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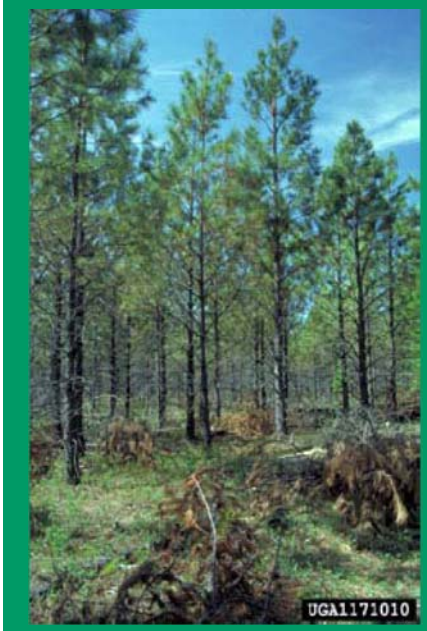
Benefits of Marking the First Pine Thinning

By Bob Daniels, PhD, and Tom Ebner (Mississippi)

The Mississippi Extension Service Publication Number 2260 by Tim Traugott entitled, "Are My Pine Trees Ready to Thin" (1) gave private forestland owners some guidelines for determining when to thin their plantations. It also defined the goal of thinning "to reduce stand density by removing the slow growing, lower quality trees, thus maintaining rapid growth on the straight, healthy, vigorous, and evenly spaced crop trees. "

While Traugott established the "why" for thinning pine plantations he did not address the 'how." To phrase it differently, "What is the best way to thin a pine plantation in need of thinning?" His publication did not get into such questions as "what tree per acre level to thin to," or "is there a financial penalty for delaying the thinning if pulpwood prices are low," nor "should the stand be marked for thinning." Economics can help answer theses questions and guide landowner decisions. In this article we address whether "operator select" or "marked" thinning is best.



We were interested in these questions and started installing permanent growth plots in thinned pine plantations in 1998. By the end of 2005, plots were installed in about 100 different stands, 30 of which were fertilized.

In this study, we focused on the 70 unfertilized stands. About half of these stands were thinned by the logging contractor (termed an "operator select thinning"). The other half of the stands had every 5th row harvested then leave trees in residual rows were marked and all but marked trees were cut (termed a "marked thinning"). Some of the marked stands were marked by registered foresters, some by the timberland owner, and some by contract timber markers. These plots are located in east central Mississippi and west central Alabama, the area bounded by Pickens County, AL, and Clay County, MS, to Newton County, MS, and Greene County, AL.

Calendar

Apr 25, 2007 - Qtrly Wiregrass RC&D Mting
May 4-6, 2007 - N. AL Birding Festival, Decatur, AL
May 10-11, 2007 - Lee Co 4th Annual Water Festival, Auburn, AL
May 17-19, 2007 - Tri-State (FL, GA, AL) SWCS Mting, Quincy, FL
Jun 5-8, 2007 - Pond 101, NRCS, Auburn, AL
Jun 20-22, 2007 - AL SWCS Annual Mting, Mobile, AL (tentative)
Jun 27-27, 2007 - Win-POND Training, NRCS, Auburn, AL
Jul 19, 2007 - Coosa Valley RC&D Annual Mting
Jul 22-23, 2007 - AP and EA Annual Mting, Destin, FL
Jul 25, 2007 - Qtly Wiregrass RC&D Mting
Aug 1-2, 2007 - Grazing Clinics, AL A&M, Sand Mtn Res & Ext Ctr, AL
Aug 6-10, 2007 - Eng Software Training, NRCS, Auburn, AL
Aug 21-24, 2007 - AU T-Square Erosion & Sediment Control Training, Mobile, Montg, H'ville, B'ham, AL
Sep 9-13, 2007 - ASDSO Annual Mting, Austin, TX
Sep 18-20, 2007 - NEDC Concrete Fundamentals, Ft. Worth, TX
Sep 20, 2007 - Area 6 District Annual Mtg, Gulf Shores, AL

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The age of the first thinning on these plots ranged from age 10 to age 23. The trees remaining after thinning ranged from100 trees/ acre to 350 trees/acre. The marked thinnings had the leave trees marked.

To judge which thinning method is preferred, it's necessary to know pre-thinning conditions in each stand so before and after comparisons can be made. The pre-thin stand conditions were very close to the same for both the operator select thinning and for the marked thinning. The stump diameters were measured on the thinned trees to determine the pre-thinning stand conditions. On average, the stands remaining after marked thinning had a 0.99 inch diameter gain. The operator select thinnings had a 0.67 inch diameter gain. The diameter gain from thinning is determined by comparing the average stand diameter before thinning with the average stand diameter after thinning. We call this after thinning diameter gain diameter lift. In 70 thinned stands, marked stands had an average .32 inches higher diameter lift over operator select stands. However the average marked stand had 34 fewer trees/ acre after thinning and 8.6 square feet less basal area. Leaving fewer trees per acre would allow some additional gain in diameter lift.

The amount of diameter lift obtainable in the first thinning can be affected by a number of factors. The age when thinned has a lot to do with the amount of possible diameter lift. As you walk through an older stand, say age 16 or older, you will see more variation in tree diameter than in a 10- or 12-year-old stand. By age 16, many of the smaller, slower-growing trees will have lost most of their crown as they have been overtopped by the more rapidly growing trees. This makes marking easier.

The quality of the trees in the stand can also affect the amount of potential diameter lift. The tree quality among stands varies considerably due to the genetic quality of the original planting stock. Second generation genetic planting stock generally has better and more consistent tree form than the first generation which is normally an improvement over non-genetically improved planting stock.

What about growth after the thinning? The marked stands had an average annual diameter growth of 0.484 inches, while the operator select stands had a 0.381 average annual diameter growth in stands first thinned between ages 10 and 19. The average age of the first thinning on the marked stands was 14.9 years while on the operator select stands it was 15.1 years. The

Marked stands in our sample had an average 26% greater diameter growth per year than did operator select stands. In operator select thinnings, 14.2% of the remaining trees after the thinning were poor quality trees compared to 5.2% in marked thinnings. Poor quality trees were trees with forks in the first 16 feet or with sufficient crook or sweep in the trunk to render them pulpwood value regardless of age or size.

Poor Quality Residual Tree
26 years old

High Quality Residual Tree
18 years old

Poor Quality Residual Tree
28 years old

average site index (base 25) was 71.5 for the marked stands and 71.9 for the operator select stands.

The amount of diameter lift from thinning is important to growth. Since in a plantation the trees are all the same age, the largest trees are the fastest growing trees. If these trees were the fastest growing trees before thinning, it is reasonable to assume that they would also be the fastest growing trees after thinning. Therefore, by retaining more of these larger trees in the thinning, the average stand diameter growth should be increased. The marked stands in our sample had an average of 27 percent greater diameter growth per year than did the operator select stands.

One of the objectives of thinning identified in the Traugott article was to remove the lower quality trees. From a timber management perspective, the "lower quality" or "poor quality" trees are trees which will remain pulpwood quality regardless of size or age. Therefore, they should be removed as soon as possible. "Poor quality" were trees graded with a fork in the first 16 feet and trees with excessive sweep or crook.

In the marked stands, 5.2 percent of the remaining trees after the first thinning were poor quality trees. In the operator select thinnings, 14.2 percent of the remaining trees after the first thinning were poor quality trees.

The skill of the operator or the marker also plays a part in determining what diameter lift you can achieve in the first thinning. For example, if you have 600 trees per acre before thinning and you remove 400 trees per acre you create the opportunity for more diameter lift than if you only remove 200 trees per acre. In the marked stands thinned at age 16, the diameter lift from the thinning varied from 1.30 inches to 0.05 inches. For a first thinning at age 16 in an average site 70 stand (base age 25) the Present Value of an inch of diameter lift in the thinning is about $100/acre. This suggests that an incentive clause in the thinning contract which relates to diameter lift and the residual tree quality would help the landowner to insure the quality of the thinning job.

First thinning marking in Mississippi costs about $40-50 dollars per acre. [2] Therefore, if you can gain 0.50 inches of diameter lift by marking, you can offset the marking cost.

The financial return from a first thinning at age 10 through age 19 was tested at different stocking levels after the first thinning (using a proprietary growth model) which ranged from 275 trees per acre to 100 trees per acre. These stands were then grown to the age of the second thinning. The Present Value of the stand at the second thinning, plus the value of the thinning removals at the first thinning, were then discounted to age 10 at a 10 percent and 6 percent discount rate. When all these factors (better growth, larger diameter lift, and better tree quality) are put together for an average stand, the best thinning combination (highest present value at age 10) was an age 13 thinning leaving 200 trees per acre for a marked thinning. For an operator select thinning the best combination was an age 12 thinning leaving 225 trees per acre.

For the marked thinning at age 13 and then grown to age 22, the stumpage value of the stand prior to the second thinning was $2,570/acre. For the operator select thinning, the stumpage value at age 22 was $2,105/acre or $465/acre less.

If the marking cost was $50/acre, the return on investment for the additional cost of marking is 28 percent for an average quality marking.

In the above example, the modeled stand was thinned at age 13 and the value comparisons were made at age 22 when the marked stand would be ready for the second thinning. In this projection, the marked stand would have grown from a basal area after thinning of 61.0 to a basal area of 132.2 at age 22. The operator select stand would have grown from a basal area of 61.1 to a basal area of 118.4.

The better diameter growth after thinning in the average marked stand increased the basal area growth over the operator select thinning by 13.9 square feet over this 9-year period between thinnings. By age 22, the marked thinning has an average diameter of 11.44 inches while the operator select stand has an average diameter of 11.04 inches.

These findings suggest that landowners can greatly improve their timber investments by using marked thinnings. Marked thinning results in higher quality residual stands, increased diameter growth, and higher stand present value prior to the second thinning than in operator select thinning. Costs for marking are easily justified by increased stand value.

Few timberland owners have an average stand. In order to determine the quality of the thinning or the quality of the marking, the owner must know some basic facts about the condition of his stand before thinning. The owner should know the average number of trees per acre and average diameter as discussed in the Traugott publication. The owner should also know the percent of sawtimber quality trees in his stand.

Continued next page-
"Pine Thinning"

Treating Cut Stumps to Improve Species Composition

By Tim Albritton, NRCS State Staff Forester, Auburn, AL

One of the many problems that may arise after harvesting a timber stand is too many undesirable tree species seeding-in or regenerating. This can be a bigger problem than no regeneration at all.

Traveling around the state, I have seen more and more sites, mainly lowland or bottomland sites, regenerate to undesirable species such as: Chinaberry, Chinese Privet, Tallow Tree, Tree-of-Heaven, and Callery Pear.

Controlling these undesirables can be difficult. The first difficulty is deciding which control method to use, mechanical or chemical, or a combination of the two. A wrong decision can be costly.

One of the proven methods for controlling undesirable tree species is cut-stump treatment method. This method involves cutting the tree at ground level then applying an appropriate herbicide to the stump surface. The hard part is cutting the tree down, the rest is fairly easy.

Most chemicals recommended for the cut-stump treatment method can be used year round, but for best results, treatments should be made during periods of active growth. The stump should be treated as soon as possible, ideally within an hour after cutting the tree.

I tried this method on my own property in Elmore County, AL. The stand in question is a 10-year-old mixed hardwood stand that naturally regenerated from stump sprouts and seedlings in place after the clear cut in December 1996. The stand is fully stocked, however, an unacceptable level of undesirable species are still present and need to be removed.

The targeted species for removal are: Chinaberry, Box-elder, Tallow Tree, and Chinese Privet. Removing, or a better term might be deadening, these trees will increase the growth of the residual trees and thus improve the long-term survivability.

A new device for applying herbicide has come to my attention -- the Cut-Stump Herbicide Wand.

If you are interested in this device, the following description and diagrams were obtained from "The Nature Conservancy's" website for invasive species entitled "The Global Invasive Species Initiative" at: http://tncweeds.ucdavis.edu/index.html.

Home-made herbicide applicator dabs herbicides directly onto cut stumps.

"Pine Thinning" cont.

These variables are relatively easy to determine as described in the Traugott publication. The only addition is to determine the tree quality in the stand. Trees with a fork in the first 16 feet were called "poor quality" trees as well as trees with excessive sweep or crook.

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Tom Ebner is a Forestry Consultant in Columbus, MS. He is retired from Weyerhaeuser Company and co-author of the book *Timberland Investments* published in 1992 by Timber Press in Portland, Oregon. Email: tjebner@earthlink.net.

The complete study from which this paper was developed is about 35 pages. If you would like a copy, please send a $5 check for copying and mailing to: Mr. Tom Ebner, Consulting Forester 468 Petersburg Drive, Columbus, MS 39702.

Literature cited:

[1] Traugott, Timothy A. 2000. Are My Pine Trees Ready To Thin? Mississippi State Extension Service. Publication No. 2260. 7 pp.

[2] Consultation with several practicing foresters in the area.

Cut-Stump Herbicide Wand

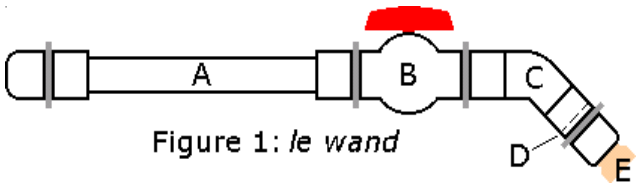


Figure 1: *le wand*

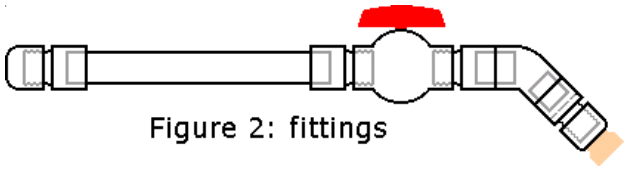


Figure 2: fittings

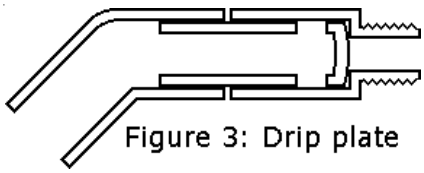


Figure 3: Drip plate

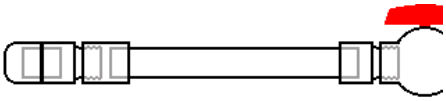


Figure 4: Reservoir variation

This home-made herbicide applicator wand was developed by Jack McGowan-Stinski as a way to dab herbicides directly onto cut stumps. Easily constructed, its design can be modified for your particular requirements. It costs about $20 to make (and is even cheaper if you already have PVC glue and purple primer).

The sponge-tip applicator stores herbicide in its PVC pipe chassis (marked "A" in Figure 1). A ball valve (B) is used to supply herbicide to the sponge reservoir (C). Herbicide in this small chamber leaks through a flow restricting drip plate (D), and moistens the applicator sponge (E). When the sponge reservoir is depleted of herbicide during use, a quick turn of the valve will recharge it. Rubber gaskets (in grey in Figure 1) let the wand be refilled, or disassembled for cleaning.

The ball valve has the important function of keeping the main reservoir separate from the sponge reservoir. If the sponge is pulled out of the wand, only the herbicide in the sponge reservoir will be able to leak out. Furthermore, the flow restrictor ensures that this leakage would be at a dribble.

—Barry Rice, TNC/GISI, May 2000; revised March 2001

Many chemicals are labeled for cut-stump treatment. I used a product called RazerPro* which has glyphosate as its active ingredient. Another example of a product labeled for this type treatment is Pathfinder* II from Dow Agro-Sciences. The active ingredient is triclopyr: 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester.

Pathfinder* II is a specialty, ready-to-use, herbicide for the control of woody plants on:

- Rights-of-way
- Rangeland and permanent pastures
- Forests
- Industrial sites
- Non-irrigation ditch banks
- Non-crop areas
- Wildlife openings including grazed areas on those sites

* Trade names are used solely to provide specific information. Mention of a trade name does not constitute a guarantee of the product by the U.S. Department of Agriculture, nor does it imply endorsement by the USDA or NRCS over comparable products that are not named.

I made a "Cut-Stump Herbicide Wand" and used it on my property in a 10-year-old stand of mixed hardwoods that had naturally regenerated after a clear-cut.

Marking undesirable species for removal.

Hardwood stand after removal of undesirable species.

Opening up a site with a chain saw is very labor intensive. The last thing you want is undesirable trees resprouting. Cut-stump treatment is an excellent method to permanently kill the unwanted species and improve the residual stand.

Above Ground Storage Tank For Animal Wastes-With Air

By Bill Prince, NRCS Environmental Engineer, Oxford, AL

To obtain a liner certification for an existing waste storage pond for a swine CAFO registration, one Alabama farmer was faced with two conventional choices. The first was to stay in production and, using temporary storage measures, install a liner in the existing storage pond. The second, an easier but more costly option, was to shut down production in the swine nursery operation and install a liner in the pond while it was not being used. With neither option being very appealing, he decided on a third, more unconventional option, and installed an above ground steel storage tank. He applied and received funds through the USDA-NRCS Environmental Quality Incentives Program (EQIP) as a special project.

The tank is made of curved panels of glass-lined steel to resist corrosion. The panels bolt together to form the 120 foot diameter, 19 foot high tank. The tank sits on a circular concrete pad that has a leak detection system and a geo-synthetic clay liner (GCL) underneath. The leak detection system will alert the owner if there is any waste seepage from the bottom of the tank that would otherwise go undetected, and the GCL assures that none of the leaking wastes, if there is indeed a leak, get into the ground water.

While the idea of an above ground steel storage tank to contain liquid animal wastes is new to Alabama, it is not new in other parts of the country. But what makes this system unique is the forced aeration system that is installed on the surface of the liquid inside the tank. Two five horsepower electric motors pump air through flexible pipes to 14 aeration modules evenly spaced and suspended about four feet below the liquid surface in the tank. The purpose of the aeration system is to provide an oxygen treatment to the wastes and form an aerobic (with oxygen) cap on the surface of the tank. This

This partially assembled floating aeration system will be lifted by cranes onto the surface of the liquid inside the storage tank.

Newly installed above-ground steel tank for the storage and treatment of liquid swine wastes.

" What makes this system unique is the forced aeration system that is installed on the surface of the liquid inside the tank."

aerobic cap is to suppress odors from the wastes at lower levels in the tank where anaerobic (without oxygen) breakdown of the wastes is being performed by microbes and bacteria.

Another purpose of the oxygen rich cap layer is to provide a "cleaner" source of water to be recycled through the production houses as pit water. Concrete pits were constructed under the slatted floors where the hogs are kept, and water is maintained in the pits to keep the wastes liquefied and to control odors. Usually after collecting the wastes for a week, a big drain plug is pulled that lets the pit water and wastes drain to one of four sump pits installed at the houses. From the sump pits, the wastewater is pumped over the top of the 19 foot high tank for another round of treatment and aeration. As the wastewater is treated with aeration, the volatile solids (VS) and biochemical oxygen demand (BOD) are reduced before being pumped back into the houses again as pit water.

This aeration type technology is not new to the treatment of wastewater, but it has been used mainly in the treatment of human and municipal wastes. This will be the initial application of this technology to animal wastes in Alabama. A private consulting firm experienced in municipal wastewater treatment employed for the aeration design has assured the Alabama Department of Environmental Management that the system will meet the treatment and odor levels of a much larger anaerobic lagoon.

The tank and aeration system have just been installed. The operational phase is just beginning and will be closely monitored this spring. The effectiveness of the system will depend largely on the amount of aeration time provided each day. Aeration times will be adjusted, perhaps often during the year as seasons change, to provide acceptable levels of odor control and nutrient concentrations. The results of this operational testing phase will be the subject of a future article.

Laurel Wilt Disease - An Ecological Disaster

Extinction of Red Bay Trees in the Southeast

by Richard M. Bryant, January 2007

Summary

Mortality of red bay trees (*Persea bobonia*) in coastal locations in South Carolina (SC), Georgia (GA), and Florida (FL) is spreading rapidly, resulting in the death of nearly all red bays and sassafras trees in the infected areas. The cause of the disease is a fungus (identified as *Ophiostoma sp*.) vectored by an Asian ambrosia beetle (*Xyleborus glabratus*) . Both the beetle and fungus are recent introductions into the U.S. There is no known method to halt the spread of this disease.

History

In 2002, a species of ambrosia beetle new to the U.S. was discovered in a monitoring trap in Port Wentworth near Savannah, GA. The beetle is a native of India, Japan, and Taiwan. By late 2003, red bay trees were dying in coastal SC and the beetle found on those dead and dying trees was suspected. Diseased trees were found to have a fungus, present in all cases and inoculation experiments confirmed the fungus was the cause of mortality. The fungus was present in all examined beetles. Evidence strongly suggested the beetle was the vector for moving this fungus from tree to tree.

Red Bay Info

Red bay trees extend from Virginia to Louisiana on the coastal plain. A member of the laurel (Lauraceae) family, it is closely related to swamp bays and silk bays. Also in the Lauraceae family are: 1. pondspice (*Litsea aestivalis*); 2. avocados; 3. sassafras; and 4. pondberry or southern spicebush (*Lindera melissifolia*), a federally endangered species.

Currently red bays and sassafras are confirmed to be susceptible to this wilt disease. It is unclear if other members of the laurel family are affected, but since it is suspected that several members of the family may be impacted, the proposed name for the disease is "Laurel Wilt Disease."

Red bays have limited commercial use. The wood is sometimes used in cabinetry and boat building and the trees are occasionally used in landscaping. The seeds of red bay are eaten by turkeys, quail, deer, songbirds, and bears. Leaves are used in Southern cooking to flavor gumbos.

Red bays are host to three butterflies: Schaus, palamedes, and spice-bush swallowtails.

Beetle Biology

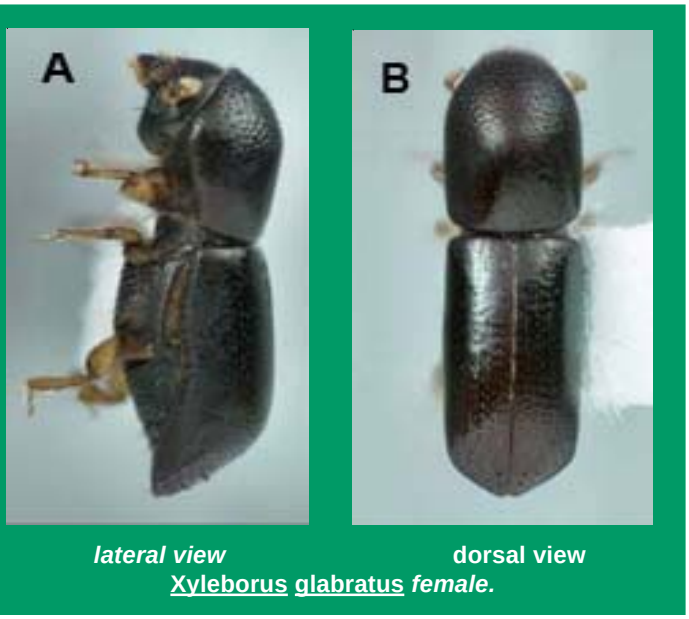
The vector for the *Ophiostoma* fungus is an ambrosia beetle. There are 20 species of ambrosia beetles in the U.S. Nine of these species are non-native and eight of these non-native species do not cause any economic or ecological harm.

Ambrosia beetles are usually attracted to dying trees. However, *X. glabratus* seems to attack healthy trees. The beetle burrows into the cambium layer and deposits the fungus which then multiplies and results in the tree's inability to move water and nutrients. The beetle may leave the tree after the initial visit, but once the trees dies, a large number of beetles return to the infected tree to eat the fungus. It may take only a single beetle visit to inoculate the fungus into the tree.

Other beetles may attack red bay trees with little impact. For example, attacks by the black twig boring beetle (*Xylosandrus compactus*) will result in limited (few) terminal leaves dying. This is not to be confused with the disease caused by the *Ophiostoma* fungus which results in the death of the entire tree.

Rate of Spread

The initial observation of dead red bay trees in SC was in late 2003. By 2005, the beetle and disease were confirmed in seven



lateral view **dorsal view**

Xyleborus glabratus *female.*

counties in northeast GA, five counties in SC, and Duval County in FL. The spread of the disease to FL happened without the disease being observed in southern GA.

By the end of 2006, the disease had spread to 5 counties in SC, 15 counties in GA, and 8 counties in FL. One of the counties in FL, Indian River, is about 140 miles south of any known infestation. Researchers in SC estimate the rate of spread is approximately 20 miles per year. Rate of spread in FL far exceeds this estimate.

Currently there is no method to halt or even slow the spread of this wilt disease. It appears the *X. glabratus* beetle is a powerful flier and by the time brown leaves are observed, many trees in the vicinity are already infected. The use of pesticides is not practical as many other species of beneficial insects would be impacted. There are no known biological controls and even if one could be located, it would be years before it would be available for release in the infected area.

Transportation of the beetle via inadvertent human actions (e.g. in firewood, in shipment of timber products, or stuck on a vehicle or train) over distances greater than the flight distance also seems to be occurring. On at least two occasions infections have made "jumps" of over 80 miles (from northern GA to Duval County in 2004 and from north FL to Indian River County in 2006).

Monitoring plots on Ft. George Island (Duval County, FL) show a 92 percent mortality of red bay trees. All red bays above 6 inches in diameter have died. Given this mortality rate, one researcher stated this was an ecological disaster.

While no one was willing to predict the long term impact of the loss of red bays (and possibly other laurel species), all researchers agreed it will have major impacts including changes in fire behavior, loss of dependent species, and economic consequences.

Ongoing and Proposed Research

Following are some projects that are currently underway or will start in 2007:

1. A workshop on the rapid decline of red bay trees in the southeast was held in January 2007 in Jekyll Island, GA. This paper was prepared to summarize that workshop.

2. SC, GA, and FL will continue to monitor disease spread.

3. U.S. Department of Agriculture – Forest Service (USDA-FS) will continue inoculation studies to determine what other species may be susceptible in the laboratory.

4. All visually infected trees on Jekyll Island, GA, were removed in December 2006 to determine if manual removal will slow the spread.

5. FL Division of Forestry (DOF) will start fungicide injection testing at two locations (Ft. Clinch State Park and Jennings State Forest) in the spring of 2007.

6. Cumberland Island National Seashore, GA, was planning a manual/mechanical removal of all dead and dying red bay trees to determine if sanitation would slow the spread on the island. However, recent investigations show nearly all red bay trees already show signs of the fungus and the tree removal effort has been cancelled.

7. FL DOF will continue monitoring of sentential avocados on Ft. George Island.

What is next?

1. The USDA-FS will head up a task force to be assembled in spring 2007. This taskforce will be modeled on the Sudden Oak Death Taskforce.

2. The USDA-FS is also starting a web site to facilitate information exchange on the wilt disease.

3. The USDA-FS is proposing a scientific forum in late 2007 to assemble researchers to give updates on what is known about the disease.

Contacts

1. USDA-FS, Don Duerr, (404) 347-3511, dduerr@fs.fed.us

2. FL Division of Forestry, Dr. Bud Mayfield, (352) 372-3505 x 119, mayfiea@doacs.state.fl.us

3. GA Forestry Commission, James Johnson, (706) 542-9608, jjohnson@gfc.state.ga.us

4. SC Forestry Commission, Laurie Reid, (803) 896-8830, lreid@forestry.state.sc.us.

A. Wilt symptoms of red bay attacked by* Xyleborus glabratus *and infected with* Ophiostoma. *Sections of crown turning purple to red. B. Healthy red bay.

Restoring Alabama's Longleaf Pine Forests

The Alabama USDA-Farm Service Agency (FSA) has received 37,000 acres for planting of Longleaf Pine through the Continuous Conservation Reserve Program (CCRP) practice CP-36. A total of 250,000 acres of longleaf pine is the goal for nine southern states: Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, and Virginia. The purpose of this practice is to establish longleaf pine stands at densities that benefit wildlife and protect water quality.

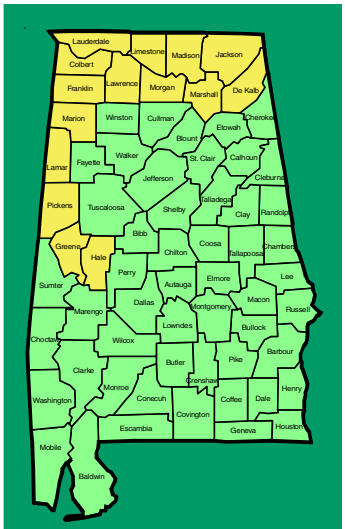
Eligible producers are those that have owned or operated the offered land for 12 months prior to the close of signup. Eligible land is cropland that has been planted or considered planted to an agricultural row-crop commodity four of the years 1996 to 2001 and is physically and legally capable of being planted in a normal manner. The soils must be suitable for longleaf pines - generally sandy well drained soils. Local FSA offices have a listing of approved longleaf soils.

Young longleaf pines.

The land offered must also be located within the National Longleaf Priority Area. For Alabama, 52 of the 67 counties are eligible. The counties NOT eligible are: Lauderdale, Limestone, Madison, Jackson, Colbert, Lawrence, Morgan, Marshall, DeKalb, Franklin, Marion, Lamar, Pickens, Greene, and Hale.

Producers approved Practice CP-36 contracts will receive an annual rental payment for 10 to 15 years, a one-time signup bonus of $100 per acre, a one-time Practice Incentive Payment equal to 40 percent of the eligible installation costs, and financial assistance up to 50 percent of the eligible reimbursable practice costs.

Sign-up began December 1, 2006, and will run continuously (i.e. eligible land may be enrolled any time) until the 250,000 acres for the nine-state region are enrolled, or December 31, 2007, which ever comes first. Applications will be approved in the State FSA office on a first-come-first-served basis as approved conservation plans are completed.



The counties in green are eligible for CCRP practice CP-36, longleaf pine.

NRCS and FSA have partnered to promote greater use of Farm Bill conservation programs such as CCRP and the Wildlife Habitat Incentives Program (WHIP) for wildlife habitat improvements. With support from non-profit organizations such as the Alabama Wildlife Federation, these programs will leverage additional resources for farm wildlife habitat improvements.

For more information regarding CP-36, other CCRP practices, and additional federal programs to improve wildlife habitat and water quality, contact your local USDA-Service Center.