NORTHWEST REGIONAL OFFICE
205-339-0602

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Bruce Springer

TIMBER RECOVERY ISSUES TO CONSIDER

I. Assessing Timber Damage - If your timber was only slightly damaged, it might be prudent to wait a couple of months before selling your timber until after the market recovers from storm damage. However, if you suffered moderate to severe damage, and a large portion of your timber is lying down, go head and harvest your timber before it further deteriorates. For additional information, see Forest Management Sheets "Establishing Priorities for Salvaging Storm-Damaged Timber" and "Assessing Timber Damage."

II. Get Professional Assistance - Our county offices provide general harvest recommendations for damaged timber, including a list of consultant foresters and timber buyers who will visit your property and provide specific recommendations. For additional information, see Forest Management Sheet "Selling Timber."

III. Sell Damaged Timber Promptly - Delaying harvest can result in insect and disease problems, ultimately reducing the value of the harvest. Be aware that a lot of timber coming on the market after a natural disaster will depress timber prices. For additional information, see Forest Management Sheet "Utilization of Storm-Damaged Timber."

IV. Consider Tax Treatment for Casualty Loss - For tax purposes, landowners must document the catastrophic event and the losses. Save a copy of the local newspaper to document the storm damage and take pictures to show the actual property damage before cleanup efforts begin. Timber losses from a tornado, hurricane, storm or other natural disasters may be claimed as a **casualty loss** if there is no timber salvaged or as an **involuntary conversion** if the timber is salvaged. For additional information, see Forest Management Sheet "Understanding Casualty Loss Deductions for Timber."

V. Reforestation - Planning reforestation is one of the most important aspects of timber salvage. If done properly, a timber harvest will leave the site better prepared for reforestation. For additional information, see Forest Management Sheets "The Need for Regeneration," "Site Preparation Methods," "Pine Weevils," "Planting Pine Seedlings" and "Planting Hardwood Seedlings."

The Alabama Forestry Commission offers much more information for landowners on our web site at www.forestry.alabama.gov .

The Alabama Forestry Commission is an equal opportunity employer and provider.

Water Quality BMP Guidelines for Tornado Debris Salvage and Cleanup

The tornadoes that struck Alabama on April 15 and again on April 27, 2011, left fallen and damaged trees across the State. Many Streamside Management Zones (SMZ) and Riparian buffers were completely destroyed by these storms. Timber salvage and debris removal in these areas, while the main priority, should be given a little thought before more damage is caused by the removal practices. Please give thought to the following:

- ◊ Water quality and stream bank protection rules are still in place.
- ◊ If salvaging timber in these areas will cause more damage than the value of the timber, please think before action is taken.
- ◊ If salvage work is feasible, maintain the integrity of the stream bank itself, do not operate equipment in the stream bed.
- ◊ State and Federal BMPs for roads and stream crossings must be followed.
- ◊ Where feasible, remove any debris that is in the creek with grapples or track hoes.
- ◊ Take a photo of area to be salvaged prior to beginning work and again after work with BMPs implemented as needed to document any audits.
- ◊ Normal stabilization of sites after salvage is expected.

If you have questions or need a site visit, contact Jim Jeter at 205-333-1590 extension 19.

A copy of Alabama Forestry Commission's "Alabama's Best Management Practices for Forestry" is available at http://www.forestry.alabama.gov/BMPIndex.aspx?bv=2&s=1.

Establishing Priorities for Salvaging Storm-Damaged Timber

EPSDT050511

When storms damage forest stands and shade trees, woodland owners have many questions about what to do with their damaged trees. The following outline provides a guideline for quick decision-making and priority setting. No simple guideline can fit all storm, seasonal and timber market conditions or the availability of harvesting resources. Forest landowners will unfortunately face situations where the salvage harvest of their damaged timber will be dangerous and expensive. In addition, many timber owners will be attempting to market their damaged timber before it spoils. As a result, harvesting and manufacturing firms will not be able to handle all of the available timber: priorities in salvaging damaged timber must be made.

When establishing priorities for salvaging storm-damaged timber, the first and highest priority should be given to salvaging:

1. The timber which has the highest potential product value (in most cases sawtimber and veneer);
2. The timber which is the easiest to cut (stands blown or felled in one direction);
3. The timber which is the most perishable (in most cases sawtimber and veneer).

In order to minimize the logging costs in storm-damaged stands of mixed sawtimber and pulpwood, all salvageable sawtimber and pulpwood should be removed during the same operation.

Type of Tree or Stand	**Woodlands**	**Shade Trees**
Wind-blown in one direction. Trunk not broken. Most roots out of ground.	Salvage as soon as possible for best product. In mixed stands, remove all merchantable timber.	Remove with caution. Split and use for firewood.
Large trees heavily skinned by flying debris. Trees standing or leaning less than 45 degree angle from vertical.	Salvage as soon as possible for best product. In mixed stands, remove all merchantable timber.	Remove. Split for firewood.
Trunk broken. 0-3 live limbs.	Salvage for pulpwood if and when possible in next 6-12 months. If salvage not possible; burn, site prepare and reforest by simplest means.	Remove. Split for firewood.

Trunk broken. At least 4-7 lives limbs. Trunk not leaning. No root damage.	Can delay salvage for pulpwood or other management decision until later or better market conditions.	Tree should live. Remove broken branches and trim broken tops.
Wind-blown in one direction. Trees leaning in less than a 45-degree angle from vertical. Most roots in ground. Trunk not broken. At least 4-7 live limbs.	Can delay salvage for sawtimber or pulpwood or other management decision until later or better market conditions.	Tree should live. Remove all trees that pose hazard to people, structures, utility lines, etc.
Large trees lightly skinned by flying debris. Trees standing or leaning less than 45 degree angle from vertical. At least 4 or more live limbs.	Can delay salvage or other management decisions until later or better market conditions.	Tree should live. Trim away loose bark.
	Beware of Bark Beetles, Borers, and Decay	
Trees in jack-straw jumble.	Salvage if possible. Logging extremely hazardous. Site prepare and reforest by simplest means.	Remove with CAUTION. Split and use for firewood.
Small non-merchantable trees skinned and broken by flying debris.	Site prepare and reforest by simplest means.	Remove. Plant new tree.

Source: North Carolina Cooperative Extension and www.forestpests.org

Assessing Timber Damage

ATD050511

Landowners with timber damaged by tornados, hurricanes and storms should assess losses and take steps to recover lost value and plan for the future. The Alabama Forestry Commission strongly recommends that landowners consult with a professional forester. Professional foresters will protect the management ideals of the landowner while ensuring proper timber appraisal, sale administration and environmental compliance.

The following are some general rules for assessing timber damage. It is not meant to be a complete guide but rather things to consider when talking with a professional forester.

Pine stands suffer a wide range of lean and breakage in a hurricane.

- Any young pines (30 feet and shorter) leaning 30 degrees or more will likely not produce higher end products such as poles, sawtimber and veneer.
- Trees leaning 15 degrees or less should recover.
- More mature pine (greater than 30 feet in height) can have more lean and still recover, but most should be 20 degrees or less.
- If the lean and wind throw has caused roots to become exposed or damaged, these trees should be removed.

Breaks of main stems and branches on pines should be assessed.

- Most pine trees will die if their tops are completely broken off.
- Most pines will survive if three or more live limbs remain; however, there will be substantial loss of growth.
- Any breakage in the pine stem or roots and major wounds will become a prime entry point for insects and disease, which ultimately weakens the timber stand, e.g., southern pine beetle and blue stain fungus.
- Large pine trees with stem breakage suffer serious wood structure damage, forcing sawmills to trim back four to six feet from the breakage point.

Hardwoods can keep longer after wind damage as long as the roots are in the soil.

- Unlike pines, a storm-damaged hardwood with a portion of the root ball attached to the ground may survive an additional 6-12 months.
- However, wood may begin to degrade much sooner, so these trees should be salvaged as soon as possible.
- Limb breakage in hardwoods is not as serious as in pines, since most hardwoods sprout prolifically and redevelop a crown.

Timber harvested in post-storm conditions present additional danger and cost.

- Timber sold in post-storm conditions may have higher logging costs factored into the final sale lowering the return to the landowner.
- The timing of selling storm-damaged timber is important. Generally, after a major storm, there is a temporary wood glut on the market, which may lower the price of the timber.

Source: North Carolina Forestry Association

Utilization of Storm-Damaged Timber

USDT050511

Use of storm damaged timber depends on physical damage to trees and the length of time between damage and harvest. Sawtimber trees with broken tops may be unusable for lumber because of wood splintering and internal tearing (shake). Salvage of usable sawlogs from broken trees depends on the height of the standing stumps.

Uprooted or leaning trees usually can be converted to lumber. Badly splintered trees also present problems in debarking and chipping before pulping or conversion to hardboard or particleboard. However, trees with shake or just end splintering can usually be processed successfully although there will be some decrease in the quality of chips.

Fungi and insects require time to degrade the quality of timber. Rapid harvest and removal is the most effective method to prevent damage by these organisms. However, if this is impossible, timber can still be utilized for some products for up to a year.

The following are guidelines for the use of storm damaged timber for various products. Times are approximate and are affected by species, size and whether the trees are standing or on the ground.

(P) Pine (H) Hardwood

Product	**Harvest within**	**Comments**
Veneer and lumber appearance (P), (H)	4 - 6 weeks	Blue stain prohibits use if left longer
Lumber-framing (P)	3 - 4 months	Should be kiln dried to prevent emergence of secondary insects. Do not use where toughness is important
Lumber-decorative boards and paneling (P), (H)	12 months	Should be kiln dried
Posts (P)	4 - 6 weeks	Blue stain will affect toughness and preservative treatability
Poles, piling (P)	Not recommended	
Pulp, hardboard, particleboard (P), (H)	12 months	Blue stain, decay and low moisture content may affect the pulping process and chemical or energy requirements. Should be mixed with sound wood.
Fuelwood (P), (H)	12 months	Low moisture content increases heat value

Trees that are bent, broken or splintered, probably have windshake (internal tearing) and may not be suitable for lumber, but could be used for pulp or particleboard. Uprooted and leaning trees are more likely to be suitable for lumber. Badly splintered trees present problems in debarking and chipping before conversion to a fiber product.

When logs cannot be used rapidly, it is possible to prevent attack by fungi and insects by storing the logs under water. Valuable logs can be protected by floating in a pond or by keeping waterlogged under a water spray. To be effective, the logs should be water logged as soon after the harvest as possible and should be kept wet continuously. Ponding and water spraying can prevent deterioration for at least a year.

Source: North Carolina Department of Forestry and Natural Resources

Evaluating Storm-Damaged Landscape Trees ESDLT050511

A storm can leave trees in your yard looking like there's no tomorrow. Major limbs may be broken or damaged, foliage can be shredded or stripped, or the bark may be torn or gouged. Before writing off your landscape tree as a "goner," evaluate by asking the following questions:

Other than the storm damage, is the tree basically healthy and vigorous? If the tree is basically healthy, is not creating a hazard, and did not suffer major structural damage, it will generally recover if first aid measures are applied immediately after the storm.

Are major limbs broken? The larger a broken limb, the harder it will be for the tree to recover. If a majority of the main branches are gone, the tree may have little chance of surviving.

Has the leader (the main upward-trending branch on most trees) been lost? In species where a leader is important to upward growth or desirable appearance, it may have to be a judgment call. The tree may live without its leader, but at best would be stunted or deformed.

Is at least 50% of the tree's crown (branches and leaves) still intact? This is a good rule of thumb on tree survivability. A tree with less than half of its branches remaining may not be able to produce enough foliage to nourish the tree through another season.

How big are the wounds where branches or bark has been damaged? The larger the wound is in relation to the size of the limb, the less likely it is to heal, leaving the tree vulnerable to disease and pests. A two- to three-inch wound on a 12-inch diameter limb will seal over with new bark within a couple of years.

Are there remaining branches that can form a new branch structure? The remaining limbs will grow more vigorously as the tree tries to replace its missing foliage. Look to see if branches are in place that can eventually fill out the tree's appearance.

Once you evaluate the condition of the tree, begin proper treatment and repair to maintain the health of the trees.

- **It's a Keeper -** If damage is relatively slight, prune any broken branches, repair torn bark or rough edges around wounds, and let the tree begin the process of wound repair.
- **Too Young to Die -** Young trees can sustain quite a bit of damage and still recover quickly. If the leader is intact and the structure for future branching remains, remove the broken branches and let the tree close over the wounds and recover itself.
- **Wait and See -** If a valuable tree appears to be a borderline case, resist the temptation to simply cut the tree down and be done with it. In such cases, it may be best to stand back for a while and think it over. Remember that time is on your side. After careful pruning of broken branches, give the tree some time to recover. A final decision can be made later.

- **Say Goodbye -** Some trees simply can't be saved or are not worth saving. If the tree has already been weakened by disease, if the trunk is split, or more than 50 percent of the crown is gone, the tree has lost its survival edge.

Some of your trees may have damage that's too close to call, or may have hidden damage. To help with such questions, a tree professional may be needed to help you decide what to do about your trees.

Don't hire just anyone who shows up at your door following a storm. Look for qualified arborists in the phone book or by contacting your county or city forester.

Resources for Urban Forestry Related Assistance

Alabama Cooperative Extension System (www.aces.edu) Through the work of more than 500 Extension agents and other field-based staff, in addition to specialists in many facets of our six program areas, the Alabama Cooperative Extension System is bringing the research and knowledge of the land-grant universities and the Alabama Agricultural Experiment Station, and the expertise of many of our partners, to people.
Alabama Urban Forestry Association (www.aufa.com) This statewide nonprofit organization is made up of a diverse membership of professionals, horticulturists, landscape workers, tree board members, tree care volunteers, and interested citizens who care about trees where they live and work. Services are designed to support members' efforts to replant, maintain, sustain, and expand the urban landscape.
Urban Forestry South Expo (www.urbanforestrysouth.org/) This "exposition" is a comprehensive library of works of science that promotes and expands urban and community forestry to an audience of urban forestry managers, urban forestry councils, universities, public managers and elected officials, and citizen activists, in an effort to stimulate greater public interest.
International Society of Arboriculture (www.isa-arbor.com) The International Society of Arboriculture is a worldwide professional organization dedicated to fostering a greater appreciation for trees and to promoting research, technology, and the professional practice of arboriculture.
National Arbor Day Foundation (www.arborday.org/media/stormindex.cfm) This section of the National Arbor Day Foundations website contains articles and artwork about how communities and individuals can save damaged trees following storms.
Tree Care Industry Association (www.natlarb.com) TCIA develops safety and educational programs, standards of tree care practice, and management information for arboriculture firms around the world.

Source: National Arbor Day Foundation

Casualty Loss Deductions For Timber CLDFT050511

Forest landowners whose timber has been destroyed may be eligible to take a deduction for the loss on their federal income tax. The loss must be physical in nature and caused by an identifiable event or combination of events that has run its course. There are two types of losses from natural events.

Casualty losses are sudden, unexpected and unusual - as from a fire, tornado, storm or hurricane. **Non-casualty losses** are not sudden but are unexpected and unusual –as from a severe insect attack, drought or disease. Casualty and non-casualty loss deductions are available to all owners who hold timber to produce income, whether as a business or an investment.

Allowed Deduction Losses may be deducted up to the adjusted basis of the timber lost. Basis is the cost of the timber on the property. It is either the cost allocated to the timber when the tract was purchased, or the fair market value of the timber when the property was inherited, or the cost of reforestation when the tract was planted by the current owner. For casualty loss purposes, the IRS lets you use the basis of the "single identifiable property", which can be the number of board feet of timber, or the basis for all timber on a tract, or the basis for all timber owned by the landowner.

Measuring Loss A deduction is allowed only if the damage renders the timber unfit for use, or results in it being sold for less value than it was appraised for prior to the storm. Claim as a loss the difference between the adjusted basis for the tract and the amount received from salvage, if the latter is less than basis. Reimbursements from insurance and other anticipated recovery must be deducted in computing the loss. In other words, Basis less salvage less insurance equals casualty loss.

EXAMPLE 1: You own 50 acres of forestland carrying 200 MBF of young sawtimber. Your adjusted basis in the timber is $4000. A natural disaster damages 10 acres, destroying 25 MBF of timber, which was worth $6500 before the storm. You have no timber insurance and could not salvage. Your casualty loss deduction can be either the basis of the damaged tract (10/50 of $4000 or $800) or of the entire property ($4000), even though the timber was worth $6500.

EXAMPLE 2: The same as above, but you are able to salvage the stand as pulpwood getting $1,000 in stumpage. Your loss is the difference between the value before and after ($6500 - $1000 = $5500) or the basis, whichever is less. In this case, the $4000 basis would be used.

Involuntary Conversion Income If the salvage income is larger than the basis, the income is considered an "involuntary conversion." This income is considered capital gains and may be taxable. But if the salvage income is reinvested within 2 years into reforestation or the purchase of new timberland, the taxes owed are deferred until the new timber is sold.

EXAMPLE 3: You own 20 acres of natural regenerated pines, which had no basis. You were able to get the timber sold and got $2000 in salvage value. The casualty loss would be the basis ($0). The timber salvage would be considered a $2,000 involuntary conversion capital gain. If you use that $2000 to site prepare and replant your trees, you will pay no taxes and the basis of the new stand will stay at $0. If you spend more than $2000 to replant, the basis will be the total cost less $2000. If you spend less than $2000, you will owe capital gains tax on the difference.

Document the Casualty Regardless of the use or intent for owning the property, it is necessary to document or show the type of casualty and when it occurred, and that you owned the property at the time of the damage. Photography is a very good way to document losses, and "before and after" shots are especially useful in assisting appraisers with determination of fair market values. Keep newspaper clippings showing the existence of the disaster.

How to File Deduct a loss on your tax return for the year the loss occurs. Use Form 4684, Section B, to report either a casualty or non-casualty loss.

Amended Returns Casualty losses occurring from an event in an area declared eligible for federal assistance under the Disaster Relief and Emergency Assistance Act may be deducted on the return or amended return for the tax year immediately preceding the tax year in which the disaster happened, as well as during the tax year in which the event occurred. For a disaster occurring in 2011, one would have until April 15, 2012, to file an amended return for deducting losses on the 2010 tax year return.

For additional information on these and other tax matters, consultation with a certified public accountant or tax attorney is recommended. Timber tax information is also available at www.timbertax.org.

Source: Forest Owner's Guide to the Federal Income Tax, USDA Forest Service

This information is provided by the Alabama Forestry Commission
For more information please visit: www.forestry.alabama.gov

Protect Yourself From Timber Theft PYFTT050511

Timber theft occurs in a variety of ways and no one is immune, however, you can minimize your chances of being a victim.

Know your timber's value -Think of your standing timber as a bank account. Anyone taking money from your account through outright theft or theft through deception or fraudulent business practices is stealing money. A timber sale contract is a business deal. Keep it business.

Hire a reputable professional consultant forester - A reputable consultant forester will look out for your interests when dealing with timber buyers, procurement foresters and producers. They charge for their work but earn it by getting top dollar for your timber and giving you some peace of mind.

Check references - A good consultant forester is proud of his/her profession and will provide names of previous clients. Were they satisfied with the work? Were there problems with the sale? Did you have any contract violations? If so, how were they resolved?

Negotiate Conditions of the Sale - You will make the final decision on how your timber is sold. Make certain you understand the advantages and disadvantages of two basic types of timber sales: Lump Sum sale and Pay-As-Cut.

> Lump Sum Sale - the landowner receives one large payment before the timber is harvested. Since competitive bidding usually insures fair market value, this method is often in the landowner's best interest. It's important to get as many bids as possible. With a good timber sale contract to protect your property and other interests, any theft problems become the buyer's.
>
> Pay-As-Cut – the landowner receives a set sum of money for each unit of pulpwood and/or sawtimber as the timber is harvested and delivered. This option may bring a better price if loggers merchandise different products and take advantage of spot markets. However, it is also the method where law enforcement receives the most complaints from landowners unhappy with the final compensation, believing they did not get paid for everything.

If you select the pay-as-cut method, exercise extreme caution. There is much potential for abuse. Some examples include but are not limited to:

- Poor utilization - The tract is high-graded (taking only the best), costing the landowner money and making it difficult to get another contractor to come in and finish the job. It can make reforestation more costly.
- Poor merchandising - You're paid pulpwood prices for sawtimber.
- Diverted wood – The wood producer sells it as his own. Unless you're there every day, how do you know what left your property and where it was taken? Wood is a commodity, once it leaves your land it looks the same as any other load of wood.
- Co-mingling of wood - The producer or buyer cuts more than one tract of timber, paying you for the lower grade wood from another tract and pocketing the difference. You are particularly at risk if the producer or buyer owns the second tract of timber. Be wary if the producer moves off your tract and onto another tract before finishing yours. Multiple trucking firms or producer trucking crews hauling from your tract and other tracts are yet another danger sign.

Establish a Paper Trail – Make certain that every load of wood leaving your property is accounted for. Alabama law requiring a record of information at the first place of weight and off-loading is very minimal. Mill records require date of delivery, weight or volume, product, seller/producer name, landowner name and the county from which forest products were severed.

- Demand copies of all mill scale tickets and check them for accuracy of basic information.
- Most importantly, make certain that your name as landowner (first and last name) is on all scale tickets.
- Record date when the producer moved onto your property, when the first load was severed and removed, and when the last load was removed.
- If the producer moves off your property before finishing the job and moves back on the job later, record these dates.
- Identify and record any trucking companies the producer may contract with to haul the products to market. If possible, get names of truck drivers.
- Remember that most producers are hard working, honest people. Treat the sale as a business deal; they will understand and not be offended. Keeping the sale on a business level will act as a deterrent and aid in resolving any disputes.

Be Alert to Suspicious Behavior - Regardless of the selling method, the following "red flags" should alert the landowner to possible problems.

- Loggers operating where they shouldn't be.
- Truckers hauling when they shouldn't be.
- Loggers or trucking contractors delivering to unauthorized markets.
- Multiple trucking contractors on a site.
- Loggers segregating products not mentioned in the contract.
- Logs hidden in the woods.
- Logs mixed with pulpwood.
- Boundary trees cut or boundary lines moved.
- Harvesting in streamside management zones in violation of contract.
- Logger working an adjacent timber tract.
- Trucking contractor hauling from adjacent tracts.
- Logs that left the site but were not delivered promptly.
- Complaints or tips from landowners, neighbors, other loggers, foresters, consultants.

There is no foolproof plan to prevent timber theft. Prevention starts with knowing where your property is, having clearly defined property lines, limiting access to the property, having good neighbors and being a good neighbor. If you are an absentee landowner, having good neighbors, friends or someone to check your property and report any suspicious activity is critical.

Hiring reputable, honest people when entering a timber sale contract will eliminate most potential problems. Insist on a written contract using clear language, completed and signed by all parties. These practices are important safeguards for the private landowner and the commercial landowner, as well.

Harvesting and marketing timber products can be very complex and if you don't know the timber business, you better know the people with whom you are dealing. Good background checks and the bidding process are two key elements to protect the landowner.

Entering a timber sale without a written contract to protect your interests is asking for trouble. A good timber sale contract that outlines prices, volumes, products, markets, sales area, cleanup, penalties for contract violations and has good wood flow accountability measures will reduce temptation, thus eliminating most potential theft opportunities.

Selling Timber

ST050511

A timber harvest marks completion of many years of growth and should be carefully considered. If done properly, the landowner will profit from the sale and, equally important, the site will be protected for the next reforestation.

Getting the most money shouldn't be the only objective of a timber sale. Future productivity of the land and protection of streams, young timber stands, and erodible soils should be equally important to the landowner.

Unfortunately, forest landowners are not always prepared to make a wise timber sale. Most sell timber only once or twice in their lifetime and are unaware of problems that arise from poor harvesting operations.

Each year many forest landowners receive a healthy check for their timber, yet are angry about the condition of their property after the harvest. They are not only upset with the appearance, but face a major investment to reclaim it into productive, healthy forestland.

Often adjacent landowners are affected by a poor harvesting job, too. Downed fences, opened gates, road damage and litter are the most common complaints of neighboring landowners when the harvesting operation is not carefully planned. Environmental complaints as well as civil court complaints may also be a result of a poorly planned timber sale.

The forest landowner not only has an ethical responsibility to be a good steward of the land, but also bears a legal responsibility to protect the environment. At present, the landowner shares the liability of protecting water quality and endangered species with the logging contractor, the consultant forester, and other involved parties.

TIMBER SALE CONTRACT: The best practice for all parties is to put the timber sale agreement in writing. A simple contract includes identification of the seller and buyer, location and description of the timber being harvested, purchase price, and method of payment.

PURCHASE PRICE: Purchase price is usually expressed by one of two ways: total value of all merchantable timber or price per unit for specific species and products, usually expressed as a per ton price.

Total value of all merchantable timber is associated with a lump sum payment where the landowner is paid before the harvest and retains no economic interest in the standing timber for the term of the contract. Price per unit for specific species and products is usually associated with a pay-as-you-cut payment where the landowner retains an economic interest in the standing timber.

There are advantages and disadvantages to both options as they pertain to the individual landowner. For information on the option that best suits your needs, contact a registered forester familiar with timber sales. Start by contacting the county manager for the Alabama Forestry Commission in the county in which your property is located.

OTHER CONSIDERATIONS WHEN WRITING A TIMBER SALE CONTRACT:

- Require all logging to be conducted in accordance with Alabama's Best Management Practices for Forestry (BMPs). A BMP manual is available at no charge from your local Alabama Forestry Commission office.
- A "performance fund" is a substantial amount of money given to the landowner by the buyer to insure that the conditions of the timber sale are met. Upon successful completion of the job, the performance fund is returned to the buyer.
- Designation of the trees to be harvested to include species and size.
- Provision for removal of litter and other logging debris after the harvest.
- Penalties for not abiding by the contract.
- Duration of the sale contract.
- Provision for payment of severance taxes.

USE PROFESSIONALS: Forest landowners should always consider seeking professional assistance when preparing to harvest timber. A consultant forester can determine the amount and actual value of the timber. Planning and supervising any logging operation requires experience and expertise of a consultant forester or a very knowledgeable landowner. A tax accountant familiar with forestry taxes can direct timber sale income and reforestation expenditures to reduce the tax burden. An attorney experienced in timber sale contracts can ensure that the best interest of both parties is represented. Additional income or reduced costs usually outweigh the cost of these professional services.

A successful timber sale benefits both the landowner and the land. The landowner receives the financial and environmental rewards of responsible forest management, and the land is protected and preserved for future generations.

For more detailed information visit the Alabama Cooperative Extension System web site at http://www.aces.edu/ "Selling Timber Successfully" Circular ANR-626 and "Timber Sale and Harvesting Contracts" Circular ANR-560. You can also find additional information in a document entitled "Selling Your Timber" on the Alabama Forestry Commission's web site, www.forestry.alabama.gov.

Photo Credit: Alabama Forestry Commission

This information is provided by the Alabama Forestry Commission
For more information please visit: www.forestry.alabama.gov

Selling Your Timber

A timber sale is a serious matter requiring careful preparation. The results of many years of past timber growth are at stake, and the condition of the forest after the sale profoundly affects its productivity for many years to come.

Basics to Consider

Your best interest should be the top priority of anyone you hire to assist in your timber sale. They should fully disclose and resolve any existing or potential conflicts of interest.

1. Hire a Registered Forester or Consultant (who is a Registered Forester) to Help With the Planning and Sale of Your Timber

Selling timber can be a source of great satisfaction to a landowner, or it may be a source of surprise, frustration, and stress, especially for those landowners who make timber sales infrequently.

Relying on the expertise of a registered forester or consultant that is a registered forester to help with the harvest planning and timber sale can prevent surprises to either the seller or buyer and help ensure landowners get the best value for their timber.

To find a registered forester or consultant, you can go to the Alabama Forestry Commission's web page ***www.forestry.alabama.gov***, the Alabama Chapter of the Association of Consulting Foresters at ***www.alacf.com,*** or the Alabama State Board of Registration for Foresters at ***www.asbrf.alabama.gov.***

2. Develop a Forest Management Plan

Properly managed forests yield more timber, have a higher net present value, suffer fewer environmental impacts, and enhance wildlife habitat more than non-managed forests.

Forest management plans are also required for third-party certification and future markets, such as Woody Biomass and Carbon Sequestration.

3. Pre-Harvest Planning

Pre-harvest planning will ensure that your forest management objectives and goals are not compromised. It will reduce opportunities for misunderstandings between you and the buyer and/or logger, help ensure that the harvest will maximize financial returns for all parties, protect water quality, and maintain or enhance forest productivity.

If profit is your primary objective, avoid the temptation to make a "quick sale." Think about what you are going to do, and don't be pressured into making a decision. Using the competitive bid process can maximize your profits.

Clearly marking sale boundary lines will help ensure that the logger does not cut non-designated trees and/or trespass on the neighbors' property.

The use of topographic maps will assist you in identifying streams, existing roads, property boundaries, steep grades, and road access. Soil maps will help identify wet areas and soils that can be easily damaged during the logging process. The use of topo and soil maps can also help in planning not only the time of year to harvest, but also the potential location of logging decks, stream crossings, culverts, and temporary roads.

You should designate areas adjacent to streams as Streamside Management Zones, where timber harvesting should be controlled or avoided.

Before harvesting begins, you or your representative should conduct an on-the-ground meeting with the buyer and logger to review the pre-harvest plan.

The consequences of not having a pre-harvest plan include: time and money spent on unintended problems, degraded forest conditions, illegal activities, declining water quality, more forest land impacted by skidding, degrading post-harvest condition of forest soils, trees more susceptible to disease and insect damage, reduced regeneration of seedlings and saplings growth, etc.

4. Determine a Selling Method

Timber is generally sold by one of two methods: negotiation or sealed bid. You should seek the advice of your Registered Forester or Consultant Forester to determine which method is best for you and your harvesting objective.

Tax Implications

Competent tax advice should be sought well before a sale. It is recommended that prior to making the sale you contact your CPA for clarification of the current tax laws.

There are also various sources of information that you can access on the internet. The Alabama Cooperative Extension System, my-forest.com, the US Forest Service Cooperative Forestry, and the National Timber Tax Website provide tax information that may help you better understand the tax implications of selling your timber.

Those sites are:

- *www.aces.edu/*
- *www.my-forest.com*
- *www.fs.fed.us/spf/coop/*
- *www.timbertax.org*

Properly managed forests yield more timber, have a higher net present value, suffer fewer environmental impacts, and enhance wildlife habitat more than non-managed forests.

You should always consult with a registered forester and attorney when drafting a timber sale contract.

STATE OF ALABAMA

COUNTY OF _____

SAMPLE TIMBER SALE CONTRACT

Sample contracts are available on our website at ***www.forestry.alabama.gov,*** under *"Market & Informational Resources"* menu or http://forestry.about.com

Whether you're dealing directly or indirectly with a timber buyer, wood supplier, logger, registered forester or consultant, you should always request references, experience, applicable licenses, and certifications.

Preparing a contract encourages forethought and planning, which will minimize difficulties and ensure that the transaction meets your expectations.

- **Negotiated sales** involve face-to-face bargaining between you and the buyer.
- **Sealed bid sales** require that prospective buyers submit confidential offers in writing for your timber.

Generally, the sealed bid method returns the highest dollar value to you, the landowner, especially if you are unfamiliar with local markets. The negotiated sale is more prevalent for specialty products such as high-value hardwoods, where there are normally very few bidders. Whichever sale method is selected, you should require the logger to be Professional Logging Manager (PLM) certified.

A trained professional logger can ensure trees are effectively harvested and merchandised in a manner that fully utilizes Best Management Practices (BMPs). This is particularly important as more emphasis is being placed on protecting and enhancing water quality. It's a good idea to take time to know the prospective logger by asking for references, business experience, and whether they have completed PLM training. You or your agent can verify they've attended Alabama's PLM course by going to the Alabama Forestry Association's website at ***www.alaforestry.org*** and clicking on PLM.

(If you choose to sell your timber through the bid process, you may limit your ability to specify a particular logger.)

5. Have a Contract

A written contract is essential and will reduce surprises to both you and the buyer and/or logger. Preparing a contract encourages forethought and planning, which will minimize difficulties and ensure that the transaction meets your expectations. A contract is not a substitute for good faith and fair dealing between parties, it is a framework in which good faith and fair dealing can operate in an orderly and effective manner.

The following items should be included in a timber sale contract:

Timber Description

- **An Accurate Legal Description:**
  In the contract, state the exact location and legal description of the timber sale area.
- **Marking Corners and Boundaries:**
  The contract should state at whose expense marking will be done and how the boundaries and corners will be marked.
- **Selling Timber on a Per-Unit Basis:**
  If you choose to sell timber by the unit, specify the units of measurement to be used, who is to do the measuring, and where. Measurements may be made by one of several different methods: log scales, weight, cords, or some combination of these. A per-unit sale should specify that all timber harvested is to be measured and paid for according to its most valuable product use.
- **The Type of Harvest:**
  Specify the type of harvest you desire and if the timber is marked, how it's marked. For example, if you are making a seed tree cut, you may specify that all trees banded with blue paint 4-1/2 feet above ground (Diameter at Breast Height, DBH) are seed trees and will not be cut or damaged. If you are thinning or using a select cut, you may want to designate the trees to be cut with one paint spot above DBH and another below the stump height. If you are doing an operator-select harvest, specify selection guidelines in the contract.

Payment, Damage Clauses, and Penalties

The following are provisions to consider including in a timber sale contract. Be aware that some restrictions placed on harvesting may lower the price someone is willing to pay for your timber, so be reasonable in your expectations.

- **Selling Timber on a Lump-Sum Basis:**
  If you are selling your timber on a lump-sum basis, specify that you desire payment in full at the time of contract execution; or if you are deferring payment, the exact date(s) you expect payment.

  (A lump-sum sale is the outright sale of standing timber for a fixed dollar amount agreed upon in advance. The sale price is not a function of the volume cut.)
- **Selling Timber on a Per-Unit Basis (price):**
  If you are selling on a per-unit basis, specify the payment per unit for each species and product, as well as timing of payments. Additionally, agree on the method and place of scaling and measurement. Also, you should require in the contract that the buyer provide you with a complete accounting of all species and products by delivery point that are harvested from your sale.

(A per-unit price is determined in advance, but the amount of timber to be harvested is not. Income from sale is based strictly on the volume actually harvested.)

- **Time Period for Cutting Timber:**
  Normal time periods for cutting timber are 12 to 24 months. There can be provisions for extensions, but the details and timing of the extension should be defined. There is usually a cost to the buyer for an extension, and you can consider the value of additional growth if the buyer holds for longer than 12 months.
- **Damage to Your Land or Remaining Timber:**
  A certain degree of damage should be expected. You may want to visit a comparable site that has been recently harvested by the logger who will harvest your tract. Also, you may want to state your damage requirements, such as no more than a maximum number of trees per acre having visible skidding damage, or specify the acceptable depth (in inches) of skidding ruts.
- **Access Restrictions:**
  Specify any restrictions you have for ingress and egress to your property. For example, If you desire that the logger not use a certain entrance to your property, such as through your pasture or beside your house, specify this requirement in the contract.
- **If You are Making a Partial Cut:**
  Include a penalty for cutting non-designated trees. If you specify in the contract a dollar value per merchantable tree volume for the cutting of non-designated trees, later problems will be more easily resolved. The usual penalty for such damage is double or triple the stumpage rate.
- **Removing Canopy or Overstory:**
  If you intend to remove a canopy or overstory to allow the future stand room to grow, you should likewise specify a penalty for failure to cut designated trees.
- **Logging Notification:**
  Agree on when logging can begin and ask to be notified prior to the logger moving on the sale site.

Logging Clauses

- **Method of Logging:**
  You may specify a certain method of logging be used, such as a forwarding system instead of tree-length skidding, to minimize damage to your residual stand during a thinning operation.
- **Road Maintenance and Skid Trail Layout:**
  If you desire that roads be maintained to a minimum standard, refer to that standard in the contract. A usual requirement is to return roads to as good or better condition than before logging occurred. Address your expectations for repair of fences or other special places that may be damaged during the harvesting operation.

As important as it is, the contract is only one of many issues that needs to be considered when the decision to sell timber is being made. The following concerns should have a bearing on the content within the contract:

1. Do you have a clear title for the timber being sold?
2. Have you established your tax basis for the land and timber you plan to sell to claim your capital gains treatment?
3. What are the market conditions for the products being sold or retained?
4. How will the sale be marketed to receive the best price or the best job?
5. Will there be any environmental issues (i.e. wetland management or threatened & endangered species) involved in the sale area?
6. How will the sale area be accessed? You would not want large equipment utilizing trails or traveling on property outside the sale area.
7. Site preparation and reforestation options.

These topics are not all inclusive but show why pre-harvest planning is important.

Timber Sale Timeline

Monitor the Harvest Operation

Check the logging operation on a regular basis to ensure contract requirements are being met. Always require as part of pay-per-unit sales that you are provided with a full accounting of what's being harvested. This information should be provided to you by the buyer. The frequency with which you receive this information is up to you, but it's recommended that it be provided on a regular time schedule, i.e. weekly, monthly, etc.

Requiring a load-by-load accounting of forest products removed from your timber sale is a good business practice for you and the buyer. It provides you with a full accounting of what is harvested off your property and helps ensure that contractual terms are fulfilled.

Record-keeping on per-unit sales:

- Load number
- County and state of origin
- Landowner's name
- Date and time
- Scale ticket number
- Species and product
- Destination
- Purchaser

Acknowledgements:

- Dr. Richard Brinker, Auburn University
- Alabama Cooperative Extension System
- Arkansas Forestry Commission
- North Carolina Department of Forest Resources
- Cornell Cooperative Extension
- Steve Nix, About.com Guide
- USDA Forest Service, Cooperative Forestry
- www.forestry.alabama.gov

- **Reduce the possibilities for non-point source pollution:**
  You should specify that all logging should be done in accordance with *"Alabama's Best Management Practices (BMPs) for Forestry."* For more information on BMPs visit our website at *www.forestry.alabama.gov/BMPIndex.aspx.*
- **Stump Height and Top Diameter Harvested:**
  If stump height and top diameter harvested is important to you, then you should specify, in inches, the maximum stump height allowed or top diameter. If you want to easily machine-plant your next timber stand, allow a maximum stump height over which the tree planter can easily maneuver.
- **Selling Your Timber Based on Unit Volume:**
  If you are selling your timber based on unit volume, be sure to specify the maximum top diameter that you will allow to remain in the woods.
- **Cleanup:**
  Include a statement requiring removal of all litter and trash from the logging operation. You may also want to specify that logging debris be scattered back over the site, versus piled at the logging deck.

The Sale and Harvest

- Arrange a meeting with the buyer and/or logger so that you or your representative can point out any special restrictions that you have imposed. Walk the sale site to ensure sale boundary lines and other restrictions are understood.
- Check the logging operation on a regular basis and inform the logging supervisor if you think that the terms of the contract are not being faithfully followed.
- Be reasonable in your expectations and assignment of damage penalties. In some instances, the amount that you receive for your timber may be reduced due to excessive restrictions.

Other Contract Provisions to Consider

- Name and address of buyer
- Date contract is executed
- Declarations of the seller's ownership and right to convey. This may include a title abstract and insurance.
- Clarify ownership of by-products.
- Liability Insurance of all contractors and sub-contractors
- State who is responsible for paying severance tax.
- Statement of who suffers the loss if timber is destroyed or stolen
- Provision for or against assignment of the contract
- Notarization of the contract
- Recording of the contract at the county courthouse
- A performance bond or deposit — collected from the buyer prior to the commencement of harvesting — to be held by a third party until provisions of the contract are met
- Require PLM certification for logger.

6. Monitor the Harvest

You or your agent should frequently inspect the harvesting operation to ensure the contract terms are being fulfilled.

When you sell on a per-unit basis, a full accounting of what was removed during the harvest should be provided by the buyer. You can designate how frequently you want the information: weekly, monthly, or at the end of the sale. Minimum information received should include:

- Each load of timber leaving a cutting site must be assigned a load number. Load numbers for each job site should be in numerical sequence.
- The county and state where the timber was cut
- The landowner's name, or if multiple owners, the name of the estate where the timber is being cut.
- Date and time the forest product was loaded on the truck
- The scale ticket number that corresponds to each load number to verify delivery of individual loads of forest product
- The forest product type identified (for example: pine logs, pine poles, pine pulpwood, hardwood logs, hardwood pulp, chip and saw, woody biomass, and miscellaneous forest products)
- Destination of the first wood-receiving facility that the forest product is being transported to
- The name of the logging company, wood dealer, or producer removing the forest products

7. Closeout with Buyer/Logger

- A notice of completion of harvest from the buyer can be helpful in removing any question if the buyer considers the harvest complete and relinquishes remaining biomass back to owner.
- Review and agree on action and timing to address any land or timber damages related to harvesting operations.
- Address any other issues related to non-compliance of the contract.
- Ensure compliance with BMPs.

For more information, contact one of the following agencies or organizations:

www.forestry.alabama.gov · www.sfws.auburn.edu · www.aces.edu · www.alfafarmers.org · www.cleanwaterpartnership.org · www.alabamanaturalresources.com · www.fs.fed.us

www.alabamawildlife.org · www.alaforestry.org/sfi · www.alaforestry.org/treefarm · www.alaforestry.org · www.alacf.com · www.dcnr.state.al.us · www.adem.state.al.us · www.al.nrcs.usda.gov

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ANR-1387 AFC-20100308

TIMBER SALVAGE AGREEMENT

I, with _____, of _____, Alabama, hereinafter called the purchaser, agree to purchase from _____, and hereinafter called the seller, the designated trees from the area described below:

I. Description of sale area:

_____, located in Sections _____, Township _____, Range _____, in _____County, Alabama.

II. Trees designated for cutting ("X" out any number below where not appropriate):

1. All downed or severely broken trees; trees with 3 or more live limbs should be left uncut,

2. All merchantable trees previously killed by insects, disease, lightning, or other natural agent.

3. All severely leaning trees (greater than 30% from the vertical plane and with evidence of root upheaval).

4. All trees within the boundary marked with _____ paint (see attached map).

5. All trees marked with _____ paint.

III. Conditions of sale:

A. The purchaser agrees to the following:

1. To pay the seller on a weekly basis according to the below stated per unit prices and supply seller with all scale and/or weight tickets:

$_____ per _____ for pine pulpwood

$_____ per _____ for pine chip-n-saw

$_____ per _____ for pine ply or sawlogs

$_____ per _____ for hardwood pulpwood

$_____ per _____ for hardwood sawlogs

<u>Other</u>:

$_____ per _____ for _____

SAMPLE

$_____ per _____ for _____

2. To waive all claim to the above-described trees unless they are cut and removed before _____, 20___.

3. To do all in his power to prevent and suppress forest fires caused by him or his agents on the sale area or adjoining landowners.

4. To pay the seller for undesignated trees cut through carelessness at the rate of $25.00 or double fair market value, whichever is greater, for each tree measuring 5.0 to 10.0 inches in diameter at stump height and $75.00 or double fair market value, whichever is greater, for each tree 10.1 inches or over in stump diameter.

5. To repair damage caused by logging to ditches, fences, roads, bridges, or other improvements damaged beyond ordinary wear and tear.

6. Not to assign this agreement in whole or in part without the written consent of the seller.

7. To remove all litter associated with the harvest operation, such as lunch bags and cans, oil cans, and other litter.

8. To remove any tops, limbs, etc. from streams, ditches, and roads placed there as a result of purchaser's operations.

9. To pay the seller a fine of $25.00 for each residual tree over 7" diameter at stump height that sustains bark removal greater than 1 square foot in area as a result of carelessness.

10. To hold the seller harmless against any liability which may be incurred or caused by purchaser, his agents, employees, or assignees in any operation connected with the cutting and removal of said timber. This liability includes also, but is not limited to, any damages which may be caused to adjoining landowners by fire, erosion, use of water course, or overflow as a result of negligent acts or omissions by purchaser under this contract.

B. The seller agrees to the following:

1. To grant the freedom of entry and right-of-way to the purchaser and his employees on and across the area covered by this agreement and also other privileges usually extended to purchasers of stumpage which are not specifically covered, provided they do not conflict with specific provisions of this agreement.

2. The seller reserves the right to cancel this Agreement, upon failure of

SAMPLE

purchaser to comply with any and all conditions hereof. Said cancellation shall be effective upon seven calendar days' written notice, or at seller's option, immediately, upon oral notification. Seller further reserves the right to interrupt operations for such periods of time as it deems necessary in order to have purchaser correct any noncompliance with the terms of this Agreement.

This agreement is signed in duplicate this _____ day of _____20____, without threat or promise by either party.

_____ _____
(Witness) **(Purchaser)**

_____
(Witness)

_____ _____
(Witness) **(Seller)**

_____
(Witness)

SAMPLE

The Need for Regeneration

TNFR050511

For centuries, families let nature provide for regrowth of trees and plants following a harvest. This method, called *natural regeneration*, resulted in occasional success. *Reforestation* is the process of rebuilding a forest after harvest, or after a fire or disease kills the timber. The ground is cleared of debris before seedlings are planted, seeds are sown or seed trees drop seeds. Growth of brush and grasses that compete with seedlings for water and light are limited. This method provides for a healthy, productive forest that is a sound investment for the landowner.

Choosing the old method of regeneration is a costly one in today's market.

- Successive harvests take smaller and smaller diameters, leaving less growing stock..

Abandoned cropland once resulted in acres of old field pines. This practice has largely stopped and is no longer a source of young stands.

Years of fire exclusion have allowed an understory of hardwood and brush that prevent new pine growth.

The net result is conversion of good pine sites into acres of low-grade hardwoods. Without potentially merchantable trees, the forest landowner is losing money.

- An acre of land half-stocked is half-used. Overhead costs per unit produced will double.

Scattered open-grown trees are usually multi-limbed, of poor form and of low-density wood.

Understocked stands are more expensive to log.

Landowner returns are frequently lowered. Sawtimber trees are often cut into pulpwood because they are too few and too scattered to allow a sawlog operation.

Choosing reforestation is one of the most important decisions of timber management. The cost of not reforesting results in three things:

You may lose future income. Taxes will drain your pocketbook. The property is less valuable if you want to sell. You lose the opportunity of new and expanding markets for wood. Your heirs may be in worse shape, for lost years cannot be recovered.

Forest industry loses. The cost of obtaining raw material increases when a large area must be covered. Opportunities for expansion to serve growing markets are limited.

Society loses through fewer jobs, lower tax base, less community stability, higher prices and dependence on high-cost imports.

Photo Credit: Alabama Forestry Commission

This information is provided by the Alabama Forestry Commission
For more information please visit: www.forestry.alabama.gov

Site Preparation Methods

SPM050511

PURPOSE: Site preparation is treating land to encourage germination of seed or growth of seedlings. The method, intensity and timing of site preparation should suit the specific site. Type and intensity of site preparation varies according to site, species, weight of seed crop, ground cover and soils.

Bedding - Bedding is creating a raised bed of soil on which to plant seedlings. Bedding improves soil drainage, reduces plant competition and makes planting easier. It is usually seen on poorly drained sites. Limit to areas with slopes of 2% or less.

Blading - Blading removes vegetation with a straight bulldozer blade. This method is discouraged because it removes topsoil, damaging the site and increasing erosion.

Chopping - Chopping is pulling a rolling drum chopper over brush and small diameter trees, crushing woody vegetation. It minimizes soil loss and is acceptable on sites with moderate to severe erosion.

Disking - Sheared or raked sites, or sites relatively clear of trees and logging debris, may be disked to loosen soil and expose roots of undesired vegetation. Limit disking to slopes of 10% or less.

Herbicides - Herbicides are site specific based on the species to be controlled, soils, proximity to streams and sensitivity of adjacent vegetation. They may be broadcast by air or on the ground. They may also be applied to individual trees by injection, basal spray or soil application. Only pesticide applicators certified by the State of Alabama should be used when applying herbicides.

Logging - Logging may expose sufficient mineral soil to enhance natural reforestation of certain species. Prescribed fire may reduce forest litter allowing more natural reforestation to occur.

Mowing - Any type of rotary cutting device such as a bush-hog is used to cut standing herbaceous vegetation to a height of less than 3 inches to prepare a site for tree planting.

Prescribed burning - Prescribed fire is applied in a skillful manner to a tract for a specific purpose, under exacting weather conditions. It is an economically sound practice on most pine sites, either alone or in conjunction with some other mechanical or chemical method of site preparation.

Root raking - Root raking usually follows shearing and is used to push felled vegetation and other debris into piles or windrows. Windrows are placed on the contour at intervals of 100-300 feet depending on slope and erodibility of the soil.

Three-in-one combination plow: A three-in-one combination plow or Savannah plow is pulled behind a large bulldozer with a V-blade to clear debris, subsoil and prepare beds in one pass. Plowing occurs in June through November and the bed settles at least three months before planting.

Scalping – Scalping is removing the top layer of soil, leaving a root-free zone, free of white-fringed beetle larvae to allow successful establishment of pine.

Subsoiling – Subsoiling opens up furrows to a depth of 15 inches to increase aeration and water-holding capacity of soils, and breaks up root-constricting hard pans and traffic pans.

Shearing - Shearing prepares sites where vegetation is 6 inches dbh or more. Blades that are angled or V-shaped are used; serrated edges have the best cutting action.

Photo Credit: John D. Hodges, Mississippi State University, www.forestryimages.org

Pine Weevils

PW050511

IMPORTANCE: Pales weevil *(Hylobius pales)* and pitch-eating weevil (*Pachylobius picivorus)* occasionally cause considerable losses to pine seedlings in Alabama. Adults commonly feed on cambium of one-year-old seedlings but will also feed on and destroy older seedlings and saplings. When there are large population buildups, 50-80% of seedlings may be destroyed. These weevils are more important in Alabama as larger tracts are clearcut and planted.

IDENTIFICATION: Weevils are robust, hard-shelled beetles characterized by a rigid and prominent snout with tiny chewing mouthparts at the tip. Pales weevil and pitch-eating weevil are similar in appearance. Adults are black or nearly so, and often speckled with whitish markings. They are 1/4 to 1/3 inch long. Larvae of both species are legless, approximately 1/4 inch long, and white with a dark brown head capsule. Pupae are white and the typical weevil beak is distinctive. Eggs are very small and white.

SIGNS OF ATTACK: Adults typically girdle bark around and below the root collar of one-year old and older seedlings. They may also eat patches of bark anywhere on the stem and branches. Seedlings suddenly wither and die. If insects are abundant, they may remove all of the bark and foliage, leaving only yellowish, pencil-like stubs protruding from the soil. Examination of pine stumps and large roots in the area may reveal larvae, pupae or oval fibrous covered (nest-like) pupal cells.

LIFE CYCLE: Most damage by the pales and pitch-eating weevils occurs in spring and fall. Adults are attracted to the odor of freshly cut pine stumps, scorched pines, or dying trees, and feed on tender bark of nearby seedlings. Eggs are deposited in the root bark of stumps and trees. Larvae hatch in one to two weeks, and feed primarily in roots for six to eight weeks. Larval galleries are packed with granular borings and when larvae are mature, they construct a shallow fibrous covered pupa cell in the sapwood. The pupa stage lasts two to four weeks, depending on the temperature. New adults may feed on seedlings before flying to other cutover or recently burned stands. The weevils feed at night. By day, they may be found in litter or soil near damaged seedlings.

CONTROL: Under forest conditions, the most practical and inexpensive method of control is to delay planting recently harvested areas for 9 to 12 months. Also:

- If no pine has been cut from an area to be planted, there will be no weevil problem.
- If a pine stand is cut before June 1 and the area will be planted during the following winter, there will be no weevil problem.

- If 3 cords of pine or less are cut from an area or pushed down during site preparation after June 1, losses should be less than 5% if the area is planted during the following winter.
- If 5 to 10 cords/acre of pine are cut or pushed down during site preparation, losses may be up to 25% if the area is planted the following winter.
- If over 10 cords of pulpwood or 5,000 board feet of sawtimber are cut or pushed down during site preparation after June 1, use treated seedlings or plant seedlings next year.

CHEMICAL CONTROL: Forest control: Spray foliage with 0.5% Malathion™ (mix 6 ½ pts. 57% Malathion™ E.C. with 100 gallons of water or fuel oil; or 2 T/gal.) or 0.5% Sevin™ (mix 5 lbs. of 80% Sevin wettable powder with 100 gal. of water; or 2 T/gal.) Shade tree control: Hand pick and destroy larvae or spray with above mixture using WATER instead of fuel.

Pales weevil feeding damage: left, girdled loblolly pine seedling; right, twig of Scotch pine Christmas tree.

Photo Credits: Clemson University, USDA Cooperative Extension Slide Series, www.forestryimages.org W. H. Kearby, retired Professor of Entomology, University of Missouri.

Pales Weevil Life Cycle in Relation to Time of Cut

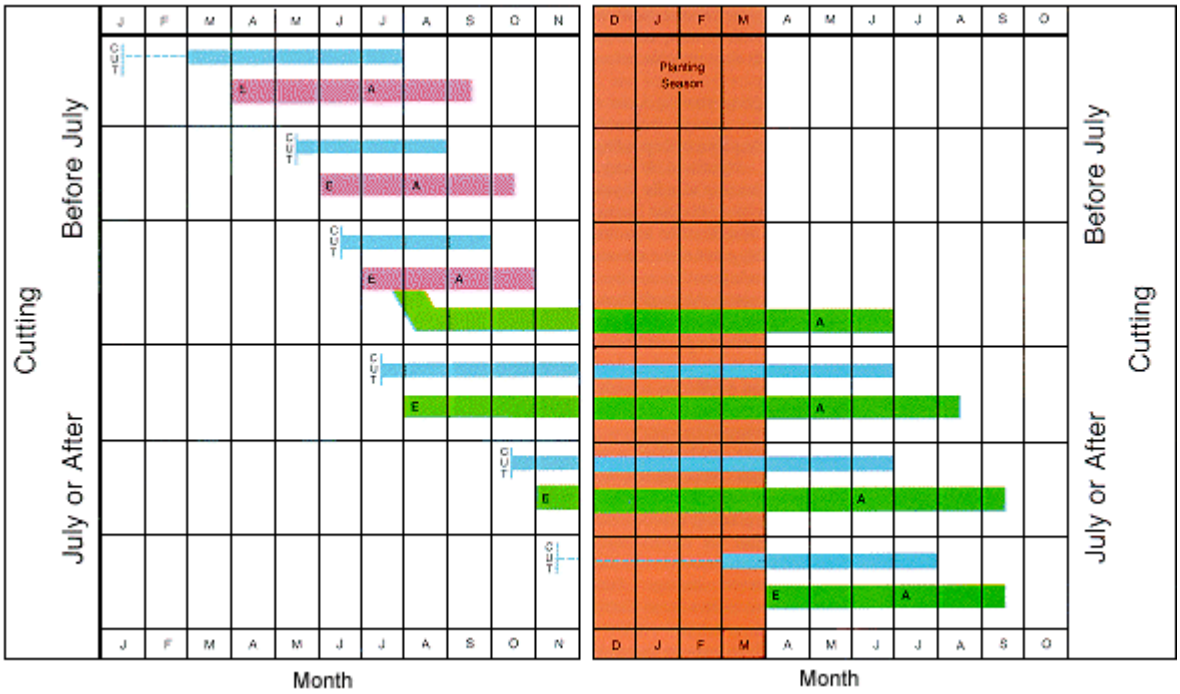


Figure 4. *Adult migration and seasonal development of pales weevil in North Carolina Coastal Plain in relation to time of cut. Cutting begins when indicated and lasts up to 2 weeks. Blue bars indicate when adults migrate to stands cut at different times of the year and how long they are present. Brood development depends on the time eggs are laid, which in turn depends on time of cutting. Red bars represent brood from early eggs that reach the adult stage from late summer to mid-fall. Green bars are brood from later eggs that overwinter as larvae and emerge the second year. E indicates when egg laying begins. A indicates when brood adults begin to emerge. In areas cut before July, the brood that emerges by fall and any surviving parent adults (blue bars) will migrate to fresh cuttings before the planting season (orange area) and, therefore, feeding damage on seedlings does not occur. In areas cut in July or after, migrating parent adults remain in the area through the following winter and spring causing seedling damage*

Planting Pine Seedlings

PPS050511

PURPOSE: To establish a correctly planted stand of pine trees for timber production and/or conservation purposes.

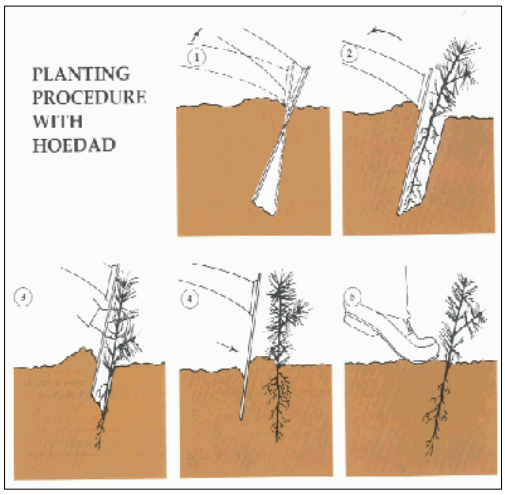
RECOMMENDED STOCKING LEVEL: To determine the appropriate stocking level for a specific site, consult a professional forester or your local Alabama Forestry Commission office. Typical planting rates range from 300 to 700 trees per acres, depending on species, seedling type (bare root or containerized), site index, and landowner objectives. Containerized seedlings usually have better survival, so not as many needs to be planted as bare root. Longleaf pine and hardwoods are usually planted at wider spacings than loblolly pine. Some commonly used planting spacings and corresponding seedlings per acre are:

Spacing (ft.)	Seedlings per Acre
7 x 10	622
8 x 10	544
9 x 10	484
10 x 10	435
12 x 12	302
15 x 15	193

EQUIPMENT: Most bare root pines may be planted with a dibble, hoedad, or machine planter. If hand planting, the planter should use tools designed to match the size and shape of the seedlings being planted. For bare root seedlings, use a hoedad or dibble bar (shown below) with a blade at least 10 inches long and 3 inches wide. Machine planters usually should have a coulter long enough to create a 12-inch furrow in which to place the seedling. Machine planting is usually performed in fields and pastures, and hand planting is usually performed on cutover sites. Hand planting containerized seedlings requires a plug-tool specifically designed for that purpose. Machine planting containerized seedlings is very difficult to accomplish successfully.

Hoedad

Dibble Bars



PLANTING CONSIDERATIONS: The taproot must be straight in the hole with only lateral roots in a horizontal plane. Machine planters must coordinate release of seedlings with the speed of the tractor to prevent "sweeping" of roots or shallow planting. Follow the contour of the land when machine planting.

Bare root seedlings should be planted at approximately the same to slightly lower depth as they were grown in nursery. Place containerized seedlings with the top of the root plug slightly above the ground. They should be planted along the side of ripped or subsoiled furrows. Any subsoiling that is required to break up hardpans should be done far enough in advance to allow soil to settle prior to planting seedlings.

Pine seedlings are perishable and must be protected against drying out. Seedlings packed in sphagnum moss must be kept moist. Seedlings that are sprayed with moisture-retentive material do not need watering if stored properly and planted within three weeks of packing. Never leave seedlings in direct sunlight or with their roots exposed to direct air. Longleaf pine seedlings do not go dormant like other pines. Therefore, longleaf pine seedlings must be stored no more than 14 days after lifting and typically planted within 7 days. If cold storage cannot be provided at the planting site, only enough seedlings for 1 day of planting should be picked up at the cooler storage facility.

Tree seedlings should be planted while they are in a dormant stage in which they are not actively growing. This occurs during winter months when temperatures are between 33 - 75 degrees and relative humidity is in excess of 50% (December through March). Planting should not be attempted when the ground is frozen. Planting outside of these parameters may result in increased seedling stress and reduced seedling survival. Remember, planting dead seedlings is a waste of time and money!

CHECKING RESULTS: Seedlings should be planted upright, at proper depth and with proper stem and root alignment. The soil should be packed properly around seedling roots. Seedlings found to be culls, planted too shallow or deep, planted with "J", "U" or excessive "L" rooting, planted with excessive root pruning and/or planted with debris in the holes will be more susceptible to mortality.

POST-PLANTING CONSIDERATIONS: Once established, the plantation should be protected from fire, grazing, insects, diseases, and competing vegetation. A plowed or disked firelane around the plantation, maintained twice a year, is the best insurance against the encroachment of fire. A fence may be required to keep cattle out. Some common insects and diseases of seedlings include aphids, scales, tip moth, pales weevil, needle blight, root rot, and rust. If an adequate job of site preparation was done prior to planting, chances are that the newly planted seedlings will outgrow the surrounding vegetation, but, if they seem in danger of becoming overtopped, additional controls, such as mowing or chemical sprays, may be required. If herbicides are used, they should be applied under the direction of licensed pesticide applicator.

For more information on tree planting and other management sheets refer to the Alabama Forestry Commission's website at: http://www.forestry.alabama.gov/ResourceSheets.aspx?bv=5&s=1

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Planting Hardwood Seedlings

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SEEDLINGS: Purchase hardwood seedlings from a reputable nursery. The Alabama Forestry Commission has information on nurseries specializing in hardwoods.

RECOMMENDED STOCKING LEVEL: Typical spacing of hardwood species is 12 x 12, however, the desired stocking level may vary with the species planted, the site index and the objectives of the landowner. When using a cost-share program, spacing and number of trees/acre are specified in the cost-share plan and must be followed to qualify for reimbursement. To determine appropriate stocking level for a specific site, consult a professional forester or forest technician. Your local Alabama Forestry Commission office is available to assist you.

EQUIPMENT: Hardwood bare root seedlings are planted with a shovel, power auger, post-hole digger, hardwood planting dibble or machine planter. An acceptable machine planter has a coulter diameter of at least 32 inches and a planting foot/trencher plate assembly to create a trench at least 4 x 15 inches.

METHOD OF PLANTING: The planting hole must be deep and wide enough so the taproot is straight down without bending and the lateral roots are spread out. Plant seedlings with the root collar 1 – 2 inches below ground level with no roots exposed. Firmly press down topsoil around the seedling. To check firmness, grasp seedling with thumb and forefinger at ground line and try to move up and down. Properly planted seedlings will not move. When planting with machine planters, planting furrows must follow the contour. Failure to plant on the contour will result in disapproval of the practice under cost-share. Coordinate release of seedlings with tractor speed to prevent "sweeping" of roots or shallow planting.

PRECAUTIONS: Seedlings are perishable; keep seedling roots moist at all times. Plant only dormant seedlings and plant promptly after being received. Discard seedlings that are obviously small, diseased, dried out or damaged. Acceptable hardwood seedlings for planting should be a minimum of 18 inches tall and 3/8 inch in root collar diameter.

CHECKING RESULTS: Seedlings planted in a cost-share program will be checked for compliance. Determinations of correctly planted seedlings are based on above ground observations only. Seedlings should be free from excessive lean, and of sufficient height and root collar diameter. The number of living and correctly planted seedlings per acre must be within the minimum and maximum number designated by the program.

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