiled by The Nature Conservancy.

The leafy prairie clover is a perennial with smooth, compound leaves and conically shaped purple flowers. It is easily distinguished from the two more common purple-flowered prairie clovers by its leaflet number. The center of distribution for leafy prairie clover is the limestone cedar glades of central Tennessee and northern Alabama, where the species is nearly endemic. However, there are also disjunct populations in Illinois, where it occurs on prairies on river terraces in the northeastern part of the state. Leafy prairie clover habitats include open limestone cedar glades and barrens, and calcareous prairies that have shallow, silty clay loam soils over flat horizontally bedded limestone. These habitat types experience high surface and soil temperatures, have low soil moisture, and are typically wet in the spring and fall and droughty in summer. Plants can persist in partial shade, but prefer open habitat in full sun on soil microhabitats deep enough to retain enough soil moisture to allow plants to survive the dry summers. Leafy prairie clover is somewhat limited by soil depth. Soil must be deep enough to hold some moisture, but not so deep that the prairie clover is outcompeted by other vegetation. Under heavy woody invasion, leafy prairie clover is eliminated.

Fire was a historical ecological process that maintained the open grasslands, glades, and barrens inhabited by leafy prairie clover. These open habitats were embedded in a matrix of mixed oak and cedar forest. Cedars are dominant in the shallow soils surrounding open limestone glades, giving them the name cedar glade. However, with the removal of fire from the landscape, cedars can now colonize and invade open glades. Much of this kind of habitat has been fragmented by unplanned development, road construction and maintenance, overgrazed by livestock, used as trash dumps or encroached by woody vegetation and invasive exotic plant species.

The recovery strategy outlined by the U.S. Fish and Wildlife Service for leafy prairie clover is the enhancement and maintenance of populations through habitat protection, management, and population restoration. Viable populations must be secured in Alabama, Tennessee, and Illinois for consideration of reclassification from endangered to threatened. This can be accomplished in the future through cooperative efforts among private landowners, government agencies, and private conservation groups. For additional information, contact the Alabama Natural Heritage Program℠, Huntingdon College, Massey Hall, 1500 E. Fairview Avenue, Montgomery, AL 36106-2148.



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Landowner Questions Concerning the TREASURE Forest Program

By PAT BUTLER, Alabama TREASURE Forest Association, and
TIM ALBRITTON, Forest Operations Specialist, Alabama Forestry Commission

The TREASURE Forest Program is designed to promote responsible stewardship by private forest owners. Established in 1974 by the Alabama Forestry Planning Committee, TREASURE Forest is not a typical government program. Participation in the TREASURE Forest Program is strictly voluntary. We must remember that the continuation of the freedom to manage our forestland without further government intervention depends on us and other forest landowners.

Many landowners have questions concerning the TREASURE Forest Program. Following are some commonly asked questions and their answers. We hope they are helpful as you consider whether you wish to become a TREASURE Forest landowner. If you are already a TREASURE Forest landowner, we need your help in promoting this management concept among your friends and neighbors.

QUESTION: Why should I enroll in the TREASURE Forest program? What benefit is it to me?

ANSWER: When you enroll in the TREASURE Forest Program you are making a statement to the resource providers and professionals in your area that good stewardship of the land matters to you. You will also receive an onsite visit or inspection by a registered forester and a wildlife biologist. During this visit you will have an opportunity to explain your management style and receive some valuable feedback from professionals.

QUESTION: What will it cost me (all estimated cost involved in the entire process) to have my land certified as a TREASURE Forest?

ANSWER: There is no cost involved with the TREASURE Forest certification. Of course, there are costs involved with property management. Some of the practices necessary to achieve and maintain TREASURE Forest standards may have associated costs. These are practices that are common in multiple-use management of forestland. Some examples of management practices with associated expenses are prescribed burning and creating and maintaining wildlife openings.

QUESTION: I am a private landowner who owns land in several different parcels, in several locations in the state of Alabama. My land also has several different usages (cropland, pasture, hay, and timber). Which of this acreage do I have to include in the TREASURE Forest certification?

ANSWER: All forestland owned in the state must be considered when applying for TREASURE Forest certification. Only forestland will be inspected for TREASURE Forest status. But, visibly poor management of other lands (farmland pastures, garbage dumps, etc.) reflects poorly on the program and may contribute to disapproval of TREASURE Forest applications.

QUESTION: I have land that I own as an individual and I also own land in an estate with family members. I am interested in becoming a certified TREASURE Forest landowner; however, my family in the estate does not want to be in the TREASURE Forest Program. Do I have to include the land that is involved in the estate in addition to my individually owned property to qualify for TREASURE Forest?

ANSWER: The land that you own as an individual may be certified as a TREASURE Forest by itself. The estate property would quality if and when all other joint owners wanted to participate.

QUESTION: If I put my land in the TREASURE Forest Program, will it affect what I can and cannot do with my land?

ANSWER: Good stewardship is a requirement of the TREASURE Forest Program. Certain practices, such as following Best Management Practices for forestry when harvesting timber or managing for multiple-use benefits, are required by the TREASURE Forest Program. Landowners participating in the program generally share the same TREASURE Forest ethics and are usually already following these guidelines. The TREASURE Forest Program is not designed to be a list of restrictions, but rather a window of opportunity for what the land can provide when managed properly.

QUESTION: I am a person who already manages my land using good stewardship principles and practices. What advantage is there to being a certified TREASURE Forest?

ANSWER: When you become a certified TREASURE Forest landowner, you earn recognition in your community, county and state as being a responsible steward of your land and show that you are practicing multiple-use management of your property. You are also joining a fraternity of like-minded individuals who share the TREASURE Forest vision.

QUESTION: After I become a certified TREASURE Forest, what am I expected to do in regard to this program?

ANSWER: Displaying your TREASURE Forest sign on your property is just the beginning. Once you are recognized as a certified TREASURE Forest landowner, you become a mentor and a role model to others. You will be encouraged to share what you have learned and accomplished with your neighbors and others throughout the South. The TREASURE Forest Program is a continual learning process. Certification is just the beginning of a rewarding journey in the TREASURE Forest Program.

If you have additional questions regarding the TREASURE Forest Program, please contact your county office of the Alabama Forestry Commission.

Considerations Before Building a Pond

By **PERRY L. OAKES,** P.E., State Conservation Engineer, USDA-Natural Resources Conservation Service

A properly located, well-constructed pond can be a beautiful addition to a landscape. Ponds provide owners with excellent recreational activities such as fishing, swimming, and wildlife viewing as well as potential water sources for livestock watering, irrigation, and firefighting.

Selecting a Pond Site

The process of choosing a pond site is at least as important, if not more so, than the actual construction process. Many sites are not suitable for ponds. To have a reasonable chance of having a good pond, the prospective pond owner should be aware of the basic criteria necessary for a site to be suitable for pond construction. These criteria include the safety of the location, the water-holding capacity of the soil in the pond, the geologic makeup and topography of the pond site, and the characteristics of the watershed, or drainage area.

Pond Safety—If possible, do not locate your pond where failure of the dam could cause loss of life, injury to persons or livestock, damage to residences, industrial buildings, railroads, or highways, or interrupted use of public utilities. Ponds, like any body of water, attract people so there is always a chance of injury or drowning. You may find that you need to protect yourself with liability insurance coverage.

Soils in the Pond—The composition of soils in Alabama is highly variable. The suitability of a pond site depends on the ability of the soils in the reservoir area to hold water. The soil profile under the proposed dam is also very important to the ultimate success of the water-holding ability of the pond. Therefore, the dam and its foundation must be sealed with impervious soil material to prevent seepage beneath the dam.

Geology—Some limestone areas of Alabama are especially hazardous as pond sites. There may be invisible crevices, sinkholes, or caverns in the limestone below the surface soil. Building in these sites may result in a badly leaking pond.

Topography—The topography, or lay of the land, determines the ultimate construction cost of the pond more than any other single factor. For economic reasons, try to locate the pond where the largest storage volume can be obtained with the least amount of earthfill for a dam. A good site is usually one where a dam can be built between two ridges crossing a narrow section of a valley that is immediately downstream of a broad section of valley.

Don't build your pond in a location where failure of the dam could cause damage to highways.

Watershed/Drainage Area—For ponds in which surface runoff is the main source of water, the contributing drainage area, or watershed, must be large enough to fill and maintain adequate water in the pond during droughts. However, the drainage area should not be so large that expensive overflow structures are needed to bypass excess runoff during storms.

If the drainage area is too small, the pond may not adequately fill, or the water level may drop too low during extended periods of hot, dry weather. Shallow water contributes to excessive aquatic weed problems and potentially to fish kills from low dissolved oxygen when average depth is less than 3 feet.

Ponds with excessive drainage areas tend to be muddy, silt-in rapidly, and have erosion problems in the spillway area. Runoff from oversized drainage areas can flush out much of the microscopic plant and animal life that form the base of the food chain for fish, thus lowering pond productivity. To avoid potential pollution of pond water, select a location where drainage from farmsteads, feedlots, sewage lines, dumps, industrial and urban sites, and other similar areas does not reach the pond.

Inflow must be reasonably free of silt from an eroding watershed. The best protection is adequate erosion control on the contributing drainage area. Land under permanent cover of trees or grasses is the most desirable drainage area.

Wetland Restrictions

Good pond sites in Alabama will sometimes include land areas classified as wetlands. Wetlands are among the most biologically productive natural ecosystems in the world. They provide many benefits including food and habitat for fish and wildlife, flood protection, natural products for human use, water quality improvement, and opportunities for recreation, education, and research.

If wetlands are present on a pond site, they must be identified before construction of the pond. Federal wetland programs such as Section 404 of the Clean Water Act and Swampbuster provisions of the Food Security Act may apply. If wetlands are present

(depending on the type and amount), locating an alternative pond site without significant wetlands may be the best alternative.

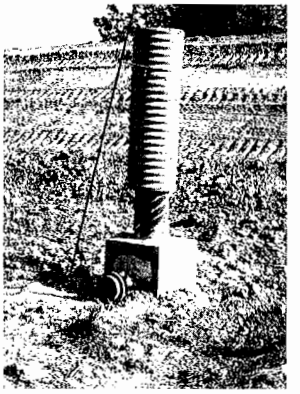
Landscape Planning

Water adds variety to a landscape and further enhances its quality. A pond visible from a home, patio, or entrance road increases the attractiveness of the landscape and often improves land value. Where possible, locate the pond (or the house) so that the major sight line crosses the longest dimension of water surface. The pond should be placed so that a viewer will see the water first before noticing the dam, pipe inlet, or spillway.

When feasible, locate the pond so that some existing trees and shrubs remain along part of the shoreline. Shoreline trees and shrubs add interest by casting reflections on the water, provide shade on summer days, and help blend the pond into the surrounding landscape.

Types of Ponds

Embankment Ponds—The most common type of pond in Alabama is the embankment pond, also called watershed pond or hill pond. A watershed is the drainage area around the pond within which rainfall drains toward the pond. A dam or embankment is constructed in a depression between two hills and serves to impound water in a basin area on the upstream side of the dam.



Principal spillway for a pond.

Embankment ponds usually depend on rainfall runoff to fill and then maintain water levels. An embankment pond is generally the least expensive type of pond per surface acre of water to construct.

Excavated Ponds—Excavated, or "dug," ponds are constructed almost entirely below original ground level. This construction method is usually used only for construction of small ponds. Excavated ponds may require an external water source to fill and maintain the pond if springs, groundwater, or runoff are not sufficient. An excavated pond is usually the most expensive type of pond to construct on a per-acre basis.

Levee Ponds—Suitable for flat or nearly flat land, levee ponds are only partially excavated. Earth from what is to be the basin area of the pond is removed and used to construct the sides, or levees, of the pond. An externally pumped water source, such as a well or creek, will be necessary to fill and maintain this type of pond.

Pond Design and Layout

Pond Sizing—The minimum recommended depth of water for ponds in Alabama is 6 to 7 feet. Greater minimum depths are needed for ponds in which a permanent or year-round water supply is essential, such as for irrigation or firefighting, or where seepage is more than normal. Most typical farm ponds in Alabama have 10 to 15 feet of water at the dam.

Pond Shaping—Usually some simple techniques can be used during planning and construction to shape the pond so that it blends with the surrounding topography and landscape. For example, additional earthfill can be placed on the back slope and abutments of the dam to achieve landform transition. Borrow material needed to construct the dam can also be salvaged along the shoreline of the pond to help deepen the water along the edge as well as provide a more pleasing curvilinear shoreline.

Water Control Structures

Principal Spillway—The principal spillway through the dam is designed to control runoff from a smaller-design storm and has several key components. The pipe through the dam, often referred to as the barrel pipe, should have an antiseep collar(s) installed on the outside to ensure that water from the pond does not leak between the outside surface of the barrel pipe and the earthfill of the dam.

As an alternative to antiseep collars, a filter and drainage diaphragm can be installed around the barrel pipe. This system collects seepage and channels it through the dam without eroding the area around the barrel pipe.

As an alternative to the conventional barrel and riser principal spillway system, a siphon pipe spillway can also be used. The siphon spillway is a closed conduit system formed in the shape of an inverted V over the dam and positioned so that the crest of the siphon is at the normal water surface elevation. An air vent is provided to break the siphon action when the pond surface is drawn down to the normal water surface elevation.

Emergency Spillway—The emergency spillway for the pond is designed so runoff from larger storms can be carried safely around the dam. The spillway is generally located on one end of the dam in undisturbed soil and should be well vegetated.

Pond Construction

Permit Requirements—If wetlands are involved, a permit may be required from the Corps of Engineers. Pond sites that involve a total of 5 or more acres of land disturbance during construction require a National Pollution Discharge Elimination System (NPDES) permit issued from the Alabama Department of Environmental Management.

Hiring a Contractor—Before contracting, have a set of plans and specifications prepared. The plans should show all elevations and dimensions of the dam and emergency spillway, the dimensions and extent of the cutoff trench and other areas requiring backfill, and the location, dimensions, and elevations of the principal spillway, bank contours, and other planned structures. The plan should also include a list of the quantity and kind of building materials required.

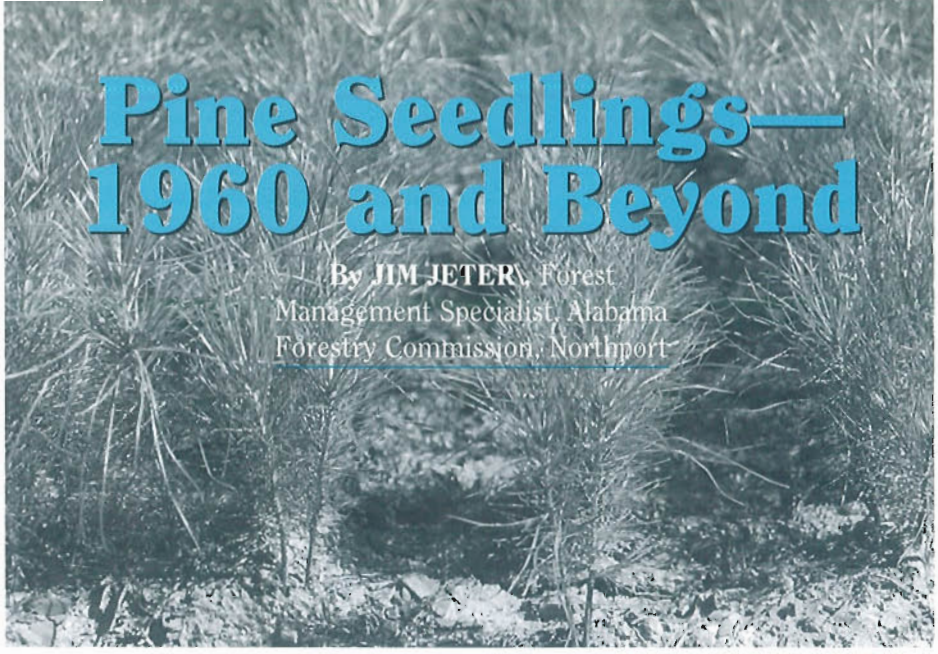
The specifications should give all the information not shown on the plans that is necessary to define what is to be done, prescribe how the work is to be done if such direction is required, and specify the quality of material and workmanship required.

Pond Maintenance

Controlling Vegetation on Pond Banks and Dams—Woody vegetation should not be allowed to grow on dams. Tree roots can eventually penetrate the core of the dam and cause excessive pond seepage.

Limiting Livestock Access—Cattle are detrimental to ponds and should not have uncontrolled access to them. Uncontrolled livestock access will cause damage to dams and banks and sub-

(Continued on page 23)



Pine Seedlings—1960 and Beyond

By JIM JETER, Forest Management Specialist, Alabama Forestry Commission, Northport

In the southern United States, forests comprise more than 50 percent of the land cover and supply 53 percent of the timber harvested in the nation. Forest genetics have made significant contributions to forest productivity and plantation management throughout the world in the last 50 years. Approximately 1.2 billion pine seedlings are planted annually in the South, 80 percent of which are loblolly pine seedlings and 20 percent are slash and other pine seedlings. Virtually all planting stocks are genetically improved seedlings from seed orchards.

For pine, a 1st cycle (generation) seed orchard is established from the best performing selections chosen from wild stands and plantations. A 1 1/2 cycle (generation) seed orchard is established from the very best performing fully tested 1st cycle orchard selections, and the best performing fully tested selections chosen from an outplanted progeny test of 1st cycle orchard crosses. A 2nd cycle (generation) seed orchard is established from the best performing full-tested selections chosen from an outplanted progeny test of 1st cycle orchard crosses.

Trees grown from seeds of 1st generation seed orchards have produced 7 to 12 percent more volume per acre at harvest than trees grown from wild seed. The 2nd generation seed orchards are now producing more than 50 percent of the total seed harvest in the region with estimated gains ranging from 13 to 21 percent in rotation volume over unimproved seedlots. Genetically improved stock has not only demonstrated outstanding growth, but also has lower infection from fusiform rust, typically 20 to 25 percent below unimproved seedlots. With additional improvements in value from quality traits (stem straightness and wood quality), the estimated genetic gains in value should be much greater.

One may ask, Why should I be concerned with wood production in plantations? The answer is simple. By increasing wood production per acre in plantations rather than by managing more acres of forest, genetics—in combination with intensive silviculture—can and will provide better opportunities for the use of natural forests and forest lands for conservation and recreational purposes. This will contribute significantly to the sustained management of world forest resources.

How the Process Works

Most of the genetic information gathered is assembled and disseminated through the North Carolina State University Industry Cooperative Tree Improvement Program. This program has completed 42 years of genetic improvement for loblolly pine in the southeastern United States and currently has 17 industries and five states as members. Annually they plant more than 600 million seedlings, accounting for 37 percent of the annual tree planting in the country. The 1st cycle of the loblolly pine breeding program started in the late 1950s and continued through the early 1970s. Seed orchards started to produce genetically improved seeds for reforestation in 1969. The 2nd cycle breeding program began with selections from the 1st generation progeny test and additional plantation selections in the late 1970s. The 2nd generation seed orchards started to produce seeds in the late 1980s and now are producing about 50 percent of the total annual seed harvest.

Does this mean that all the seedlings you plant should be 2nd cycle (2nd generation) seedlings? No, not necessarily, because within each cycle there are high producers and low producers. So, if you get a low producing seed from a 2nd cycle cross, you may have been better off getting a high producer from a 1st cycle cross. Beware of marketing schemes. Generally speaking, however, you will be better off with 2nd cycle over 1st cycle over wild seed sources.

Westvaco Research Focuses on Genes

Westvaco, which has the oldest continuously-operating forest research program in the United States (initiated in 1944), has had particular success with its pine research. A major focus of Westvaco's research is the discovery of individual genes that control growth processes in pines and hardwoods. The company says it has made important progress genetically engineering resistance to herbicides and insects.

The company is projecting increases in productivity up to eight to nine times greater than can be achieved in natural stands. The company expects stands established in the year 2000 to produce twice the fiber in half the time and at half the cost as stands that the company harvested in 1995.

Alabama Forestry Commission Seedlings

The Alabama Forestry Commission operates E.A. Hauss Nursery located near Atmore, Alabama. The AFC has pine orchards at Geneva State Forest and Thorsby State Forest and a hardwood orchard at Jake Stauffer Nursery in Opelika, Alabama. The Commission's sales exceeded 40 million pine seedlings and 3 million hardwood seedlings in fiscal year 1998-99. Projected sales for FY99-00 should match last year's numbers.

Now is the time to order seedlings for the upcoming planting season. Orders are taken starting in January of each year by calling Hauss Nursery at 334-368-4854. Pine seedlings are sold according to *species selection*—loblolly, slash, longleaf; *geographic region*—coastal (south), piedmont (north); and the *cycle* or *generation* they came from. Hardwood seedlings are sold by species only.

Points to Remember

1. Seeds used to be collected from cones gathered in the wild, with absolutely no quality control.
2. Seeds are now collected from controlled orchards that are from genetically improved seedlings.
3. "Super Tree," "Improved Tree," and "Superior Tree" are trade names, so to speak, and are all from genetically improved stock.
4. To get the **most** gain from genetically improved seedlings, intensive silvicultural practices must be implemented.
5. If people talk to you about the families the seed came from, remember that within each generation and each family there are high producers and low producers.
6. Just because a seedling looks good does not mean it is a high producer. Likewise, just because someone says the seedling is a high producer or if it does not have a proper root-shoot ratio (phenotypically superior) you may not be getting what you paid for.
7. To date, small forest landowners who own 70 percent of the region's forestland have not fully explored the potential of genetic improvement because they have too often elected low-cost natural regeneration methods over plantation establishment.
8. For most forest landowners, good 1st generation seedlings perform as well as 2nd generation seedlings. The intensive management does not exist.

GENERAL CONCEPTS OF TREE IMPROVEMENT

Production line seed for operational planting is obtained from seed orchards established during each of the research and development stages of a Tree Improvement Program. These stages are depicted in the following diagram:

Tree Improvement Cooperative

⬇

Individual Cooperative Members

⬇

Pick very best selections from natural stands and plantations

⬇

Establish 1st cycle seed orchard

⬇

Outplant open pollinated progeny tests

⬇

Analyze progeny test data and remove (rogue) poorer selections from 1st cycle seed orchard

⬇

Improved 1st cycle seed orchard

⬇

Controlled pollination progeny testing

⬇

Analyze progeny test data and make 2nd cycle selections from very best performers of cooperative wide progeny testing

⬇

2nd cycle seed orchard

References

Li, Bailian, Steve McKeard, and Robert Weir. 1998. "Tree improvement and sustainable forestry—impact of two cycles of loblolly pine breeding in the U.S."

Helms, John A., editor. 1998. **The Dictionary of Forestry.** Society of American Foresters.

The author extends appreciation to Chris Mead, Alabama Forestry Commission, Geneva State Forest, for providing information for this article.

Tree Improvement Terminology

Clone: A gene or piece of DNA replicated in a host.
Cross: The process of cross-pollination.
Genetic Gain: The average improvement in a progeny (clonal) population over the mean of the parental population, resulting from selection population.
Progeny: The offspring of a particular tree or mating.
Progeny Test: A planting generally designed to evaluate parents by comparing the performance of their offspring or to provide for selection of future parents from within the planting itself.
Roguing: Systematic removal of individuals not desired for the perpetuation of a population (culling).
Scion Wood: An aerial plant part, often a branch tip, that is grafted onto the root-bearing (rootstock) of another plant.
Seed Orchard: A plantation consisting of clones or seedlings from selected trees for early and abundant production of seed and to promote balanced, random mating (panmixis). Seed orchards may attempt isolation to reduce pollination from outside sources, and more advanced techniques may seek to skew mating to the most desirable clones.
Silviculture: The art and science of controlling the establishment, growth, composition, health, and quality of forest and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis.

THE POISONOUS THREESOME

By **TILDA MIMS,** Forest Education Specialist, Alabama Forestry Commission

Allergic reactions to three native American plants—poison ivy, poison oak, and poison sumac, all members of the plant genus Toxicodendron—have been sources of misery for many centuries. Captain John Smith described them in his journal, thus making the first report of an allergic disease in America.

According to experts at the American Academy of Dermatology, approximately 85 percent of the population will develop an allergic reaction to poison ivy, oak or sumac if exposed to them. They are the most common cause of allergic reaction in the U.S. and will affect 10 to 50 million Americans every year. Nearly one-third of forestry workers and firefighters who battle wildfires in California, Oregon and Washington develop rashes or lung irritations from contact with this poisonous threesome.

Descriptions

Poison ivy has slightly glossy green leaves that normally grow in groups of three. The leaf shape may vary, and the plant may grow as a vine, or a trailing or low shrub. The plant may produce yellow-green flowers and greenish white berries with the distinct marking that make them resemble a peeled orange. Recognizing the berries can help identify the plants in late fall, winter and early spring when the leaves are not present.

Poison oak closely resembles poison ivy, although it is usually more shrub-like and its leaves are shaped somewhat like oak leaves. The undersides of the leaves are always a much lighter green than the surface and are covered with hair. The plant may develop hanging clusters of greenish or white berries.

Poison sumac grows mainly in uninhabited areas, especially in swampy locations. A small tree about 5 to 6 feet high, poison sumac has seven to 13 leaflets arranged in pairs, with a single leaflet at the end of the midrib. The leaves are elongated and without teeth. Poison sumac can be distinguished from harmless sumacs by drooping clusters of green berries. Harmless sumacs have red, upright berry clusters.

Poison ivy is a term used loosely to refer to an entire class of plants comprised mainly of ivy, poison oak and poison sumac and for the sake of convenience, poison ivy in this article will refer not only to ivy but to sumac and oak as well.

Allergic Response

Sensitivity to poison ivy is not something we are born with. It develops only after several encounters with the plants, and sometimes over many years. Scientists believe that sensitivity to poison ivy changes with time and tends to decline with age. People who reach adulthood without becoming sensitized have only a 50 percent chance of developing an allergy to poison ivy. Those who were once allergic may lose their sensitivity later in life. Only 10 to 15 percent of the population is thought to be resistant. "Once allergic, always allergic" is not true.

Poison ivy rash is an allergic contact dermatitis caused by a substance called *urushiol* (you-ROO-shee-ol), found in the sap of the three plants. Urushiol is a colorless or slightly yellow oil that oozes from any cut or crushed part of the plant, including the stems and leaves. After exposure to air, urushiol turns brownish-

black making it easier to spot. It is easily transferred from one person to the other, so clothing or tools that touch the plants, or pets that rub up against them, can pick up the plant oil and pass it directly to another person. The chemical can remain active for at least one year, so exposed objects or pets should be thoroughly cleaned with water after contact with the plants.

Treatment

The first and most essential part of the treatment is to wash the urushiol from the skin. Urushiol has been proven to be neutralized by water. If the oil can be washed off the skin within five minutes of contact, there should be no reaction. If it remains on the skin more than five minutes, washing will prevent the rash from spreading.

Wash exposed skin as soon as possible with soap and cold water, or use a special soap such as Technu®, specifically designed to remove urushiol. Follow washing by liberally applying rubbing alcohol or a solution of alcohol and water in equal proportions to dissolve all the unabsorbed poison. Don't return to the woods or yard the same day. Alcohol removes the skin's protection along with the urushiol, and any new contact will cause the urushiol to penetrate twice as fast.

The rash will heal without treatment, but wet, cold compresses may relieve inflammation. Calamine lotion is a good drying agent and helps to relieve itching and inflammation. Cool showers or soaking in a lukewarm bath with oatmeal or baking soda added will help dry blisters. Scratching or spontaneous oozing of the rash and blisters will not cause the rash to spread because urushiol is not present in the blister fluid.

The FDA also recommends topical corticosteroids (commonly called Cortaid® and Lanacort®) as safe and effective for temporary relief of itching. Other products to dry up oozing blisters are recommended, including aluminum acetate, baking soda, Aveeno®, calamine lotion and zinc oxide.

Contaminated clothing can carry the poisonous oil for years. Do not wash contaminated clothing with other clothing and take care to rinse out the washing machine thoroughly after washing contaminated clothing. Air drying of clothing is recommended since the ultraviolet part of sunlight is thought to break down the urushiol.

Preventing Dermatitis

Avoidance is the best method of preventing contact dermatitis symptoms. The rule "leaves of three, let them be" is good, except some plants don't play by the rules and have leaves in groups of five to nine. Learning to identify these three members of the Toxicodendron genus is a must.

In 1996 the USDA approved bentoquatam, the first drug that protects against the rash of poison ivy and related plants. It is available over the counter as IvyBlock® lotion and other brand names. It comes in a lotion that should be applied at least 15 minutes before exposure to poison ivy, oak or sumac, and reapplied every four hours.

An inexpensive and effective way to prevent a poison ivy reaction is to make your own homemade poison ivy prevention kit. Fill a pint or quart jar with rubbing alcohol. Cut a wash cloth in half and keep one part in the jar. After exposure to poison ivy, remove the cloth from the jar and slosh the rubbing alcohol on exposed skin (but not the face), then rinse with lots of water. No need to scrub—just slosh. Return the cloth to the jar. For up to several hours after exposure, use the rubbing alcohol on the cloth to neutralize the urushiol to prevent a reaction.

Eradicating Plants

You can destroy poison ivy by cultivation. A single treatment seldom kills the plant completely, since it consists of a vast interconnected network of above- and below-ground horizontal rhizomes and above-ground vertical stems. Treat the area again as soon as regrowth occurs from any living parts. Repeated cultivation will eliminate poison ivy because it does not easily regenerate from plant fragments.

Chemicals are recommended for eradication in areas that do not permit cultivation and where some damage to other vegetation can be tolerated. It is best achieved in May through July while the plants are flowering. Spraying glyphosate (Roundup®, Kleenup® and others) is effective but it is a non-selective herbicide and will kill any vegetation it contacts.

Do not burn the plants except under controlled conditions, as the sap-covered soot in the smoke will carry the poison. Inhaling dust and ash from the smoke can result in lung poisoning that can require hospitalization. Also, dead poison ivy plants can still cause dermatitis and must be handled with care.

Pull plants when the soil is wet and loose. Make sure to remove all the roots of the plant. To kill poison ivy that climbs high into trees, cut the vine off 6 inches above ground level. Treat the stump with glyphosate immediately after cutting the roots and to prevent sprouting. If sprouting does occur, treat the leaves with glyphosate.

What Good Is It?

As with kudzu and fire ants, we often wonder why such things exist. What good is poison ivy? The white, waxy berries are a popular food for songbirds during fall migration and in winter when their foods are scarce. Robins, catbirds and grosbeaks especially like the berries. In fact, they are largely responsible for the spread of the pesky plant.

Small mammals and deer browse on the foliage, twigs and berries. Urushiol or components derived from these poisonous plants are used in making lacquers, processing photographic film and for a test as an allergen. In the fall of the year the aging foliage of these plants produces colors of amber, orange and red adding to the splendor of autumn colors.

For More Information

For more information on identifying and controlling these plants, contact one of the sources listed below.

Alabama Cooperative Extension System; www.aces.edu

American Academy of Dermatology; www.aad.org

Food and Drug Administration; www.fda.gov

Nature's Revenge by Susan Carol Hauser, Lyons & Burford, Publishers, 1996

www.ivyblock.com/poison.htm

LANDOWNERS LEGISLATIVE•ALERT

NATIONAL

by JAY JENSEN, Washington Office,
National Association of State Foresters

With the first half of the legislative calendar completed, plenty of natural resource related bills have been introduced before Congress. Yet, the legislative climate looks to be limited this year to one or two broad appealing issues, neither of which is directly related to forestry. And now with Congress' attention focused on the Balkans and how to pay for the conflict, activity on forestry issues outside of the yearly appropriations bills is highly unlikely.

However, there is one issue that has been building over the past few months relevant to the Alabama private forest landowner, and the nation's non-industrial private forest landowners as a whole, which may have an outside chance at seeing some action.

Taxation

With possible record budget surpluses this year, Congress—the Republican leadership in particular—is pushing to pass some sort of tax cut legislation. Tax issues are a major factor in land management decisions for private landowners. If a tax bill is to be included on the agenda for this year, forestry interests are pushing strongly to be included.

The National Association of State Foresters has already taken a stance in support of three separate pieces of taxation legislation currently before Congress that positively impact the private landowner.

Death Tax Elimination Act (H.R. 8)—Introduced in the House of Representatives, this bill, in short, seeks to eliminate the federal estate and gift tax (commonly referred to as the "death tax.") over a 10-year period. Elimination of the estate taxes would have the effect of removing a source of land fragmentation pressure that has forced some landowners to subdivide their property. The federal estate tax levies a hefty burden on the benefactor of a will. To cover the large tax, landowners, prior to their passing, frequently subdivide and sell portions of their property to raise money to cover the tax.

The bill, sponsored by Jennifer Dunn (R-WA) and John Tanner (D-TN), is being strongly supported by agriculture and forestry groups including the American Tree Farm System, the Forest Landowners Association, the American Farm Bureau Federation and others. The bill might have a chance at passage seeing that House leadership has identified it as a priority, as indicated by the low bill number (H.R. 8). However, one large hurdle it must overcome is its costly implementation. It would cost roughly $40 billion over the next 10 years in lost tax revenue. This is not a very palatable option this year with extremely tight spending limits on appropriations.

Reforestation Tax Act (H.R. 1083)—Also sponsored by Dunn of Washington, this bill would do two things. First, it would provide timber owners with a partial inflation adjustment for timber-related capital gains. Landowners would receive a 3 percent reduction in the capital gains rate each year that timber is held, for up to 17 years, for a total of 50 percent maximum reduction. Second, the bill would remove the $10,000 cap on reforestation expenses that can be used as a tax credit, and shorten amortization of these expenses from seven years to five years. The estimated tax revenue that the federal treasury would forego, if the bill were enacted, is $1.469 billion over five years, a figure much lower than the potential impacts form the Death Tax Elimination Act. The Reforestation Tax Credit portion of the bill would cost only $10 million, but go a long way in encouraging the private landowner to actively manage his or her land.

Again, a strong list of supporters has lined up behind this bill: the American Forest & Paper Association, the Forest Industries Council on Taxation, the Forest Landowners Association, and the American Tree Farm System. It is possible that portions of this bill may find their way into a larger tax bill, but right now it is too early to predict its future.

Conservation Tax Incentives Act (S. 808)—Introduced by Sen. Jim Jeffords (R-VT), this bill would allow landowners to exclude from capital gains taxes 50 percent of the proceeds of the sale of land, or interests in land, to a qualified conservation buyer. In other words, if a landowner sold a conservation easement to a state agency, federal agency, or a land trust, 50 percent of the proceeds from the sale would be exempt from the capital gains tax.

The idea behind this bill is that currently, landowners are free to donate easements that can provide them with a variety of tax benefits (lower property tax assessments, avoidance of estate tax), but are penalized if they sell an easement. This is viewed as unfair to cash-poor landowners who simply cannot afford to give away that much asset value.

This bill has been endorsed (and was written by) the Nature Conservancy, and has the support of several other land conservation organizations such as the Land Trust Alliance. The tax revenue impact of this bill is relatively minor, at $50 million. For passage, this bill will likely need a strong champion to push it through the legislative process.

There are a few other taxation bills out there of interest to the forest landowner, but these are the three with the most potential and the most impact.

New Landowner Support Program Initiated

By GLENN R. GLOVER, Extension Specialist, Private Forest Management,
Alabama Cooperative Extension System, School of Forestry, Auburn University

The Alabama Cooperative Extension System and the School of Forestry at Auburn University, supported by Alabama's forest industry, have initiated a new forest landowner support program. The goal of this program is to educate both forest landowners and non-landowners (stakeholders) in the personal, social, environmental and economic values that can be derived from forestland, as well as how to achieve these benefits in a sustainable manner. This program is called the Private Forest Management Team (PFMT). The PFMT is a coordinated effort among many groups and agencies that work with or support forest landowners in Alabama.

Web Site

Two avenues the PFMT will use in this effort include a World Wide Web site (www.pfmt.org) and an education, motivation and recognition program called Forest Masters. The main structure and format of the Web site have been designed and new information is constantly being added. The site is organized somewhat like a book, with chapters or topics related to forest management displayed along the left side of the screen. Topics include planning and objectives, best management practices, stand establishment and management, forest roads, wildlife management, economics, aesthetics, and others. The site has a glossary to help landowners understand forestry terminology.

There is a section titled Services by County where a landowner can find forestry consultants, loggers that have completed the professional logging management course, and home pages of forestry-related agencies. There is even a section where a landowner can find the endangered species occurring in their county and considerations that might affect forest management. The site is growing daily. It will take some time to complete all of the information, but there are many useful pages and links already in place.

Forest Masters

A second PFMT initiative is to develop a program similar to Master Gardeners for forest landowners and other stakeholders interested in Alabama's forests. This program will be called Forest Masters. This initiative will utilize numerous outstanding educational programs and service opportunities that already exist in Alabama and work to develop new educational opportunities, as needed.

Forest Masters will use a continuing education unit system that many professions utilize to ensure that members of their profession remain current. Any educational program in Alabama that addresses appropriate technical topics can qualify for Forest Master credits. Organizers of the program will submit an agenda and description of the topics to be presented to the Forest Masters coordinator. Credits will be assigned to the presentation or activity designated for one of several identified topic groups (such as timber management, wildlife management, aesthetics and the environment, and policy and economics). Participants will build credits with each educational activity in which they participate.

Once a participant has achieved a designated number of credits within a topic group, they will receive a certificate and a bronze medallion, signifying they have achieved the first level of recognition. As they earn more credits, silver and gold medallions will be awarded. When a participant earns credits across a range of topics, they will receive a certificate recognizing them as a Forest Masters—Bronze Level, Silver Level or Gold Level, with each subsequent level requiring additional Forest Masters credits. To earn recognition beyond the Bronze Level, however, participants will also have to accumulate service hours, such as teaching other forest landowners, working with school children, serving as forest landowner organization officers, etc.

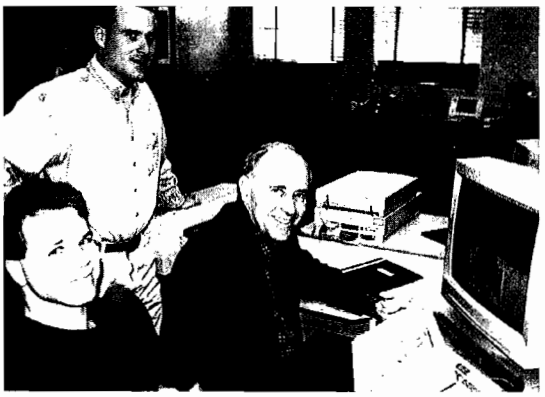
These two PFMT initiatives, along with others, are aimed at improving the understanding of forest landowners and the public about the importance of our forests and of actively managing them for objectives appropriate to each landowner. The future of our forests depends on us. If you own forestland, enjoy it, protect it and utilize it, but do so in a manner that sustains its potential for future generations.

Use of GIS in TREASURE Forest Management

By MIKE HENSHAW, County Extension Coordinator, Alabama Cooperative Extension System, Winston County

The heart of TREASURE Forest is the management plan. The management plan gives the TREASURE forest owner the road map he or she needs to keep on track so goals can be reached. Computer technology has given the TREASURE Forest landowner a new tool that may help make the management plan a more useful, dynamic document that can change with the owner's changing goals. This new tool is the Geographic Information System.

The Geographic Information System (GIS) is a kind of computer software that can be thought of as a combination of a map and database. Like a computer database, the information on the computer can be searched very quickly. Like a computer mapping program, updated maps can be created when changes in the forest occur. GIS combines the features of the database and the computer mapping program and allows the user to make changes to the data and view those changes almost instantly. GIS has been in use for more than 20 years, but only recently has the computer software and hardware started to become accessible to the TREASURE Forest landowner.



Pat Smith, John Beck and Bill Snoddy work on the GIS database at the Alabama Land Resource Information Center at Auburn University.

An opportunity to demonstrate this new technology occurred recently when long-time TREASURE Forest landowners Bill and Jeanie Snoddy became interested in GIS technology. Through a partnership with the Alabama Cooperative Extension System and the Alabama Land Resource Information Center (ALRIC) at Auburn University, Bill and Jeanie were able to try GIS on their Loblolly Farm TREASURE Forest.

Loblolly Farm

Bill and Jeanie's TREASURE Forest is located in Winston County near Double Springs. The Snoddys have managed the forest for multiple uses for almost 30 years. In 1994, they were honored with the Helene Mosley Memorial TREASURE Forest Award. The forest has areas devoted to softwood timber, hardwood timber, streamside management zones, recreation, trails, roads, and many other uses.

Bill Snoddy is no stranger to innovation and technology. He retired four years ago from NASA as a manager of design and development of space systems. His entire 37-year career was spent adapting cutting-edge technology to advance the nation's space program. When a new tool became available to help manage his family's fourth generation TREASURE Forest, he was curious to see if it could give him more management information about the forest. This interest is tempered with years of experience that has shown him that new technology, despite its promise, is often not mature enough to be practical in the real world setting. He was leery of the investment in time and money that might be necessary to make it work on his TREASURE Forest. With the assistance of ALRIC in Auburn University's Agronomy and Soils Department, he could try the new technology without making a large investment in time or money.

The partnership between the Winston County Office of the Alabama Cooperative Extension System, ALRIC, and the Loblolly Farm TREASURE Forest began when I approached Bill about the possible application of this new technology on his TREASURE Forest. Bill, a long-time innovator, was willing to try a demonstration of the GIS technology. Since Bill and Jeanie had decades worth of management plans for Loblolly Farm, this was the perfect place to try this new technology.

GIS Technology

With Bill's large collection of forest management plans and maps in hand, he and I made a trip to ALRIC at Auburn University to see John Beck and Pat Smith. John is the manager of the Alabama Land Resource Information Center and Pat was a technician and forestry major at Auburn University. Pat has since graduated and is a private consulting forester. Together John and Pat designed a GIS database around Bill's goals and needs.

Pat sorted through the stack of maps and forest management plans. Being a forester, he understood the terminology about forest stand types and basal areas. John, an expert in GIS, designed the GIS database so that it would fit Bill's needs.

The most time consuming task in creating a GIS database is the collection and entry of data. Since Bill had a good set of management plans that he had maintained over the years, this was a gold mine of data available for entry. His maps of forest stands, roads, trails, and streams were also good sources of data. Pat and John also brought in other data such as topographic maps from the U.S. Geological Survey. Finally, Pat spent many hours manually entering data on a computer. It cannot be emphasized too strongly that data entry is the most time-consuming and costly part of the entire GIS system.

Now that the database has been created, to what uses can it be put? The database has many potential uses on the TREASURE Forest. For instance, Bill could print out maps as needed for timber sales. He could create maps for specific uses such as trail maps, stream and water features, timber sale areas, topographic maps, and many other uses. Bill has recently purchased a computer that can use the necessary software, and he will soon be able to update the database and create maps whenever needed.

Another feature of the GIS database is the ability to do search-

es. For instance, Bill might want to find the pine stands on his property with basal areas of over 160 square feet per acre. He can search the database for these stands, then print out a list and a map of the stands. Armed with this information, Bill may choose to thin these stands to prevent pine beetle attacks that plague crowded stands.

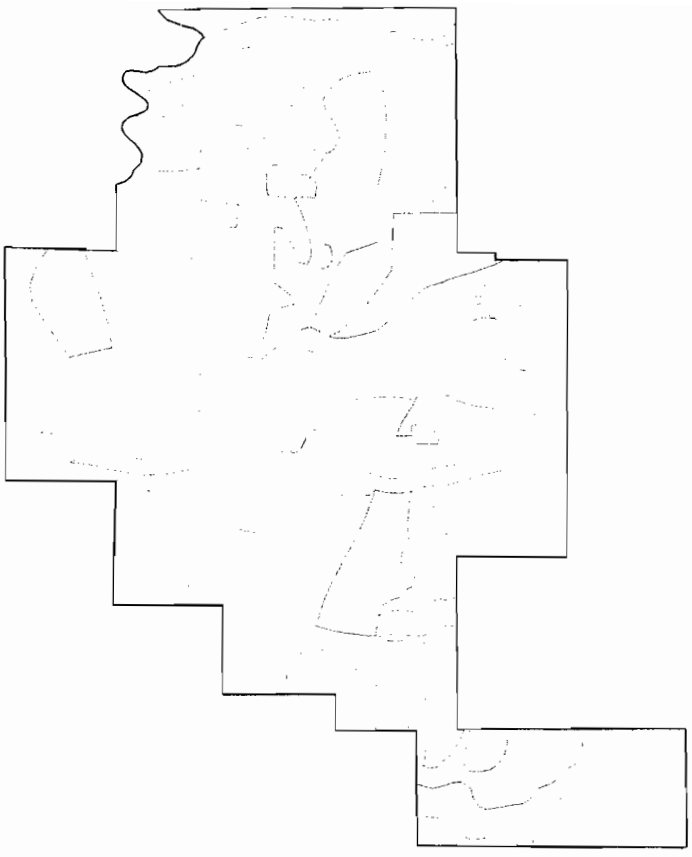
The Future

The largest investment in creating a good GIS database is not in the computer or in the computer software. The largest cost is in the collection and entry of the data that makes up the database.

At this point, the expertise to construct such a GIS database is considerable. For this project, two experts—one in forestry and one in GIS—were needed to create the GIS database. While creating a GIS database is within the reach of some computer savvy forest owners, it will take some time before the technology advances to the point were the typical landowner would feel comfortable with the process. On the other hand, GIS technology is becoming mainstream for government agencies and corporate landowners. Widespread use of the technology among private landowners is perhaps just a matter of time.

Conclusion

This demonstration of GIS technology is in the beginning stages. A database has been created and its potential has been displayed. The true value of the GIS database will come in the future when Bill and Jeanie's management decisions will be affected by the ready access of good management information. With any luck, we may be able to follow up on the progress of this demonstration in a few years when they have had time to use this tool in the management of their TREASURE Forest.



Computer-generated map highlighting pine stands in need of thinning.

Become a TREASURE Forest Landowner 6 Steps to Success

Anyone owning 10 or more acres of forestland can be considered for the certified TREASURE Forest award. To be eligible, a landowner must do the following with respect to all their forestland in Alabama:

1. Identify one primary and at least one secondary management objective for the property based on the following list of choices: Timber Production; Wildlife; Recreation; Aesthetics; Environmental Education.
2. Possess or acquire a written multiple-use management plan for the property. Your local Alabama Forestry Commission office can help you identify options for obtaining a written management plan if one does not exist.
3. Actively practice multiple-use management on the property. Your local office of the Alabama Forestry Commission can supply you with information on the level of management activity necessary.

Once these items are in place, the following must occur to earn the award:

4. The property must be nominated by someone associated with one of the member agencies or groups of the Alabama Forestry Planning Committee. You may contact them and suggest a nomination if you feel your property or that of someone you know qualifies for the award.
5. The property must be inspected by a registered forester and wildlife biologist. Your local Alabama Forestry Commission office will arrange the inspection.
6. The nomination and inspection report must be submitted to the TREASURE Forest Subcommittee of the Alabama Forestry Planning Committee for review and approval.

If you would like to be considered for the certified TREASURE Forest award, or know of someone else who may qualify, contact your local office of the Alabama Forestry Commission or other member agency/group of the Alabama Forestry Planning Committee. These organizations are listed on page 3 of this magazine. They will be happy to assist you with the certification process.

The Demand for Solid Wood vs. Fiber

Continued from page 7

Future Outlook

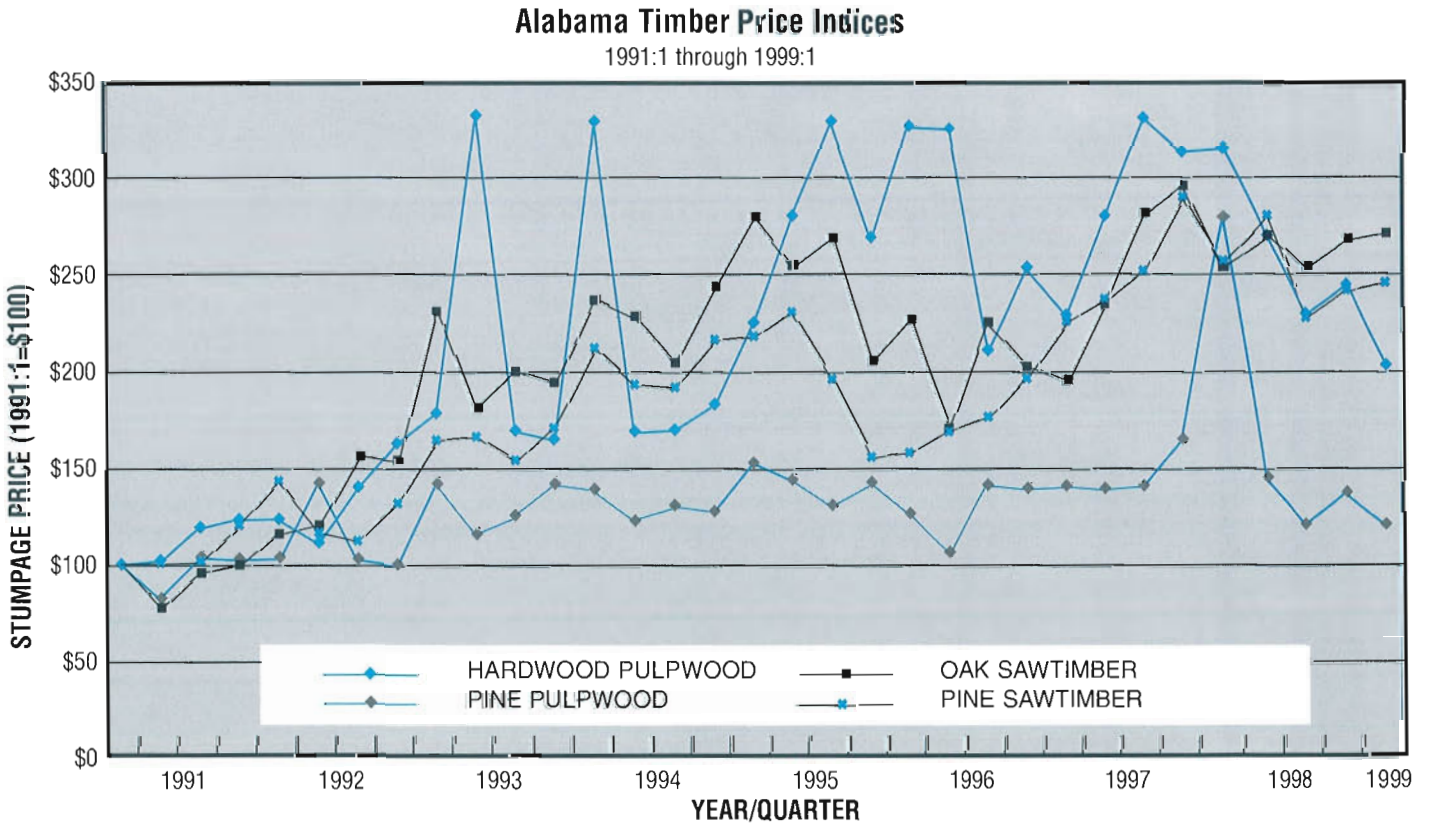
For a while timber owners in the South escaped the effects of weak markets in the U.S. forest products markets. Timber prices rose fairly steadily through the 1990s, peaking in early 1998. However, during the past year the markets have reversed themselves with sharp declines in all timber product categories, and especially in pulpwood. From the first quarter of 1998 through the first quarter of 1999, prices for pine pulpwood stumpage have declined 22.7 percent and hardwood prices have declined an even more remarkable 35.8 percent. Prices for sawtimber are also down during this period, with pine declining 19.2 percent while oak declined 10.8 percent. In Alabama, pulpwood prices have come down even more sharply than the averages across the South, but prices for sawtimber have held up a little better than in other Southern states.

While reviewing the past is generally both interesting and instructive, it is the outlook for future markets and prices that are of real interest to timber growers in Alabama. Where are prices going from here, and will pulpwood and sawtimber markets move differently? While it is very difficult to predict markets in the short term, we should take comfort in the fact that both U.S. and world demand for forest products continues to grow. While international markets for forest products have been weak recently, the long-term outlook is still bright. Some of the world's most populous nations with tremendous economic growth potential are also countries with very limited domestic wood resources. Those markets offer significant long-term future growth potential for producers in the U.S. South.

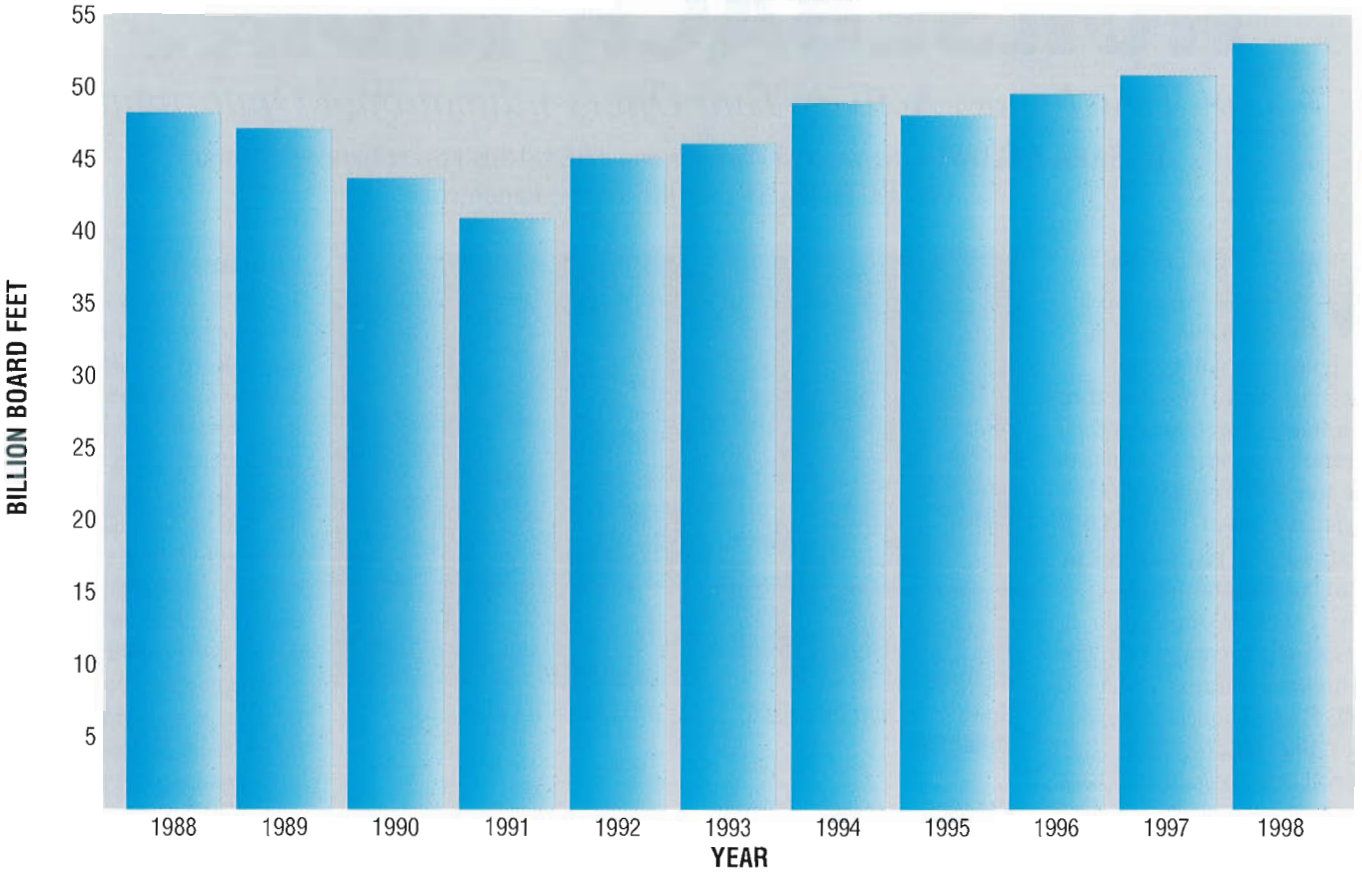
In the short term, anything can happen. Although prices for market pulp and certain paper grades have started to improve slightly, it is too early to tell whether a constructive trend is developing. Further declines in pulpwood prices in the near term are certainly a possibility with plentiful timber supplies and shrinking consumption in some areas due to production curtailments and mill closures. However, barring a major economic contraction, it is reasonable to expect that the positive demand trends for pulpwood will re-establish themselves in the intermediate and longer term, with corresponding improvement in prices.

The solid wood products and sawtimber markets, although currently a bit more stable than the pulp and pulpwood markets, have always been marked by high volatility. Again, the longer-term outlook appears reasonably good with steady growth in demand expected, both domestically and internationally. However, in the short term, any domestic economic downturn could have very unpleasant effects on the prices of solid wood products and, in turn, sawtimber prices.

Will the outlook for pulpwood prices be better or worse than for sawtimber prices, and how should a timberland owner be influenced by the current outlook? In my opinion, timberland owners should take the same approach with their forest investments that is recommended by prudent investment managers everywhere. That is, take a long-term approach and diversify your portfolio. One would do well not to spend too much time wringing hands and gnashing teeth over current stumpage prices. Over the long term, one can expect that reasonable appreciation will occur. Remember that even today's currently depressed prices are still approximately double what they were in the early 1990s for most timber products. As for the pulpwood versus sawtimber question, the specific circumstances and objectives of each individual timberland owner will ultimately determine what is best for that person. However, as previously mentioned, a policy of diversification will certainly minimize risks and provide a better route for achieving long-term financial goals in most cases.

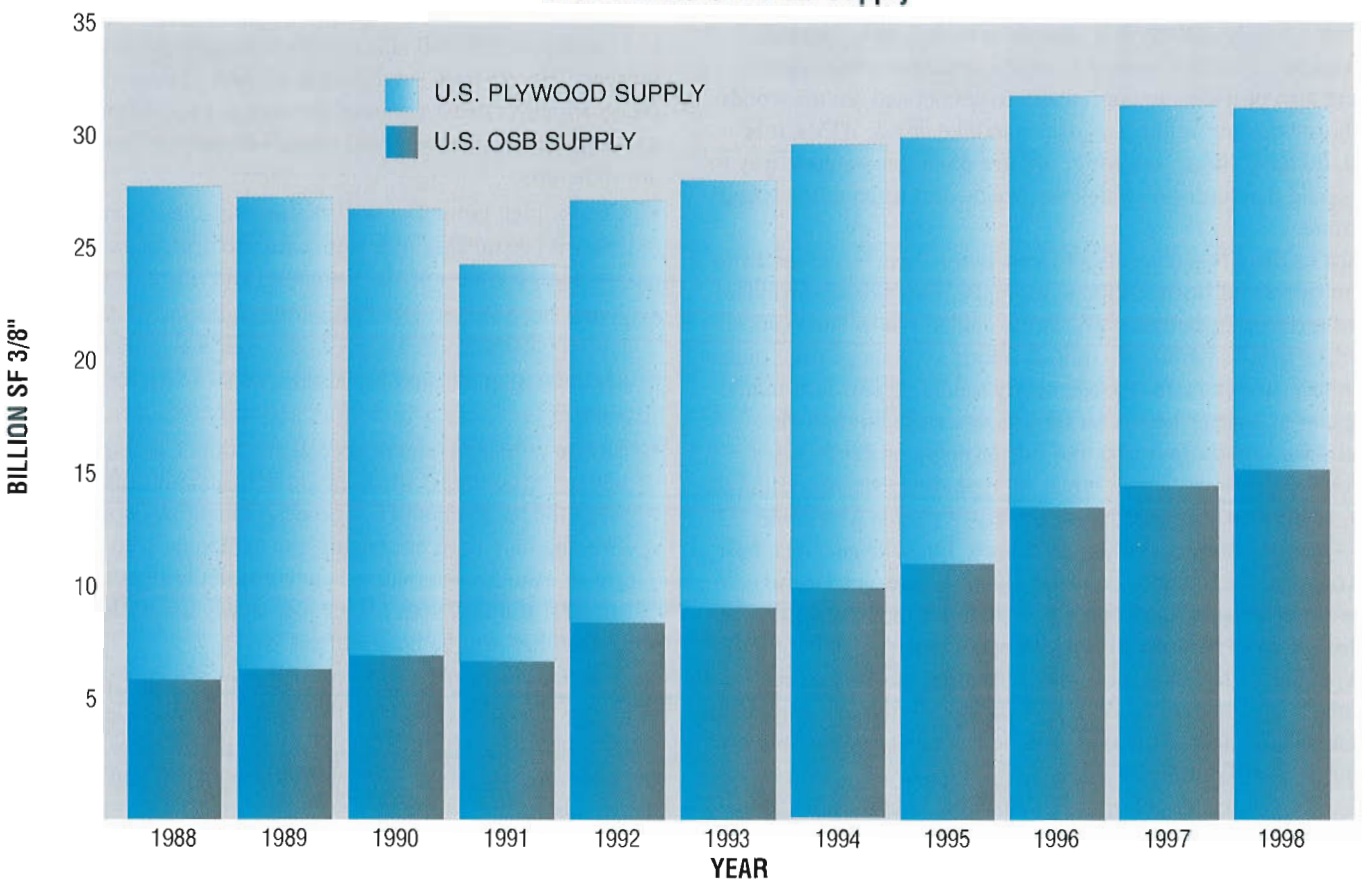


U.S. Lumber Supply



Source: Forest Products Development Center

U.S. Structural Panel Supply



Source: Forest Products Development Center

HORSEBACK RIDING

A Fun, Low Impact Activity That Offers Educational Opportunities

By SARA BALDWIN, Registered Forester and TREASURE Forest Landowner and
PAT BUTLER, TREASURE Forest Landowner

Most TREASURE Forest owners take justifiable pride in their property, visiting and inspecting often. Thus, whether it is a stated objective or not, recreation is an important use of these forests. Programs about recreational use of TREASURE Forests seem to pay most attention to hunting and fishing. There is another surprisingly widespread recreational activity that fits well with the TREASURE Forest concept—horseback riding. Sharing your TREASURE Forest with others through horseback riding can be a fun, low impact activity that also offers educational opportunities.

Good food and fellowship make a trail ride an event to remember.

A Fun Activity

There are many TREASURE Forest landowners who ride horses, and the numbers are continuing to grow. Horseback riding is often a family activity that appeals to moms, dads, and kids, and can be alternately geared to inexperienced or expert riders. Riding also provides an opportunity to get out and see the woods for those who are unlikely or unable to hike or ride ATVs. It is quiet, relaxing, stress-relieving, and just plain fun—a great way to appreciate the outdoors, watch the woods, and listen to the sounds of nature.

Just as there is a diversity of forest types, there is a great diversity in riders and horses. Riders can range from weekend wayfarers who ride only occasionally, to fox hunters, show and event riders, or serious endurance trainers. Horses can range from high-endurance Arabians, to smooth, sporty saddle horses, sure-footed mules, or to quarter horses set for a slow shuffle through the woods. Sara Baldwin runs a trail ride business on her family's TREASURE Forest, which brings all types together. According to Sara, "I'm often surprised by the variety of people who come ride—doctors, nurses, policemen/women, financial advisors, business owners, the list goes on. They all appreciate a chance to enjoy the woods. While I don't take credit for the beauty, it makes me feel good to provide this type of opportunity."

A variety of forest games, such as posse or poker runs can be organized for horseback riders. Overnight trail rides are becoming a popular means of fellowship. A delicious dinner cooked on a campfire, accompanied by an evening symphony of whippoorwills, owls, crickets, and frogs is enchanting; add the night show of fireflies, stars, and moonlight, and the occasional snort from your horse for a perfect evening.

Low Impact

Horses are a good means of accessing the forest. They can travel nearly anywhere, allowing one to see what is going on far beyond the developed roads and firebreaks. Riders often notice storm damage, beetle infestations, animal tracks, evidence of old field clearings and terracing, interesting trees, and elusive wildlife on their slow-paced, quiet explorations.

The passing of a single horse leaves a minimal imprint on the land, far less than a truck, motorcycle, or ATV. Areas that receive heavier horse use require trail maintenance. However, providing adequate horse trails is easier, cheaper, and less invasive than road building. A good horse trail system is a network of narrow tracks through scenic sections of the forest. Some trails can also be used by hikers and ATV riders.

Any trail, no matter how small, should be planned to minimize soil erosion, which will also usually minimize maintenance in the long run. Horses have small feet in relation to their weight, and create a tremendous amount of pressure per square inch. Because of this pressure, choosing trail routes carefully is important. Here are some tips:

- Choose high ground or well-drained soils over wet areas. Hooves can quickly turn wet areas into deep bogs, leading to problems for the soil and for horses and riders.
- Avoid steep slopes. Hoof pressure can displace a lot of soil as horses pull their weight up or ease their weight down. Pay attention to grade, and use a series of switchbacks for steep areas.
- Stream crossings require special attention. Choose a place where the bottom is sandy or gravelly and not soft or muddy. Also, the banks should not be steep or soft. A good stream crossing may need excavating and hardening with rock or gravel. Another alternative is to construct bridges to protect streams. If this is your choice, use sturdy materials and designs so that they will be horse-safe as well.

In addition to trail maintenance, riders—whether forest owners or groups who use a forest by permission—need to learn to take care of the forest. Groups should always practice low impact riding and camping. Always do the following when you ride through the woods:

- Pack out your trash. This is a simple courtesy to the land and landowner.

- Use picket lines or hobbles. Tying horses to trees can cause bark damage as the animals rub and chew.
- Practice proper sanitation. Bury or compost human and horse wastes around campsites. This is important to reduce insect pests and the possibility of disease.
- Leave campfires clean. Thoroughly extinguish with ashes scattered or buried.

Each of these impact-lowering techniques will allow for more enjoyable use of an area with less maintenance required and less resource damage.

An Educational Opportunity

Promoting riding is a way to share the example of your TREASURE Forest, reaching out to non-forest owners or to non-managing forest owners. To help people learn more about the forest, Sara has begun putting up educational signs about trees; she hopes to do more signs explaining forest management practices. Tree identification, orienteering and tracking workshops can be done on horseback, allowing riders to learn woods skills such as map and compass reading and observing wildlife sign while developing their horsemanship skills.

Developing educational TREASURE Forest tours for riders is a whole new arena for recreational and outreach development. We would appreciate you contacting us with your ideas! Pat Butler can be contacted at 205-695-6448, 53 Browns Mill Creek Road, Vernon, AL 35592; and Sara Baldwin can be contacted at 256-377-2656, P.O. Box 414, Rockford, AL 35136.

Considerations Before Building a Pond

Continued from page 11

stantially shorten the life of a pond. Cattle damage ponds by trampling edges, exposing soil of pond banks through overgrazing, and muddying the pond through wading. The physical trampling of pond edges and erosion from overgrazing will cause premature siltation and shallowing of the edges. Shallowing of pond edges promotes aquatic weed growth. Cattle wading in the pond causes excessive muddiness, which lowers pond productivity and can lead to conditions of low dissolved oxygen and a resulting fish kill.

An excessive quantity of manure in the pond can result in excess fertility and possible fish kills due to low dissolved oxygen. Limited access for cattle at a planned location (watering ramp) can be provided; however, the best alternative is to fence cattle entirely out of the pond and provide water by gravity-flow into a trough below the pond.

Muskrat and Beaver Control—Muskrats and beavers are burrowing animals that cause extensive damage to pond structures. Their burrowing activities damage ponds by weakening and eventually caving in pond banks and dams. Keeping pond banks neatly mowed and trimmed will help discourage muskrats and beavers by removing desirable habitat.

Aquatic Weeds—A popular misconception is that fish need vegetation in ponds in order to thrive. In reality, aquatic vegetation is neither necessary nor desirable in most ponds for maintaining a healthy fish population. Aquatic vegetation can interfere with fishing, decrease the quality and quantity of the fish, and make ponds unattractive.

This article is excerpted from Alabama Cooperative Extension System Circular-ANR-1114, "Pond Building: A Guide to Planning, Constructing, and Maintaining Recreational Ponds" by Chris Hyde and Perry Oakes. Contact your local Extension System office for a copy of this publication.

MEMORIAL

Blinn D. Sheffield, Sr., a former resident of Grove Hill, passed away in October 1998. Mr. Sheffield was a 1982 recipient of the Helene Mosley Memorial TREASURE Forest Award for his property in Wilcox County. Mr. Sheffield was very involved in conservation organizations and served as supervisor of the Clarke County Soil and Water Conservation District and president of the Clarke County Farm Bureau. His property was certified as a TREASURE Forest in 1981. After dividing his property among his children, his TREASURE Forest number 95 was retired from the program.

Promote and Support the TREASURE Forest Program
Join the Alabama TREASURE Forest Association

The Alabama TREASURE Forest Association is composed of people who practice TREASURE Forest management, people who encourage others to practice it, and people who believe that management of Alabama's forestlands according to the TREASURE Forest concept is good for both present and future generations.

Membership in the Alabama TREASURE Forest Association is open to certified TREASURE Forest owners (Full Members), any forest landowner who is not certified (Growing Member), and persons, companies, corporations, or organizations that do not own forestland (Associate Member), but want to support and promote the sustainable and wise use of our forest resource for present and future generations.

☐ Yes, I would like to join the Alabama TREASURE Forest Association Date: _____

Name: _____

Address: _____

City: _____ County: _____

State: _____ Zip: _____ Telephone: (____) _____

Check each category and fill in the blanks as appropriate:

☐ Associate Member ☐ Enclosed is $20 annual membership fee

☐ Growing Member ☐ Enclosed is $25 annual membership fee

☐ Full Member ☐ Enclosed is $30 annual membership fee

primary objective _____

secondary objective _____

Mail to: Alabama TREASURE Forest Association, P.O. Box 145, Chunchula, AL 36521

For more information about the Alabama TREASURE Forest Association contact James Malone, Executive Director, at (334) 679-6087.

The Black Bear in Alabama

By **JOSEPH D. CLARK,** Southern Appalachian Field Laboratory,
Biological Resources Division, U.S. Geological Survey, Knoxville, Tennessee

Black bears *(Ursus americanus)* were once abundant throughout Alabama. In the southeastern coastal plain, extensive land clearing, primarily for agriculture, has resulted in loss of a tremendous amount of bear habitat, particularly bottomland hardwoods. As of 1991, only 4.8 million hectares of an original 36.8 million hectares of bottomland hardwood habitats remained in the South.

Sightings of bears have been regularly reported in Choctaw, Clarke, Washington, Mobile, and Baldwin counties in southern Alabama in recent years. A study was conducted during the mid 1980s by Auburn University and a few bears were captured and tagged. In 1993, trapping crews from Virginia Tech and the University of Tennessee captured 11 bears in the Mobile River area. Those animals were tagged and biopsies were taken for a taxonomic analysis. The U.S. Fish and Wildlife Service estimates that there are less than 50 animals in the south Alabama population today.

These bears are designated as *Ursus americanus floridanus,* the Florida black bear. Besides Alabama, the subspecies is scattered in isolated populations throughout Florida and Georgia. Today, the Florida black bear occupies only 27 percent of its former range; perhaps no other subspecies of black bear is as fragmented in distribution (see map).

In 1982, the Fish and Wildlife Service listed this subspecies as Category 2 under the Endangered Species Act of 1973. As a Category 2 species, it was classified as a species that was potentially threatened but that insufficient data were available to make a determination. Later, a *Federal Register* notice issued by the Service in 1992 found that listing was "warranted but precluded" by higher priority listing actions. Finally, the Service entered into a final settlement agreement with the Fund for Animals to resolve the conservation status of the Florida black bear by December 1998.

The mission of the Alabama Black Bear Alliance is to promote the restoration of the bear into its former range in Alabama through education, research, and habitat management.

Partnership Formed

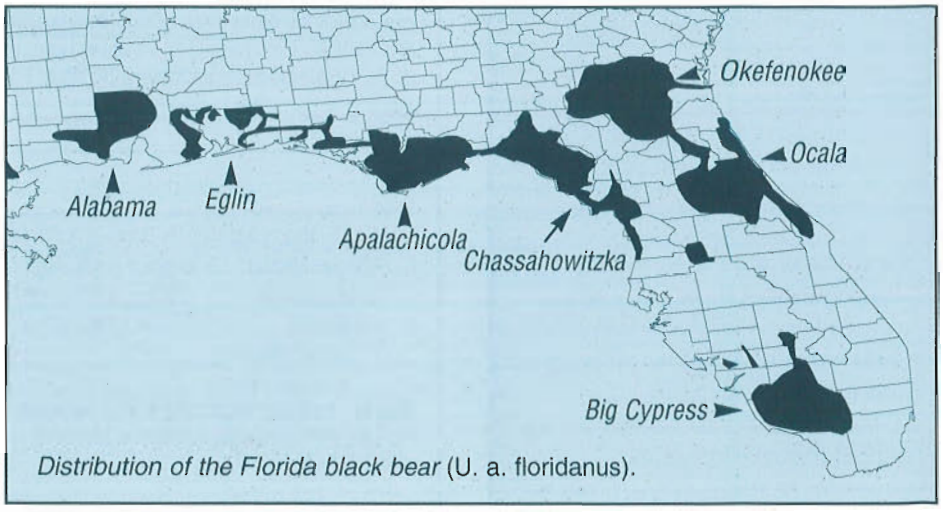
Due to concern for the long-term status of this subspecies in Alabama, a partnership between state and federal wildlife agencies, conservation groups, the academic community, and forest industry was formed called the Alabama Black Bear Alliance (ABBA). The first organizational meeting was held in May 1997. It is founded on the idea that providing landowners with incentive to protect and manage bears is a successful alternative to restrictive regulatory processes, always putting the resource first. Its mission is to promote the restoration of the bear into its former range in Alabama through education, research, and habitat management.

Studying Bears in Alabama

Restoration of the black bear in Alabama is contingent upon a clear understanding of the present status and dynamics of the population. Almost nothing is known about the natural history and ecology of this species in south Alabama. It is vital that such fundamental questions like reproductive rates, distribution, relative density, and major factors affecting population demographics be promptly addressed. We at the Biological Resources Division of the U.S. Geological Survey initiated research to address these questions in the summer of 1998. Our study is designed to do the following:

1. Determine the distribution of black bears in the Mobile River area of Alabama.
2. Estimate basic demographic parameters.
3. Evaluate habitat needs of black bears in the Mobile River area.

The study area is in extreme southern



Distribution of the Florida black bear (U. a. floridanus).

Alabama in the Mobile-Tensaw River Delta. Most of the land is in private ownership although state and federal landholdings are found in the basin as well. Due to the large size of the area of study, our approach was to be extensive rather than intensive in scope. Graduate student Michael Gay and his technician, Will Underwood, began fieldwork in June 1998 by pre-baiting areas where sightings of bears had been reported or areas where habitat was thought to be promising (e.g., riparian areas, inaccessible areas along major river drainages, large blocks of woodland). The pre-baits consisted of a variety of items including fish, doughnuts, cheese, and corn. This first field season, 133 bait sites were established. Most of these bait sites were located in Baldwin County and throughout the Mobile-Tensaw River Delta. A bait along a water canal near Creola and two baits in Washington County near Wagarville were taken by bears. We also were able to locate signs of bears in several areas.

Captured bears are tagged and fitted with radio collars so their movements can be monitored.

Three bears were captured during this past field season, two females and one male. All captured bears were tagged and fitted with radio collars. We concluded last yearís field work in November.

Although only three bears were captured last year, we feel that much was accomplished in our efforts to work with the landowners and in determining areas that have good potential for holding bears. Perhaps more importantly, we also identified those areas that did not. In late May 1999 we returned to locate and capture additional bears, with greater emphasis on capturing bears in those areas identified during 1998. We will also begin using telemetry to look at movements and habitat use by the bears. Our plans are to radio-collar up to 20 bears. This should provide us with valuable information on mortality rates, general movement patterns, denning habitat, and reproduction. Also, we will be able to determine the types of habitats bears in the area are using for denning and may be able to gather reproductive data at den sites. Another field season will follow during the year 2000.

Upon completion of our project in 2000, we hope to know a great deal more about the Alabama black bear and the problems it faces. Our goal is to identify those factors that may be limiting population growth. Only by first isolating those problems can we then begin to address them so that bear conservation in Alabama can move forward.

Conclusion

Recently, the U.S. Fish and Wildlife Service ruled that the Florida black bear should not be listed as a threatened species. The rationale was based largely on the stability and size of those populations at Okefenokee, Big Cypress, Ocala, and Apalachicola. All four populations are centered primarily on public land.

Little is known about the natural history and ecology of the black bear in south Alabama.

The report, however, went on to state that the population in Alabama was threatened with extinction in the near future due to shrinking habitat, possible inbreeding, and low numbers. In other words, the subspecies as a whole is likely to persist but the subpopulation in Alabama may not.

Clearly, this decision presents both a challenge and an opportunity for private landowners in south Alabama. The no-listing decision places the responsibility to conserve bears in Alabama squarely on the shoulders of landowners there. Bears need good quality habitat across broad landscapes and habitat conservation in south Alabama will be a difficult task. A mechanism to coordinate management activities across this mosaic of habitat fragments with such large numbers of owners will be extremely complex. However, an infrastructure for coordinating such activities may exist with ABBA. The organization represents a broad-based coalition and could serve as a forum for reaching consensus among landowners in the region. In that sense, the recent listing decision makes ABBA more important than ever. This could be a great opportunity for private landowners to demonstrate that wildlife conservation can be accomplished without federal intervention. The question is, are we up to the challenge?

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Prescriptions for Tough Vegetation Problems

By **JAMES H. MILLER,** Southern Research Station, USDA Forest Service, Auburn University

Most tough forest vegetation problems are caused by non-native plants. These foreign invaders—often called exotic, alien, or noxious weeds—occur as trees, shrubs, vines, and grasses. Some have been introduced into this country accidentally, but most were brought here intentionally for livestock forage or as ornamentals. They arrived without their natural predators of insects and diseases that tend to keep most plants in a natural balance. They are now essentially free to spread without too much opposition, except from control and eradication measures applied by landowners and managers trying to defend their property from an unfriendly takeover.

Most alien plants come to your property from their migration along right-of-ways and stream margins. Some are widely scattered by bird- and animal-dispersed seeds, while others are actually planted by unsuspecting or poorly informed landowners and land managers.

The first line of defense against an alien plant takeover is a constant surveillance of adjoining right-of-ways, stream banks, and internal roads and trails for any new arrivals. With the first sign of an unwelcome plant, effective control measures should be started. Early detection and treatment will minimize efforts and costs that come with treating well-established plants or full-blown infestations. More effort is required for successful eradication of established infestations, but it still can be accomplished with proper treatments described here.

Troublesome Plants and Effective Herbicide Treatments

If an alien plant infestation is spotted or already occurs on your land, then proper and effective eradication measures should be undertaken or spread is inevitable. Continued treatments and retreatments will probably be necessary to be successful. Most alien and troublesome plants are perennials, having extensive tough runners or roots. This means that effective herbicide applications offer the best means of containment or eradication, because herbicides can kill roots.

To be successful, the most effective herbicide for the species should be used, applied using the correct method, and during the optimum time period. Only herbicides registered by the Environmental Protection Agency for forestry use in the Southeast will be discussed here. Herbicides in other use areas (such as noncropland, right-of-way, pastures and rangeland, etc.) may be just as effective, or even contain the same active ingredient of those mentioned. Read and thoroughly understand the herbicide label and its prohibitions before and during use.

Many herbicides and some target plants require the addition of a good non-ionic surfactant to the spray tank to be effective. Another important point is to always use clean water and mix your spray solution thoroughly before applying. Forgo applications during periods of severe drought as herbicide effectiveness can be greatly reduced during these times. And, always wear your personal protective equipment prescribed on the label or in supplementary materials.

Other Treatments

Overgrazing is a way to reduce the vigor of palatable alien plants like kudzu, but this rarely yields eradication and may spread seeds (now occurring with tropical soda apple). Mechanical treatments and prescribed burning can assist eradication measures, but are limited in effectiveness. Mechanical rootraking and disking can actually spread or aggravate a problem when dealing with plants having runners. Prescribed burning does not control runners and usually only kills small above-ground shoots, not the roots or runners, providing only temporary above-ground control.

Although ineffective by themselves, both mechanical and burning treatments can give additional kill of herbicide-weakened plants and have a place in an integrated pest management program. Burning can kill or stimulate seed germination of troublesome plants permitting effective herbicide control of germinants. Prescribed burning can also prepare the site for effective herbicide applications by clearing debris and revealing application hazards, such as old wells and pits. Disking and rootraking, if applied correctly, can dislodge herbicide-damaged woody roots and large runners, leaving them to dry and rot. It is important that herbicide applications following burning or disking be delayed to permit adequate resprouting of target plants for maximum herbicide uptake and effectiveness. It is also important to take steps for preventing erosion when using mechanical and burning treatments.

An eradication program for infestations of troublesome plants usually takes several years and surveillance for many more years to check for seed germination or new invasions. By doing this in a planned manner, and being persistent, your lands and the lands you manage can be protected from being choked out by useless alien plants. In this way, native plants and forest productivity can be safeguarded and wildlife can continue to have suitable habitat.

Exotic Tree Control with Herbicides

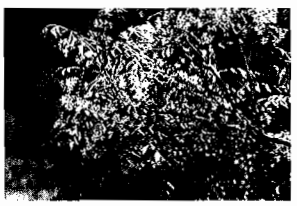
Exotic tree species hinder reforestation as well as stand and right-of-way management. Some occur as scattered trees while others occur in dense infestations. Silktree is continually spreading along stream networks, chinaberry is appearing more in new forests, and tallowtree has extensive infestations in wet forests, replacing native species. All use roadsides for gaining access to your lands and often occur together.

Silktree or **mimosa** *(Albizia julibrissin)*
Nature: Small legume tree, growing 30-40 ft. tall, that reproduces by seeds and root sprouts. It has feathery deciduous leaves, showy pink blossoms, and smooth light brown bark.

USFS

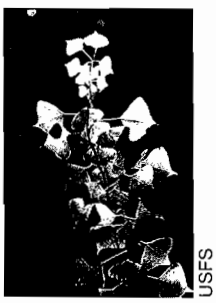
Origin: Native to Tropical America.
Range: Found along roadsides and forest borders from MS to FL and north to KY and VA.
Uses: A traditional ornamental with infestations originating from old home-site plantings.
Herbicide control: Apply Accord™, Roundup™, Garlon 3A™, or Garlon 4™ as 2% solutions in water (8 oz. in a 3-gal. sprayer) with a wetting agent to thoroughly wet all leaves in July to October. Apply Transline™ as a 0.2% solutions in water (1 ounce in a 3-gal. sprayer) to thoroughly wet all leaves, stems, and bark in July to September. Transline controls only legumes and is often safe on surrounding non-leguminous species.

Chinaberry *(Melia azedarach)*
Nature: Medium tree growing to about 50 ft. tall that spreads by prolific seeding. It has lacy, bipinnate leaves that are dark green and blue flowers that yield sticky yellow fruit.



Origin: Introduced from Asia and traditionally planted at home sites in the Southeast.
Range: Grows along forest borders and in disturbed habitat throughout the Southeast, but rare at high elevations.
Uses: Traditional ornamental, with potential uses of its extracts for natural pesticides.
Herbicide control: Apply Garlon 3A or Garlon 4 as a 2% solution in water (8 oz. in a 3-gal. sprayer) with a wetting agent to thoroughly wet all leaves in July to Sept.

Popcorn tree or **tallowtree** *(Sapium sebiferum)*
Nature: Shade-tolerant, small tree growing to 40 ft. tall that spreads by bird-dispersed seeds. It has light-green heart-shaped leaves that have bright fall colors, long drooping flowers, and bundles of white waxy seeds.

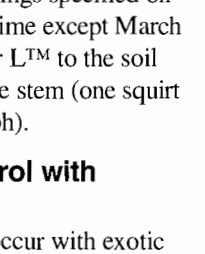

USFS

Origin: Introduced from China to the U.S. Gulf Coast in early 1900s.
Range: Occurs in the coastal plain from NC south to FL to TX with severe infestations on wet forest sites and coastal prairies in east TX to FL. Occurs as an ornamental in OK and AR and is spreading into all upland areas.
Uses: Ornamental. Waxy seeds traditionally used to make candles. Honey plant for beekeeping.
Herbicide control: Apply Garlon 4 in diesel, mineral or vegetable oil with a penetrant (check with herbicide distributor) to young bark completely around the trunk up to 16 inches above the ground in spring. Use a 5% solution (18 oz. in 3-gal. sprayer) when less than 6 inches dbh, up to a 20% solution (2 quarts in 3-gal. sprayer) when greater than 6 inches dbh. Apply Arsenal AC™ to the foliage of seedlings in July to October, as a 1% solution in water (3 oz. in 3-gal. sprayer) plus a wetting agent. For large trees, make stem injections using Arsenal AC or Garlon 3A in dilutions and cut spacings specified on the herbicide label (anytime except March and April). Apply Velpar L™ to the soil surface within 3 ft. of the stem (one squirt of spotgun per 1 inch dbh).

Exotic Shrub Control with Herbicides

Exotic shrubs often occur with exotic tree species and present similar problems. The most extensive invader of bottomland hardwoods is Chinese privet, with infestations stopping regeneration of hardwood-pine forests. Exotic shrubs have some value as wildlife forage, and are often established by misinformed hunter groups.

Bicolor *(Lespedeza bicolor)* and **Serecia lespedeza** *(Lespedeza cuneata)*
Nature: Although still planted for quail food, these plants will quickly invade surrounding forests, replacing native plants. Bicolor is a shade-tolerant, 3-leaflet, legume shrub up to 10 ft. tall that spreads by bird- and animal-dispersed seeds. Serecia is not really a shrub, but a semi-woody plant to 3 ft. tall with many small 3-leaflet leaves feathered along erect stems. Bicolor has small purple flowers and serecia has tiny cream-colored flowers during the summer. Both will form dense stands that prevent pine and hardwood regeneration or land access.

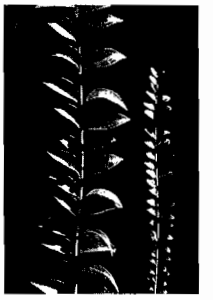


Bicolor lespedeza

Serecia lespedeza

Origin: Introduced from Japan.
Range: Found as infestations throughout the Piedmont and Coastal Plain in the Southeast.
Uses: Wildlife food for birds and soil stabilization.
Herbicide control: Apply Accord, Roundup, Garlon 3A, or Garlon 4 as 2% solutions in water (8 oz. in a 3-gal. sprayer) with a wetting agent to thoroughly wet all leaves in July to Oct. Apply Transline as a 0.2% solutions in water (1 ounce in a 3-gal. sprayer) to thoroughly wet all leaves and stems in July to Sept.

Chinese privet *(Ligustrum sinense)* and **Japanese privet** *(Ligustrum japonicum)*
Nature: Shade-tolerant, tall shrubs or small trees growing to about 30 ft. tall, with evergreen leaves, that spread by bird-dispersed seeds and by underground runners. Both species have leafy stems with opposite leaves. Chinese privet leaves are less than 1 inch long and Japanese privet leaves are 1-3 inches long. Both have clusters of small white flowers in spring, yielding large clusters of round, dark-purple berries during fall and winter. Both will form dense stands that prevent pine and hardwood regeneration or land access.



Japanese privet (left) and Chinese privet

Origin: Both introduced from China.
Range: Scattered throughout MS north to TN and KY; east to AL, GA, SC, and NC.
Uses: Traditional Southern ornamental shrubs.
Herbicide control: Apply Accord or Roundup as a 3% solution (12 oz. in a 3-gal. sprayer) or Arsenal AC as a 1% solution (4 oz. in a 3-gal. sprayer) in water with a wetting agent to thoroughly wet all leaves in August through Sept. For stems too tall for foliar sprays, apply Garlon 4 to the young bark completely around the trunk up to 16 inches above the ground in Jan. to Feb. or May to Oct. using a 20% solution (2 quarts in 3-gal. sprayer) in

diesel, mineral or vegetable oil with a penetrant (check with herbicide distributor).

Multiflora rose *(Rosa multiflora)*


Ted Bodner

Nature: An open-growing thorny rose, having been planted widely 20-40 years ago for living fences, wildlife cover, and windbreaks. It has cluster of white roses in spring, unlike our native single roses. Multiflora rose reproduces by seeds, root sprouts, and rooting at the ends of arching branches. It forms dense thickets that prevent tree regeneration and land access.
Origin: Introduced from Japan and Korea.
Range: Most of the Eastern U.S.
Uses: Some wildlife value.
Herbicide control: Apply Escort™ at 2 oz. per acre (0.6 dry oz. in 3-gal. sprayer) in water and a wetting agent in May, wetting foliage to run-off. This may damage fescue and bahiagrass.

Exotic Vine Control with Herbicides

Exotic vines are some of the most troublesome invaders because they form the most dense infestations. Kudzu and Chinese wisteria can overtop even mature forests, while Japanese honeysuckle can form dense cover below tree canopies. Reforestation after harvesting infested stands requires high-cost treatments. A relative newcomer is Japanese climbing, which is extending its range rapidly by wind-blown spores. It can be found along forest roads, margins, and within even dense forest cover.

Kudzu *(Pueraria lobata)*
Nature: Semi-woody legume vine that spreads by vine growth, rhizomes, and seeds.
Origin: Introduced from Japan and China into MS, AL, GA, TN, NC, and SC.
Range: Occurs on roadsides, fields, and forests throughout the South-east and scattered north in OH to CT.
Uses: Erosion control, livestock feed, and folk art.


USFS

Herbicide control: Apply foliar sprays of Tordon 101™ (1 pt in 3 gal. sprayer) or Tordon K™ (0.5 pt in 3-gal. sprayer) and wet foliage until run-off in June to Sept. for successive years. Tordon herbicides are soil active and can kill or damage plants having roots within the treated area. Other options provide partial control and may be useful in specific situations. Specific for legume species and relatively safe to other plants, apply Transline as a 0.2% solutions in water (1 ounce in a 3-gal. sprayer) to thoroughly wet all leaves and stems in July to Sept. To treat kudzu in young pine plantations, apply Escort from 2-4 oz. per acre (0.6-1.2 dry oz. in 3-gal. sprayer) to foliage in July or August.

Japanese honeysuckle *(Lonicera japonica)*
Nature: Shade-tolerant, climbing and trailing semi-woody vine with evergreen leaves that spreads by stolons and seeds. This is the only exotic of seven species of honeysuckle in Southeast. Forms dense cover after harvest to prevent regeneration in areas.


Ted Bodner

Origin: Introduced from Japan.
Range: Eastern U.S.
Uses: Valued as deer browse in Piedmont and erosion control.
Herbicide control: Apply Escort at 2 oz per acre (0.6 dry oz. in 3-gal. sprayer) in water and a wetting agent in May when pine tolerance is needed. Apply Accord or Roundup as a 2% solution in water (8 oz. in a 3-gal. sprayer) with a wetting agent to the leaves in middle to late summer.

Chinese wisteria *(Wisteria sinensis)*
Nature: Semi-woody legume vine (or shrub) that spreads by vine growth and seeds. One of four species in the SE with one other being exotic but rare, Japanese wisteria (*Wisteria floribunda*), while the native or naturalized, *Wisteria frutescens,* is the more frequent.


Ted Bodner

Origin: Introduced from Asia.
Range: Piedmont and Coastal Plain from VA to LA and north to AR and TN.
Uses: Traditional Southern porch vine.
Herbicide control: Apply foliar sprays of Tordon 101 at 3 % solution (12 oz. in 3-gal. sprayer), Tordon K at 2% solution (8 oz. in 3-gal. sprayer), or Garlon 4 at 4% solution (15 oz. in 3-gal. sprayer) in water with a wetting agent and wet foliage until run-off in July to Oct. for successive years.

Japanese climbing fern
(Lygodium japonicum)
Nature: Delicate viney fern, climbing and twining to form clumps that can cover shrubs and trees. One of three species of climbing fern in the SE (the others—


USFS

Lygodium palmatum in the Blue Ridge and *Lygodium microphyllum* in FL—are native). Climbing and twining perennial vine with lacy leaves, and black and wiry vines.
Origin: Introduced from Japan
Range: Currently found scattered throughout the lower halves of AL, MS, LA, SC, GA, and central FL.
Uses: Ornamental.
Herbicide control: Apply Accord, Roundup, Garlon 3A, or Garlon 4 as 2% solutions (8 oz. in a 3-gal. sprayer) or Arsenal AC as a 1% solution (4 oz. in a 3-gal. sprayer) in water with a wetting agent to thoroughly wet all leaves in July to Oct. Damage to surrounding plants may occur with these herbicides.

Trumpetcreeper *(Campsis radicans)*
Nature: Although not an alien plant, this native species can spread under forest cover to become a nuisance. A trailing or climbing vine, with many small toothed leaflets in paired rows on a leaf stalk with a leaflet at the end. Trumpet-shaped orange to red flowers appear in summer.
Origin: Native to U.S.
Range: Throughout Eastern U.S.
Uses: Widely used as an ornamental vine.
Herbicide control: Apply Arsenal AC as a 1% solution (4 oz. in a 3-gal. sprayer) or Accord as a 2% solution (4 oz. in a 3-gal. sprayer) (or combination of the two) in water with a wetting agent to thoroughly wet all foliage in June through July with multiple applications to regrowth. Do not treat during times of severe drought.

Exotic Grass Control with Herbicides

Exotic grasses present severe competition for establishing forest plantations on abandoned row-crop and pasture lands.

Some of these are generally considered naturalized—like bermudagrass (Cynodon dactylon), crabgrass (Digitaria spp.), and giant fescue (Festuca arundinacea)—but are still troublesome for forestry. Most exotic grasses spread and reside along highway and utility right-of-ways since eradication treatments are not applied.

Cogongrass *(Imperata cylindrica)*
Nature: Dense, erect perennial grass that spreads by prolific seed production and rhizome movement in fill-dirt. Has light yellow-green foliage. Invades new forests and prevent establishment of planted seedlings.


Ted Bodner

Origin: Native to Southeast Asia and listed as the world's seventh worst weed.
Range: Found in all MS, lower AL, and isolated infestations in southwest GA and SC. Eradication program in LA apparently successful.
Uses: Improved forage initially projected without success and initially for soil stabilization.
Herbicide control: Apply Arsenal AC as a 1% solution (1.3 oz. in a 3-gal. sprayer) or Accord as a 2% solution (8 oz. in a 3-gal. sprayer) (or combination of the two) in water with a wetting agent to thoroughly wet all foliage in Sept. or Oct. with multiple applications to regrowth.

Japanese grass or stiltgrass *(Microstegium vimineum)*
Nature: Dense, mat-forming annual grass that roots at nodes and is shade tolerant and occupies various habitats including creek banks, floodplains, forest roadsides and trails, damp fields, and swamps.


Ted Bodner

Origin: Native to temperate and tropical Asia, it was introduced near Knoxville, TN around 1919.
Range: Eastern U.S.
Uses: None
Herbicide control: Apply Accord or Vantage™ as 2% solutions in water (8 oz. in a 3-gal. sprayer) with a wetting agent in late summer.

Bermudagrass *(Cynodon dactylon),* **Giant fescue** *(Festuca arundinacea),* **Bahiagrass** *(Paspalum notatum),* and **Johnsongrass** *(Sorghum halepense)*
Nature: All these grasses have been widely planted and continue to provide excellent forage for cattle and sheep, but can present problems for forest landowners and right-of-way managers. They are difficult to control when converting old pastures to tree crops and continue to increase along right-of-ways to the exclusion of any native plants.
Origin: Introduced from the Mediterranean and Africa, and now widely distributed most everywhere in the world.
Uses: Improved pasture for livestock production. Bermuda grass is a turfgrass also. Fescue is commonly planted for wildlife openings and soil stabilization. Johnsongrass is now only a troublesome weed.


Ted Bodner

Giant fescue


Ted Bodner

Johnsongrass

Herbicide control: Apply Accord as a 2% solution in water (8 oz. in a 3-gal. sprayer) with a wetting agent in late-summer before planting trees. Then over sprays with mixtures of 1% Arsenal AC (4 oz. in a 3-gal. sprayer), 1-2 oz. Oust (0.3-0.6 dry oz. in 3-gal. sprayer), and 1 ounce Escort (0.3 dry oz. in a 3-gal. sprayer) in water and a wetting agent in May when pine tolerance is needed.

The Rehabilitation Phase

The most important final part of an eradication and rehabilitation program is the establishment of fast growing native plants that will out-compete with any surviving unwanted plants. Actually, this often means planting genetically-improved Southern pine seedlings and ensuring their initial rapid growth through cultural means. Another option is the planting of improved forage grasses, but most of these are actually introduced plants that can spread through your lands.

Native plants are increasingly becoming available for planting for rehabilitation, but limited seed supplies and the absence of well-developed establishment procedures hinders their current use. In the near future, with the commendable efforts of organizations like the Alabama Wildflower Watch, native plant seeds will become commercially available in adequate supplies. This will leave the development of proper establishment procedures as the last barrier that will require intensive study. Native plants do have native predators and require proper seed treatments to assure timely germination, thus their establishment will be more challenging than the commonly available alien plants.

Caution

Pesticides used improperly can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife. Use all herbicides and pesticides selectively and carefully. Follow recommended practices for the disposal of surplus herbicides and pesticides and their containers.

Author's Note: Use of trade names is for reader's information and does not constitute official endorsement or approval by the U.S. Department of Agriculture to the exclusion of any suitable product or process.

Attention CRP Landowners

If you are planning to thin your CRP pines under the cost share, you need to know about annosus root rot (ARR). ARR is associated with sandy well-drained soils and attacks pines following thinning IF the stumps are not treated with Borax at the time of thinning.

The soils in Alabama have been rated for ARR hazard and any plan that requires thinning should have this rating included along with recommendations for prevention. Make sure your plan includes ARR hazard ratings—and if the rating is high, implement prevention. Your county office of the Alabama Forestry Commission has copies of the ARR hazard rating and prevention measures.

Landowner Conference Scheduled for October 7-8, 1999

The Sixteenth Annual Alabama Landowner and TREASURE Forest Conference will be held in Tuscaloosa on October 7-8, 1999. The Paul Bryant Conference Center and the Four Points Sheraton Hotel, which are adjacent to each other, will be the setting for conference events with the exception of the landowner tour.

The order of this year's events has been changed from previous conferences. Also new is a flat registration fee of $50, which includes all events—the landowner tour, banquet, indoor sessions and luncheon. Registration will start at 10 a.m. on October 7 in the lobby of the Four Points Sheraton Hotel.

The first event will be a forest landowner tour on the afternoon of Thursday, October 7. Buses will begin leaving from the parking area at the Four Points Sheraton Hotel at 1 p.m. Tuscaloosa County landowner Ralph Dorrah will host the tour, which will include stops on crawfish management, methane gas wells and the importance of the Black Warrior River to our natural resources. In addition, participants will visit Mr. Dorrah's trap museum, which includes hundreds of different traps. It is considered the largest trap museum in the Southeast, if not the nation.

A banquet on Thursday night will honor some outstanding TREASURE Forest landowners and county forestry planning committees. It will be held at 7 p.m. in the Sellers Auditorium at the Paul Bryant Conference Center.

Indoor technical sessions will take place on Friday morning. One of the featured speakers will be Dr. Stephen Small, who will be speaking on "Preserving Family Lands," the title of his book. Dr. Small is a tax attorney at his own firm in Boston. Before going into private practice, he was an attorney-advisor in the Office of Chief Counsel of the Internal Revenue Service in Washington, D.C., where he wrote the federal income tax regulations on conservation easements. Dr. Small advises landowners on federal income tax and estate planning to help preserve valued family land, including planning for the next generation of ownership. A session on "Threats to the Independent Family Farm" will offer additional information on how to keep lands in the family. Other topics for indoor sessions will include "Small Woodlot Management for Quail," "Supplemental Feeding for White-tailed Deer and Other Wildlife," and "Forest Recreational Ideas and Opportunities."

The conference will end with a luncheon hosted by the Alabama TREASURE Forest Association after the indoor sessions on Friday. It will be held in the Sellers Auditorium.

The ATFA will also be conducting its annual silent auction during the conference. Bids will be received all day Thursday and up until the luncheon on Friday. Items to be auctioned will include handmade crafts and forestry-related items. If you have an item you would like to donate for the auction, contact Joan Malone at 334-679-6087.

Some exhibit space is also available. Call Tom Counts at 334-887-4510 for more information.

An additional opportunity for attendees either before or after the conference is to visit several museums located on the campus of the University of Alabama. The Paul Bryant Museum is located in between the hotel and the conference center. The Alabama Museum of Natural History, located in Smith Hall, and the Gorgas House Museum are also located on campus.

To register for the conference, please use the form on page 31.

1998 Award Winners

TREASURE Forest landowners from each of the four regions in Alabama were honored with the Helene Mosley Memorial TREASURE Forest Award at the 15th Annual Alabama Landowner and TREASURE Forest Conference in March 1999.

Southeast Region.....**Johnny & Beverly Taylor**

Southwest Region .....**David & Ruth Ball**

Northeast Region .....**James T. & John Frank Hendon**

Northwest Region .....**Pine Lake-Tom Richey Family**

County forestry planning committees honored with awards at the conference were as follows:

Outstanding County Forestry Planning Committee.....**Walker County**

Masters Award .....**Covington County**

Natural Resources Special Project .....**Cullman County**

TREASURE Forest Special Project .....**Fayette & Lamar Counties**

Sixteenth Annual Alabama Landowner and TREASURE Forest Conference

Paul Bryant Conference Center and Four Points Sheraton Hotel
Tuscaloosa, Alabama • October 7-8, 1999

REGISTRATION FORM

Name(s) of Attendee(s):

#1 _____
#2 _____
#3 _____
#4 _____
Company: _____
Address: _____
City: _____ State: _____ Zip: _____

Will Attend Tour on Thursday:

☐ Yes ☐ No
☐ Yes ☐ No
☐ Yes ☐ No
☐ Yes ☐ No

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

CATEGORY(IES) OF ATTENDEES (Check one category only) **Total number attending Thursday's tour** ____

#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 am enclosing
$50 preregistration x _____ attendees = ... $ _____

NOTE: Registration includes tour and banquet on Thursday; indoor sessions and luncheon on Friday.

CONFERENCE INFORMATION

Thursday, Oct. 7: Buses begin departing at 1:00 p.m. from the parking lot of the Four Points Sheraton for the tour.
Thursday, Oct. 7: Banquet begins at 7 p.m. in the Sellers Auditorium of the Bryant Conference Center.
Friday, Oct. 8: Indoor sessions begin at 8:00 a.m.; agenda will list meeting rooms and sessions topics.
Friday, Oct. 8: Luncheon begins at 11:45 a.m. in the Sellers Auditorium of the Bryant Conference Center.

- Registration will begin at 10 a.m. on Thursday, October 7 in the lobby of the Four Points Sheraton.
- An outdoor tour will be held on Thursday afternoon. **Please dress appropriately.**
- Buses will return to the hotel in time to change clothes for the banquet that evening.
- **Preregistration fee for conference per person if postmarked by September 24 is $50.**
- Registration fee for the conference after September 24 is $60.
- Mail upper portion of form and fee payable to Alabama Forestry Conference to:
  Fran Whitaker, Alabama Forestry Association, 555 Alabama St., Montgomery, AL 36104; 334-265-8733.

HOTEL INFORMATION

- Three hotels are offering special room rates. *Please specify that you are attending the TREASURE Forest Conference when you make reservations.* Blocks of rooms will be held until the cutoff date of Sept. 6.

Four Points Sheraton Hotel, 320 Paul Bryant Dr., Tuscaloosa, AL 35401; (205) 752-3200 or 800-477-BAMA
Room rate: $71; located adjacent to the Bryant Conference Center.

Hampton Inn-University, 600 Harper Lee Dr., Tuscaloosa, AL 35404; (205) 553-9800
Room rate: $69; located 1.5 miles from the Bryant Conference Center.

Key West Inn, 4700 Doris Pate Dr., Tuscaloosa, AL 35405; (205) 556-3232
Room rate: $55; located 7 miles from the Bryant Conference Center.

TREES OF ALABAMA

Water Oak

By MAC PRINCE, Forestry Management Specialist, Alabama Forestry Commission, Ozark

The water oak (*Quercus nigra*) is a common tree in Alabama and a member of the red oak group. Its hard, heavy, strong wood is used for rough lumber, ties, fuel, charcoal and pulp.

The water oak is identified by its thin, light gray bark, and somewhat unique, three-lobed, spatulate leaves. Though the water oak has highly variable leaf shapes, there are usually some of these spatulate leaves to be found on the tree. The water oak tends to hold some of its leaves for a period of time after they have turned, almost through the entire winter in the southern part of the state. This tendency is referred to as being "tenaciously deciduous." This habit can be troublesome in a lawn tree, as it seems you can never finish raking up the leaves. Otherwise, the water oak is as nice as other oaks for the lawn. As with any large tree, it should not be planted within 25 feet of a structure.

The water oak is one of our good timber species. It is fairly fast growing on a good site, and has a good form when grown in competition with other trees. It is also a dependable acorn producer, with its small acorns usable by many animals. The high tannin content of the acorns makes them somewhat less palatable than other species, but a high-energy food all the same. The water oak can be a problem to retain on droughty soils. During a drought year the tree can become stressed, and succumb to several complex diseases, usually showing some hypoxylon cankers before it fades out.

Overall, the water oak is a good species for Alabama, good for timber and good for wildlife. If you have it, keep it. If you are considering planting some hardwood species, it is a good one to include in your planting mix.

TREASURE FOREST

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