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Feature Article

Christmas Trees of Mississippi

John Kushla, Extension Specialist

The leaves have turned color, and there's a nip in the air. Folks are decorating for Christmas, and that means finding a tree. You may not realize it, but Mississippi has thriving Christmas tree farms. There are over 20 growers scattered across the state, and they're all ready to provide you a memorable holiday experience. Our producers are expected to sell around 30,000 Christmas trees this year for an estimated \$1.7 million dollars in sales. Search for a grower near you online at <http://www.southernchristmastrees.org/>.

All the growers in Mississippi operate choose-and-cut farms. That is, you pick the tree you like, and cut it to take home for decorating. Our climate is too warm for re-cutting and wholesaling trees. So our growers are retailers too! Indeed, Mississippi growers can produce a 6-8 foot tall tree in 3-5 years. Moreover, freshness is guaranteed when you cut your own tree.

There are several species of Christmas trees grown in Mississippi. The most commonly grown Christmas tree in Mississippi is the Leland cypress (*Cupressocyparis leylandii*, Figure 1). It is really an inter-genus hybrid of the Monterey cypress (*Cupressus macrocarpa*) and the Alaskan cedar (*Chamaecyparis nootkatensis*). While not a naturally occurring hybrid in North America, both species of conifers were grown in the gardens of an English estate. The first hybridization occurred there in 1888, and several varieties of this hybrid have since been developed. The Leyland cypress can be grown on a wide variety of soils having good drainage, and will tolerate partial shade, the Carolina Sapphire and the Blue Ice. Both have a distinctive pale, gray-green to blue-green color, and are

aromatic.

The Eastern redcedar (*Juniperus virginiana*, Figure 3) is an old standby as a Christmas tree in Mississippi. It is very tolerant of dry sites and alkaline soils. In fact, this species prefers a slightly less acidic soil than the other Christmas tree species. Its foliage has a lacy texture. Cultural pruning to shape the tree helps develop stiffer branches to hold ornaments and lights. Of course, this tree is very fragrant.

The original southern Christmas tree is the Virginia pine (*Pinus virginiana*, Figure 4). This Christmas tree is not as commonly grown now as previously due to many insect and disease problems. Nevertheless, the Virginia pine has excellent needle retention and stiff branches for heavy ornaments. It is also aromatic.

Mississippi growers are trying some new species for Christmas trees, including the Giant arborvitae (*Thuja plicata*) and the Mexican cypress (*Cupressus lusitanica*). Both species are fast growing. The Giant arborvitae is tolerant of shade, whereas the Mexican cypress is tolerant of droughts. Be looking for these species in the years ahead.

Finally, many Mississippi growers offer customers pre-cut Fraser fir (*Abies fraseri*, Figure 5) trees imported from the Appalachian states. Fraser fir is among the most popular of southern Christmas trees. It is often the tree chosen to decorate in the White House. The needles are short and soft, with excellent retention. The limbs are strong, and the crown is open for hanging

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"...freshly cut Christmas trees smelling of stars and snow and pine resin - inhale deeply and fill your soul with wintry night..."

— John Geddes, *A Familiar Rain*



Figure 1. Leyland cypress, Rosebud Christmas Tree Plantation in Walnut Grove



Figure 2. Professor Stephen Dicke next to an Arizona cypress at Curry Farms near Rayville, LA



Figure 3. Three-year-old Eastern redcedar, Rosebud Christmas Tree Plantation

All photos by J.D. Kushla

The Overstory

Christmas Trees of Mississippi (Continued)

ornaments. It is also mildly fragrant. Since these trees are sold pre-cut in Mississippi, freshness is a concern. To check for freshness, the needles should be green and persistent, while the branches should be flexible.

Once you have your real Christmas tree back home, keep it in water. Cut off about 1 inch from the bottom of the trunk before placing in water. The tree stand should hold at least one quart of water per inch of trunk diameter. Check the water level regularly to keep the trunk wet. Keep the tree in a cool place (away from fireplaces or heater vents). When decorating, use new LED or mini-lights. Follow these tips and you can enjoy a real tree for your Christmas celebrations.



Figure 4. Virginia Pine prior to pruning, Rosebud Christmas Tree Plantation



Figure 5. Fraser fir, Little Switzerland Christmas Tree Farm, NC

Mississippi Biomass Best Management Practices (Guidelines)

Randy Rousseau, Extension Specialist

Mississippi State University Forestry Extension developed Best Management Practices (BMPs), which are specific practices designed to guide the removal of biomass within the state of Mississippi. The Mississippi Forestry Commission extended a grant to Mississippi State University as a proactive move based on the potential of forest woody biomass to become an important component in renewable energy. Currently, wood pellets are produced in Mississippi and shipped to mainland Europe and Great Britain as electrical production feedstock, with the added benefit those countries will reach the goal of reducing carbon dioxide (CO₂) emissions. Besides electrical production, woody biomass is being intensively researched for additional bio-products, including fuel and polymers. To accomplish the task of developing BMPs for forest woody biomass, a number of paths were pursued. These practices were based on an extensive review of the scientific information, correspondence with the research scientists involved with the effect of biomass removals, evaluation of biomass BMPs from other states and various agencies (such as the Forest Guild), and making site visits where forest woody biomass was being harvested. While the pellet industry is producing a product considered of biomass origin, the vast majority of the wood is being harvested from first thinnings in pine plantations, which falls under Mississippi's Traditional Forest BMPs. Because this may not always be the case, the Mississippi forest woody biomass BMPs were developed specifically to address the limitation of removals needed to maintain sustainability and without the addition of nutrients into forest stands.

There are many definitions of biomass; so, it was necessary to define the term as specifically used in the guidelines. Thus, forest woody biomass is defined as any tree or portions of the tree, including living stems, poorly formed or damaged



Mississippi Timber Price Report

3rd Quarter 2016

The Mississippi Timber Price Report (MTPR) is a quarterly survey of stumpage timber prices in Mississippi. It is developed to provide a picture of timber market activity. The state average prices for common forest products are listed. Values given are offered as a guide to help individuals assess the fair market value of their timber. The average price should not be applied as the exact value for a particular tract. This report is updated quarterly and available at MSUCares.com/forestry, or by contacting your local county Extension office.

QUARTER'S PRICES: 3rd Quarter 2016 Stumpage Prices/Ton (Source: Timber-Mart South)

Pine Sawtimber - \$24 Pine Chip-N-Saw - \$15, Pine Pulpwood - \$8,
Mixed Hardwood Sawtimber - \$43, Hardwood Pulpwood - \$7

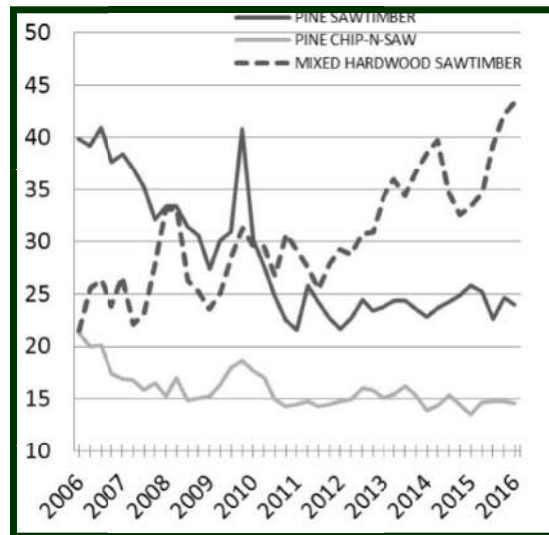
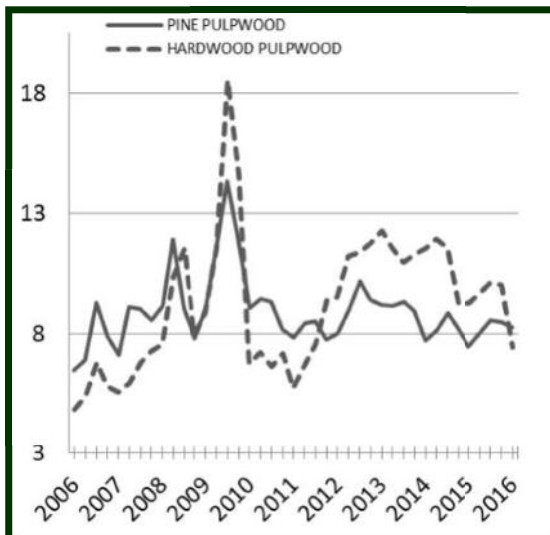
NOTE: Prices vary widely across the State; thus, average prices presented here may not reflect your local market.

WHAT'S MOVING PRICES - TRENDS:

Stumpage price for mixed hardwood sawtimber increased during the 3rd quarter, while pine sawtimber and chip-n-saw and pine and hardwood pulpwood decreased.
Stumpage prices for hardwood sawtimber increased by 3.1% and pine sawtimber decreased by 2.6%. Pine chip-n-saw decreased slightly by 0.8%, pine pulpwood decreased by 2.8%, and hardwood pulpwood decreased sharply by 26.9% from the previous quarter.

TIME SERIES:

**Average Mississippi Pine and Hardwood Stumpage Prices
1st Quarter 2006 through 3rd Quarter 2016
(All prices in \$/TON)**



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.TMART-SOUTH.COM> for information on subscriptions.

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Mississippi Biomass Best Management Practices (Guidelines) (Continued)

stemwood (i.e. the bole of the tree), large and small branches, bark, topwood (i.e. crown of the tree), and foliage harvested for the primary use of renewable bio-products. Under this definition, forest woody biomass is any renewable woody fiber obtained from natural or plantation stands not used for added value products following complete stand harvested and prior to regeneration of a new stand. The three key factors of the guidelines are the frequency, intensity, and type of forest woody biomass removals. The higher frequency of entry dictates that more material should be left and that the number of entries into the stand should be limited to mitigate site impact. The intensity of removals should focus on leaving 30 to 35 percent of forest woody biomass and, specifically, the type that includes foliage and fine woody branches. The latter are the quickest to breakdown allowing the nutrients to be recycled in the growth of the new seedlings occupying the site. In addition, a certain amount of coarse woody branches, dead snags, and downed woody material should be left on-site for the use of by insects, birds, and mammals.

The Mississippi biomass guidelines are focused on soil protection and sustainability. The two major soil types of focus are the loess soils and the deep sands. The loess soils run the length of Mississippi on the west-end of the state and while fertile are also prone to erosion, thus retention of biomass would aid in erosion control. The deep sands found along the eastern part of the state will require higher amounts of biomass retention as well as a variety of types (i.e. large and small branches) to maintain soil sustainability. It is important to remember that these guidelines are only a supplement to Mississippi’s traditional forest BMPs and not intended to be used as a stand alone document.

Delta Hardwood Notes: Ips beetles in the Delta

Brady Self, Extension Specialist

While this column typically focuses on hardwoods, Extension personnel have fielded large numbers of pine mortality questions this year across the Delta. While pines are often impacted by some of the more common agricultural herbicides used in the Delta region, Ips bark beetle populations and associated damage have been high this year.

Three species of Ips beetles occur in Mississippi: the six-spined engraver, *Ips calligraphus*, the eastern five-spined engraver, *Ips grandicollis*, and the small southern pine engraver, *Ips avulsus*. All three species are small (between 1/8th and 1/5th of an inch in length) and range in color from light brown to black as they mature. While a few beetles do not cause mortality, infestation in large numbers kill the tree. Typically, stressed and lower vigor trees are attacked singly or in small groups. However, in droughty years, larger numbers of infested trees can be encountered. Ips beetles do not infest non-pine tree species (e.g. oaks, maples, hickories, etc.).

Symptoms of Ips infestation include fading crowns, dead trees, pitch tubes, and sloughing bark. Signs of the beetles include: galleries under the bark, emergence holes, boring dust, frass (excrement and sawdust), and beetles themselves. Management practices include watering during drought conditions (impractical for non-landscaping trees), thinning pines, removing slash material, and spraying insecticides (also impractical for non-landscaping trees). For more detailed information regarding Ips beetles and their treatment, please review Mississippi State University Extension Publication 2876 (Ips: The Other Pine Bark Beetles). If you have questions please contact your county Extension office, Mississippi Forestry Commission office, or Extension Forestry Specialist.

Ips Killed Tree
(Photo: Andrew Ezell)



Ips Beetle
(Photo: Gerald Lenhard, LSU, Bugwood Org.)



Example of Pitch Tubes,
(Photo: Brady Self)

Reintroducing Mixed-Stand Management to Mississippi

John Willis, Extension Specialist

Pine plantations have steadily become a common feature across the Mississippi landscape. Much of this expansion was driven by a once vibrant timber market and a robust logging industry. Recognizing a prime economic opportunity, many landowners converted their agricultural fields and natural stands into a pine plantations in an effort to maximize productivity. For decades, this strategy worked exceedingly well and provided solid returns for plantation owners. However, in recent years, declining timber prices and logging capacity have reduced the profitability of pine plantations and, in some parts of the state, made plantation management very challenging. Consequently, some landowners have begun to question the future viability of this long-standing paradigm.

For landowners in this position, mixed-stand (stands with a mixture of pine and hardwood species) management may represent an enticing management alternative to pine plantations. Unlike plantation management, mixed-stand management typically relies on natural regeneration for its sustainability. Relying on natural regeneration can be financially advantageous for forest landowners during periods of reduced timber prices, as landowners do not incur stand establishment costs, which can help offset lower returns. In addition to the financial savings, mixed-stands are generally considered superior to pine plantations in terms of their diversity of wildlife habitat provided, resilience to disturbance, and access to a variety of different forest products markets. Thus, mixed-stand management can be used to accomplish an assortment of landowner objectives.

It is very important to realize, however, that mixed-stand management does have its disadvantages relative to pine plantations. One very important consideration is that your average timber rotation will be lengthened under mixed-stand management. Landowners using natural regeneration will also lose direct control over the genetic quality of their stand. This can be very problematic if your property currently lacks quality seed sources to regenerate the stand. It is also important to recognize that seed production is highly-variable among species, which could result in an unfavorable species composition. As such, we suggest you consult with your local forester or the Extension Forestry Faculty at Mississippi State University before you make the decision to alter your management plan.

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