



Alabama's TREASURED Forests

A Publication of the Alabama Forestry Commission

Spring/Summer 2012

Message from the STATE FORESTER

Healthy forests, waters, and wetlands are necessary for sustainable ecosystems and human society. Alabamians are fortunate that our state has an abundance of these natural resources, and we should never take for granted all of the benefits they provide.

Unfortunately, our waters and wetlands are among the most threatened ecosystem types of all. It is estimated that along the Gulf Coast, almost half of our wetlands have been lost due to land use changes and other harmful practices. As population growth and development increases along the Gulf Coast region, the pressures on our wetlands will only increase. That's why forest landowners and natural resource professionals must be even more diligent in their understanding of the linkages between forests, waters, and wetlands, and learn how to better manage our forest ecosystems.

A major portion of this issue of *Alabama's TREASURED Forests* magazine, like the Coastal Pre-Harvest Guide for Landowners publication, is designed to help forest landowners, foresters, and other natural resource professionals work together in protecting our wetlands through sustainable forestry practices. The articles provide a broad perspective that can help landowners make wise decisions involving forest activities that impact wetlands, especially with regard to timber harvesting.

I want to thank the many subject matter experts and partner organizations who contributed to the development and review of these articles, including the Alabama Department of Conservation and Natural Resources (State Lands Division), Alabama Department of Environmental Management, USDA Natural Resources Conservation Service, and Auburn University's School of Forestry & Wildlife.

My hope is that the cooperation will be strengthened between forest landowners, natural resources professionals, and other stakeholders in protecting our state's wetlands through sustainable forestry.



Linda Casey

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The distinctive bald cypress knees rising from the swamps are a common sight in the wetlands of Alabama.

Photo by
Stephen Hudson



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Desire, Devotion, a



By Elishia Ballentine, Editor

He calls it the “Poor Man’s Farm.” With mostly his own two hands, sheer determination, and limited resources, landowner Bobby Jennings has built one small tract into a true TREASURE along the banks of Hillabee Creek in Tallapoosa County. Initially equipped only with a mule named Queen, a plow, and a desire to improve the property, Bobby has planted, sprayed, and burned his way to a forest landowner’s dream. His motivation? Seeing other TREASURE Forests and Helene Mosley properties.

Humble Beginnings

Back in the late 1960s, Bobby was a “vo-ag” (vocational-agricultural) teacher in Hackneyville. One evening he received a phone call that a bus driver at the school had suffered a heart attack and needed a temporary substitute. Bobby agreed to help out and ended up driving the school bus for over three months. When the man eventually recovered and came back to work, he wanted to know how he could repay him for his kindness, but Bobby wouldn’t accept any payment.

and Determination



Still wanting to show his appreciation, a week or so later the man made Bobby an offer he couldn't refuse . . . he wanted to sell him 82 acres of forestland for \$75 an acre. Thinking it sounded like a fair deal, but admitting he wasn't an expert on the value of timberland, Bobby sought the advice of his father. Together, they walked the property and determined that it would indeed be a good investment. Once Bobby Jennings became a landowner, the real work began.

Planting the Seeds of Good Stewardship

Harvesting and replanting in a constant cycle over the next several years, he steadily continued to purchase more acreage across four or five separate tracts. Over 750,000 loblolly pine seedlings were planted on approximately 700 acres. When the first trees reached about 16 years, Bobby contacted consulting forester Bruce Eason. For almost 30 years now, the two men have been working together. His first forest management recommendation to hands-on landowner Jennings was to burn!

With the help of the Alabama Forestry Commission (AFC), Bobby recalls starting his prescribed burning program in the late 1980s. He then attended seminars and training, learning everything he could about prescribed fire. He was soon doing the burns himself and has been ever since on an approximately 300-acre rotation, using a four wheeler and an "8N" tractor. For the past several years, he's successfully controlled hardwoods by conducting growing season burns with the help of forester friend and Certified Prescribed Burn Instructor Kent Hamby.

Timber production for income was the primary objective of this TREASURE Forest, with the landowner himself doing 90 percent of the planting and other tasks. The majority of the property is in loblolly pines: 500 acres planted and 200 acres in natural stands. At the time of this interview, there were currently 280 acres in longleaf pine, with plans to plant 115 more acres making a total of nearly 400 acres. There's another 150 acres in hardwood.

Wildlife was Bobby's secondary forest management objective, with an emphasis on quail. Toward that end he's accomplished a



good bit of burning and thinning, and planting of lespedeza to increase both cover and food sources for the birds. According to Jennings, that's also why he's made a practice of investing in longleaf . . . "it can be burned on a regular basis, and it's more friendly to quail."

There are now approximately 40 wildlife openings, all about one-acre in size. Each is maintained annually with cool and warm season mixes. With an abundance of deer

and turkey, all of the acreage is currently under hunting lease with five different hunting clubs. Helping him develop a quality wildlife program, Bobby comment that he had received a tremendous amount of assistance from the Alabama Wildlife Federation, particularly biologist Claude Jenkins. He also noted that Joel Glover, biologist with the Fish & Wildlife Division of the Alabama Department of Conservation and Natural Resources, has delivered great advice on managing for wildlife benefits.

Expressing appreciation to the local Tallapoosa County AFC staff as "another great addition to his TREASURE Forest program and team of experts" over the years, Bobby commended forester David Kelly and forestry specialist James Yarbrough. He said they've helped construct fire lanes, establish green fields, and create stream crossings and turn-outs on the farm's 18 miles of roads and steep hills, of course always following Alabama's Best Management Practices (BMPs) for Forestry!

From early on, Bobby set two goals for himself: to one day become certified as a Tree Farm, and be recognized with the coveted Helene Mosley award. And wow, did he ever achieve "Tree Farm" status! Not only was Bobby named 2008 Alabama Tree Farmer of the Year, but in 2009 he also qualified as one of three finalists from the Southeast Region for (national) Outstanding Tree Farmer of the Year! Then in 2011, Bobby and Marilyn Jennings were the recipients of the Helene Mosley Memorial TREASURE Forest Award for the central region.

Readily giving credit to those people and agencies already mentioned, Bobby understands that he could never have attained these successes without their professional assistance and often "free advice." As he once commented to David Kelly, he views this forestland as a reflection of himself, with its transformation being very similar to the one he has experienced in his own life.

Passing the Torch

Bobby acknowledges that because he's learned so much from so many, educating other landowners is an important mission for him . . . to share this knowledge, hopefully motivating and inspiring just as he was inspired so many years ago. He wants to demonstrate what one person can do, if they're dedicated . . .

The Jennings family has hosted several groups and landowner tours; one of the largest was in 2007 which was attended by approximately 220 people. Among other things, Bobby shows landowners a comparison between vegetative management control achieved chemically with Arsenal and prescribed burning, versus not burning at all, but letting nature take its course and

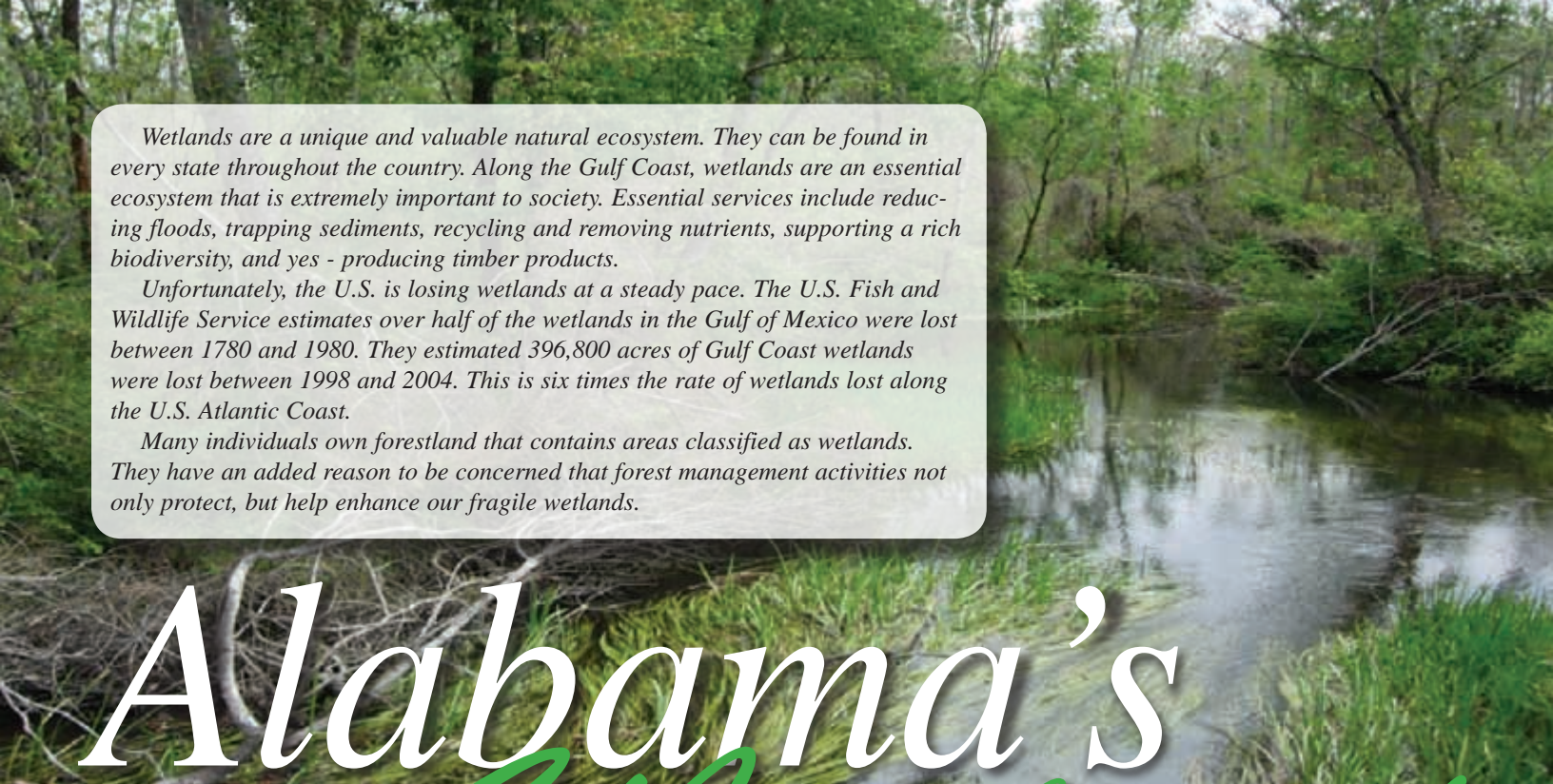
allowing everything to grow. One of his favorite highlights . . . on 95 acres in one spot and another 200 acres on a separate tract, he exhibits how much more productive natural stands can be in just a few years with pre-commercial thinning.

Bobby Jennings says he is by no means wealthy, but owning a total of nearly 1,800 acres is a personal achievement of which he is very proud. He admits it is nice to have the timber value of the property, but he realizes he couldn't have done it without the help of others. He also appreciates the support of his family and especially



The Jennings Family: (seated) Bobby and Marilyn with great-grandson Hudson; (standing) son, Mike; granddaughter-in-law, Lindsey (grandson, Taylor, is a green beret in North Carolina); daughter, Camille, and her husband, Joe.

his wife, Marilyn, who has given him the freedom over the last 40 years to work on the property as often as needed to make improvements . . . the freedom to devote so much time and energy to his passion . . . the development of a productive forest. ♣



Wetlands are a unique and valuable natural ecosystem. They can be found in every state throughout the country. Along the Gulf Coast, wetlands are an essential ecosystem that is extremely important to society. Essential services include reducing floods, trapping sediments, recycling and removing nutrients, supporting a rich biodiversity, and yes - producing timber products.

Unfortunately, the U.S. is losing wetlands at a steady pace. The U.S. Fish and Wildlife Service estimates over half of the wetlands in the Gulf of Mexico were lost between 1780 and 1980. They estimated 396,800 acres of Gulf Coast wetlands were lost between 1998 and 2004. This is six times the rate of wetlands lost along the U.S. Atlantic Coast.

Many individuals own forestland that contains areas classified as wetlands. They have an added reason to be concerned that forest management activities not only protect, but help enhance our fragile wetlands.

Alabama's Wetlands

By Randy C. Shaneyfelt

Mobile Branch – Coastal Programs, Alabama Department of Environmental Management

“Trees can reduce the heat of a summer's day; quiet a highway's noise, feed the hungry; provide shelter from the wind and warmth in the winter. You see, our forests are the sanctuaries not only of wildlife, but also of the human spirit. And every tree is a compact between generations.”

-U.S. President George H.W. Bush (1989)

Alabama has been blessed with a rich and plentiful array of natural resources. Foremost of these are our quality water resources and extensive forests, which comprise millions of acres throughout the state. As these two resources are of vital importance and connected to each other hand in hand, their management and conservation are critical to sustain and enhance the quality of our American way of life so that it will continue and prosper.

Despite increasing development pressures, Alabama is fortunate to have a large amount of hydrologic resources with rivers and wetlands of quality that may be conserved and managed to maintain our needs. Conservation of the water resources also includes lakes, streams, headwaters, and marshes. In recent times, more attention has been given to protecting these riverine and wetland ecosystems and their associated habitats.

These water resources are of great importance to forestry operations and concerns throughout the state, and this article places emphasis on those wetland ecosystems associated with forestry practices.

What are Wetlands?

According to Alabama's Best Management Practices for Forestry, wetlands are described as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support (and under normal circumstances do support) a prevalence of vegetation typically adapted for life in wet or saturated soil conditions.

An area is classified or determined to be a wetland when the three key parameters of hydrophytic vegetation, hydric soils, and wetland hydrology occur together on a site under normal circumstances and of sufficient duration, according to the U.S. Army Corps of Engineers (using the 1987 *Corps of Engineers Wetland Delineation Manual* and its *Regional Supplements*).²

Wetlands may include marshes, swamps, wet meadows, natural depressions, bogs, impoundments, ponds, and sloughs. They are present in many environmental settings such as riparian areas, floodplains, and upland forested areas. Some wetlands are fresh water, some are saline, and others are created by underground water that is very close to the surface. Wetlands can be vegetated or non-vegetated, and they can be dry part of the year but wet long enough and often enough to have unique natural functions. Consequently, wetlands perform such unique and complex processes that few definitions adequately describe all wetlands well, or completely.³

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Alabama's Wetlands

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Where are Wetlands and Forested Wetlands Located?

Actually, forested wetlands may be found at any elevation or place on the landscape in Alabama, since these wetlands usually occur whenever the local water table is near the surface. Designated or protected wetlands may be found in the following areas:

- Seeps, along slopes of hills and sloughs
- River, creek, and branch or stream bottomlands
- Bayheads, "grady ponds," bayous, and "bogues"
- Muck swamps, peat swamps, and cypress/gum ponds
- Wet meadows, savannah, and coastal prairie flats
- Tidal fringe marshes, hummocks, and swales
- Barrier island lagoons and backwater bays

Often when a landowner hears the word "wetlands" or any other related term (swamp, marsh, bog, etc.), it usually creates images that are not so favorable. Early coastal settlers commonly associated these 'wet' areas with disease and regarded them with disdain or even fear. They referred to the Yellow Fever, borne by mosquitoes, as "swamp fever," which caused many deaths in the early 1800s. They constantly warned their children not to play too close to the "blackwater swamps" for fear that their "vapours" might cause illness or other strange maladies.

Traditionally people have been taught that those "wet bottomlands" serve little purpose unless they are drained and "put to good use." Despite many years of regarding them in this negative manner, landowners have come to learn that open and forested wetlands actually contain many beneficial uses that serve to enhance water quality and our ecosystem as a whole.²

Just from looking at a wetland, it can be hard to imagine what kind of important value or use it might provide. But we have found that these 'wetland worlds' house many of our biological wonders and serve various important functions that make them of increasing value in their natural state. In order to protect these dynamic ecosystems, our forestry landowners and the public must first understand the positive values of wetlands and their functions.³

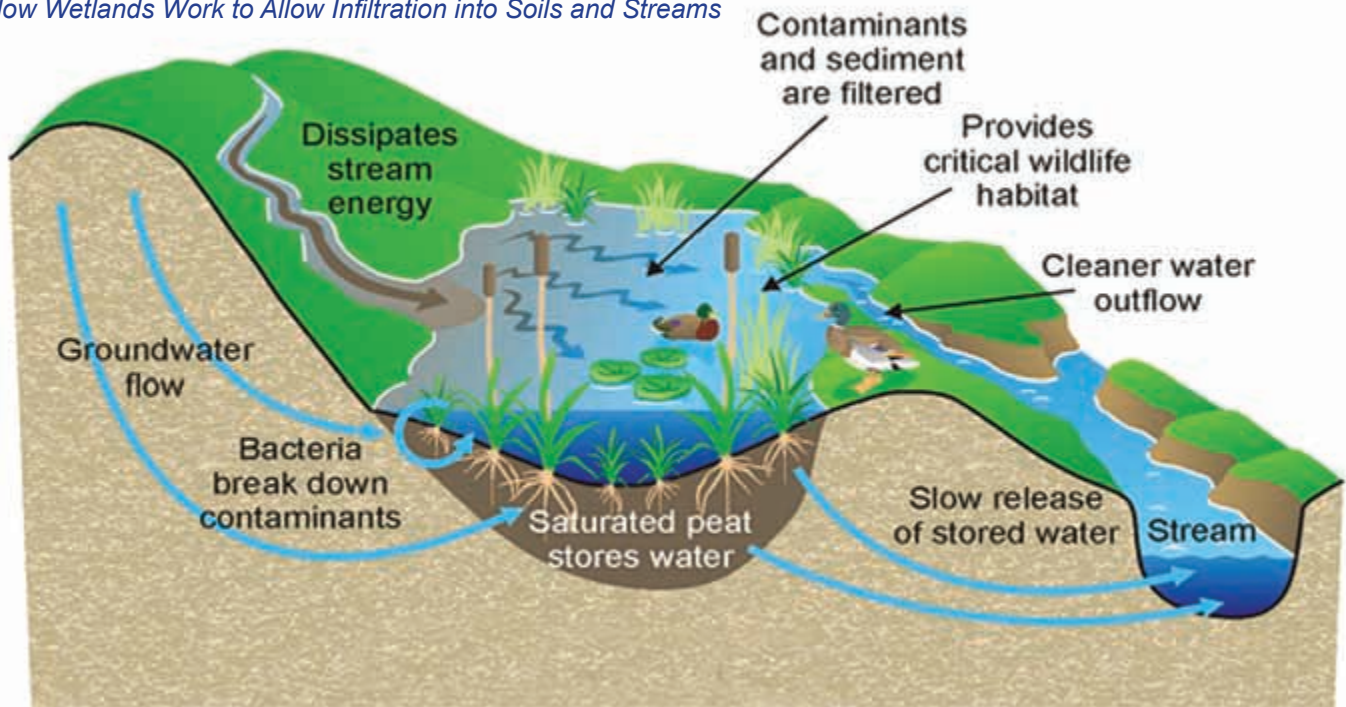
“In the end we will conserve only what we love; we will love only what we understand; and we will understand only what we have been taught.”
– Baba Dioum,
1968 International Union for Conservation of Nature

Functions of Forested Wetlands

Flood control - Perhaps one of the most important aspects of a wetland is its ability to protect the surrounding forests and lands by acting like a natural sponge. In Alabama, wetland and river floodplains may cover wide areas of specific geographic regions. Floodplains allow the flow of water across or through large areas of the landscape, eventually being received by another stream, wetland, or body of water. The wetlands hold and absorb water during heavy rainfall, snowmelt, or flooding, then slowly release it downstream. Trees, bushes, shrubs, grasses, and other vegetation help impede the flow of water and decrease its velocity as it passes through the wetland, while absorbing much of the water into the water table which is situated in the ground below. As floodwaters move across a floodplain, this combined braking action and water storage lowers flood heights, preventing further water-logging of valuable forestry or agricultural lands.

Another important value is the protection a wetland or forested wetland area offers to nearby urban settings. Because of its

How Wetlands Work to Allow Infiltration into Soils and Streams



flood control capabilities, a wetland is able to offset and counteract the increased volume and rate of water runoff from roadways, pavement, and rooftops of buildings. This is especially critical for Alabama's coastal area where hurricane and tropical storms may drop as much as 3 feet of rain in a single storm event.

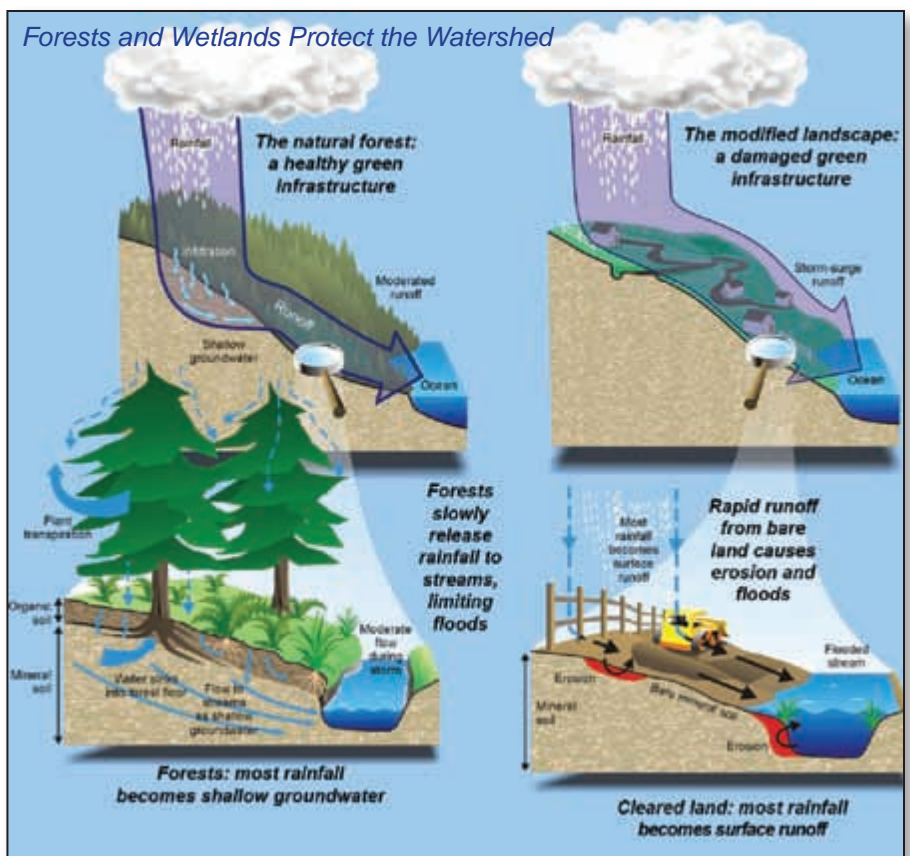
On the other end of the spectrum, a wetland's stored water often makes an important difference, especially to creatures and plants. When a stream or waterway becomes dry during periods of drought, the forested wetland (because of its protective canopy and nearness to groundwater) may continue to slowly discharge its reservoir of water into the nearby streams. In essence, the wetland and stream's dependent plants and animals may be allowed to remain alive and functioning for a much longer period of time.²

Erosion control - Storm surges and intense rainfall from hurricanes and tropical storms cause incredible damage to nearby coastal areas through flooding and destruction of property. Many times our coastal forested wetlands act as buffers to lessen the impact of these destructive storms. They are the first line of defense as they reduce not only the advance of wind and wave energy, but also currents that flow into them from surges and intense rainfall. The intertwined, steadfast roots of the wetland vegetation and their protective forests hold the soil and sand in place, preventing or minimizing shoreline erosion for rivers, streams, and our important coastline areas.²

“Not all wetlands perform all functions, nor do they perform all functions equally well. The location and size of a wetland may determine what functions it will perform.”
 —U.S. Geological Survey

Water quality and availability - It has been shown that much of the coastal wetlands intercept surface-water runoff from higher elevation uplands before it continues into the open waters. Their filtering capabilities here are of extreme importance. Similar to how the human kidney filters the bloodstream of toxic and harmful products, wetlands also function to purify water that runs through it. Containing chemicals, pollutants, and unwanted sediment from upstream, water flowing through wetlands is slowed down and filtered in a seemingly simple process through the associated vegetation. With shallow coastal gradients, the slowing of water allows for suspended sediment to drop and settle on the riverbank terraces, levees, wetlands, and wetland bottoms. This turns out to be most beneficial further downstream, since the process prevents excessive deposition of sediment that could eventually block main waterways.

At the same time, metals, nitrogen, and phosphorus wastes (associated with various pesticide and fertilizer use from upstream) are processed or retained by wetland plants acting as “sinks” that are adapted to break down, or actually utilize, the potentially harmful chemicals. Other organic pollutants are naturally decomposed in the same manner. This purification of the



water “treats” many of the negative effects associated with urban, agricultural, or forestry use and other associated run-off that could have detrimental effects on smaller creatures and ultimately impact our food chain, once the run-off reaches nearby rivers, lakes, and oceans. It is also important to note that these wetland processes prevent harmful chemicals from reaching groundwater, which ensures that higher quality water is available for humans who rely on groundwater supplies for potable drinking water.

Wetlands also help combat the environmental problem of eutrophication [process where water bodies receive excess nutrients that stimulate excessive plant growth], or nutrient enrichment impacts, which leads to rapid algal growth (increase in the population of algae) and depleted oxygen levels that affect other species. These wetland processes utilize or tie-up the excess nutrients or pollutants that cause the problem to begin with. As beneficial as this process of water purification seems, the public must be aware that the capacity of wetlands to function in this manner is limited.² The “overloading” of the wetland with pollutant chemicals and sediment can be detrimental, and if excessive, may destroy the wetland entirely.

Atmospheric benefits - One lesser known aspect of forested wetlands is their great ability to store carbon within their plant tissue and residual biomass (peat), instead of releasing it into the atmosphere. What would normally be released into the atmosphere as a greenhouse gas (carbon dioxide) is further trapped in the wetland biomass and peat, all helping to maintain global climates. Consequently, by clearing these types of wetlands, high levels of carbon dioxide are released into the atmosphere.²

Fish and wildlife habitat (biodiversity) - At first glance it may not be evident that wetlands sustain a warehouse of organ-

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Alabama's Wetlands

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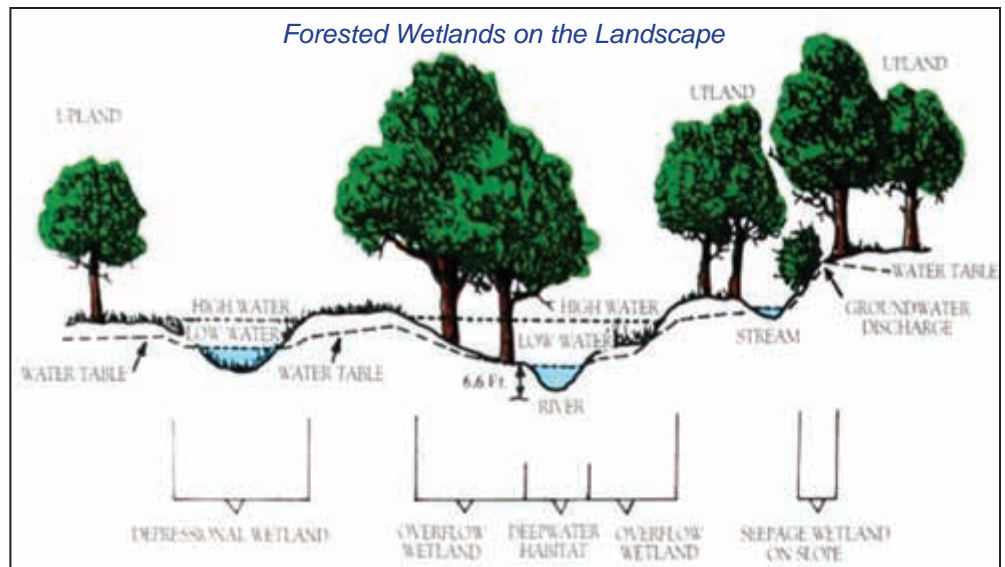
isms, ranging from microscopic bacteria to alligators or rare flowers. Some scientists think that wetlands are comparable to coral reefs and tropical rainforests in their biodiversity. Many of the creatures and wildlife contained within a wetland are wetland-dependent and are only found in these special ecosystems. They rely on the food products and protective shelter provided by forested wetlands. Some of these species are brought to our attention by the "endangered or threatened species" list, which means that they are near or in immediate danger of being exterminated completely. So, it is most curious why we continue to destroy these precious areas that cradle biological diversity.³ According to the US Fish and Wildlife Service, there are as many as 115 threatened and endangered species in Alabama, with 79 of them found in our streams and wetland areas. Our extensive Mobile/Tensaw Delta watersheds in coastal Alabama contain a number of these endangered creatures; several are only found in these wetland and bayou areas.

Wetlands contain the essential ingredients for the development of organisms that make up the foundation of the food web. These forested wetlands contain high levels of inorganic nutrients, with shallow water, and high rates of primary productivity (plant tissue built up over time through photosynthesis) that help to attract many species of insects, mollusks, and crustaceans. As the built-up plant material begins to break down into smaller particles, fungal and bacterial activity causes it to become increasingly enriched with nutrients. This becomes part of a food-chain that provides food for smaller fish, which then serve as food for larger predators such as amphibians, birds, reptiles, and mammals. This food-chain within a wetland is of critical value to these creatures and their life cycles.

Wetlands provide the principal habitat for virtually all waterfowl. Certain wetlands act as migratory "pit stops," so to speak, during a flock's cross-country travels. Some 75 percent of these birds court and breed only in wetlands! Also, these waterfowl and wading birds, along with many other animals (particularly amphibians), require water as a medium for the growth and development of their young. Our forested wetlands may be short-term or seasonal habitats for many of these animals (such as the American alligator, blue heron, and numerous species of ducks), while a vast number of reptiles and amphibians use these wetlands as their primary year-round habitat.³

“... safeguard thy fields from soil erosion, thy living waters from drying up, thy forests from desolation, and protect thy hill..., so that thy descendants may have abundance forever.”
 -excerpt from Walter C. Loudermilk, 1939

Natural resources - As is the case with most other ecosystems, we humans use various natural products from wetlands in the form of mammals, fish, shellfish, medicinal plants, timber, and peat. Certain non-medicinal edible plants are also found in



or near wetlands; most notably these include blueberries and blackberries. Common fur-bearers such as the muskrat, beaver, otter, and mink all make their homes in wetlands, as do alligators, which are valued for their skin and meat.

Without a doubt, the most abundant natural resources stemming from wetlands are fish and shellfish. The National Marine Fisheries Service estimates that almost 70 percent of the annual commercial fish catch depends upon inshore-wetland habitats.² As mentioned above, many Alabama fish and wildlife species are wetland-dependent at some stage in their life cycle. Both commercially and recreationally, valuable species such as crabs, shrimp, trout, and snapper spend their early lives in wetlands.

Threatened and endangered species such as piping plover and bald eagles depend on wetlands. Our wetlands also provide habitat for many upland game birds, as well as stopover feeding and breeding grounds for migratory birds. Some of the nation's most valuable migratory birding areas are the coastal counties of Alabama.³

The intrinsic values of wetlands were not recognized until their loss started to reveal problems. For example, sportsmen gradually began to notice a decline in the numbers of fish and wildlife. Also, flooding along rivers and shorelines increased over historical levels. These events led the public to recognize that wildlife habitat, water pollution control, groundwater recharge, and flood control are direct benefits of wetland preser-



Restored bottomland hardwood on forested wetland site in Mobile County, Alabama.

Photo by Randy Shaneyfelt

vation. With this recognition has come an expanded interest in protection, conservation, and management of Alabama's remaining wetlands.²

Recreation, education, research, and natural beauty -

Forested wetlands provide cool shade, unrivaled natural beauty, opportunities for wildlife viewing, and unique areas for fishing and hunting. For a private landowner, a forested wetland can be a special sanctuary for family and friends. Aside from providing various environmental benefits to us, many landowners are finding that the "old swamps" and surrounding buffers can create lucrative eco-business opportunities. According to the Environmental Protection Agency (EPA), nearly half the adults in the United States are involved in hunting, fishing, boating, bird watching, or photographing wildlife in these areas, annually spending more than \$59.5 billion!

Forested wetlands are usually underestimated and undervalued, for they often provide many rewarding adventures and memories with family and friends. They are ideal spots for repeated visits. Whether you are a scientist looking to research water quality or plant life, an avid birdwatcher hoping to snap a contest-winning photograph, a hunter waiting in the trees for the next trophy to walk by, a fisherman wanting to try out some new gear, or simply a person in need of a beautiful landscape to put your mind at ease, these wetlands have your name written all over them.²

Buffers for Wetlands and Forested Wetlands

Forested wetlands are of unique value and as such, they should be managed more carefully as a sensitive ecosystem. With properly preserved buffer zones, they not only protect the plants and animals within the wetlands themselves, but also provide additional help to protect the surrounding lands from flooding. Much like streamside management zones (SMZs), the use of additional vegetative buffers serves to protect the aquatic functions that are vital for forested wetlands. Vegetative buffers beside forested wetlands also offer a visual signpost for work crews in the field that these areas should be treated differently.

“A people without children would face a hopeless future; a country without trees is almost as helpless.”
U.S. President Theodore Roosevelt

Regulations that Protect Wetlands

Wetlands are identified for various legal and scientific purposes, including regulation, functional assessment, ecosystem and landscape management, and human use. In general, wetland definitions have evolved from two main sources: the academic or scientific arenas, and entities which have a regulatory responsibility related to wetlands management. For scientific understanding and academic research, wetlands are defined primarily for classification based on ecological function or position in the landscape. Scientific definitions or classification systems are not required to be as concrete or rigid with regard to interpretation as are regulatory definitions, since they are rarely subject to legal scrutiny. In regulatory programs, wetlands are defined primarily for legal purposes, in order to develop rules and standards that can be interpreted consistently to assist in those management efforts. Regulatory definitions require wetland delineation and are usually interpreted more conservatively, since they restrict the use of wetlands in regard to private property and develop-



Photo by Randy Shaneyfelt

Hummock in West Fowl River tidal marsh in Mobile County.

ment issues in order to preserve the health, safety, or welfare of our waterways, as well as our communities, under the government's regulatory powers.³

Please note that the regulatory aspects that further apply to forested wetlands have been described in more specific detail in the article "Regulatory and Environmental Concerns" beginning on page 29.

Section 404 of the Clean Water Act "forbids the unpermitted discharge of dredge or fill material into waters of the United States." Section 404 does not regulate every activity in wetlands, but requires anyone seeking to 'fill' a wetland to first obtain a permit from the U.S. Army Corps of Engineers or other regulatory entity that may require it.² For example, if a person wishes to construct a building or other development, and wetlands need to be filled to complete the project, Section 404 requires that the person first obtain a permit from the Corps as well as any that may be needed to meet the state, county, or local town requirements.

The Food Security Act (1985) takes a different approach to protect wetlands. It basically states that landowners who convert wetland acreage into agricultural tracts are ineligible for agricultural subsidies (price supports, loans, or crop insurance) for forests or crops planted in these converted wetland areas.

From the early 1900s to the present, many environmental laws have been directed toward the protection of wetlands, yet there is still a heated debate over how to properly enforce their defense and restoration. The intent of all these programs is to protect and conserve wetlands by way of increasing cooperative efforts among private landowners and local, state, and federal governments.² ♣

References

¹All figures and illustrations presented in this article were provided courtesy of the U.S. Environmental Protection Agency unless otherwise noted.

²ALABAMA WETLANDS. 2012. (<http://www4.samford.edu/howard/biology/wetlands/>) Samford University, the Alabama Wetlands Website Committee.

³Coastal Counties Wetlands Conservation Plan. 2001. ADC-NR-Coastal Section/Alabama Coastal Counties Wetlands Working Group.



Silviculture *an*

By Neil Letson

Forester, Alabama Forestry Commission, Retired

Silviculture is the fundamental basis for good forest management. It combines knowledge with proven experience to help people manage forests in ways that satisfy the needs and values of all generations. In general terms, silviculture requires knowing how trees work, the basics of forest ecology, and how people interact with and depend on trees. Landowners who properly follow a silvicultural approach are stewards of their land. They work with the natural forest ecosystem, make forest management decisions with an eye on the entire life cycle of the forest, and strive to protect natural resources in a sustainable manner. Each forest activity is done with future goals and objectives in mind, including establishing trees, stand management, harvesting, and renewing the cycle with reforestation. When landowners correctly practice silviculture, they ensure that our forests produce maximum benefits while conserving all natural resource values, including water quality.

Protecting water quality is essential to all silvicultural activities. Success depends on understanding how forest hydrology works. In a natural and undisturbed setting, trees help distribute, cleanse, and store water through processes such as evapotranspiration, interception, soil absorption, and forest floor runoff. These processes are especially helpful for wetlands. Forests help wetlands function to moderate flooding, trap sediment, retain and remove pollutants, support biodiversity, and provide timber products. But when human disturbances occur, there is an increased risk that wetlands could be degraded. If poorly planned or incorrectly implemented, forest activities could:

- Increase sedimentation
- Alter water drainage
- Obstruct stream flow
- Compact soil
- Contaminate water

So, can a forest landowner safely practice silvicultural activities while protecting water quality? There will always be cases where surface features are too sensitive to allow forest practices,

and these sites should be protected from human disturbances. But when the forest activity is appropriate to the site, precautions are included in the planning, and activities are implemented properly, then it can be done.

Typically, there are four silvicultural practices that need precautions to protect water quality. These include road construction, timber harvesting, site preparation and regeneration, and the application of forest herbicides.

Be aware there are federal and state laws and regulations that apply to wetlands. Landowners considering a silvicultural practice in a wetland should first contact local state or federal natural resource agencies to learn of any rules or regulations that may apply.

“ In order to meet Section 404 exemption for an ongoing silvicultural operation, there are 15 mandatory BMPs to be implemented when constructing roads and creek crossing in wetlands. ”

Road Design and Construction Practices

Forest roads are used to provide access for timber management, wildlife habitat improvements, fire control, recreation, and routine inspections of the property. They can be well-maintained with a surface capable of accommodating two-way traffic. They can also be low maintenance and used primarily for forest management access on an irregular, or as needed basis. Forest roads can induce sedimentation during active forest operations. This is a major concern. Landowners should use the services of a registered forester, engineer, or other qualified professional for help in forest road construction design and specifications.

Several considerations will help minimize impact of road construction on water quality. Landowners should plan forest road locations before harvest operations. Constructed forest roads should avoid streamside management areas and, wherever possible, crossing wetlands. If necessary, limit the total wetland road



Upland Water Quality

miles to achieve landowner objectives. Make sure to know the type and depth of wetland soils to ensure proper design and construction. Build fill roads only when necessary. Minimize road width consistent with safety and road design considerations. Include upland road approaches to wetlands to divert surface runoff before entering wetland.

Harvest Practices

Timber harvests are a primary source of revenue for landowners. Without the ability to earn income off the land, there is less incentive to make investments that improve forest health and productivity. However, landowners should remember that an actual timber harvest will involve more than cutting trees. It includes moving severed trees to a landing, processing, sorting, loading, and transporting offsite. Timber harvests will alter forest structure. They can also be detrimental to water quality if there is excessive and poorly planned movement of machinery on site and skidding of logs for delivery to mill.

Good planning is necessary for a successful timber harvest. A timber harvest plan should detail the actual harvest operation with consideration to what type forest or reforestation will follow. Good plans also ensure that all activities will take into account any impact on wetland function. A successful timber harvest will follow Best Management Practices (BMPs). This will help reduce potential nonpoint source pollution due to soil disturbance and loss of vegetative cover. BMP guidelines should also cover equipment operations and maintenance.

Site Preparation and Regeneration

Timber harvests are usually followed, to some degree, with treatments that prepare the site for the next stand of trees. The method, species, and density are selected based on the goal of the landowner. Machinery, chemicals, and fire are tools used to prepare sites for tree planting, direct seeding, or natural seeding.

Water runoff, sedimentation, and nutrient losses will increase the more intensive the site treatment becomes.

Leaving forest floor litter intact can minimize soil disturbances that reduce water quality. Site preparation methods, such as the proper use of herbicides and prescribed burning, cause less disturbance to soil surfaces than mechanical practices. Natural regeneration, hand planting, and direct seeding are other methods used to further reduce soil disturbances.

Forest Herbicides

Herbicide technology has radically changed forest management in the Southeast. Herbicides are commonly used to control vegetation so that landowners can enhance forest regeneration, increase timber growth, improve wildlife habitat, control invasive plants, and maintain forest roads. The proper use of herbicides during reforestation actually helps sustain water quality by reducing sedimentation, preserving organic matter, and limiting a decline in physical soil properties. Used according to label instructions, today's silvicultural herbicides quickly degrade after application. Studies indicate residue concentrations tend to be low, except where direct applications are made to temporary channels or streams, and do not persist for extended periods of time. Regional environmental impact statements show that forest herbicide presence in surface and groundwater is not a significant risk to water quality or human health.

Today's equipment is designed to control drift and should be used only during stable weather conditions. Herbicides, without an aquatic label, applied directly to the waters of Alabama violate state and federal law. Operations should incorporate no-spray buffer strips along streams, ponds, and swamps that contain standing water. These vegetative strips will be wide enough to prevent any movement of active ingredient to open water. ♣

“*Silviculture - “art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis.”*

-*Silviculture of American Forester*”

Shortleaf Pine, *Pinus echinata*, is one of the most widely distributed southern yellow pines and is found growing naturally from southeastern New York, south to northern Florida, and east to eastern Texas. In the early 1900s, shortleaf pine was found as a dominant species in pure or mixed forest stands on over 281 million acres, and was estimated to have made up more than one-fifth of the southern yellow pine lumber supply. Since that time, shortleaf pine acreage has dropped drastically to just over six million acres, due to conversion to other pine species and hardwoods. According to the USDA Forest Service, Alabama has lost more acres of shortleaf pine since 1980 than any other state. Associated with the loss of this acreage is the loss of the shortleaf pine/oak savanna ecosystem which once provided habitat for many wildlife species, including some which are no longer found here such as American bison and elk. The future of this important species is uncertain, but efforts are underway to improve our understanding of this pine and its associated ecosystem.

In September of 2011, a Shortleaf Pine Conference was held at Monte Sano State Park in Huntsville, which was attended by natural resources professionals from across the eastern half of the United States. Topics addressed at this conference included the historical importance and range of the shortleaf, current economic and ecological value of the species, as well as shortleaf planting and forest management. A field trip to Redstone Arsenal and the Bankhead National Forest provided an opportunity to see shortleaf reforestation and management.

Historically, shortleaf pine was found in very open, often pure stands, but also mixed with other pine species or hardwoods such as oaks. These natural stands were found with native grasses as an understory and were maintained with frequent, low intensity fires. This type of stand was particularly important to the mega fauna once found here such as the aforementioned American bison and elk, but it was also important to early settlers for grazing free range cattle and other livestock. Fire frequency is important in maintaining this ecosystem. Fires at a frequency of three years apart or less promote a grass understory, while fire frequencies of greater than three years favor woody species in the understory. It is important to note that with shortleaf, fire is important in maintaining the ecosystem, but the species is not fire-dependent as is longleaf pine for seeds to germinate.

Shortleaf and longleaf are similar in that the seedlings are fire-resistant, unlike other pines. Shortleaf seedlings have a basal crook at the root collar – a sharp bend in the stem before turning upright again – keeping the root collar below the litter layer and safe from damaging heat during a fire. While the seedlings will be top-killed during a fire, they will re-sprout from the protected root collar and continue to grow. This attribute allows fire to favor shortleaf in a natural system; without it many other woody



Shortleaf Pine The Forgotten

By Jason R. Dockery
Foresters, Alabama

species would quickly take over the site and suppress the shortleaf regeneration.

It is thought that much of the loss of historical shortleaf acreage is due to the reduction of natural fires. Without frequent fire, natural shortleaf stands will convert to other species with quicker early growth, such as hardwoods or loblolly pine, by the suppression of the shortleaf seedlings. Frequent fires across the landscape once allowed shortleaf to thrive, but today's landscape is



Photo by Franklin Bonner, USFS (ret.), Bugwood.org

Littleleaf: Rotten Pine?

and Lynn Washington
Forestry Commission

much different. Fires are no longer allowed to burn unchecked because of the danger to homes, communities, and farms. Although the frequency and scale of natural fire is hard to duplicate with prescribed burning, prescribed fire is effective at regenerating shortleaf pine in stands with even a few remaining shortleaf pines.

In areas with no remaining shortleaf, artificial regeneration by planting is also an option. Shortleaf is planted using the same

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techniques and methods as loblolly pine. Seedlings are available from several sources. Check the Seedling Vendors List under Service Providers on the Alabama Forestry Commission's website at www.forestry.alabama.gov/seedling_search.aspx.

While many acres of shortleaf have been lost by conversion to hardwoods through fire exclusion, numerous other acres have been converted to plantations of other pine species, especially loblolly pine. Loblolly has a faster early growth than shortleaf and has been the commercial species of choice for years; this is not likely to change anytime soon. Although loblolly has the economic advantage, shortleaf also offers advantages of which landowners and land managers should be aware. Shortleaf is the most resistant southern pine to fusiform rust, it is more drought-resistant than loblolly, and is more resistant to wind-throw. Shortleaf also has low levels of flammable resins and is resistant to fire scar rot. As mentioned before, shortleaf seedlings re-sprout prolifically after fire, which could make it a valuable alternative in areas north of the longleaf range in managing habitat for wildlife such as quail with frequent prescribed burning. Shortleaf is also reported to be a better species on poor sites than loblolly. In areas where shortleaf, longleaf, and loblolly pine share ranges, loblolly was historically found on

wet sites, longleaf on dry ridges, and shortleaf was everywhere in between. This would indicate that shortleaf should be suitable for most sites in Alabama.

There is one problem with shortleaf pine in some portions of its range: Littleleaf Disease. A fungal disease, littleleaf affects shortleaf pine on poorly drained and eroded soils in the coastal plain and piedmont regions. Trees infected with this fungus turn a yellowish-green color, and tree growth slows. The needles also grow shorter than normal. While some infected trees may live only a year or two, others may survive as much as ten years with the disease. Infected stands are also more susceptible to southern pine beetle outbreaks.

Littleleaf is rarely found in the following north Alabama counties which are outside of the coastal plain: Blount, Cherokee, Cullman, DeKalb, Etowah, Jackson, Lawrence, Limestone, Madison, Marshall, Morgan, Walker, Winston, and the eastern portions of Colbert, Lauderdale, Fayette, Franklin, and Marion. Studies have also shown that trees grown from fire-killed and re-sprouted shortleaf seedlings may be more susceptible to littleleaf disease, so it may be unwise to burn young stands in areas of the state outside of the counties mentioned above.

For most of the recent history, shortleaf has been treated as a weed species in other pine stands and little was known of its importance and management. This is changing with efforts such as the Shortleaf Pine Conference, but there is still much to be learned of this species and the important ecosystem it provides. Foresters and other natural resource managers will continue to research the management of shortleaf pine for use by landowners. For more information on managing or planting shortleaf pine, visit your local Alabama Forestry Commission office. ♣

Follow Your Management Plan

By Tim Albritton

State Staff Forester, USDA Natural Resources Conservation Service

Hopefully every landowner has a picture in mind of how they want their property to look and the rewards they want to receive from their forest. Some want their property to look like a park and they want to enjoy recreating there. Others want to attract game animals to hunt, view, and enjoy. Still others just want the financial rewards that an intensely managed forest can offer.

Most people could care less about meeting the ever-increasing demands of society for wood products or protecting the habitat of an endangered snail. Such matters are the concern of government agencies, and these agencies do everything possible to stimulate landowner interest in proper forest management. But when you boil it all down, the chief interest of most landowners is simply their own little part of the world – their “back-forty.”

What some landowners do not realize is that a management plan can be much more useful than simply gaining the approval of a forestry cost-share program. It is a tool that can help turn your “back-forty” into that picture in your mind. You know – the one you have always envisioned your property could be, if you just knew what to do.

A forest management plan prepared by an experienced professional forester can be a

“Professional foresters have the knowledge, skills, and expertise to help landowners develop forest management plans that meet individual goals while sustaining the natural resource.”

road map guiding you from where you are now, to where you want to be. It will take into consideration your objectives for your property and will lay out a detailed plan to help you move forward.

Goals and objectives often change with the passing of time. Your goals at age 55 may be drastically different than they were at age 25. So your plan will need to be reviewed from time to time. Most plans try to propose activities for five to ten years, even though the rotation length of a stand of trees can vary from as short as 18 years to as long as 80 years.

A carefully designed management plan can also provide documentation of planned forestry activities in or near wetlands. Harvesting timber in or near wetlands will certainly involve some federal laws or regulations. A written forest management plan can serve as documented proof of established or ongoing silvicultural operations in the area.

A written plan will not protect you against violations, but it can serve as a historical record that the objective of your property was and is timber production. It can also communicate to the harvesting crew and equipment operators the specific activities recommended.





If you have never had a forest management plan, your first step is to request one. “Where?” you may ask. Several sources are available to landowners from government agencies, forest industry, and consulting foresters.

There are two government agencies in Alabama that have a system in place to assist private landowners in obtaining a forest management plan. The first agency is the Alabama Forestry Commission (AFC). The Commission has dozens of professional foresters with offices throughout the state. The AFC promotes certification and participation in the Tree Farm program, Stewardship program, and the TREASURE Forest program. All three programs require a written management plan before certification is achieved.

A TREASURE Forest plan is based on multiple-use concepts; the landowner selects at least two objectives which will be primary in the management of the land. A landowner can choose from the following management objectives: Timber Production, Wildlife, Recreation, Aesthetics, and Environmental Education.

A TREASURE Forest plan, Stewardship plan, or a Tree Farm plan will all have property information such as a legal description, stand tables, and a summary of the landowner’s desires for the property. Each plan has a set of maps such as an area map giving the general location and a property map detailing the boundaries, timber stands, roads, and other special areas.

Each stand is described and management recommendations made based on the landowner’s objectives. Often other natural resource specialists, such as a wildlife biologist, are asked to assist in making specific recommendations.

The second agency is the Natural Resources Conservation Service (NRCS). The NRCS offers assistance in the development of Conservation Activity Plans (CAPs), which are specialized, in-depth plans that address specific resources and can be used to improve management. Many of the recommendations from the plans can be part of a subsequent application for financial assistance through the Environmental Quality Incentives Program (EQIP).

For additional information about the CAP plans, contact your local USDA Service Center or check out the NRCS website at: www.al.nrcs.usda.gov/programs/eqip12/cap12.html. (See Activity Code “106” for the CAPs in Forest Management Practice offered in Alabama.)

Another source for landowners to consider is a consultant forester, of which there are many within our state. An experienced consultant can help you develop a plan and assist with many other forestry projects. For more information, check out the Association of Consulting Foresters (ACF) website at: www.alacf.com/Benefits.html.

Obtaining a written forest management plan for your property can be the first step in transforming your “back-forty” into that picture in your mind. It may also help you reach a higher level in forestry management than you ever imagined.♣

BOUNDARY LINES

Know, Mark, and Protect What You Own

By Chris Mead

Geneva State Forest Supervisor, Alabama Forestry Commission

Much of the United States was originally surveyed 175 years ago or more, and many times since then in some instances. However, even today, boundary line disputes happen. As a result, it is very important to know exactly where your property is. Common disputes in the Southeast arise from others accidentally trespassing on your property and/or cutting your trees, or you accidentally trespassing on your neighbor's property. Most of these disputes can be eliminated with an inexpensive task of painting your boundary lines. Also, in legal matters, properly marking your property lines can be a distinct advantage if you do discover a trespass has occurred on your property.

Most importantly, you must know the exact location of your boundary line before you even consider marking your boundaries. This is usually accomplished during the purchase of your property when a deed is surveyed, and recorded. Today, surveyors usually identify property corners with metal pipe and flagging so the property corner can be found later using a metal detector. The idea is to mark the point with something that will not rot, weather, or burn, so that it could be easily located for many years.

If you have not located your property boundaries, it is possible to locate them yourself. This requires work and some caution to make sure you don't permanently mark the boundaries in the wrong location. Be very careful because you could be liable for your mistakes. Since most deeds have been surveyed in the past, there should be some evidence, if you know what you are looking for.

First, you must locate the legal description for your property which will specify the distances and bearings (compass directions) of each of your property boundaries. The legal description is usually associated with the deed for your property or a previous deed it references. Your deed is available in the office of the revenue commissioner or circuit clerk at the county courthouse where the land is located. Courthouse personnel can help you find this information if you ask for assistance. Once you acquire


the legal description, you are ready to start locating your property lines.

In addition to your legal description, you will need several other pieces of equipment such as a compass, biodegradable flagging, and a 100-foot measuring tape. Using your legal description, try to find the most obvious of your property corners. This corner could be along a road, or a well-established boundary with a neighboring property owner. In the past, many section corners were identified using concrete markers. Other items used to mark property corners included rocks, piles of rocks, iron, wooden stakes, lighted posts, trees with multiple "blazes" (cuts in the tree, often painted), and iron axles.

Once you have located an obvious property corner, use your legal description, compass, and measuring tape to find your next property corner. In many cases, using the compass and measuring tape will only get you in the vicinity of your property corner. Then you must painstakingly search in detail for some indication of the corner marker. Sometimes it is necessary to work toward a corner marker from opposite directions. After locating the property corner, you can lay out a temporary boundary line between the two corners using biodegradable flagging. Move on to the next property corner, continuing to work around your entire property. Afterwards, contact your neighbors for agreement regarding the locations you've flagged as the actual property boundaries. Hopefully, some or all of your lines will have significant evidence indicating this is the true boundary. Once you've reached agreement about the property lines, you can paint your boundaries.

In recent years, several Southeastern states passed trespass laws which have specifications when marking property boundaries. Therefore, it is best to determine these requirements before proceeding. These laws make it easier to prosecute when trespass has occurred. Marking your property boundary can still benefit you civilly in legal matters, even if your state does not have such specifications.

In states that do not have these requirements in their trespass laws, consider the following common specifications and practic-



es. Mark trees within 3 feet of the property line at distances of 50 to 75 feet apart. The mark should be made 3-6 feet above the ground. The area where the paint is to be applied should be scraped to allow the paint to adhere longer. A common tool for scraping away loose bark and debris is the draw knife. Safety should be your top priority when using the draw knife. Also be careful not to cut into growing tissue of the tree. The mark is commonly **one** vertical line (stripe) with a minimum size of 2 inches by 8 inches, but can be larger depending on the diameter of the tree. It should be clearly visible when entering your property. Trees that are actually on the property line can be marked all the way around the tree. The paint is applied using a brush, usually when weather will permit drying for 2-3 hours. Corner trees are marked with **three** stripes and an “X” with the lower end of the stripes pointing toward the property corner. Property lines that change directions should be marked with **two** vertical stripes. Paint only the top of monuments. Painting and erecting metal fence posts are common when dealing with young timber.

Boundary lines are usually marked using boundary-marking paint, an oil-based paint developed for use on trees which can be purchased from suppliers such as Forestry Suppliers and Ben Meadows. Common boundary-marking paint brands include Nelson and BarkMark.

These are just a few tips to assist with locating and marking your property boundaries. Keep in mind that problems do occur, particularly when boundaries have not been surveyed for many years. When difficulties arise, you should seek professional assistance. Adjusting property monuments is a crime, even when it appears to be incorrectly placed. Remember, there are licensed professionals available for resolving these problems.

Timber Marking

All boundaries of a timber harvest should be marked to identify the specific area to be cut, and to prevent logging contractors from harvesting across the timber harvest boundary. Just as important, the timber contract between the logging contractor and the landowner should fully describe the method, type, color, and manner used to delineate and identify the specific timber to be harvested.

A timber harvest boundary is usually marked using paint, biodegradable flagging, or a combination of both. Other common boundaries involved with timber harvesting include indentifying sensitive areas such as streamside management zones, or habitat for threatened and endangered species. These areas are usually identified using biodegradable flagging with wording for the particular sensitive area. For example, in a typical first thinning of a pine plantation, the trees to be harvested might be painted, and the perimeter of the sale area marked with timber harvest boundary flagging.

There are many timber-marking paint brands with a variety of colors from which to choose, available for purchase from the same suppliers as boundary-line paints. It can be either oil or water based, with choice usually specified by need. Oil-based paint tends to last longer on the tree, while water-based cleans up much easier. On average, timber-marking paint will last over one year, depending on the amount of dilution during preparation. It can be purchased in spray cans or quart and gallon containers. The paint is usually applied using one-quart paint guns or larger backpack sprayers. Some paint guns have pump triggers that attach directly to the containers, while others require pouring from containers. Although more expensive, backpack sprayers can deliver more paint and cover a larger area before refilling.

Marking timber for harvest can be complicated, and in many cases requires someone with experience. First, should the timber be marked for harvest? In situations where all merchantable timber will be harvested, the answer is no. However, timber marking is necessary in situations requiring identification of specific timber classes to be harvested, while other specific timber classes are to be left after the harvest. In the previous example, a typical first thinning of a pine plantation could have every fifth row of timber removed, and thinning in between on the remaining four rows.

In most cases, timber is marked in a manner which will require the least amount of paint and labor. Typically, individual trees are marked so that equipment operators can easily identify harvest trees, and also so that it can be easily recognized when unauthorized tree cutting is occurring during the harvest. In our example, a typical first thinning of a pine plantation could have the end tree on every fifth row marked with a continuous blaze on the outside face, up to 6 feet high, to identify that row for harvesting. Harvest trees on the remaining four rows could be marked on one side at eye level, with another spot at ground level as a means to recognize unauthorized timber harvesting.

In another example, a mature longleaf pine forest requiring an establishment thinning could require “leave” trees marked on three faces, and a spot at ground level so the mature harvest trees can be thrown in any direction to minimize damage to leave trees. Also, leave trees would be marked using a crew of timber markers briefed on a list of established priorities that might include 1) preference to longleaf pine species; 2) leaving 14+ dbh trees with large cone producing crowns; 3) adequate spacing to leave a 25-to-30 square foot basal area; and 4) leaving one mast-producing hardwood every five acres as a primary food source for native wildlife habitat.

Another activity requiring tree marking is to identify specific classes of merchandized timber as either pulpwood, sawtimber, poles, pilings, or transmission poles. The timber is marked before harvest so that it can be better evaluated. In our example of a mature longleaf pine forest, transmission poles could be marked

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BOUNDARY LINES

(Continued from page 19)

using an “X” and classes of poles marked with one slash every five feet starting at 30 feet, in a thinning effort designed solely to take advantage of high pole prices.

Also important is what is done after the timber contract between the contractor and landowner is finalized. In some cases, harvesting begins, then changes occur to the agreed plan outlined in the contract. When this happens, problems can arise! Often what should be settled in a courtroom is not, simply because of a poorly maintained timber contract. It is very important for landowners to protect their interests by updating timber contracts with the contractors when important changes occur. Examples of changes that have led to irreparable damage between contractor and landowner include: not using the specified color of tree-marking paint because of availability; using flagging instead of paint; or allowing the harvesting contractor to make harvesting decisions because tree marking is behind schedule.

As you can see, there are multitudes of forest management goals requiring timber marking. The method of timber marking is always based on the planned forest management activity to be accomplished. To get desired results and achieve set forest management objectives, timber marking should be planned in advance and completed in a systematic manner.

Resource and Improvement Protection

Land ownership implies stewardship, that responsibility toward planning and managing all natural resources found on the property. Conservation and protection of water quality, soil stability, threatened and endangered species, and native habitat is critical in every forest management endeavor. In recent years, tools have been developed toward conservation and protection of those natural resources.

These tools are mostly the result of laws such as Section 404 of the Clean Water Act, the Coastal Zone Management Act, the Water Quality Act, and the Endangered Species Act. Contrary to popular belief, these regulations, policies, and guidelines are written to allow silvicultural activities both within and adjacent to identified sensitive areas. Also, depending on your state, there can be additional regulations, restrictions, and procedures that could affect your efforts. You should always check with your local state forestry and/or wildlife personnel beforehand when implementing forest management activities in and around sensitive areas. Sensitive areas include jurisdictional wetlands, streamside management zones (SMZs), riparian areas, roads, as well as threatened and endangered species habitat.

During timber contract preparations, these sensitive areas should be addressed. Sections within the contracts should incorporate minimum standards when dealing with sensitive areas and associated penalties. For example, a timber contract clause could read as follows: trees shall be felled and skidded away from water as much as possible; any tops or other logging debris dropped into the water or channel shall be removed immediately; heavy equipment shall not be operated within the SMZ (or within 35 feet of any water of the State and U.S. if SMZs are not specifically delineated) unless the forest floor and understory vegetation can be protected from unnecessary damage; wheel ruts shall be filled in with soil; failure to meet these standards immediately terminates this contract.

Sensitive areas are usually identified with biodegradable flagging around the perimeter of the area and at a spacing determined by equipment operator visibility. For example, a typical first thinning of a pine plantation could have trees painted that are to be harvested, and the perimeter of the sale area marked with timber harvest boundary flagging. A drainage area/sensitive area with harvesting restrictions within the timber sale area would be marked using SMZ flagging.

Fences, dams, and structures are valuable improvements to property. As such, they should be considered during all phases of forest management activities and protected in the same manner as sensitive areas. During planning, an effort should be made to minimize potential problems associated with each feature and it should also be addressed within the timber contract.

Timber contracts should also address maintenance and repair of forest roads. Sometimes it may be necessary to improve roads prior to the forest management activity. For example, it may be necessary to install at contractor's expense a rock ford stream-crossing suitable for all equipment planned for the contract period. As a minimum, contractor will install rip-rap (class II or smaller) of a sufficient depth in the stream bottom, and 2 to 4 feet beyond to support all equipment to be used during the contract period. In addition, contractor will install smaller crushed rock aggregate (2- to 4-inch size) to a depth of 4 to 6 inches for a minimum of 100 feet on each side of the ford approaches. Said ford will be in good working order at the end of harvest operations, and it and all materials will become the property of the landowner.

In all forest management activities, landowners should set aside sufficient time for careful planning, necessary negotiation, and completion.♣



Erich G. Vallery, USDA Forest Service - SRS-4562, Bugwood.org

Ensure Accurate and Complete Property Title

By Tom Conway

General Counsel, Legislative Liaison, Alabama Forestry Commission

One of the steps that you as a landowner should take before attempting to sell forest products is ensuring that you have the legal right to sell the products. Your failure to make certain that you have clear title to the land and the forest products being sold can result in significant legal complications, including litigation which can drag on for years and delay your payment or result in not receiving payment at all.

One of the first actions to take before selling forest products is to be absolutely sure that you have full and clear ownership of the property where the forest products are growing. There are several ways by which property can be acquired. You may have bought the property from a previous owner. If this is the case, the closing attorney should have conducted a title search to make sure the seller had the right to sell the land to you. You may have inherited the land by will from a parent or other previous owner of the property. In this case, it is unlikely that a title search would have been conducted when ownership of the property was transferred to you.

While property transfers by will are a common and completely valid method of acquiring ownership of land, it is important to note that the person who left the property to you could only transfer whatever legal interest he/she had in the property at the time of death. If the person had clear title to the land without mortgages, liens, or other encumbrances, you are not likely to encounter problems related to your ownership of the property. However, you need to verify that you received clear, unencumbered title to any land acquired by will before planning a timber sale on that property.

There are various other ways of acquiring real property. In most cases, you will find that you do have clear legal title to the property you believe you own. When you contemplate a timber sale, it is imperative that there not be any doubt that you own the land where the timber is located. If you have the slightest question about your ownership, you should not move forward with a timber sale until you have consulted with an attorney to confirm that your title to the property is clear. While no one likes to spend money for legal fees, the cost of ensuring that your title is clear can be small compared to the costs that will be incurred if you sell timber and it's discovered later that you did *not* have the right to do so.

Validating your ownership of the property is only one step you should take before selling forest products. In addition, you should make sure that you own and have the legal right to sell the timber on the property. It's easy to assume that if you have clear legal title to the property, you also have clear title to any forest products growing on the land, but some situations present complications which must be addressed before a sale takes place.

One situation involves the common ownership of a parcel of real estate by two or more joint owners. This happens frequently when property is left to children or other relatives in a will and the heirs are named as "joint tenants" rather than each individual

heir being given a designated portion of the property. In some cases, one joint owner of a parcel of property may sell the timber on that property without the knowledge or consent of the other owners, and without sharing the proceeds of the sale with the other heirs. The other joint owners may not become aware of the sale for some time because heirs often do not live near the property. However, when the sale is discovered, as it will be eventually in every case, the legal and personal fireworks will begin.

If you are a joint owner of property along with siblings or other owners, you should never attempt to sell forest products from the property without the involvement and informed consent of all owners of the property. When co-owners of land discover that products from the land have been sold without their knowledge, they have a right to recover their portion of the proceeds. The seller of the forest products can pay the other owners of the property voluntarily, but more often, the co-owners hire attorneys and initiate civil lawsuits against the individual who sold the timber. The AFC is aware of cases where attorneys' fees and the other costs of litigation have actually exceeded the value of the forest products that were sold originally. Aside from the legal implications, the sale of forest products from land owned in common with other owners without their knowledge and consent can create resentment and bitterness that lasts for generations.

Another occasion where issues can arise during a timber sale, even when you have clear title to the land itself, is when there are one or more mortgages, liens, or other encumbrances on the property. In some cases, a bank or other lender who has loaned money against the value of the property has done so with the assumption that the forest products are included as part of the security for the mortgage. An individual, business, or government agency with a lien against the property may also have an interest in any forest products on the property. Responsible timber buyers will always check courthouse records to see if there are recorded mortgages, liens, or other encumbrances that must be addressed before any transaction involving forest products from the land takes place. However, you can save time and frustration by checking with any individual or entity that has a mortgage or lien against the property before planning a timber sale. Failing to resolve such issues could result in the holder of a mortgage or lien claiming all or part of the proceeds of the sale.

This chapter is only a brief look at some of the ownership issues that should be considered and resolved before undertaking a timber sale. The vast majority of timber sales in Alabama are completed to the satisfaction of both buyer and seller, without legal disputes arising. In most of the cases where legal disputes do occur, the issues could have been resolved before the transaction started by taking the steps described in this chapter. When there is any doubt as to ownership of property and forest products, or the right of an owner to sell forest products, it's always wise to consult an attorney before signing any documents related to the transaction.†

A **TIMBER** Sale Contract PLAN AND PREPARE

By Eddie Kirkland
State Lands Forester, Alabama Forestry Commission



Know your management objectives

Prior to initiating any timber sale, the landowner should formulate his or her land management objectives. This will involve prioritizing the reasons for owning the land and then making them a part of a forest management plan. The plan will state the landowner's desire to maximize timber production, wildlife habitat, recreational opportunities, or forest aesthetics, or more likely, some combination thereof.



The landowner should seek professional help with the management plan by way of a forestry consultant, state agency forester, or industry landowner assistance forester. A professional forester can also provide the help needed in the subsequent steps of selling timber such as timber valuation, harvest planning, sale preparation, sale advertising, contract negotiations, and harvest monitoring.

throughout the tract for access, and then selectively thin the remaining rows to the desired density. Operator selection is also often used for a first thinning in natural stands that are composed mainly of pulpwood-sized products. **Diameter limit** harvests have been much used in the past in determining which trees to harvest, such as all trees under or over a certain diameter. This method should be used with caution as it could result in degraded stand quality; however, there are still some cases where, with proper professional planning, it might be used. **Species-only** sales may also be used whereby only pine or only hardwoods may be cut. In other cases it may be more prudent for a trained **timber marker** to select the trees to harvest. In this method, either the trees to be harvested or the trees to remain are marked with paint at eye and stump levels.



Whether the sale is a thinning or a clearcut, the remaining steps are much the same. The sale and/or property boundaries should be marked either with paint or flagging. Sensitive areas such as streamside management zones (SMZs), stream crossings, new roads, logging decks, etc., should be designated and/or marked, although some of these may be left until the logger moves onto the site.



Prepare the timber sale

The management plan will determine the type of harvest to be used; i.e., whether the sale will be a thinning or a clearcut. If a thinning is planned, then the decision has to be made as to the method of selecting the trees to harvest. In a first thinning of pine plantations the more usual method is by **operator selection** whereby the tree cutter will clearcut certain rows or paths



Know the value of the timber for sale

Several factors will determine the value of the timber: timber type, timber quantity, mill proximity, and site conditions. Timber type involves tree species, size, and quality of timber to be sold.

Knowing how much timber will be sold at any one time (sale acreage, volume per acre, and whether the sale is a clearcut or thinning) will greatly determine the sale price. One large sale will probably bring more than several small sales over a period of years. Due to today's high transportation costs, the proximity of the sale area to the various timber mills greatly impacts the value. Site conditions which could affect the value of one's timber include distance of the harvest area to a main highway, need to create or improve interior roads, slope, and soil wetness. If the tract is on ground that can be accessed and harvested during wet weather, it is likely that the sale will command a premium.



Other factors affecting the value of the landowner's timber include federal, state, or local regulations as pertains to wetlands, protected species, highway access, logging restrictions, etc. Any regulations which would increase a logger's operating costs will likely lower the landowner's revenue.

A professional forester will be able to analyze all of these factors and derive a good estimate of the timber's potential value.

mailed to as many buyers as possible who operate in the area, who in turn provide the landowner with the price they are willing to pay for the timber. The sealed bid method often brings the highest prices to the landowner. Potential buyers should usually be required to be Professional Logging Manager (PLM) certified. Loggers who have taken Alabama's PLM course, administered by the Alabama Forestry Association, are taught Best Management Practices (BMPs) which stress efficient harvesting and merchandizing of timber products with an emphasis on protecting and enhancing water quality. A list of potential buyers for each county may be obtained from the Service Providers database under "Timber Buyers/Loggers" on the Alabama Forestry Commission website at www.forestry.alabama.gov/ServiceProviders.aspx.

The next decision to be made is whether the sale will be paid on a lump-sum or per-unit basis. A **lump-sum** payment is usually paid at the time of contract closing or may be deferred to a date(s) of the landowner's choosing. In a lump-sum sale, the price is not determined by the actual volume cut, but by the buyer's estimate of the timber's value which may be either under or over the timber's actual value.

If the sale is on a **per-unit basis**, each species/product should be specified as well as the unit of measurement and timing of payments. The most common measure is in tons and payments are usually made weekly. The logger should also be required to provide settlement statements and copies of all weight/scale tickets. This method is sometimes referred to as "pay-as-cut" and overall sale income is based solely on volume actually harvested.



Determine a selling method

The method used to sell timber may be broken down two different ways: negotiated versus sealed bid refers to the way in which a buyer is selected; lump-sum versus per-unit refers to the way the buyer is to pay for the timber.

A **negotiated sale** is one in which the landowner or a consultant bargains for the best price with one or more buyers. This is more common in sales of specialty products such as high-value hardwoods where there are relatively few buyers. Sales are also often negotiated for a first thinning where there may be few quality loggers, or when you want to demand the best harvest outcome for future growth and earnings.



The other method of selecting a buyer is by way of a **sealed bid**. In this, a notice of sale is



Protect your interests

Always use a written contract not only to protect your land and resources, but also to ensure that your sale objectives are met. The contract should contain a legal description of the sale area, method of selecting trees to harvest, provisions for payment, penalties for damages, logging specifications, time period for cutting timber, and provisions for making corrections during and after the logging period. The landowner should always consult a professional forester and/or attorney when drafting a timber sale contract. The landowner and/or agent should make frequent inspections of the harvest operation to ensure that contract terms are being fulfilled. Be sure to make a final inspection after the harvest is complete and address any issues of contract non-compliance.

For more information, please visit www.forestry.alabama.gov/PDFs/Selling_Your_Timber_color.pdf.



Understanding FOREST TAX LAW

By Dr. Robert A. Tufts

Attorney and Associate Professor, Auburn University School of Forestry and Wildlife Sciences

Any expense paid or income received from forest operations has income tax impacts. The purpose of this article is to make you aware of the issues, but space does not allow for a detailed explanation. Be sure to consult your income tax professional to determine the effect on you individually.

The first issue to decide is whether you are going to operate as a business or hold the property as an investment. The advantage of operating as a business is the opportunity to use expenses to offset other income. This is important because the Internal Revenue Code allows for the current deduction, as opposed to capitalization, of most of the expenses associated with forest operations. Two related issues are whether your investment is “at risk” and whether you materially participate in the forest operations, which are also required to deduct losses against other income.

Benefit of Basis. Probably the most important tax issue is determining your “basis” in the land and timber. Basis is your investment in the property (or a prior owner’s investment), and the return of basis is not a taxable transaction. In other words, if you sell timber worth \$10,000 and your basis was \$4,000 you would only pay tax on the income or \$6,000.

Determining Basis. If you purchased the property, your basis is the total price paid for the property plus any expenses associated with the purchase, such as the consulting forester, surveyor, or legal expenses. If your parents gifted the property to you, then your basis is their basis, plus any gift taxes paid on the appreciation. For example, your parents purchased the property in 1960 for \$25,000 and today it is worth \$100,000. Your basis in the property is \$25,000. If you acquired the property as a result of someone’s death, then your basis is the fair market value (FMV) of the property at the date of death. We used to say “step up” in basis to FMV date of death, but some property values have decreased.

Allocation of basis. Once you know your basis in the property, the basis has to be allocated among the land, trees, and any other depreciable assets on the property. Your basis has to be allocated proportionately based on the FMV of the assets. In other words, you cannot arbitrarily allocate a larger amount of the basis to the timber. To accelerate the tax benefit, the basis

allocated to the timber is usually further subdivided into accounts such as sawtimber, pulpwood, pre-merchantable, and regeneration. For example, sawtimber has a higher FMV so it would be reasonable to allocate a larger portion of the basis to that account. Sawtimber will probably be harvested sooner so your basis will be recovered faster (income that is not taxable) which will increase the rate of return from your property. The IRS provides a four-part document, Form T, that should be used to record the purchase, basis determination, and basis allocation for each property that you purchase. You are not required to file the Form T when you purchase property, but since the IRS states that you must determine the information required on the form, you should complete Part 1 of Form T.

Single Identifiable Property. A parcel of land can be divided into blocks or separate depletion units called single identifiable properties. Blocks may be more efficient for claiming basis and expensing replanting.

Harvesting Timber. To qualify for capital gains treatment prior to 2005, you had to sell your timber with a “retained economic interest.” In 2005, Section 631 was amended to allow “lump sum” sales to qualify for capital gains treatment. To qualify for long-term capital gains, you must have owned the asset for the holding period, currently one year (which starts the day after the purchase). To determine the amount of proceeds that are taxable, you would deduct your investment or basis in the trees harvested by calculating a depletion allowance.

Depletion. The investment in a capital asset (basis) is normally recovered through an annual depreciation write-off, with the amount calculated under the modified accelerated cost recovery

system. Depreciation is not available for natural resources; instead, a depletion allowance is calculated each time timber is harvested. The format for calculating the depletion allowance is included in Part 2 of Form T, which must be included with your tax return when claiming a depletion deduction. Depletion changes each year because the amount invested remains constant, but the volume of timber changes each year with growth. For example, when you purchased the land, there were 10,000 tons of pulpwood with a basis of \$50,000 or \$5 per ton. Five years later when you harvested the trees, there were 12,000 tons but the basis is still \$50,000, so the depletion allowance is \$4.17 per ton.

Reforestation. Another somewhat recent change is the opportunity to expense the cost of stand establishment. Reforestation includes site preparation as well as replanting. Up to \$10,000 may be expensed for any taxable year with respect to each qualified timber property. For example, if two 40-acre tracts were harvested and they were separate depletion blocks, then \$20,000 could be expensed: \$10,000 for each of the properties. Any amount over \$10,000 can be amortized over the following 84 months. To maximize the benefit, the site preparation could be conducted in July, year one, with replanting the following January, year two, to expense \$20,000 for one block.

Maintenance expenses. These costs are incurred for the management, maintenance, and protection of the timber stand and are considered “ordinary and necessary” under §162. Amounts incurred for labor and materials for fire, disease, insect, and brush control are deductible. Post-establishment fertilization is also performed for the management, maintenance, and protection of the timber stand and are held to be ordinary and necessary expenses deductible under §162. Also deductible are operating expenses such as fees paid to consulting foresters, other professional fees, salaries for labor, and travel expenses related to the management of the property.


Timber cruise. The deductibility depends on the purpose of the timber cruise. Expenses incurred for a cruise *not* made in contemplation of a purchase or sale, and for the purpose of determining the type, quantities, location, and growth possibilities of the timber have been determined to be an ordinary operating expense. The costs incurred in connection with a purchase are a capital expenditure and must be added to the basis of the acquired timber.

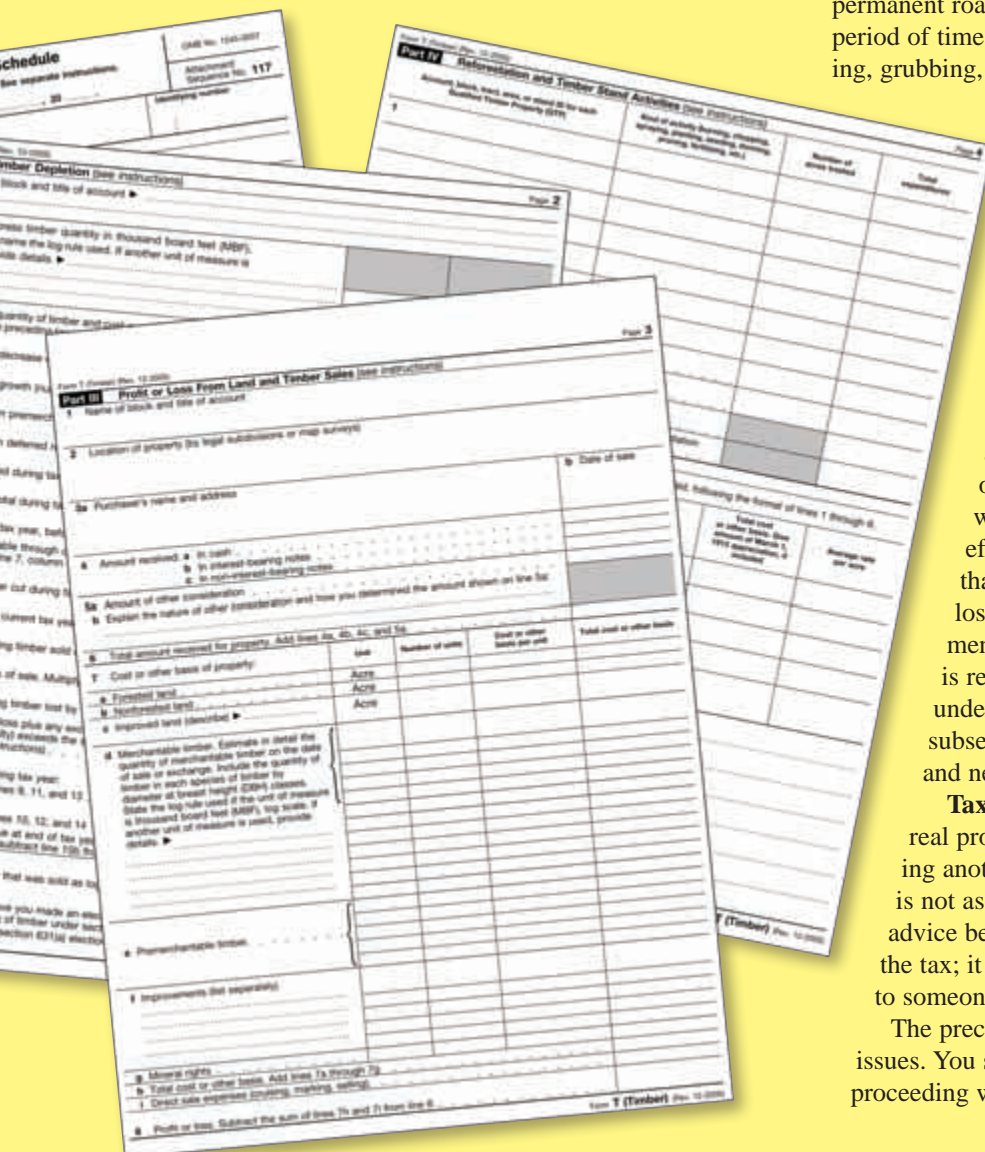
Surveys. Surveys to defend title must be capitalized into the land account. A survey done to re-establish a lost property line should be deductible.

Forest roads. To be depreciable or amortizable, property must have a useful life to the taxpayer that is determinable. For a permanent road, the roadbed should be useful for an indefinite period of time and is not depreciable; therefore, the cost of clearing, grubbing, and rough cut and fill should be placed in a non-depreciable account. Improvements to a permanent road, such as culverts and bridges, do have a useful life and are depreciable. The recovery period is 15 years for land improvements such as drainage facilities, bridges, and fencing. If the road is meant to be temporary, for example, a road that is constructed for timber harvesting with the intent that it be reclaimed and planted, then it has a useful life and may be depreciated.

Casualty losses. Timber production is usually a business or entered into for profit; therefore, ordinary losses would be deductible whether there was a casualty involved or not. The income tax effect of having the loss associated with a casualty is that it provides for the separation of the “ordinary” loss (as opposed to long-term capital) from the deferment of income from salvage operations, if the income is reinvested in similar assets (involuntary conversion under §1033). In other words, the casualty loss and the subsequent sale of salvage timber are separate events, and need not be combined and set off for tax purposes.

Tax-free exchanges §1031. If an owner exchanges real property rather than selling one parcel and purchasing another, he can defer the tax on the gain. The process is not as simple as it sounds and you should obtain tax advice before starting the transaction. You do not eliminate the tax; it is only deferred to a later sale (unless you leave it to someone in your estate and they get a step-up in basis).

The preceding list is barely an introduction to income tax issues. You should consult an income tax professional before proceeding with any of these operations. 





Timber Theft – Criminal or Civil?

By Craig Hill

Law Enforcement Chief, Alabama Forestry Commission

better decision as you decide how, and to whom, you sell your timber. Ben Franklin said, “An ounce of prevention is worth a pound of cure.” It is much easier to prevent a theft than to fix one.

During Fiscal Year 2011, over \$300,000 worth of timber was reported as stolen in our state. A person made a comment to me several years ago that I couldn’t believe. He stated that with all the millions of dollars worth of timber sold each year in Alabama, if only a few hundred thousand dollars worth is stolen – we didn’t have a timber theft problem. This statement really took me by surprise. I responded that it may not sound like much to him, but if it were *his timber*, we would have a big timber theft problem. Surely no one suggests that a certain amount of theft should be expected, or tolerated. Where is the moral compass of someone who can justify in their minds that it’s okay if we only take a few loads of wood; if we take from the wealthy; or if we work a scheme to take from a large corporation because they can afford to lose a few dollars. Stealing is stealing.

Many of the thefts we have investigated are sad because the victims are disadvantaged. They are poor, elderly, many times uneducated, and will only sell timber once in their lifetime. They depend on this money to carry them through retirement, put children through college, or for any number of reasons, but the bottom line and regardless of the amount – *it’s their money*.

Timber theft complaints can be separated into one of three categories: trespass, failure to pay, or theft. The following guidelines are used for classifying these situations:

- Timber trespass (encroachment) – an individual *unintentionally* cuts and/or destroys timber without permission of the owner.
- Failure to pay – the buyer does not promptly pay the seller for the timber after the harvest.
- Timber theft – an individual knowingly takes timber without permission, or deceives the seller in one of several ways and does not pay or fully pay for what was harvested.

Timber trespass or encroachment occurs when a person harvesting timber cuts across a property line, and without permission, cuts timber owned by an adjoining landowner. This happens due to one or both of the following reasons: the person harvesting the timber fails to ascertain the property boundary lines before cutting, and/or the property boundary lines are not properly marked or maintained by a landowner. When the victim discovers the trees cut, they usually call the AFC or another law enforcement agency wanting to prosecute this person. However, §9-13-60, *Code of Alabama*, requires that before a criminal

What if someone cuts timber on your property without your permission, or the buyer of your timber fails to pay you? Are these situations criminal or civil?

These are not new questions but have been debated for years. Most of the discussions stem from a belief by some attorneys, district attorneys, judges, and others in the legal and forestry communities that *all* transactions involving the sale of timber are civil in nature and have no place in criminal courts. They point out that selling timber is a business deal. I have been told, “It’s just a business deal gone bad,” and “We don’t arrest people in this country for bad business deals or failing to pay a debt.” They argue that a remedy is already available to fix bad business deals – lawsuits.

I don’t believe all timber transactions are civil issues, especially if it involves a landowner not getting paid. Granted, many things pertaining to timber sales are civil in nature because of failure to perform as specified in a contract. For example: the buyer of your timber agreed to repair your roads after the harvest, or agreed to replant the harvested area, etc. The real issue – and what I believe defines whether a timber transaction is criminal or civil – is money. Why does anyone buy, sell, or harvest timber? MONEY. Timber theft is about money – not trees. The trees provide an avenue to get to the money.

Those that view all timber transactions as purely civil are not hypocrites, because they would also say that if the buyer of your timber gets money from *your* timber but refuses to pay you – it’s a civil issue! This mindset has allowed the “bad actors” of the forest community to use our court systems as a playground for years and they know how to work the system. Thankfully, through educational efforts of the Alabama Forestry Commission (AFC) and other forestry and landowner groups, the way timber transactions are viewed and handled in our court systems is changing. Finally, we can look beyond the trees and see what’s really happening – the theft of money.

I want to tell you about the most frequent ways money and timber are stolen, and help you avoid becoming a victim. Hopefully some of this information will assist you in making a

charge of cutting timber without authorization can be made, it must be proved that the person cutting the timber “willfully *and* knowingly” cut it without the authorization of the owner.

For a successful prosecution we must prove that the person cutting the timber knew or should have known that they were on the lands of another, and then having this knowledge cut the timber anyway. Without this evidence, the case must go to civil court. Of course the question asked by the victim landowner is, “Doesn’t the person that cut my timber have a legal responsibility to know where the land lines are located before they cut?” The answer is yes, they have an ethical responsibility, but it is a civil liability and not criminal if they fail to do so. Many trespass situations could be avoided or a criminal case made if the victim landowner would adequately mark and maintain their property lines. Pictures in court of highly-visible marked lines such as fences, trees with POSTED signs, paint on trees, etc. near the point of encroachment can turn this incident into a criminal matter.

There are times when an honest mistake is made:

- The buyer of the timber is erroneously told where the property line is located by the landowner; or
- A property land line dispute exists between adjoining landowners.

Both of these two situations are civil in nature. However, §9-13-62, *Code of Alabama*, requires that when the timber of another is cut without permission, the victim is to be paid double the fair market value for the timber. The value of the timber would be determined by a registered forester. Needless to say, the victim would have to pay for this service. If the person that cut the timber does not have insurance, refuses to pay, or disputes the dollar value of the cut timber, then the matter would go to civil court.

Timber trespass situations have been and will continue to be a problem until some things change. Persons cutting timber must determine land line locations before cutting, and landowners must mark and maintain their property lines. Some states have addressed timber trespass issues by legislation requiring certain actions prior to cutting timber. For example: §15-32-101, *Code of Arkansas*, requires the following actions *before* cutting timber: 1) Cause the land to be surveyed, and the metes and bounds of the land marked and plainly established; 2) Rely in good faith on an existing marked line or established corners; or 3) Acquire a document signed by the landowner selling the timber and signed by the adjoining landowners, indicating that the landowners agree on the location of the boundary. Persons that cut timber in violation of this law face fines up to \$300.

Before coming to the Forestry Commission, I worked over 21 years as a conservation officer and was shocked to find that hunters in Alabama have a greater legal responsibility to know whose property they are on than people cutting timber! A hunter is required by law to know whose property they are on and have the landowner’s permission before hunting. A person found hunting without permission faces a mandatory fine of \$1,000 and loss of hunting privileges. A hunter goes to great lengths to determine land line locations before hunting.

Failure to pay the seller of timber in a timely manner generates a lot of calls for the AFC investigative unit. Of course, a person failing to pay a debt is usually not considered a criminal offense unless a pattern of not paying sellers can be documented.



Under current law, most failure-to-pay situations are civil, and the victim must sue the buyer in court to recover his/her money. This is why you should take your time deciding to whom you will sell your timber *and* get the help of a professional consultant. The money paid to a registered forester to oversee a timber sale is worth every penny. The forester will get the best price for your timber because most are paid on a percentage basis. The more money your timber makes, the more money the forester makes. A consultant should be familiar with the people that work in the forest community, and with this knowledge, would not deal with timber brokers, dealers, or harvesters that do not have good reputations. This translates into you getting your money at the end of the job!

To understand **timber theft**, you first must know how timber is sold. Most timber is sold one of two ways: lump sum or pay per unit.

- Lump sum - Timber is advertised for sale and bids taken for a specific time period. At the end of the bid period, the timber is sold to the highest bidder. The seller gets the money for the timber up front and normally gives a timber deed to the buyer. The buyer has a specified period of time to harvest the timber. Buyer is at risk due to changing market prices.
- Pay per unit - Timber is sold by volume and type of timber product harvested from the property. An agreement is reached as to how much per ton or cord the buyer will pay the seller for each type harvested (pine pulp, hardwood pulp, poles, etc). The seller is at risk if dealing with a dishonest buyer.

There are still a few wood yards in Alabama that will purchase timber from an individual right off the truck. However, you and I would not be allowed to haul timber into one of the larger timber or paper mills. Only individuals or businesses that have contracts with the mills can haul and sell to them. Usually the people that have contracts with the mills are larger operations that can consistently supply sizeable amounts of timber and are financially able to meet other mill requirements. If the timber buyer doesn’t have a contract with the mill but is hauling timber to them, he/she is selling through a broker or dealer who does have a contract.

As the timber is delivered to the mill, the driver hauling the timber usually scans a card (provided by the broker/dealer) which identifies the broker and credits the load on his account. The mill remits payment to the broker for the timber. The broker
(Continued on page 28)

Timber Theft – Criminal or Civil?

(Continued from page 27)

then pays the timber buyer, minus a fee for using the contract and other administrative costs. The smaller timber buyer then pays the landowner and workers that actually harvested the timber. The person that buys the timber is required by §9-13-63, *Code of Alabama*, to keep records of all timber purchases for three years and allow investigators to examine these records. Each buyer of timber in this chain is required to keep these records. This is basically how timber is sold, but there can be many variations of this scenario. (Note: The timber/paper mills are under no legal requirement to disclose to a landowner the amount the timber buyer was paid or copies of the scale tickets. This information is confidential between the mill and the person with whom they have the contract.)

Historically the problem with timber theft has been that it does not neatly fit into the general definition of “theft.” Why? Because the person that bought the timber has permission to take and sell the timber. However, we do have many textbook cases of timber theft each year that do neatly fit that definition. Someone enters the property of another and takes timber without permission; usually this happens to landowners who do not live on the property.

Much of what we investigate is theft by deception, which most often occurs during pay-per-unit purchases. As defined in §13-8-1, *Code of Alabama*, deception has many faces. Theft by deception occurs when the buyer fails to fully disclose the total amount or types of timber harvested; the buyer fails to pay the seller; someone sells timber they do not own; or an employee steals from his company. The following are examples of deceptions we have investigated:

Example 1: Buyer finishes a job and pays the seller, telling the landowner he harvested 20 loads of pine pulpwood. In reality, the buyer failed to disclose to the seller that he harvested 30 loads and also cut higher-valued trees such as saw timber or poles. The dishonest buyer pockets the money.

Example 2: Buyer signs a contract with a landowner to purchase timber on a pay-per-unit sale. Buyer completes the harvest but never pays the landowner. Upon investigation we find that this particular buyer has repeated this same process with several other people. The buyer gets his money but never pays the landowner.

Example 3: Buyer cuts timber and pays the seller. Buyer learns that the seller did not own the timber. Buyer never checked or verified ownership.

Example 4: Employee works as a driver, hauling timber. The employee stays late or comes in early, taking a load of timber to an unauthorized location, selling the timber, and pocketing the money.

Example 5: Timber buyer hires a company to cut a tract of timber. This company was to transport the timber to a specific location to be sold. Instead, the dishonest company diverts several loads of timber to another location, sells the timber, and pockets the money.

In reality there are two victims in timber-related thefts – the landowner and the forest community. One dishonest person causes a negative ripple effect on the whole industry. The following are a few suggestions that will help you get the most for your timber and avoid being a victim:

- Always use a registered forester as a consultant to sell your timber and oversee the harvest.
- Never sell or let anyone start cutting your timber without a written contract.
- Require that a harvest record be maintained on any pay-per-unit sell, and get copies of the record. Examples of harvest records can be found on the AFC website.
- Require in your contract that the person harvesting your timber be certified as a Professional Logging Manager. PLM-certified loggers can be found or verified on the Alabama Forestry Association’s website www.alaforestry.org/.
- Don’t be in a hurry to sell – talk with several buyers and check references.
- Don’t allow a prospective buyer to pressure you into selling your timber.
- If a prospective buyer will not agree to your terms – don’t sell.

Please remember that the majority of people in the timber business are honest, but it only takes a few “bad actors” to cause a lot of problems. There are many members of the forest community who are assisting us in identifying the dishonest people. We have individuals involved in every aspect of the timber business – including timber buyers, truck drivers, equipment operators, and those working at the mills – that are dedicated and active in helping us rid the timber industry of these thieves.

The Alabama Forestry Commission is committed to reducing the number of forestry-related crimes that occur each year across the state. These crimes generate annual losses of hundreds of thousands of dollars to landowners and the timber industry. Overcoming timber theft requires two things: *education and enforcement*. Working together we can conquer this problem. We appreciate the Alabama Forestry Association, Alabama Loggers Council, Alabama Forest Owners Association, Alabama TREASURE Forest Association, and other organizations that have been very helpful in educating landowners and forestry workers about timber thefts and the dangers associated with selling timber.

The AFC provides a Wildland Arson/Forest Crimes Hotline so that citizens can call and report theft of timber, theft or vandalism of harvesting equipment, and wildland arson. The toll-free number is 1(800) 222-2927. The information provided is confidential and the caller remains anonymous.☎





Regulatory

Environmental Concerns

By Richard Hulcher
Field Operations Division

Alabama Department
of Environmental Management

To ensure the protection of Alabama's environment, programs have been designed and are managed by the Alabama Department of Environmental Management (ADEM). This responsibility includes the protection of water quality, and is accomplished through applicable state and federal statutes, state regulations, and permitting programs. Timber harvesting and related activities are regulated by ADEM, and this article gives a brief overview of laws and programs administered by the agency that directly or indirectly affect activities associated with the forestry industry.

ADEM and AFC Coordination

Working cooperatively to address the prevention and abatement of nonpoint source impacts to water quality during forestry operations in the state, ADEM and the Alabama Forestry Commission (AFC) have entered into a Memorandum of Agreement in order to provide the maximum benefit to Alabama citizens.

Pursuant to the Alabama Environmental Management Act and the Alabama Water Pollution Control Act, ADEM has the authority and responsibility to be the lead agency in the state in regard to environmental matters. ADEM also has the responsibility and authority pursuant to these laws to establish and enforce water quality standards and any other necessary rules and regulations for the protection of waters of the state. This information can be viewed at www.adem.alabama.gov/programs/water/guidance.cnt. The AFC is a resource agency that provides technical assistance to the forestry industry in the harvesting of timber and prevention of pollution from these activities.

Best Management Practices for Forestry (Timber Harvesting)

ADEM has a long-standing and continuing compliance program relative to the implementation of effective best management practices (BMPs) associated with timber harvesting activities, including road construction and material borrow areas.

To promote forestry BMP implementation, ADEM's Field Operations Division staff and the AFC staff work cooperatively conducting compliance assistance for forestry operators, performing routine evaluations of forestry activities statewide, and responding to citizen complaints in a timely manner. ADEM achieves voluntary implementation of BMPs where possible, requiring implementation through compliance assurance activities as necessary. In addition, ADEM staff will independently perform compliance inspections of forestry operations and initiate appropriate compliance activities as needed in order to ensure that effective forestry BMPs are implemented and maintained to ensure the protection of water quality.

For technical information related to pollution prevention in timber harvesting operations, please refer to Alabama's Best Management Practices for Forestry. This publication is available at www.forestry.alabama.gov/BMPIndex.aspx or www.adem.alabama.gov/programs/water/forestry.cnt.

Persons who have questions, wish to file a complaint related to BMP implementation or potential water quality impacts, or want to request additional information regarding water quality requirements relative to forestry timber harvesting operations, can contact the ADEM Field Operations Division.

Timber Harvesting in Wetlands and Sensitive Areas

Timber harvesting conducted in certain areas, including wetlands, may require permit coverage pursuant to §404 of the Clean Water Act (CWA) which requires the U.S. Army Corps of Engineers (COE) to regulate and permit dredge and fill activities in waters of the United States. The regulatory definition for waters of the United States is, "All waters covered by Section 10 of the Rivers and Harbors Act (RHA); all interstate waters and interstate wetlands; all other waters (of various types) which could be used in interstate commerce; all impoundments of waters of the United States; tributaries of the above waters; terri-

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Regulatory Environmental Concerns

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torial seas of the United States; and wetlands adjacent to waters identified in this section.”

If timber harvesting activities will result in fill or dredge activities in wetlands or other waters of the United States, the COE should be contacted prior to commencing operations in order to determine if permit coverage is required.

Timber Harvesting in the Alabama Coastal Zone

Permitting and regulatory requirements for activities in the Alabama coastal zone are contained in ADEM Admin. Code Div. 335-8 (Coastal Area Management Program). Program rules and other information can be viewed at www.adem.alabama.gov/programs/coastal/default.cnt.

Common Problems Observed at Forestry Sites

1. Spilled fuel, grease, and other chemicals resulting in soil contamination.
2. Trash, garbage, used fuel/chemical containers, etc.
3. Logging debris deposited or allowed to enter stream.
4. Lack of or inadequate streamside management zones.
5. Improperly constructed/maintained stream crossings.
6. Significant sediment loss from poor location and maintenance of skidding trails and roads.
7. Too much distance between drainage turnouts, or turnouts not installed.
8. Lack of or inadequate seeding, mulch, and long-term revegetation of bare areas after logging is complete.

Environmental Compliance Assurance Considerations

Below are items/issues to consider prior to commencing timber harvesting and reforestation activities (not in any priority order).

1. Contact your local AFC office to obtain current information and requirements for timber harvesting activities.
2. Contact a registered forester.
3. Arrange for a professional pre-inspection, post-inspection, and as many inspections as needed during the activity to assure compliance.
4. Review Alabama’s Best Management Practices for Forestry.
5. Review the permitting/regulatory requirements of ADEM Admin. Code Div. 335-8 (Coastal Area Management Program) if your site is located in the Alabama Coastal Zone.
6. Contact the COE if you are harvesting timber in a wetland or your activities could impact wetland areas.
7. Ensure any contracts or agreements require effective BMPs to be fully implemented and maintained at all times.
8. Ensure that any contracts or agreements provide for properly constructed/maintained stream crossings and appropriate streamside management zones.
9. Conduct regular, daily if needed, self-inspections.
10. PROMPTLY repair/correct any BMP deficiencies or non-compliance issues as work progresses.
11. Remember that the operator/logger who conducts the work is primarily responsible for compliance. However, the

landowner, buyer/broker, or other person with decision-making authority or a financial interest is also responsible for compliance. All involved persons/entities may be subject to potential enforcement as appropriate.

12. Treat the property/streams as if it were your own back yard.
13. Private pond/lake construction including tree/stump removal may require National Pollutant Discharge Elimination System (NPDES) permit coverage.
14. Pre-construction logging and land clearing for subdivision or commercial development requires NPDES permit coverage prior to commencing logging.
15. Noncompliance is subject to ADEM enforcement, including administrative fines.
16. Be advised that the public can file a complaint electronically with ADEM at www.app.adem.alabama.gov/complaints/.

General Information and Current Discharge Permitting Requirements

Forest landowners, loggers, buyers, brokers, and other entities involved in timber harvesting are encouraged to stay informed regarding current and proposed regulatory requirements that may be applicable to their forestry activities.

It is recognized that the federal Clean Water Act (CWA) *currently* allows an exemption from federal NPDES stormwater permitting for construction activity intimately associated with certain silvicultural activities, provided effective forestry BMPs are fully implemented and regularly maintained. Normal silvicultural harvesting and related silvicultural construction practices (as described in 40 CFR Part 122) do not *currently* require permit coverage if they are conducted consistent with ADEM guidelines and ADEM-accepted forestry BMPs (as described in *Alabama’s Best Management Practices for Forestry*), and are not performed in advance of or in support of a regulated construction activity or development.

Currently, it is also recognized that certain material acquisition/borrow activity may be more reasonably defined as an extension of forest construction activity, thus making NPDES permit coverage unnecessary. Generally, small temporary mining/borrow areas for silvicultural local road construction are considered part of the silvicultural construction activity and are *currently* exempt from permit requirements, provided effective BMPs are fully implemented and regularly maintained. Generally, larger pits, pits open for a longer period, or pits used for purposes other than logging construction are considered surface mining and do require a permit.

The installation and expansion of these temporary, small borrow areas should be planned to minimize and control the migration of sediment from the pits. Organic debris generated from these pits must be disposed of outside of streamside management zones. Upslope runoff should be diverted around pits and discharged in a diffuse pattern.

Appropriate techniques should be employed to control erosion and sediment migration from mining/borrow pits, with non-active portions of these pits immediately closed and reclaimed. Structures such as drainage swales, gradient terraces, earth dikes, sediment traps, properly installed and maintained silt fences or stake hay bale rows, and soil retaining measures are examples of appropriate sediment control techniques. Temporary seeding, crimping, mulching, matting, hydro-seeding, permanent seeding,

and planting are examples of appropriate erosion control techniques.

Reclamation is accomplished by sloping pit banks and re-vegetating to recreate the natural runoff pattern as much as possible. Established erosion control measures must be used for reclamation. Such measures could include seeding and/or tree planting to establish permanent vegetative cover.

Forestry operators should keep records, including photo-documentation, as appropriate. The operator should maintain records regarding the location, size, begin-and-end dates, approximate amount of material excavated, personnel performing site inspections, and other relevant information.

ADEM Admin. Code r. 335-6-12-.11

Registration Requirements for NPDES Construction Sites

(1) Except as provided otherwise by this chapter, after March 1, 2003 or the effective date of this chapter, whichever date occurs later, new or continued operation of NPDES construction sites that have not submitted a complete and correct Notice of Registration (NOR) or application requesting coverage under a valid NPDES general permit, or individual permit, is prohibited. Except as provided otherwise by this chapter, after March 1, 2003 or the effective date of this chapter, whichever date occurs later, commencement of construction at proposed NPDES construction sites that have not submitted a complete and correct NOR acceptable to the Department, or have not been granted NPDES permit coverage under a valid NPDES general permit, or individual permit, is prohibited.

(6) Unless required by applicable federal law or State law, and provided the activity is not being conducted in support of, in conjunction with, or to prepare for NPDES construction activity as defined by this chapter, the following construction activities are not required to register under this chapter:

(a) Normal silvicultural harvesting and associated silvicultural construction practices conducted in accordance with rule 335-6-6-.03 and rule 335-6-6-.10 that are not planned or performed in immediate advance of, in support of, or as part of, a regulated construction activity or development.

1. For the purposes of this chapter, silvicultural construction includes certain temporary nonmetallic/noncoal material acquisition or borrow activity that is reasonably considered as an extension of forest road construction activity. Generally, small, temporary material borrow areas for silvicultural local road construction are considered part of the normal nonpoint source silvicultural activity, including but not limited to, timber harvesting, site preparation, tree planting, controlled burning, fertilization and are not required to register under this chapter provided the duration of the disturbance is minimized to the extent possible, but in all cases

is less than sixty (60) days, effective BMPs are fully implemented and regularly maintained to the maximum extent practicable prior to, during, and immediately after use of each completed increment of the borrow area until the site is reclaimed or effective stormwater quality remediation is achieved, and the total active, unreclaimed land disturbance is less than five (5) acres in size at all times;

2. In addition, in order for temporary material borrow areas for silvicultural local road construction to be considered part of the normal nonpoint source silvicultural activity not required to register under this chapter, the disturbance shall be conducted to ensure that borrow material is exclusively obtained for construction and periodic maintenance of forest roads utilized in silvicultural activities. The temporary disturbed area shall be continually graded and reclaimed to within a safe operating distance from any high-wall or steep slope and the temporary borrow area is used exclusively by a single operator within the scope of the operator's own operations. Re-establishment of permanent vegetative cover shall be accomplished immediately after active disturbance is completed for each disturbed increment, and the active non-graded, non-reclaimed area adjacent to the active high-wall shall not exceed one-half acre. The borrow area shall be located outside of streamside management zones and outside the designated 50-year flood plain and the site is located as close as practicable near scheduled road construction and maintenance activities to the extent that appropriate road fill material is available. Fuel storage tanks/containers shall not remain onsite unattended, dry/wet crushing/screening or other processing shall not be conducted, the borrow activity shall not result in a point source discharge to surface waters of the State, and the Department shall be notified immediately of any unpermitted discharges or non-compliant discharges in order to ensure the protection of water quality;

3. Road construction and maintenance shall be for support of normal nonpoint source silvicultural practices only. Material borrow activity for construction or maintenance of dual-use or multi-use roads used for silvicultural practices but which are also used incidentally for access to other types of activities or development is exempt. However, material borrow activity for construction or maintenance of dual-use or multi-use roads used primarily for access to other types of regulated non-silvicultural development, including but not limited to, marinas, barge/rail loading facilities, industrial/manufacturing facilities and subdivision developments, is not exempt and requires registration under this chapter.☞

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Fringetree

(*Chionanthus virginicus*)

By Fred Nation, Environmental Services, Baldwin County

When fringetree is in bloom, masses of snow-white flowers against the delicate greens of new spring growth are among the most beautiful sights in our Southern forests. Like other beloved native plants, it has many names, including old man's beard; grancy graybeard, and white ash. Fringetree can be found in the wild from New Jersey to central Florida, and west to Arkansas and Eastern Texas. In Alabama it is found nearly throughout the state, mostly in the midstory of rich, moist forested sites.

Most often seen as large deciduous shrubs, fringetrees can be pruned and trained into small, well-formed trees with a potential height of about 25 feet. The leaves are opposite, oblong to oval, up to about 8 inches long, and 3 inches wide. The bark is gray-brown, eventually becoming somewhat scaly with age. In April or May, flowers are small and fragrant, with four strap-like petals in showy 4- or 5-inch panicles.

Fringetree belongs to a large and famous family. Close relatives include ash trees, in the genus *Fraxinus*, and Olive, *Olea europaea*, one of the most ancient and economically important of the world's cultivated plants. Other family relations are the exotic privets, in the genus *Ligustrum*, which are often used as hedge plants. Several of these have established themselves outside of cultivation, and one species, Chinese privet, *Ligustrum sinense*, has become one of the most destructive invasive exotics on roadsides and in tree plantations and natural habitats in the eastern United States.

Our beautiful fringetree is a good citizen, and it would be seen even more often in our gardens if it were not somewhat difficult to cultivate commercially. Stem cuttings are reluctant to root, and the seeds should be "stratified" – exposed to two separate

cold treatments to enhance germination. These difficulties can be overcome, but they do somewhat limit the availability of these beautiful landscape plants.

The bark and roots of *Chionanthus* have been used by Southeastern Indians as a poultice to treat boils and wounds. Tea made from the bark is often listed in old herbals as a diuretic, to stimulate water loss, and as a treatment for a variety of fevers. The ripe fruits are a little less than an inch long, oval, blue-black when ripe, with a single large pit. They look very much like small olives, which is not surprising, given their family relations. In fact, the fruits have been brined and used as olives!

The best use of our beautiful native fringetrees is in the landscape, where their masses of snowy-white flowers will remind us of the beauty that surrounds us in the fields and forests of Alabama and the Southeast. The Alabama state champion *Chionanthus virginicus* is a giant in Tuscaloosa County, with a trunk 29 inches in circumference, 18 feet tall, and an average crown spread of 31 feet. 🌳



Photos by Fred Nation