



THE OVERSTORY

MSU Forestry Extension Newsletter

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Forestry Extension: The Value of Friendship

Randy Rousseau, Extension Specialist

The Forestry Extension Group at Mississippi State University is without a doubt looking forward to the day when we can talk to each of you at a face to face meeting. The personal interaction between Extension personnel and landowners is definitely missed during the period of Covid-19. Although on-line techniques have helped, they have certainly shown us why we like our job so much. And, like everyone else we're not sure when that day will come, hopefully sooner than later. The one thing that I've learned is how much I miss the close interaction of the various forest landowners across the state. We look forward to bringing a variety of perspectives concerning forestry and the various ecosystems of Mississippi. We will continue to strive to ensure that our clients are aware and understand the need to sustainably maintain the wide array of forest ecosystems of Mississippi.

Although I received my doctorate at Mississippi State University under Dr. Sam Land and Dr. George Switzer, coming back never crossed my mind, and especially not as an Extension Professor. Don't get me wrong, the four years I spent at Mississippi State were some of the most memorable days of my life. I was lucky enough to get to know so many fine people like Dr. Rodney Foil, Dr. Warren Thompson, Dr. Charles Lee, Dr. Doug Richards, and Dr. John Hodges. However, what originally caught my attention was how friendly and welcoming everyone was across the entire campus. You would be hard pressed to walk down the street and not be greeted by everyone that crossed your path. Following graduation, we moved to Kentucky, but I soon realized how special the atmosphere was around Mississippi State. When it came time for my oldest to pick a college, he chose Mississippi State for a lot of reasons and once he moved to Starkville he soon discovered the courtesy and friendship that existed on campus. Three of my four sons received degrees from Mississippi State University and still love to make trips to games and camps.

When I returned to campus in 2007, after 25 years as a Researcher and Center Leader in the forest industry, I soon found that same friendliness and courtesy that I experienced from 1977 to 1980 remained, making me feel as if I had come home. Through the years working in Extension I have found those same traits throughout Mississippi. It will be with me always and although I loved my research in the industry, the change of working in Extension is extremely personable and very rewarding. It allowed me for the first time to reach people who actually needed and wanted to learn from my experiences. Extension's goal, in my opinion, will not change. It focuses on helping people and trying to do this in a variety of ways. There are no problems that are too small nor any project too large; Extension will provide the help requested. Extension is here to provide you with the knowledge that will direct you along the right path to accomplish solving a problem or meeting your objectives for your forest land. The one thing that I'm also certain about is that during this process we will both be rewarded by becoming friends.

Mississippi Timber Price Report

Marc Measells, Senior Extension Associate

2nd Quarter, 2020

The Mississippi Timber Price Report provides a picture of timber market activity across the state showing regional and statewide stumpage prices for common forest products. **This report should only be used as a guide to help individuals monitor timber market trends. The average price should not be applied as fair market value for a specific timber sale because many variables influence actual prices individuals landowners receive.** This report and previous historical timber prices are available by contacting your local county Extension office or at:

www.extension.msstate.edu/forestry/forest-economics/timber-prices.

2nd-Quarter 2020 Stumpage Prices/Ton (Source: MSU Extension)

NOTE: Prices vary widely across the state; average prices presented here may not reflect your local market.

Pine Poles - \$38.20	Oak Sawtimber - \$41.27
Pine Sawtimber - \$21.33	Mixed Hardwood Sawtimber- \$37.61
Pine Chip N Saw - \$10.60	Crossties - \$35.00
Pine Pulpwood - \$3.04	Hardwood Pulpwood - \$5.88

Price Trends:

As the COVID-19 pandemic continues, Mississippi timber markets face uncertainties along with volatility. As predicted last quarter, many product classes saw decreases in stumpage prices during the 2nd quarter as the supply and demand relationship was impacted by prolonged business shutdowns and reduced mill productivity across the state and nation. The figures show 10-year statewide average price trends.

Compared to the 1st quarter, statewide average prices dramatically decreased during the 2nd quarter for most product classes (5% to 67% reductions) except pine poles, pine sawtimber, and mixed hardwood sawtimber which saw very modest increases of 2% to 11%. Timber sales ending the 1st quarter and throughout the 2nd quarter were difficult. However, prices in some regions were better than others. The reduction in demand and our oversupply issue remain as main contributors to low stumpage prices.

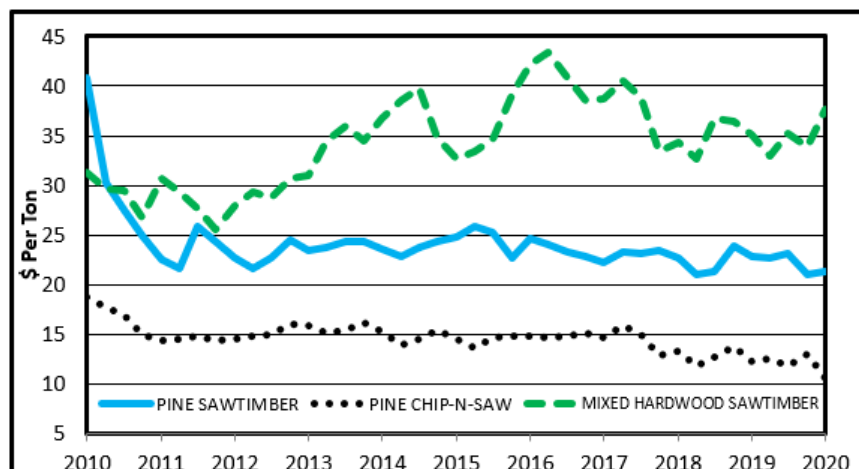
North Mississippi prices continue to trail those in south Mississippi, except for hardwoods this quarter.

The housing market dramatically declined at the start of the pandemic. However, housing starts have increased sharply since April. Additionally, the unemployment rate, although still high, has decreased since April. If these two trends continue, we may begin to see timber markets recover. Lumber futures have remained high but are expected to trade lower as more mills are back operational.

However, stumpage prices during the 3rd quarter are expected to remain low. Most economic forecasters now expect the recovery to be slower, possibly lasting into 2021. Hopefully, the COVID-19 situation will begin decreasing, more people will get back to work, and our economy will recover quickly.

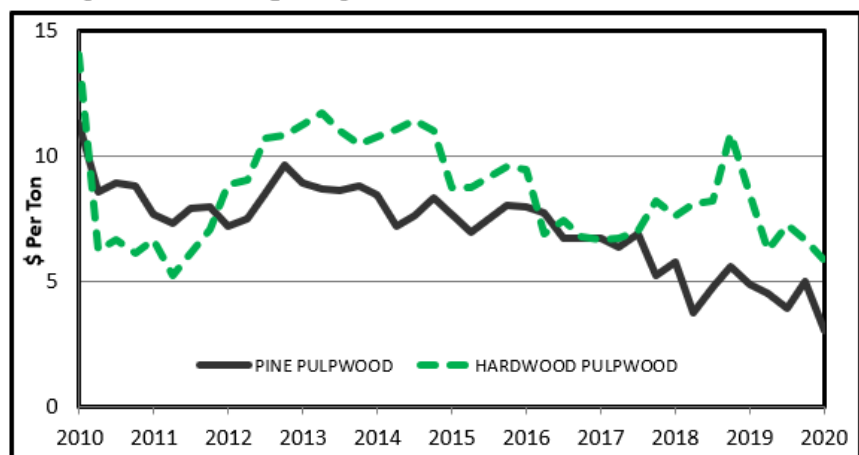
*Timber-Mart South (TMS), Inc. has more detailed data available by subscription that contains values for other timber products not included in this report. TMS is compiled and produced at the Center for forest Business, Warnell School of Forest Resources, University of Georgia, under contract with the Frank W. Norris Foundation, a non-profit corporation serving the forest products industry. See <http://WWW.TMARTSOUTH.COM> for information on subscriptions.

Figure 1: Average Mississippi pine sawtimber, pine chip-n-saw, and mixed hardwood sawtimber stumpage prices (\$/ton) for 2nd quarter 2010 through 2nd quarter 2020.*



*Prices from 2010-2017 are from Timber Mart-South. 2018-current prices are from Mississippi State University Extension.

Figure 2: Average Mississippi pine and hardwood pulpwood stumpage prices (\$/ton) for 2nd quarter 2010 through 2nd quarter 2020.*



*Prices from 2010-2017 are from Timber Mart-South. 2018-current prices are from Mississippi State University Extension.

Hardwood Plantings – What are the Keys to Success?

Randy Rousseau, Extension/Hardwood Specialist

In general, this question usually comes up at the wrong time. By wrong time, I mean after considerable money has been spent on site preparation, purchase and planting of quality seedlings, and waiting several years in hopes that a young hardwood planting is successful. It is usually at that time the landowner recognizes that something has gone wrong. In many cases, their next thought centers around a nutrient problem and additional funds are spent fertilizing the planting site, typically resulting in new abundant herbaceous growth with little or no help to the planted trees. Concern sets in, and then followed by a phone call or email inquiring about the planting. Usually, it is apparent that one or more of the key steps for a successful hardwood planting was not understood, leading to undesired result of either a poorly stocked stand or a total failure. Thus in these cases the old adage of “Putting the Cart before the Horse” fits perfectly.

There are a number of key steps that should be followed when undertaking a hardwood planting project. These are:

1. Correctly matching the planting site with the appropriate hardwood species desired through the life of the stand.

Hardwoods are very site specific. They survive, compete, and grow better when the species is planted in the appropriate environment. Having a working knowledge of your soils, as well as hardwood species best adapted to the soil type that fits these conditions, is extremely important. This implies a clear understanding of the soils' physical and chemical makeup as well as the hydrology of the site (i.e. dry to poor drainage) Soils information can be easily obtained through the NRCS Web Soil Survey (www.websoilsurvey.sc.egov.usda.gov) and this information can then be checked using USDA Forest Service General Technical Report (Baker-Broadfoot) Site Evaluation Methods for Hardwood Species. Even the Mississippi Trees book offers excellent basic information concerning habitat and ecology for all hardwoods native to Mississippi.

2. Proper planting site preparation must be accomplished, but cost and extent will vary by previous site history.

No matter the area being considered for planting (other than following a forest stand harvest), it is always best to have the site subsoiled to a depth of 16 to 18 inches to break up any type of traffic or plow pan allowing for ease of planting and better root expansion. On former agricultural land, site may need spraying first, followed by disking and then subsoiling. The spraying will greatly depend on the type and extent of the herbaceous vegetation still growing on the site Former pasture ground tends to be a little more formidable as grass is typically thick and volunteer hardwood tree seedlings have been mowed and sprouted, with this process continuing each year. Herbicide application is definitely needed to kill the grass and the volunteer seedlings is needed prior to disking followed by subsoiling.



*A young thinned oak plantation
Photo: Randy Rousseau*



*Hardwoods in Trainer Plantation
Photo: Randy Rousseau*

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Restoring hardwoods following pine plantations can be one of the simplest and least costly site preparation following a harvest; Simply walk the area and determine how many desirable hardwood sprouts are visible. If suitable numbers are found then planting may not be needed or only limited to those areas which are void of hardwood seedlings (no need for subsoiling on these types of sites).

3. Obtain quality hardwood seedlings.

Hardwood seedlings are fairly expensive, thus the need to purchase seedlings from a very credible nursery. A quality seedling can be described by morphological features with a height of two feet, root collar diameter of $\frac{3}{8}$ to $\frac{5}{8}$ of an inch, with 8 or more lateral roots thus providing a high root-shoot ratio. The use of competitor seedlings that fit with your more desired hardwoods such as oaks should also be part of your planting and intermixed thoroughly throughout the planting allowing the stand development to be similar to that of a natural stand.

4. First year herbaceous control is a must.

First-year herbaceous control is a must to keep seedlings from becoming stressed thus allowing root systems development. To develop a quality hardwood species, such as oaks, spacing should be rather dense but mixed with a combination of competitor trees providing diversity and interaction while promoting crown stratification.

Following these steps will provide a landowner with a successful hardwood planting and enjoyment for decades.

Tree Focus: Longleaf Pine

Butch Bailey, Extension Specialist

Longleaf pine (*Pinus palustris*) is one of the few trees that has the power to conjure strong emotions from foresters, forest landowners, and conservationists across the southeast. The one-time undisputed sovereign of the forests between the Appalachian Mountains and the Gulf of Mexico, longleaf pine's dominance covered an area of more than 140,000 square miles between Texas and Virginia. One of the earliest European explorers and naturalist William Bartram described the vast expanses of the longleaf pine ecosystem as, "...covered with grass, interspersed with an infinite variety of herbaceous plants, and embellished with extensive savannas, always green, sparkling with ponds of water...." that stretched for days travel in any direction.

The key to the reign of longleaf pine was its ability to withstand fire. With thick, corky bark that insulates the vital living tissues in the trunk, it was able withstand the fires that experts believe burned through the forest understory every few years, killing off weaker trees. Young longleaf seedlings were likewise adept at not only surviving these low intensity fires, but thriving in them. A number of factors including the removal of fire from the forests, population growth, and the choice of moving to a faster growing pine species has resulted in a severe reduction of the longleaf pine forests to less than 5% of its historic range.



*Longleaf Pine in DeSoto county
Photo: Butch Bailey*

Today, in an era of fragmented and well-managed forests, the longleaf still has a place and a role to play. In addition to being the keystone species in a shrinking ecosystem, longleaf can be an economic generator for private landowners. While longleaf grows slower than other pine species, at least early in its lifecycle, they have far superior wood and growth habit, with a far greater proportion of trees in a stand that would be suitable for higher valued products like poles and pilings. Additionally, longleaf pine is more resistant to wind damage, less attractive to pine bark beetles, and of course more resilient to wildfires.

Economic Comparison of Longleaf and Loblolly Plantations

Shaun Tanger, Extension Specialist

Some forest landowners in Mississippi are skeptical of growing longleaf pine as an alternative to loblolly pine due to the superior financial performance of loblolly, but in regions that are suitable for longleaf growth, mostly south of I-20, the gap may not be as large as you think.

Loblolly's extremely wide natural range and natural properties combined with extensive work in silviculture and genetics has led to substantial increases in not only growth but disease resistance over the last 50 years, thus enhancing the use of loblolly over other pine species. In comparison, longleaf has two things working against it when it comes to comparing it to loblolly – time to final harvest and establishment costs. Longleaf, while a heavier wood, typically takes longer to express its best traits, that of long straight timber with few limbs. So, the rotation cycle with longleaf is more often 60 years, whereas loblolly is closer to 35. Fortunately, longleaf pine is also more wind resistant than loblolly pine. The current surplus supply of sawtimber in MS and elsewhere has resulted in depressed stumpage values for pine sawtimber while pole prices are doing fine. This works well for longleaf as the quality and its noted value for pole production is a definite advantage over other species. Higher establishment costs, lack of genetic improvement, along with a longer period of time to harvest are the disadvantages for longleaf.



In finance, the longer you must carry a cost, the less attractive the investment. In forestry, this is the case with longleaf especially with upfront increased seedling costs. Fortunately, there are incentives in place to offset some of these costs and while they are available to loblolly also, the benefits are more helpful (the percentage reduction) to the longleaf costs than the loblolly. These incentives I'm referring to are the Mississippi Reforestation Tax Credit and Mississippi Forestry Commission (MFC) cost-share options.

Cost analysis between two "typical" stands (one loblolly, one longleaf) indicated that the base case (with no additional incentives) loblolly outperformed longleaf by 44%. However, the difference drops considerably once all cost-share opportunities are added. Keep in mind you can't use both of the above listed Mississippi cost share incentives for the same practice, on the same acre, in the same year. For cost-share, the difference drops to 21% and if you utilize the MS reforestation tax credit it drops to a 15% difference. There are a lot of assumptions used in building these numbers, some may apply to you, others not at all. However, given the current market prices for the different stumpage products and the current incentives in place, longleaf looks like a reasonable alternative to loblolly plantations, especially if you have multiple objectives beyond timber production on your property. Are those other objectives worth a decrease of 15%, only you can answer that as a landowner, but for many landowners the answer to that question has been a yes.

*Natural Regeneration Longleaf pine exiting the grass stage
Photo: MSU Extension*

Can a Change in Pine Planting Strategies Provide a Better Fit for a Changing Market?

Randy Rousseau, Extension Specialist

Currently, there are approximately 34 million acres of pine plantations in the southern United States, and nearly 5 million acres in Mississippi, most of which is loblolly pine. The past strategy used to establish pine plantations included a large number of seedlings on a per acre basis (i.e. 800+ seedlings/acre) which allowed for considerable early-age mortality and a market for small diameter trees and thinnings needed to ensure enough larger trees reach suitable sawtimber size. Increased research efforts led to the development of quality pine seedlings. That, along with genetic improvement in growth and disease resistance, pointed to the fact that fewer seedlings per acre were necessary.

However, the reduction of seedlings per acre took considerably more time than expected. Certainly, the delay of lowering seedling numbers per acre resulted from landowners and consultants remaining cautious due to their reluctance to spend money on weed and hardwood control. Closure of pulp and paper mills, such as the International Paper Mill in Cortland, AL, has resulted in stumpage and pulpwood prices dropping to a low that had not been seen in over 30 years.

Unfortunately, landowners in northeast Mississippi have essentially seen the pine pulpwood market, which was once vigorous, nearly eliminated. Many landowners decided to wait until prices rebound, but that decision does not take into account that as the plantation ages, tree-to-tree competition increases and stress sets in, thus resulting in mortality through self-thinning. These stressed conditions could progress to more severe conditions including large areas of mortality from insects and diseases that was noted in loblolly pine during the late 1990s.



*MCP Plot at Age 8
Photo: Randy Rousseau*

In some cases, the biomass market focused on the production of pellets for sales in the United Kingdom and Europe has taken the place, at least to some extent, of pulp and paper mill closures. Drax, in southwest Mississippi uses small diameter pine coming from the first thinnings of pine plantations. While the biomass market has continued to grow in south Mississippi, there has been no biomass mills located in northeast Mississippi. Thus, with essentially a loss of a market for pine pulpwood this area has two primary markets remaining (i.e. chip and saw and sawtimber), both needing larger diameter material. The question is can a change in pine plantation planting strategies provide a viable method to minimize the need for early thinning while avoiding stress caused by overstocking, and bypass the pulpwood market altogether? This would allow landowners to a focus on growing larger, higher quality, material.

The proposed design is a combination of wide corridors along with a planting spacing that remains suitable for self-pruning but also capable of producing larger diameter trees before a thinning is necessary. For this design the current recommendation would be to use full-sib seedlings (seedlings resulting from the mating of two known parents), with an emphasis on stem and branch quality, disease resistance, and good growth rates.



Every 5th row thinned at age 13
Photo: Randy Rousseau

The recommendation for using full-sib seedlings is based on knowing that the parental origin for these traits, which is the result of considerable genetic trials. In the future, varieties may be better but for now it's to stay with full-sib stock.

Remember that effective silvicultural techniques, including site preparation, herbaceous and woody control as well as insect control will be needed to produce the desired stand. The planting design takes advantage of multiple rows of trees (3 to 4) and wide corridors on both sides of the tree blocks thus accommodating logging equipment. The spacing within the tree blocks will promote self-pruning, but allowing the trees to develop a larger diameter with minimum stress prior to a chip and saw harvest. The corridors, while providing an area for unimpeded logging operations focused on selection, can also be used as wildlife areas to increase the diversity within the stand from age one. Prior to the first thinning, the stand should be assessed to determine if it is suitable to carry enough individuals on a per acre basis to a sawtimber harvest and possibly beyond.

Got a question? Want us to cover something specific?

Send us a message on Facebook, or email rjr84@msstate.edu to submit your questions, comments, or ideas for future articles in The Overstory!

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MSU-ES Region Map

